FUZZYSCAN

Serial Command Manual

International Edition Rev. A9

cino

Revision History

Rev. 01	April 1, 2013	❖ Merged all the CMD Manuals of different series into one Manual ❖ Added command **TS A Operation Mode** ❖ Flash, Force, Toggle, and Diagnostic Mode in **TS Operation Mode** are available for L series from now on. ❖ Change the parameter name of “Inverse Reading” to “1D Barcode Inverse Reading” in **Operation** ❖ Added LED Illumination, Illumination Delay Duration in **Operation**. ❖ Added Parameters for **TS Operation** including Operation Mode (Tethered A Series), Hand-Held Mode Illumination & Aiming Control, Hand-Free Mode Decode Aiming Control, Aiming Control, Delay Aiming Timeout, Presentation Background, Center Alignment, Mobile Phone Capture, Unique Barcode Reporting. ❖ Modified parameter Code 128 Settings in **Symbology** ❖ Added parameters for **Symbology**, including GS1-128, code 16k, code 49, QR code, Data Matrix, Maxicode, Aztec, Chinese Sensible, Australian post, US Planet, US Postnet, British post, Japan post, Netherlands KIX code, Intelligent mail.
Rev. 02	August 16, 2013	❖ Added parameters for **Transmission**, including Data Script Active Setting, Data Script Setting, Security Script Setting and Data Wizard Premium Error Message. ❖ Added **Security Check**
Rev. 03	March 25, 2014	❖ Added command **BT A Operation Mode** ❖ Added command **FS A Operation Mode** ❖ Added Auto Power Off Timeout and Bluetooth Device Name (Bluetooth A Series) in **Bluetooth** ❖ Added parameters for **FS Operation** and **BT Operation**, including Operation Mode (FA470 & SM5700 Series), Operation Mode (Bluetooth A Series), Hand-Held Mode Illumination & Aiming Control, Hand-Free Mode Decode Aiming Control, Aiming Control, Delay Aiming Timeout, Presentation Background Lighting, Center Alignment and Mobile Phone Capture.
Rev. 04	April 25, 2014	❖ Page 2-17: Modified “LED Status” parameter in **Action**
Rev. 05	June 3, 2014	❖ Page 1-4: Modified **Status** description in **Command Structure**
Rev. 06	June 14, 2016	❖ Page 2-62: Modified RS232 ACK/NAK handshaking character in **Options** of **Reply RS232 Parameter(s) Field**
Rev. 07	July 28, 2016	❖ Page 2-27: Modified the test mode description.

Rev. 08	September 20, 2018	❖ Modified this manual's page numbering ❖ Added Motion Control information ❖ Added Code Page information
Rev. 08	Feb 26, 2019	❖ Modified the parameters of Capture Image Mode

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ABOUT THIS GUIDE

Introduction

This guide provides complete programming information about the serial command of Cino FuzzyScan Scanner & OEM Engine, which enable Scanner to communicate with a serial host through a virtual COM port created.

Chapter Descriptions

Topics covered in this guide as follows:

Chapter 1 Command Overview

This chapter provides an overview of FuzzyScan Serial Command, including the command list, packet format and communication descriptions, etc.

Chapter 2 Serial Command Descriptions

This chapter provides the detailed information of each serial command.

Notational Conventions

The following conventions are used in this document:

ALL:	All FuzzyScan Series Scanners
SE:	FuzzyScan Scan Engines
TS:	FuzzyScan Tethered Scanners
FS:	FuzzyScan Fixed-mount Scanners & Scan Module
BT:	FuzzyScan Bluetooth Scanners
WF:	FuzzyScan Wi-Fi Scanners

Related Documents

You may refer to following related documents to get more information:

FuzzyScan Scanner Integration Guide
FuzzyScan Scanner Programming Manual
FuzzyScan Scanner API Manual

If you need more information, please contact your supplier or visit our web site www.cino.com.tw.

CHAPTER 1 COMMAND OVERVIEW

This chapter provides a comprehensive view of the FuzzyScan Serial Command, including:

Command Briefing
Command Structure

This will help programmer to understand the command structure and each key elements of FuzzyScan Serial Commands.

1.1 COMMAND BRIEFING

The FuzzyScan Serial Commands provide a simple and effective way for serial host application to communicate with FuzzyScan device with ease. All commands have been categorized into several functional groups, including "**Communication**", "**Data**", "**Image**", "**Action**", "**Interface**", "**Operation**", "**Transmission**", "**Symbology**", "**Device Info**" and "**Acknowledgement**". The following table shows all available commands for scanner.

In **Action** Group, there are ten special commands (Available for Wi-Fi L & F Series) which are used to remote control the scanner to display a user defined message, to beep, to vibrate, etc. **Remote Control** commands include **Paging**, **Remote Indication**, **Remote Message**, **Remote Clear**, **Remote Lock**, **Remote Unlock**, **Remote Programming** and **Remote Programming Extension.**

Important: For better use of Wi-Fi L & F Series Scanner, we introduced the concept of **Programming Mode**, which refers to an occasion where scanner is permitted to perform all the commands. However, **Remote Control** listed above is permitted on any occasion, which means scanner can only perform **Remote Control** when it is not in **Programming mode**. So if you want to set or get parameters to or from the scanner, you need to put it into **Programming Mode** using **Remote Programming (Enter)** or **Remote Programming Extension (Enter)** command. If not, the scanner will reject all the commands (except **Remote Control**) and replies a Device NAK. Once entered the **Programming Mode**, a lock message will be shown on the screen and the subsequent programming commands will all take effect. After the operation, you need to send **Remote Programming (Exit)** or **Remote Programming Extension (Exit)** to exit the mode.

Functional Group	Command Name	Supported Scanner	Message Source
Communication	Get/Reply Connected MAC	Bluetooth Scanners	Host/Device
	Get/Reply Paired MAC	Bluetooth Scanners	Host/Device
	Select/Deselect By MAC	Bluetooth Scanners	Host/Host
	Select/Deselect By ID	Bluetooth Scanners	Host/Host
Data	Decode Data	All Series Scanners	Host
	Transmit Record	Wi-Fi Scanners	Host
Image	Enter Capture Image Mode	Tethered Scanners	Host
	Exit Capture Image Mode	Tethered Scanners	Host
	Capture Image Ready Notify	Tethered Scanners	Host
	Get Capture Image Data	Tethered Scanners	Host

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Functional Group	Command Name	Supported Scanner	Message Source
Action	LED Indicator	Bluetooth, Tethered Scanners	Host
	Beeping	All Series Scanners	Host
	Serial Trigger	All Series Scanners	Host
	Store Configuration	All Series Scanners	Host
	Factory Default	All Series Scanners	Host
	Master Default	All Series Scanners	Host
	Security Check	All Series Scanners	Host
	BT Operation Mode	Bluetooth Scanners	Host
	BT Synchronize	Bluetooth Scanners	Host
	FS Test Mode	Fixed-mount Scanners	Host
	FS Operation Mode	Fixed-mount Scanners	Host
	SE Operation Mode	Scan Engines	Host
	TS Operation Mode	Tethered Scanners	Host
	TS A Operation Mode	Tethered Scanners	Host
	Paging	Wi-Fi Scanners	Host
	Remote Indication	Wi-Fi Scanners	Host
	Remote Message	Wi-Fi Scanners	Host
	Remote Clear	Wi-Fi Scanners	Host
	Remote Lock	Wi-Fi Scanners	Host
	Remote Unlock	Wi-Fi Scanners	Host
	Remote Programming	Wi-Fi Scanners	Host
	Remote Programming Extension	Wi-Fi Scanners	Host
	Sync Date Time	Wi-Fi Scanners	Host
	Delete Record	Wi-Fi Scanners	Host
Interface	Set/ Get/ Reply USB COM	*<See Detailed Description>*	Host/Host/Device
	Set/ Get/ Reply RS232	*<See Detailed Description>*	Host/Host/Device
	Set/ Get/ Reply USB HID	*<See Detailed Description>*	Host/Host/Device
	Set/ Get/ Reply Bluetooth	Bluetooth Scanners	Host/Host/Device
	Set/ Get/ Reply Wi-Fi	Wi-Fi Scanners	Host/Host/Device
Operation	Set/ Get/ Reply TS Operation	Tethered Scanners	Host/Host/Device
	Set/ Get/ Reply SE Operation	Scan Engines	Host/Host/Device
	Set/ Get/ Reply FS Operation	Fixed-mount Scanners	Host/Host/Device
	Set/ Get/ Reply BT Operation	Bluetooth Scanners	Host/Host/Device
	Set/ Get/ Reply WF Operation	Wi-Fi Scanners	Host/Host/Device
	Set/ Get/ Reply WF System	Wi-Fi Scanners	Host/Host/Device
	Set/ Get/ Reply WF Scanning	Wi-Fi Scanners	Host/Host/Device
Transmission	Set/ Get/ Reply Transmission	All Series Scanners	Host/Host/Device
	Set/ Get/ Reply Transmission	Wi-Fi Scanners	Host/Host/Device
Symbology	Set/ Get/ Reply Symbology	All Series Scanners	Host/Host/Device
Device Info	Get/ Reply Device Info	Wi-Fi Scanners	Host/Device
	Get/ Reply Record Count	All Series Scanners	Host/Device

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Functional Group	Command Name	Supported Scanner	Message Source
Acknowledgement	Device ACK	All Series Scanners	Device
	Device NAK	All Series Scanners	Device
	Host ACK	All Series Scanners	Host
	Host NAK	All Series Scanners	Host
	Host ACK Extension	Wi-Fi Scanners	Host
	Host ACK Extension	Wi-Fi Scanners	Host

1.2 COMMAND STRUCTURE

Packet Format

The following table shows the general packet format of FuzzyScan Serial Command.

Prefix	Opcode	Status	Length	Parameter(s)	Check Digit	Suffix
1 Byte	3 Bytes	1 Byte	2 Bytes	Variable	1 Byte LRC or 2 Bytes CRC16	1 Byte

Field Name	Size	Descriptions
Prefix	1 Byte	Fixed, “7Eh”
Opcode	3 Bytes	Operation code to identifies each command
Status	1 Byte	**Bit 2 ACK/NAK** 0 = Request 1 = Do not request **Bit 4 Check Digit** 0 = LRC (1 Byte) 1 = CRC16 (2 Bytes) (See Notes) **Bit 5 Continuation** 0 = Last packet 1 = Intermediate packet **Other Bits** Reserved. (Always 0)
Length	2 Bytes	Total bytes amount of the Parameter(s) field Formatted as High Byte Low Byte. Length = Low Byte + High Byte x 256 If Parameter(s) = null, Length = 00h, 00h.
Parameter(s)	Variable	See next paragraph
Check Digit	1 Byte	**LRC**: “Opcode” XOR “Status” XOR “Length” XOR “Parameter(s)”
	2 Bytes	**CRC16**: From “Opcode” to “Parameter(s)” (See Notes)
Suffix	1 Byte	Fixed, “7Eh”

. Notes

CRC16 Check Digit is only used in image command which is sent from scanner to host.

All FuzzyScan Serial Commands begin and end with the fixed prefix and suffix - **7Eh**, which serve as parentheses. Between the prefix and the suffix is the command body. The main body consists of Opcode, Status, Length, Parameter(s) and check digit.

According to the functional group, there are two different parameter formats. The “Action” and “Acknowledgement” command groups use the “**Simple**” parameter format. The other command groups allow the “**Compound**” parameters to make more effective control. Please refer to the following paragraphs for details.

Escape Sequence

Several characters have special functions in FuzzyScan Serial Command and communication manipulation, such as “Prefix (**7Eh**)”, “Suffix (**7Eh**)”, “ACK (**06h**)”, “NAK (**15h**)”, “XON (**11h**)”, “XOFF (**13h**)” and “Backslash (**5Ch**). If you have to use above characters in your command string (from “Length”, “Parameter” to “LRC”), please replace them with their escaped value listed in following table.

ASCII	~	\	ACK	NAK	XON	XOFF
Hex	7Eh	5Ch	06h	15h	11h	13h
Escaped Value	5Ch 00h	5Ch 01h	5Ch 02h	5Ch 03h	5Ch 04h	5Ch 05h

For example,

If a host-to-device serial command is listed as below:

" 7Eh 85h 00h 00h 00h 00h **06h** 02h 00h 00h 02h 01h 01h 83h 7Eh "
“ Prefix Opcode Status Length Parameter(s) LRC Suffix “

The “06h” have to be replaced "**5Ch 02h**". So the correct command string will be,

" 7Eh 85h 00h 00h 00h 00h **5Ch 02h** 02h 00h 00h 02h 01h 01h 83h 7Eh ".

In other words, if the device send following string to host:

" 7Eh 07h 00h 00h 00h 00h **5Ch 02h** 02h 00h 00h 02h 01h 01h 01h 7Eh "

Your serial host application have to change “5Ch 02h” to “**06h**” as well.

Parameter Format

Generally, there are two different parameter formats, “Command with **Simple** Parameter(s)” and “Command with **Compound** Parameters”.

Commands with simple parameters

The **Action, Acknowledgement, Data** and **Image** commands belong to this group.

1) Action

The parameter filed of Action commands can be “Null” or several option bytes. The following table shows the structure of Parameter(s) field:

Parameter(s)		
First byte of the parameter	……	Last byte of the parameter
Options	……	Options

If the device successfully received the action command issued by the host, a “**Device ACK**” will be sent to the host right after the device performed the action. Otherwise, a “**Device NAK**” will be sent to host to issue a command error

If the host can’t receive any reaction within the user preset time-out duration, this can be considered as a transmission failure. In this case, you are recommended to check the cable connection, power supply, setting of communication profile, and so on.

2) Acknowledgement command

There are four Acknowledge commands including “Device ACK”, “Device NAK”, “Host ACK” and “Host NAK”. All Acknowledgement commands have no parameters, it means the parameter field of those commands has to be set to “null”.

3) Data

The **Decode Data** is a special command, and it has to be considered as an unconditional event. If the “**Data Transmission Packet**” parameter is set to “**Enable**”, the scanner will send a **Packed Decode Data Message** rather than a Raw Data message to the host after a successful decode. The actual decoded data will be put into the Parameter(s) field of Decode Data message string. Differently, the **Transmit Record** command is used to retrieve records from the scanner. Scanner send back the stored records as reply.

4) Image

Image commands is used to capture image, which is available for A series scanner. **Enter/ Exit Capture Image Mode** formatted like **Action** command, scanner replies ACK/NAK. **Capture Image Ready Notify** is similar to **Decode Data** which is sent from the scanner to the host. And the format of **Get Capture Image Data** is like **Transmit Record** command, which is used to retrieve data from the scanner.

Commands with compound parameters

The **Communication, Interface, Operation, Transmission, Symbology** and **Device Info** commands belong to this group. For better understanding of the command format, we divide these commands into three types: **Set, Get** and **Reply**

1) Set

Set commands are used to configure the device setting. The parameter field can handle multiple parameters request at same time. It means you are able to change multiple setting of device at same as well. It is very useful for programmer to make fast initialization on the device.

Each parameter is composed of “PID”, “Size” and “Option”. If necessary, you are able to pack the selected parameters into one parameter field in accordance with the format described in the following table.

Parameter(s)						
First Parameter			…	Last Parameter		
PID	Size	Option	…	PID	Size	Option
2 Bytes	2 Byte	Variable	…	2 Bytes	2 Byte	Variable

	Size	Descriptions
PID	2 Byte	Parameter ID
Size	2 Bytes	Total bytes of the “Option” section Formatted as High Byte Low Byte. Length = Low Byte + High Byte x 256 If Parameter(s) = null, Length = 00h, 00h.Operation code to identifies each command
Options	Variable	Parameter setting

Upon the receipt of a **Set** command, the scanner will response a Device ACK or Device NAK message to indicate whether the new settings has been performed successfully or not. If the host did not receive any response from the device within the user preset time-out duration, please resend the command.

2) Get

Get commands are used to obtain the device setting. The parameter field can handle multiple parameters request at the same time. It means you are able to obtain multiple setting of device at same as well. It is a very useful for application to reduce communication overhead.

Each parameter is composed of “PID”, “Size” and “Option”. If necessary, you are able to pack the selected parameters into one parameter field in accordance with the format described in the following table. Due to **Get** command does not have Option section, please always set the “Size” section to “**00h 00h**”.

Parameter(s)				
First Parameter		…	Last Parameter	
PID	Size	…	PID	Size
2 Bytes	2 Byte		2 Bytes	2 Byte

If the device received a **Get** command issued by the host successfully, the device will pack all requested parameters into one Reply message string and send it to the host. Otherwise, a Device NAK will be sent to host to indicate a command error. However, if the host didn’t receive any response from the device within the user preset time-out duration, please resend the above command.

3) Reply

Reply message is sent by the device in response to the Get command. All the desired values are listed one by one in the Parameter(s) field in accordance with the format described in the following table. Each parameter is composed of “PID”, “Size” and “Option”. If necessary, you are able to pack the selected parameters into one parameter field in accordance with the format described in the following table. Please note that the Parameter(s) field of a Reply message is the same as Set command.

Parameter(s) (Reply)						
First Parameter			…	Last Parameter		
PID	Size	Option	…	PID	Size	Option
2 Bytes	2 Byte	Variable	…	2 Bytes	2 Byte	Variable

Since **Reply** message is a device-to-host return message, there is no response for this message.

CHAPTER 2 COMMAND DESCRIPTIONS

This chapter provides detailed information of each serial command.

2.1 COMMUNICATION

Get Connected MAC (BT)

Descriptions

Get the connected scanners' MAC addresses.
This command is used when working with the SmartCradle in PICO mode.
Available for F, L & A series

Packet Format

Prefix	Opcode	Status	Length	PID	Size	LRC	Suffix
7Eh	D6h FFh FFh	00h	00h 04h	FFh 00h	00h 00h	2Dh	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	2 Bytes	2 Bytes	1 Byte	1 Byte

. Host Requirements

If the device successfully received the above command issued by the host, a "Device ACK" will send to the host right after the device performed the action. Otherwise, a "Device NAK" will be sent to host to issue a command error. However, if the host can not receive any response from the device within the user preset time-out duration, please resend the above command.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

"Opcode" XOR "Status" XOR "Length" XOR "Parameter(s)"

. Size

Total size (bytes) of the Options field

Reply Connected MAC (BT)

Descriptions

List all the connected scanners' MAC addresses

Reply Connected MAC is sent by the device in response to the Get Connected MAC command.

Available for F, L & A series

Packet Format

Prefix	Opcode	Status	Length	Parameter	LRC	Suffix
7Eh	**17h 00h 00h**	00h	Variable	(MAC List)	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	Variable	1 Byte	1 Byte

. Host Requirements

If the device successfully received the above command issued by the host, a "**Device ACK**" will send to the host right after the device performed the action. Otherwise, a "**Device NAK**" will be sent to host to issue a command error. However, if the host can not receive any response from the device within the **user preset time-out duration**, please resend the above command.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

"Opcode" XOR "Status" XOR "Length" XOR "Parameter(s)"

. Size

Total size (bytes) of the Options field

Get Paired MAC (BT)

Descriptions

Get all the paired scanners' MAC addresses
This command is used when the working with the SmartCradle in PICO mode.
Available for F, L & A series

Packet Format

Prefix	Opcode	Status	Length	PID	Size	LRC	Suffix
7Eh	**D6h FFh FFh**	00h	00h 04h	**FFh 02h**	00h 00h	2Fh	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	2 Bytes	2 Bytes	1 Byte	1 Byte

. Host Requirements

If the device successfully received the above command issued by the host, a "**Device ACK**" will send to the host right after the device performed the action. Otherwise, a "**Device NAK**" will be sent to host to issue a command error. However, if the host can not receive any response from the device within the **user preset time-out duration**, please resend the above command.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

"Opcode" XOR "Status" XOR "Length" XOR "Parameter(s)"

. Size

Total size (bytes) of the Options field

Reply Paired MAC (BT)

Descriptions

List all the paired scanners' MAC addresses

Reply Paired MAC is sent by the device in response to the Get Paired MAC command.

Available for F, L & A series

Packet Format

Prefix	Opcode	Status	Length	Parameter	LRC	Suffix
7Eh	17h 00h 00h	00h	Variable	(MAC List)	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	42 Bytes	1 Byte	1 Byte

. Host Requirements

If the device successfully received the above command issued by the host, a "**Device ACK**" will send to the host right after the device performed the action. Otherwise, a "**Device NAK**" will be sent to host to issue a command error. However, if the host can not receive any response from the device within the **user preset time-out duration**, please resend the above command.

. Parameter(s) Field

Since up to 7 scanners can be connected to one smart cradle concurrently, the Parameter field of the Reply Paired MAC takes 42 bytes. If there are less than 7 scanners paired, the rest bytes of the parameter field is filled with FFh.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

"Opcode" XOR "Status" XOR "Length" XOR "Parameter(s)"

. Size

Total size (bytes) of the Options field

Select By MAC (BT)

Descriptions

Use the MAC address to select the desired scanner to communicate

This command is useful when multiple scanners are connected to the SmartCradle in PICO mode. Select By MAC is often preceded by a Get Connected MAC command to provide a list from which the desired scanner will be selected. Afterwards, all the subsequent serial command will be send to this selected scanner, and the other scanners will not be able to communicate with the host until a Deselect By MAC command is sent.

Available for F, L & A series

Packet Format

Prefix	Opcode	Status	Length	Parameter	LRC	Suffix
7Eh	95h FFh FFh	00h	00h 0Ah	See Below	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	10 Bytes	1 Byte	1 Byte

Parameter		
First and the only Parameter		
PID	Size	Options
FFh 00h	00h 06h	(Scanner's MAC Address)
2 Bytes	2 Bytes	6 Bytes

. Host Requirements

If the device successfully received the above command issued by the host, a "**Device ACK**" will send to the host right after the device performed the action. Otherwise, a "**Device NAK**" will be sent to host to issue a command error. However, if the host can not receive any response from the device within the **user preset time-out duration**, please resend the above command.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

"Opcode" XOR "Status" XOR "Length" XOR "Parameter(s)"

. Size

Total size (bytes) of the Options field

Deselect By MAC (BT)

Descriptions

Deselect the scanner by MAC

This command is used to deselect the scanner which is selected by command Select By MAC. Please note that once this command is processed successfully, the host will be able to receive the decode data from all the connected scanners, but the subsequent serial commands sent will be neglected because there are not any selected scanner which is available to receive commands.

Available for F, L & A series

Packet Format

Prefix	Opcode	Status	Length	Parameter	LRC	Suffix
7Eh	95h FFh FFh	00h	00h 0Ah	See Below	66h	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	10 Bytes	1 Byte	1 Byte

Parameter		
First and the only Parameter		
PID	Size	Options
FFh 00h	00h 06h	00h 00h 00h 00h 00h 00h
2 Bytes	2 Bytes	6 Bytes

. Host Requirements

If the device successfully received the above command issued by the host, a "**Device ACK**" will send to the host right after the device performed the action. Otherwise, a "**Device NAK**" will be sent to host to issue a command error. However, if the host can not receive any response from the device within the **user preset time-out duration**, please resend the above command.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

"Opcode" XOR "Status" XOR "Length" XOR "Parameter(s)"

. Size

Total size (bytes) of the Options field

Select By ID (BT)

Descriptions

Use the auto-assigned ID number to select the desired scanner to communicate
This command is useful when multiple scanners are connected to the SmartCradle in PICO mode. Afterwards, all the subsequent serial command will be send to this selected scanner, and the other scanners will not be able to communicate with the host until a Deselect By ID command is sent.
Available for F, L & A series

Packet Format

Prefix	Opcode	Status	Length	Parameter	LRC	Suffix
7Eh	95h FFh FFh	00h	00h 05h	See Below	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	5 Bytes	1 Byte	1 Byte

Parameter		
First and the only Parameter		
PID	Size	Options
FFh 01h	00h 01h	(Scanner's ID)
2 Bytes	2 Bytes	1 Byte

. Host Requirements

If the device successfully received the above command issued by the host, a "**Device ACK**" will send to the host right after the device performed the action. Otherwise, a "**Device NAK**" will be sent to host to issue a command error. However, if the host can not receive any response from the device within the **user preset time-out duration**, please resend the above command.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

"Opcode" XOR "Status" XOR "Length" XOR "Parameter(s)"

. Size

Total size (bytes) of the Options field

Deselect By ID (BT)

Descriptions

Deselect the scanner by ID

This command is used to deselect the scanner which is selected by command Select By ID.

Please note that once this command is processed successfully, the host will be able to receive the decode data from all the connected scanners, but the subsequent serial commands sent will be neglected because there are not any selected scanner which is available to receive commands.

Available for F, L & A series

Packet Format

Prefix	Opcode	Status	Length	Parameter	LRC	Suffix
7Eh	**95h FFh FFh**	00h	00h 05h	See Below	6Fh	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	5 Bytes	1 Byte	1 Byte

Parameter		
First and the only Parameter		
PID	**Size**	**Options**
FFh 01h	00h 01h	00h
2 Bytes	2 Bytes	1 Byte

. Host Requirements

If the device successfully received the above command issued by the host, a "**Device ACK**" will send to the host right after the device performed the action. Otherwise, a "**Device NAK**" will be sent to host to issue a command error. However, if the host can not receive any response from the device within the **user preset time-out duration**, please resend the above command.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

"Opcode" XOR "Status" XOR "Length" XOR "Parameter(s)"

. Size

Total size (bytes) of the Options field

2.2 DATA

Decode Data (ALL)

Descriptions

Decoded Data in FSC packet format

Decode Data is considered as an unexpected event since the decoded data will be sent to the host whenever the scanner scanned a barcode, either accidentally or intentionally. The decoded data is sent in two types of format, either packed or unpacked. If packed data is selected, the scanner will send a packed Decode Data message rather than a Raw Data message to the host after a successful decode.

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	14h 00h 00h	00h	Variable	Variable	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	Variable	1 Byte	1 Byte

. Host Requirements

Since Decode Data is a device-to-host message, there is no response for this message.

. Parameter(s) Field

The first 4 bytes indicates the Data Packet ID.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

”Opcode” XOR “Status” XOR “Length” XOR “Parameter(s)”

Transmit Record (WF)

Descriptions

Transmit all record(s) of Batch Mode
Available for F & L series

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	**80h 11h 01h**	00h	00h 00h	<Null>	90h	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	0 Byte	1 Byte	1 Byte

. Host Requirements

If the device successfully received the above command issued by the host, the device will reply the **"Transmission Start Command"** followed by the raw record data and the data transmission will end with the **"Transmission End Command"**. Please refer to the following table for details. Otherwise, a "**Device NAK**" will be sent to host to indicate a command error. However, if the host can receive any response from the device within the **user preset time-out duration**, please resend the above command.

. Parameter(s) Field

Get Device Status can request multiple parameters at one time, so it takes compound parameters.

. LRC

"Opcode" XOR "Status" XOR "Length" XOR "Parameter(s)"

. Size

Total size (bytes) of the Options field

Reply Format

- ***Part 1 – Transmission Start Command***

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	**01h 02h 00h**	00h	00h 00h	<Null>	03h	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	0 Byte	1 Byte	1 Byte

- ***Part 2 – Raw Data***
- ***Part 3 – Transmission End Command***

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	**01h 02h 01h**	00h	00h 00h	<Null>	02h	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	0 Byte	1 Byte	1 Byte

2.3 IMAGE

Enter Capture Image Mode (TS)

Descriptions

Enter Capture Image Mode

Once scanner is entered the Capture Image Mode, you can trigger the scanner to capture image repeatedly, after every image is captured and ready to be retrieved, scanner will send out a **Capture Image Ready Notify** packet to host, and then the host can send **Get Capture Image Data** command to retrieve the image data.

Available for A series

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	**80h 1Ah 00h**	00h	00h 0Ah	See below	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	10 Bytes	1 Byte	1 Byte

. Host Requirements

If the device successfully received the above command issued by the host, a "**Device ACK**" will be sent to the host right after the device performed the action. Otherwise, a "**Device NAK**" will be sent to host to issue a command error. However, if the host can not receive any response from the device within the **user preset time-out duration**, please resend the above command.

. LRC

"Opcode" XOR "Status" XOR "Length" XOR "Parameter(s)"

Parameter(s)

Size	Parameter	Descriptions
1 Byte	**Type**	- 00h Photo - 01h Video
1 Byte	**Format**	- 00h 8 bits BMP - 01h 32 bits BMP - 04h 1 bits BMP
1 Byte	**Aimer**	- 00h Without Aimer - 01h With Aimer
1 Byte	**AE**	- 00h Fixed Exposure - 01h Auto Exposure
2 Bytes (Big Endian)	**Exp Level** (The higher value the longer exposure time	- 0001h Level 1 - 0002h Level 2 - ……(Range from Level 1 ~ 24)

	will be used)	- 0018h Level 24
4 Bytes	**Timeout**	Reserved (Always 00h)

Exit Capture Image Mode (TS)

Descriptions

Exit Capture Image Mode

Available for A series

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	**80h 1Ah 01h**	00h	00h 00h	<NULL>	9B	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	0 Byte	1 Byte	1 Byte

. Host Requirements

If the device successfully received the above command issued by the host, a "**Device ACK**" will be sent to the host right after the device performed the action. Otherwise, a "**Device NAK**" will be sent to host to issue a command error. However, if the host can not receive any response from the device within the **user preset time-out duration**, please resend the above command.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

"Opcode" XOR "Status" XOR "Length" XOR "Parameter(s)"

Capture Image Ready Notify (TS)

Descriptions

Capture image ready notify.
When an image is captured by scanner and ready to be retrieved by host, this command will be sent as a notification.
Available for A series

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	**0Fh 1Ah 00h**	00h	00h 00h	<Null>	15	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	0 Byte	1 Byte	1 Byte

. Host Requirements

Since Capture Image Ready Notify is a device-to-host message, there is no response for this message.

. Parameter(s) Field

Capture Image Ready Notify takes no parameters, so the Parameter(s) field is null.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

”Opcode” XOR “Status” XOR “Length” XOR “Parameter(s)”

Get Capture Image Data (TS)

Descriptions

Get the captured image data.

When in Capture Image mode, scanner stores the image of the last trigger automatically. This command is used to get the latest image data. On receiving this command, scanner will pack all the image data into several command packets and send back to the host *(See Next Page)*.

Available for A series

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	**80h 1Ah 02h**	00h	00h 00h	<Null>	98	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	0 Byte	1 Byte	1 Byte

. Host Requirements

If the device successfully received the above command issued by the host, the device will send an "**Image Data Output"** to the host. Please refer to the "**Image Data Output**" command for details. Otherwise, a "**Device NAK"** will be sent to host to indicate issue a command error. However, if the host can not receive any response from the device within the **user preset time-out duration**, please resend the above command.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

"Opcode" XOR "Status" XOR "Length" XOR "Parameter(s)"

. Size

Total size (bytes) of the Options field

Reply Format

- ***Part 1 – First Image Data Command***

Prefix	Opcode	Status	Length	Parameter	CRC16	Suffix
7Eh	0Fh 1Ah 02h	34h	10h 00h	See Below	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	4096 Bytes	2 Bytes	1 Byte

Parameter			
Image Width	**Image Height**	**Image Size**	**Image Data**
4 Bytes (Big Endian)	4 Bytes (Big Endian)	4 Bytes (Big Endian)	4084 Bytes

- ***Part 2 – Subsequent Image Data Commands***

Prefix	Opcode	Status	Length	Parameter	CRC16	Suffix
7Eh	0Fh 1Ah 02h	34h	10h 00h	<Image Data>	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	4096 Bytes	2 Bytes	1 Byte

- ***Part 3 – Last Image Data Command***

Prefix	Opcode	Status	Length	Parameter	CRC16	Suffix
7Eh	0Fh 1Ah 02h	14h	See Notes	<Image Data>	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	Maximum 4096 Bytes	2 Bytes	1 Byte

. *Notes*

1. **Status** is defined as follows:

Value	**Bit 2** ACK/NAK	**Bit 4** Check Digit	**Bit 5** Continuation	**Other Bits**
0	Do not request	LRC (1 Byte)	Last packet	Reserved
1	Request	CRC16 (2 Bytes)	Intermediate packet	Always 0

2. **Length** of the **Last Image Data Command** equals to the length of the remaining Image Data which should be no more than 4096 bytes.

3. **CRC16** Check Digit is calculated from the beginning of the **Opcode** field to the end of the **Parameter** field.

2.4 ACTION

LED Indicator (BT, TS)

Descriptions

Controls the LED indicators

This command turns on/off or restores one of the three LEDs, Red LED, Green LED, and Blue LED. Please note that LED Indicators can not be set to the default value by Factory Default or Master Default.

Available for Bluetooth F, L & A series and Tethered F, L & A series

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	**80h 00h 00h**	00h	00h 02h	See <Table 1-0>	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	1 Byte	1 Byte	1 Byte

. Host Requirements

If the device successfully received the above command issued by the host, a "**Device ACK**" will be sent to the host right after the device performed the action. Otherwise, a "**Device NAK**" will be sent to host to issue a command error. However, if the host can not receive any response from the device within the **user preset time-out duration**, please resend the above command.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

"Opcode" XOR "Status" XOR "Length" XOR "Parameter(s)"

Parameter(s)

< Table 1-0 > LED Indicator Parameter(s) Field

Parameter / PID / Size	Options	Descriptions
LED Indicator **PID : <Null>** Size : 00h 02h (2 Bytes)	**1st Byte** - 01h - 02h - 03h **2nd Byte** - 00h - 01h - 02h	**LED Selection** Red LED Green LED Blue LED **LED Status** OFF ON Restore to system control

Beeping (ALL)

Descriptions

User programmable beeping control

Once received the Beeping command, the device will follow the desired beep sequence to sound the beeper.

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	**80h 01h 00h**	00h	00h 40h	See <Table 1-1>	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	64 Bytes	1 Byte	1 Byte

. Host Requirements

If the device successfully received the above command issued by the host, a "**Device ACK**" will be sent to the host right after the device performed the action. Otherwise, a "**Device NAK**" will be sent to host to issue a command error. However, if the host can not receive any response from the device within the **user preset time-out duration**, please resend the above command.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

"Opcode" XOR "Status" XOR "Length" XOR "Parameter(s)"

Parameter(s)

< Table 1-1 > Beeping Parameter(s) Field

Parameter / PID / Size	Options	Descriptions
Beeping **PID : <Null>** Size : 00h 40h (64 Bytes)	**1st~64th Byte Value range:** - 00h 01h 02h 03h 04h 05h 06h 07h 08h 09h 0Ah 0Bh 0Ch 0Dh 0Eh 0Fh 10h FFh	The 64-bytes parameter items specify 64 nodes respectively. The bigger the value, the lower it beeps. Duration of every node is fixed. 10h serves as Suspension Node. The beep sequence is temporarily suspended when comes up against a Suspension Node. FFh serves as Termination Node. A beep sequence must end up with the Termination node FFh, otherwise a Device NAK will be sent to the host. The beep nodes following the termination node are indispensable but not part of the beep sequence.

Serial Trigger (ALL)

Descriptions

Start or Stop a scan session

When triggered on, the scanner attempts to obtain the requested data. When triggered off, the scanner aborts a decode attempt.

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	**80h 02h 00h**	00h	00h 01h	See <Table 1-2>	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	1 Byte	1 Byte	1 Byte

. Host Requirements

If the device successfully received the above command issued by the host, a "**Device ACK**" will be sent to the host right after the device performed the action. Otherwise, a "**Device NAK**" will be sent to host to issue a command error. However, if the host can not receive any response from the device within the **user preset time-out duration**, please resend the above command.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

"Opcode" XOR "Status" XOR "Length" XOR "Parameter(s)"

Parameter(s)

< Table 1-2 > Serial Trigger Parameter(s) Field

Parameter / PID / Size	Options	Descriptions
Serial Trigger **PID : <Null>** Size : 00h 01h (1 Byte)	 - 00h - 01h	 OFF ON

Store Configuration (ALL)

Descriptions

Save current settings into flash memory permanently

Note that this command is not available for storing the following settings: the beep sequence set by Beeping command; trigger status set by Serial Trigger command and LED status set by Indicator command.

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	**80h 03h 00h**	00h	00h 00h	<Null>	83h	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	0 Byte	1 Byte	1 Byte

. Host Requirements

If the device successfully received the above command issued by the host, a "**Device ACK**" will be sent to the host right after the device performed the action. Otherwise, a "**Device NAK**" will be sent to host to issue a command error. However, if the host can not receive any response from the device within the **user preset time-out duration**, please resend the above command.

. Parameter(s) Field

Store Configuration command takes no parameters, so the Parameter(s) field is null.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

"Opcode" XOR "Status" XOR "Length" XOR "Parameter(s)"

Factory Default (ALL)

Descriptions

Set all parameters to the factory default

After sending this command, all parameters will be set to factory default value. Then the scanner resets all parameters into factory default values.

For Bluetooth L & F Series:

The radio link will be disconnected and the scanner will revert to uninstall state.

For Wi-Fi L & F Series:

Set all parameters to the factory default, except Fonts and Language Pack.

The radio link will be disconnected because Wi-Fi profiles are removed.

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	**80h 04h 00h**	00h	00h 00h	<Null>	84h	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	0 Byte	1 Byte	1 Byte

. Host Requirements

Upon receiving this command, the device sends a "**Device ACK**" message immediately to the host before performs the action. Then it takes about **500 milliseconds** to complete all jobs to reset all parameters into factory default values. Please note that you are not supposed to send any command during this period of time.

However, a "**Device NAK**" message is passed to the host to issue a command error. If the host can not receive any response from the device within the **user preset time-out duration**, please resend the above command.

. Parameter(s) Field

Factory Default command takes no parameters, so the Parameter(s) field is null.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

"Opcode" XOR "Status" XOR "Length" XOR "Parameter(s)"

Master Default (ALL)

Descriptions

Set all parameters to the factory default except for the interface settings

The host interface related parameters still remain the same after performing the Master Default command.

For Bluetooth L & F Series:

Set all parameters to the factory default settings except for the following parameters:

Handshaking Protocol, Baud Rate, Data Frame, Serial Response Timeout, Bluetooth Device Name, Bluetooth PIN Code, Out-of-range Scanning, Interface Delay Settings.

And the radio link is still on.

For Wi-Fi L & F Series:

Restore Scanner Settings and keep Fonts, Language Pack, Batch Records, Wi-Fi Profile, System Settings, Interface Settings, Online Scanning and Batch Scanning Settings.

And the radio link is still on.

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	**80h 04h 01h**	00h	00h 00h	<Null>	85h	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	0 Byte	1 Byte	1 Byte

. Host Requirements

If the device successfully received the above command issued by the host, a "**Device ACK**" will be sent to the host right after the device performed the action. Otherwise, a "**Device NAK**" will be sent to host to issue a command error. However, if the host can not receive any response from the device within the **user preset time-out duration**, please resend the above command.

. Parameter(s) Field

Master Default command takes no parameters, so the Parameter(s) field is null.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

"Opcode" XOR "Status" XOR "Length" XOR "Parameter(s)"

Security Check (ALL)

Descriptions

Host sends this command to verify the connected scanner.

Once the scanner receives this command, it will pass the 16-byte parameter data to the Security Script to generate a 16-byte result data and send it back as a reply command to the host. If the Security Script is disabled, the reply would be a **Device NAK**.

This command is only available for Scanners that support DataWizard Premium. For more details about DataWizard Premium, please refer to *FuzzyScan DataWizard Premium User Manual.*

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	**80h 2Fh 00h**	00h	00h 10h	Variable	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	16 Bytes	1 Byte	1 Byte

. Host Requirements

If the security script does not exist or enabled, a "**Device NAK**" will be sent to the host. Otherwise, scanner will send back a **Reply** Command carrying the 16-byte result data (See Below). The host will check whether the result is right.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

"Opcode" XOR "Status" XOR "Length" XOR "Parameter(s)"

Reply Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	**0Fh 2Fh 00h**	00h	00h 10h	Variable	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	16 Bytes	1 Byte	1 Byte

BT Operation Mode (BT)

Descriptions

Select operation mode for Bluetooth Scanner

BT Operation Mode is equivalent to the Operation Mode Selection in the Set BT Operation command. It is of more convenience to use BT Operation Mode of the Action Command Category.

Available for F & L series

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	**80h 08h 02h**	00h	00h 01h	See Below	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	1 Byte	1 Byte	1 Byte

. Host Requirements

If the device successfully received the above command issued by the host, a "**Device ACK**" will be sent to the host right after the device performed the action. Otherwise, a "**Device NAK**" will be sent to host to issue a command error. However, if the host can not receive any response from the device within the **user preset time-out duration**, please resend the above command.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

"Opcode" XOR "Status" XOR "Length" XOR "Parameter(s)"

Parameter(s)

< Table 4-1 > BT Operation Mode Parameter(s) Field

Parameter / PID / Size	Options	Descriptions
BT Operation Mode **PID : <Null>** Size : 00h 01h (1 Byte)	 - 00h - 02h	 Trigger mode (External triggering) * Presentation mode (Auto Detection)

BT A Operation Mode (BT)

Descriptions

Select operation mode for Bluetooth Scanner

BT A Operation Mode is equivalent to the Operation Mode Selection in the Set BT Operation command. It is of more convenience to use BT A Operation Mode of the Action Command Category.

Available for A series

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	**80h 08h 05h**	00h	00h 03h	See Below	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	3 Bytes	1 Byte	1 Byte

. Host Requirements

If the device successfully received the above command issued by the host, a "**Device ACK**" will be sent to the host right after the device performed the action. Otherwise, a "**Device NAK**" will be sent to host to issue a command error. However, if the host can not receive any response from the device within the **user preset time-out duration**, please resend the above command.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

"Opcode" XOR "Status" XOR "Length" XOR "Parameter(s)"

Parameter(s)

< Table 4-6 > BT A Operation Mode Parameter(s) Field

Parameter / PID / Size	Options	Descriptions
BT A Operation Mode **PID : <Null>** Size : 00h 03h (3 Byte)	 - 00h 01h 01h - 02h 01h 01h	 Trigger mode * Presentation mode

BT Synchronize (BT)

Descriptions

Synchronize BT scanner with SmartCradle

If the BT scanner(s) are working with the SmartCradle in PAIR mode or PICO mode, this command is used to sync the Scanner with the SmartCradle, so that the changes of the following six parameters will take effect instantly: “Handshaking Protocol”, “Baud Rate”, “Data Frame”, “Serial Response Timeout”, “Dollar Sign Control”, “Field Delimiter” and “Data Transmission Packet”. If not, the settings of the parameters described above will probably be neglected.

Note that if you are using the USB Virtual COM Port to connect the SmartCradle to the host, please close the virtual COM Port within 500 milliseconds right after you issue this command. Otherwise, the host can not identically detect the occupied COM Port after the synchronization.

Available for F, L & A series

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	**80h 09h 00h**	00h	00h 00h	<Null>	89h	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	0 Byte	1 Byte	1 Byte

. Host Requirements

If the device successfully received the above command issued by the host, a “**Device ACK**” will be sent to the host right after the device performed the action. Otherwise, a “**Device NAK**” will be sent to host to issue a command error. However, if the host can not receive any response from the device within the **user preset time-out duration**, please resend the above command.

. Parameter(s) Field

BT Synchronize command takes no parameters, so the Parameter(s) field is null.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

”Opcode” XOR “Status” XOR “Length” XOR “Parameter(s)”

FS Test Mode (FS)

Descriptions

Set the Fixed Mount and Scan Module to Test Mode.

You may refer to “FuzzyScan Fixed Mount Scanner Programming Manual “or “FuzzyScan Fixed Mount Scanner Quick Start Guide” for more details about the Test Mode.

Available for FM480, FA470, SM380 & SM5700 series

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	**80h 06h 00h**	00h	00h 01h	See Below	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	1 Byte	1 Byte	1 Byte

. Host Requirements

If the device successfully received the above command issued by the host, a “**Device ACK**” will be sent to the host right after the device performed the action. Otherwise, a “**Device NAK**” will be sent to host to issue a command error. However, if the host can not receive any response from the device within the **user preset time-out duration**, please resend the above command.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

”Opcode” XOR “Status” XOR “Length” XOR “Parameter(s)”

Parameter(s)

< Table 4-2 > FS Test Mode Parameter(s) Field

Parameter / PID / Size	Options	Descriptions
FS Test Mode **PID : <Null>** Size : 00h 01h (1 Byte)	 - 00h - 01h	 Disable Fixed Reader Test Mode Enable Fixed Reader Test Mode

FS Operation Mode (FS)

Descriptions

Select operation mode for Fixed Mount and Scan Module

FS Operation Mode is equivalent to the Operation Mode Selection in the Set FS Operation command. It is of more convenience to use FS Operation Mode of the Action Command Category.

Available for FM480 & SM380 series

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	**80h 08h 03h**	00h	00h 01h	See Below	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	1 Byte	1 Byte	1 Byte

. Host Requirements

If the device successfully received the above command issued by the host, a "**Device ACK**" will be sent to the host right after the device performed the action. Otherwise, a "**Device NAK**" will be sent to host to issue a command error. However, if the host can not receive any response from the device within the **user preset time-out duration**, please resend the above command.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

"Opcode" XOR "Status" XOR "Length" XOR "Parameter(s)"

Parameter(s)

< Table 4-3 > FS Operation Mode Parameter(s) Field

Parameter / PID / Size	Options	Descriptions
FS Operation Mode **PID : <Null>** Size : 00h 01h (1 Byte)	 - 00h - 01h - 02h - 04h - 06h	 Trigger mode (External triggering) * Force mode (Continued power on) Presentation mode (Auto Detection) Level mode (Auto power off) Alternative mode (Periodic power off)

FS A Operation Mode (FS)

Descriptions

Select operation mode for Fixed Mount and Scan Module

FS A Operation Mode is equivalent to the Operation Mode Selection in the Set FS Operation command. It is of more convenience to use FS A Operation Mode of the Action Command Category. Available for FA470 & SM5700 series

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	**80h 08h 05h**	00h	00h 03h	See Below	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	3 Bytes	1 Byte	1 Byte

. Host Requirements

If the device successfully received the above command issued by the host, a "**Device ACK**" will be sent to the host right after the device performed the action. Otherwise, a "**Device NAK**" will be sent to host to issue a command error. However, if the host can not receive any response from the device within the **user preset time-out duration**, please resend the above command.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

"Opcode" XOR "Status" XOR "Length" XOR "Parameter(s)"

Parameter(s)

< Table 4-3 > FS A Operation Mode Parameter(s) Field

Parameter / PID / Size	Options	Descriptions
FS A Operation Mode **PID : <Null>** Size : 00h 03h (3 Byte)	 - 00h 01h 01h - 01h 01h 01h - 02h 01h 01h - 04h 01h 00h - 06h 01h 00h	 Trigger mode * Force mode Presentation mode Level mode Alternative mode

SE Operation Mode (SE)

Descriptions

Select operation mode for Scan Engine

SE Operation Mode is equivalent to the Operation Mode Selection in the Set SE Operation command. It is of more convenience to use SE Operation Mode of the Action Command Category.

Available for SE380, SE390 & SE480 series

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	**80h 08h 04h**	00h	00h 01h	See Below	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	1 Byte	1 Byte	1 Byte

. Host Requirements

If the device successfully received the above command issued by the host, a "**Device ACK**" will be sent to the host right after the device performed the action. Otherwise, a "**Device NAK**" will be sent to host to issue a command error. However, if the host can not receive any response from the device within the **user preset time-out duration**, please resend the above command.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

"Opcode" XOR "Status" XOR "Length" XOR "Parameter(s)"

Parameter(s)

< Table 4-4 > SE Operation Mode Parameter(s) Field

Parameter / PID / Size	Options	Descriptions
SE Operation Mode **PID : <Null>** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h - 04h - 06h - 09h	Trigger mode (External triggering) * Force mode (Continued power on) **(See Notes)** Presentation mode (Auto Detection) Level mode (Auto power off) Alternative mode (Periodic power off) Low Power mode (Low Power triggering)

. Notes

Force mode is not available for SE390 and SE480 series.

TS Operation Mode (TS)

Descriptions

Select operation mode for Tethered Scanner

TS Operation Mode is equivalent to the Operation Mode Selection in the Set TS Operation command. It is of more convenience to use TS Operation Mode of the Action Command Category.

Available for F & L series

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	**80h 08h 00h**	00h	00h 01h	See Below	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	1 Byte	1 Byte	1 Byte

. Host Requirements

If the device successfully received the above command issued by the host, a "**Device ACK**" will be sent to the host right after the device performed the action. Otherwise, a "**Device NAK**" will be sent to host to issue a command error. However, if the host can not receive any response from the device within the **user preset time-out duration**, please resend the above command.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

"Opcode" XOR "Status" XOR "Length" XOR "Parameter(s)"

Parameter(s)

< Table 4-5 > TS Operation Mode Parameter(s) Field

Parameter / PID / Size	Options	Descriptions
TS Operation Mode **PID : <Null>** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h - 04h - 05h - 06h - 07h - 08h - 09h	Trigger mode (External triggering) * Force mode (Continued power on) Presentation mode (Auto detection) Level mode (Auto power off) Diagnostic mode (Test reading) Alternative mode (Periodic power off) Toggle mode (Repeat reading) Flash mode (Pulse driven reading) Low Power mode (Low Power triggering)

TS A Operation Mode (TS)

Descriptions

Select operation mode for Tethered A Series Scanner

TS A Operation Mode is equivalent to the Operation Mode Selection in the Set TS Operation command. It is of more convenience to use TS A Operation Mode of the Action Command Category.

Available for A series

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	**80h 08h 05h**	00h	00h 03h	See Below	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	3 Bytes	1 Byte	1 Byte

. Host Requirements

If the device successfully received the above command issued by the host, a "**Device ACK**" will be sent to the host right after the device performed the action. Otherwise, a "**Device NAK**" will be sent to host to issue a command error. However, if the host can not receive any response from the device within the **user preset time-out duration**, please resend the above command.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

"Opcode" XOR "Status" XOR "Length" XOR "Parameter(s)"

Parameter(s)

< Table 4-6 > TS A Operation Mode Parameter(s) Field

Parameter / PID / Size	Options	Descriptions
TS A Operation Mode **PID : <Null>** Size : 00h 03h (3 Byte)	 - 00h 01h 01h - 01h 01h 01h - 02h 01h 01h - 04h 01h 00h - 05h 01h 01h - 06h 01h 00h - 07h 01h 00h - 09h 01h 01h - 0Dh 01h 01h	 Trigger mode * Force mode Presentation mode Level mode Diagnostic mode Alternative mode Toggle mode Low Power mode Multiple mode

Paging (WF)

Descriptions

Paging the scanner

This command is helpful for you to locate the connected Wi-Fi scanner.

Available for F & L series

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	**80h 90h 01h**	00h	00h 00h	<Null>	5Ch 04h	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	0 Byte	1 Byte	1 Byte

. Host Requirements

If the device successfully received the above command issued by the host, a "**Device ACK**" will be sent to the host right after the device performed the action. Otherwise, a "**Device NAK**" will be sent to host to issue a command error. However, if the host can not receive any response from the device within the **user preset time-out duration**, please resend the above command.

. Parameter(s) Field

Store Configuration command takes no parameters, so the Parameter(s) field is null.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

"Opcode" XOR "Status" XOR "Length" XOR "Parameter(s)"

Serial Command

Paging the scanner

0x7e 0x80 0x90 0x01 0x00 0x00 0x00 0x5c 0x04 0x7e

. Notes

0x5C 0x04: the escaped value of 0x11.

Remote Indication (WF)

Descriptions

Send remote indication to the connected scanner
Available for F & L series

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	**80h 90h 02h**	00h	02h 00h	See Next Page	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	512 Bytes	1 Byte	1 Byte

. Host Requirements

If the device successfully received the above command issued by the host, a "**Device ACK**" will be sent to the host right after the device performed the action. Otherwise, a "**Device NAK**" will be sent to host to issue a command error. However, if the host can not receive any response from the device within the **user preset time-out duration**, please resend the above command.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

"Opcode" XOR "Status" XOR "Length" XOR "Parameter(s)"

Parameter(s)

Size		Parameter	Value
2 Bytes		**Code Page**	00h 00h
1 Byte		**Close**	00h
1 Byte		**Message Type**	07h
1 Byte	Bit 4~7	**Beeping Type**	- 0h Short - 1h Long
	Bit 0~3	**Number of Beep(s)**	- 0h Disable - 1h Once - 2h 2 times - 3h 3 times - 5h 5 times - 8h 8 times - Ah 10 times
1 Byte	Bit 4~7	**Vibration Duration**	- 1h 100ms - 2h 200ms - 3h 300ms - 4h 400ms - 5h 500ms
	Bit 0~3	**Number of Vibration**	- 0h Disable - 1h 1 time - 2h 2 times - 3h 3 times - 4h 4 times - 5h 5 times
3 Bytes		**Message Length**	00h 00h 00h
503 Bytes		**Message Content**	00h 00h …00h

Remote Message (WF)

Descriptions

Send remote message to the connected scanner
Available for F & L series

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	**80h 90h 02h**	00h	02h 00h	See Next Page	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	512 Bytes	1 Byte	1 Byte

. Host Requirements

If the device successfully received the above command issued by the host, a "**Device ACK**" will be sent to the host right after the device performed the action. Otherwise, a "**Device NAK**" will be sent to host to issue a command error. However, if the host can not receive any response from the device within the **user preset time-out duration**, please resend the above command.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

"Opcode" XOR "Status" XOR "Length" XOR "Parameter(s)"

Parameter(s)

Size		Parameter	Value
2 Bytes		**Code Page**	XXh XXh (See Notes)
1 Byte	Bit 7	**Manual Close**	- 0 Disable(See Notes) - 1 Enable
	Bit 0~6	**Auto Close**	- 0h Disable(See Notes) - 3h after 3 seconds - 5h after 5 seconds - 8h after 8 seconds - Ah after 10 seconds
1 Byte	Bit 7~6	**Left Align**	Set Bit 7 to 1, Bit 6 to 0
		Right Align	Set Bit 7 to 0, Bit 6 to 1
		Center Align	Set both Bit 7 and Bit 6 to 1 or 0
	Bit 5~0	**Message Type**	- 0h Tips - 1h Warning - 2h Question - 3h Information - 4h Error
1 Byte	Bit 4~7	**Beeping Type**	- 0h Short - 1h Long
	Bit 0~3	**Number of Beep**	- 0h Disable - 1h Once - 2h 2 times - 3h 3 times - 5h 5 times - 8h 8 times - Ah 10 times
1 Byte	Bit 4~7	**Vibration Duration**	- 1h 100ms - 2h 200ms - 3h 300ms - 4h 400ms - 5h 500ms
	Bit 0~3	**Number of Vibration**	- 0h Disable - 1h 1 time - 2h 2 times - 3h 3 times - 4h 4 times - 5h 5 times
3 Bytes		**Message Length**	XXh XXh XXh (See Notes)
503 Bytes		**Message Content**	XXh… (See Notes)

. *Notes*

1. The following Chart lists all available **Code Pages** and their 2-byte Hex value.

437	OEM - United States	B5h 01h
737	OEM - Greek (formerly 437G)	E1h 02h
850	OEM - Multilingual Latin I	52h 03h
852	OEM - Latin II	54h 03h
855	OEM - Cyrillic	57h 03h
857	OEM - Turkish	59h 03h
860	OEM - Portuguese	5Ch 03h
863	OEM - French Canadian	5Fh 03h
865	OEM - Nordic	61h 03h
866	OEM - Russian	62h 03h
932	ANSI/OEM Japanese (Shift-JIS)	A4h 03h
936	ANSI/OEM - Simplified Chinese (GB2312)	A8h 03h
950	ANSI/OEM - Traditional Chinese (Big5)	B6h 03h
1250	ANSI - Central European	E2h 04h
1251	ANSI - Cyrillic	E3h 04h
1252	ANSI - Latin 1	E4h 04h
1253	ANSI - Greek	E5h 04h
1254	ANSI - Turkish	E6h 04h
1255	ANSI - Hebrew	E7h 04h

2. **Manual Close** and **Auto Close** can not be disabled at the same time.
3. **Message Length** has at most three bytes. If the first byte is 0xFF, the following two bytes represent the content length, formatted as High Byte Low Byte. Otherwise, the first byte represents the content length itself, and the following two bytes will become part of the message content.
4. **Message Content** uses **Little-endian UCS-2** character set. If shorter than 503 bytes, the rest bytes should be set to **00h**.

Remote Clear (WF)

Descriptions

Clear the remote message

The scanner will beep twice and vibrate for 100 milliseconds at the same time.

Available for F & L series

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	**80h 90h 02h**	00h	02h 00h	00h 00h 00h **08h** 00h 00h … 00h	18h	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	512 Bytes	1 Byte	1 Byte

. Host Requirements

If the device successfully received the above command issued by the host, a "**Device ACK**" will be sent to the host right after the device performed the action. Otherwise, a "**Device NAK**" will be sent to host to issue a command error. However, if the host can not receive any response from the device within the **user preset time-out duration**, please resend the above command.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

"Opcode" XOR "Status" XOR "Length" XOR "Parameter(s)"

Remote Lock (WF)

Descriptions

Send remote message to the connected scanner
Note that a locked scanner can not work until the Remote Unlock is called.
Available for F & L series

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	**80h 90h 02h**	00h	02h 00h	See Next Page	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	512 Bytes	1 Byte	1 Byte

. Host Requirements

If the device successfully received the above command issued by the host, a "**Device ACK**" will be sent to the host right after the device performed the action. Otherwise, a "**Device NAK**" will be sent to host to issue a command error. However, if the host can not receive any response from the device within the **user preset time-out duration**, please resend the above command.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

"Opcode" XOR "Status" XOR "Length" XOR "Parameter(s)"

Parameter(s)

Size		Parameter	Value
2 Bytes		**Code Page**	XXh XXh (See Notes)
1 Byte		**Close**	00h
1 Byte	Bit 7~6	**Left Align**	Set Bit 7 to 1, Bit 6 to 0
		Right Align	Set Bit 7 to 0, Bit 6 to 1
		Center Align	Set both Bit 7 and Bit 6 to 1 or 0
	Bit 5~0	**Message Type**	- 5h
1 Byte	Bit 4~7	**Beeping Type**	- 0h Short - 1h Long
	Bit 0~3	**Number of Beep**	- 0h Disable - 1h Once - 2h 2 times - 3h 3 times - 5h 5 times - 8h 8 times - Ah 10 times
1 Byte	Bit 4~7	**Vibration Duration**	- 1h 100ms - 2h 200ms - 3h 300ms - 4h 400ms - 5h 500ms
	Bit 0~3	**Number of Vibration**	- 0h Disable - 1h 1 time - 2h 2 times - 3h 3 times - 4h 4 times - 5h 5 times
3 Bytes		**Message Length**	XXh XXh XXh (See Notes)
503 Bytes		**Message Content**	XXh… (See Notes)

. *Notes*

1. The following Chart lists all available **Code Pages** and their 2-byte Hex value.

437	OEM - United States	B5h 01h
737	OEM - Greek (formerly 437G)	E1h 02h
850	OEM - Multilingual Latin I	52h 03h
852	OEM - Latin II	54h 03h
855	OEM - Cyrillic	57h 03h
857	OEM - Turkish	59h 03h
860	OEM - Portuguese	5Ch 03h
863	OEM - French Canadian	5Fh 03h
865	OEM - Nordic	61h 03h
866	OEM - Russian	62h 03h
932	ANSI/OEM Japanese (Shift-JIS)	A4h 03h
936	ANSI/OEM - Simplified Chinese (GB2312)	A8h 03h
950	ANSI/OEM - Traditional Chinese (Big5)	B6h 03h
1250	ANSI - Central European	E2h 04h
1251	ANSI - Cyrillic	E3h 04h
1252	ANSI - Latin 1	E4h 04h
1253	ANSI - Greek	E5h 04h
1254	ANSI - Turkish	E6h 04h
1255	ANSI - Hebrew	E7h 04h

2. **Manual Close** and **Auto Close** can not be disabled at the same time.
3. **Message Length** has at most three bytes. If the first byte is 0xFF, the following two bytes represent the content length, formatted as High Byte Low Byte. Otherwise, the first byte represents the content length itself, and the following two bytes will become part of the message content.
4. **Message Content** uses **Little-endian UCS-2** character set. If shorter than 503 bytes, the rest bytes should be set to **00h**.

Remote Unlock (WF)

Descriptions

Send remote message to the connected scanner
The scanner will beep twice and vibrate for 100 milliseconds at the same time.
Available for F & L series

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	**80h 90h 02h**	00h	02h 00h	00h 00h 00h **5Ch 02h** 00h 00h 00h 00h 00h … 00h	16h	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	513 Bytes	1 Byte	1 Byte

. Host Requirements

If the device successfully received the above command issued by the host, a "**Device ACK**" will be sent to the host right after the device performed the action. Otherwise, a "**Device NAK**" will be sent to host to issue a command error. However, if the host can not receive any response from the device within the **user preset time-out duration**, please resend the above command.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

"Opcode" XOR "Status" XOR "Length" XOR "Parameter(s)"

. Notes

0x5C 0x02: the escaped value of 0x06.

Remote Programming (WF)

Descriptions

Enter or exit the Programming Mode.

Wi-Fi scanner can only perform Remote Control commands when it is not in Programming mode.

Remote Programming (Enter) is used to put scanner into programming mode, so that the subsequent programming commands will take effect. Please refer to Briefing Chapter (Page 1-2) for detailed descriptions. Note that in programming mode the scanner can not work until the **Remote Programming (Exit)** or **Remote Programming Extension (Exit)** is sent.

Available for F & L series

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	**80h 90h 06h**	00h	00h 01h	See Below	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	1 Byte	1 Byte	1 Byte

. Host Requirements

If the device successfully received the above command issued by the host, a "**Device ACK**" will be sent to the host right after the device performed the action. Otherwise, a "**Device NAK**" will be sent to host to issue a command error. However, if the host can not receive any response from the device within the **user preset time-out duration**, please resend the above command.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

"Opcode" XOR "Status" XOR "Length" XOR "Parameter(s)"

Parameter(s)

< Table 4-7 > Remote Programming Parameter(s) Field

Parameter / PID / Size	Options	Descriptions
Remote Programming **PID : <Null>** Size : 00h 01h (1 Byte)	 - 00h - 01h	 Exit Remote Programming Enter Remote Programming

Serial Command

Enter Remote Programming

0x7e 0x80 0x90 0x5c 0x02 0x00 0x00 0x01 0x01 0x16 0x7e

Exit Remote Programming

0x7e 0x80 0x90 0x5c 0x02 0x00 0x00 0x01 0x00 0x17 0x7e

. Notes

0x5C 0x02: the escaped value of 0x06.

Remote Programming Extension (WF)

Descriptions

Enter remote programming mode with user defined message, beeps and vibration.
Wi-Fi scanner can only perform Remote Control commands when it is not in Programming mode.
Remote Programming Extension (Enter) is used to put scanner into programming mode, so that the subsequent programming commands will take effect. Please refer to Briefing Chapter (Page 1-2) for detailed descriptions.
Note that in programming mode the scanner can not work until the **Remote Programming (Exit)** or **Remote Programming Extension (Exit)** is sent.
Available for F & L series

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	**80h 90h 06h**	00h	02h 00h	See Next Page	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	512 Bytes	1 Byte	1 Byte

. Host Requirements

If the device successfully received the above command issued by the host, a "**Device ACK**" will be sent to the host right after the device performed the action. Otherwise, a "**Device NAK**" will be sent to host to issue a command error. However, if the host can not receive any response from the device within the **user preset time-out duration**, please resend the above command.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

"Opcode" XOR "Status" XOR "Length" XOR "Parameter(s)"

Parameter(s)

Size		Parameter	Value
2 Bytes		**Code Page**	XXh XXh (See Notes)
1 Byte	Bit 7	**Manual Close**	- 0 Disable (See Notes) - 1 Enable
	Bit 0~6	**Auto Close**	- 0h Disable (See Notes) - 3h after 3 seconds - 5h after 5 seconds - 8h after 8 seconds - Ah after 10 seconds
1 Byte	Bit 7~6	**Left Align**	Set Bit 7 to 1, Bit 6 to 0
		Right Align	Set Bit 7 to 0, Bit 6 to 1
		Center Align	Set both Bit 7 and Bit 6 to 1 or 0
	Bit 5~0	**Message Type**	**-** 0h **Exit Programming Mode** **-** 1h **Enter Programming Mode**
1 Byte	Bit 4~7	**Beeping Type**	- 0h Short - 1h Long
	Bit 0~3	**Number of Beep**	- 0h Disable - 1h Once - 2h 2 times - 3h 3 times - 5h 5 times - 8h 8 times - Ah 10 times
1 Byte	Bit 4~7	**Vibration Duration**	- 1h 100ms - 2h 200ms - 3h 300ms - 4h 400ms - 5h 500ms
	Bit 0~3	**Number of Vibration**	- 0h Disable - 1h 1 time - 2h 2 times - 3h 3 times - 4h 4 times - 5h 5 times
3 Bytes		**Message Length**	XXh XXh XXh (See Notes)
503 Bytes		**Message Content**	XXh… (See Notes)

. *Notes*

1. The following Chart lists all available **Code Pages** and their 2-byte Hex value.

437	OEM - United States	B5h 01h
737	OEM - Greek (formerly 437G)	E1h 02h
850	OEM - Multilingual Latin I	52h 03h
852	OEM - Latin II	54h 03h
855	OEM - Cyrillic	57h 03h
857	OEM - Turkish	59h 03h
860	OEM - Portuguese	5Ch 03h
863	OEM - French Canadian	5Fh 03h
865	OEM - Nordic	61h 03h
866	OEM - Russian	62h 03h
932	ANSI/OEM Japanese (Shift-JIS)	A4h 03h
936	ANSI/OEM - Simplified Chinese (GB2312)	A8h 03h
950	ANSI/OEM - Traditional Chinese (Big5)	B6h 03h
1250	ANSI - Central European	E2h 04h
1251	ANSI - Cyrillic	E3h 04h
1252	ANSI - Latin 1	E4h 04h
1253	ANSI - Greek	E5h 04h
1254	ANSI - Turkish	E6h 04h
1255	ANSI - Hebrew	E7h 04h

2. **Manual Close** and **Auto Close** can not be disabled at the same time. And they are available for **Exit Programming Mode** only.
3. **Message Length** has at most three bytes. If the first byte is 0xFF, the following two bytes represent the content length, formatted as High Byte Low Byte. Otherwise, the first byte represents the content length itself, and the following two bytes will become part of the message content.
4. **Message Content** uses **Little-endian UCS-2** character set. If shorter than 503 bytes, the rest bytes should be set to **00h**.

Sync Date Time (WF)

Descriptions

Set Date Time

Available for F & L series

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	**80h 30h 00h**	00h	00h 07h	See Below	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	7 Bytes	1 Byte	1 Byte

. Host Requirements

If the device successfully received the above command issued by the host, a "**Device ACK**" will be sent to the host right after the device performed the action. Otherwise, a "**Device NAK**" will be sent to host to issue a command error. However, if the host can not receive any response from the device within the **user preset time-out duration**, please resend the above command.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

"Opcode" XOR "Status" XOR "Length" XOR "Parameter(s)"

Parameter(s)

< Table 1-8 > Sync Date Time Parameter(s) Field

Parameter / PID / Size	Options	Descriptions
Sync Date Time **PID : <Null>** Size : 00h 07h (7 Bytes)	**1st ~ 2nd Byte** - XXh XXh **3rd Byte** - XXh **4th Byte** - XXh **5th Byte** - XXh **6th Byte** - XXh **7th Byte** - XXh	**Year** (For example: 14h 0Ch stands for 2012) **Month** (See Notes) **Day** **Hour** **Minute** **Second**

. Notes

1. Date Time values are described in Hex Value. For example, to set 16:13:03 Feb. 27, 2012, the parameter field should be: 14h 0Ch 02h 1Bh 10h 0Dh 03h.

Delete Record (WF)

Descriptions

Delete all record(s) of Batch Mode
Available for F & L series

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	**80h 11h 00h**	00h	00h 00h	<Null>	91h	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	0 Byte	1 Byte	1 Byte

. Host Requirements

If the device successfully received the above command issued by the host, a "**Device ACK**" will be sent to the host right after the device performed the action. Otherwise, a "**Device NAK**" will be sent to host to issue a command error. However, if the host can not receive any response from the device within the **user preset time-out duration**, please resend the above command.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

"Opcode" XOR "Status" XOR "Length" XOR "Parameter(s)"

Send STerm Data (WF)

Descriptions

This command is used to send Sterm Page Data when works with WaveCentre.
It is sent by the host application to the WaveCentre.
Available for F & L series

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	**80h 80h 00h**	00h	Variable	Variable	Variable	7Eh
1 Byte	3 Bytes	1 Byte	4 Bytes	Variable	1 Byte	1 Byte

. Host Requirements

There is no response for this message.

. Parameter

The Page Packet Body

. Length

Total size (bytes) of the Parameter(s) field

. LRC

”Opcode” XOR “Status” XOR “Length” XOR “Parameter(s)”

2.5 INTERFACE

Set USB COM (TS, SE, FM)

Descriptions

Change the desired one or more parameters of the USB COM Interface settings
Available for F, L & A series; SE380, SE390 & SE480 series; FM480 & SM380 series; FA470 & SM5700 Series

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	82h 00h 03h	00h	Variable	See Below	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	Variable	1 Byte	1 Byte

Parameter(s)						
First Parameter			.....	Last Parameter		
PID	Size	Options	.....	PID	Size	Options
2 Bytes	2 Bytes	Variable	.....	2 Bytes	2 Bytes	Variable
See Next Page						

. Host Requirements

If the device successfully received the above command issued by the host, a "**Device ACK**" will send to the host right after the device performed the action. Otherwise, a "**Device NAK**" will be sent to host to issue a command error. However, if the host can not receive any response from the device within the **user preset time-out duration**, please resend the above command.

. Parameter(s) Field

Set USB COM can change multiple parameters at one time, so it takes compound parameters.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

"Opcode" XOR "Status" XOR "Length" XOR "Parameter(s)"

. Size

Total size (bytes) of the Options field

Parameter(s)

< Table 5-1-1 > Set USB COM Parameter(s) Field

Parameter / PID / Size	Options		Descriptions	
STX/ETX Transmission **PID : 00h 00h** Size : 00h 01h (1 Byte)	- 00h - 01h		Disable * Enable	
Handshaking Protocol **PID : 00h 01h** Size : 00h 03h (3 Bytes)	**1st~3rd Byte** - 00h 00h 00h - 00h 00h 01h - 00h 01h 00h		None * ACK/NAK Xon/Xoff	
Baud Rate **PID : 00h 02h** Size : 00h 01h (1 Byte)	- 02h - 03h - 04h - 05h	- 06h - 07h - 08h - 09h	1200 BPS 2400 BPS 4800 BPS 9600 BPS *	19200 BPS 38400 BPS 57600 BPS 115200 BPS
Data Frame **(Data Bit, Parity, Stop Bit)** **PID : 00 03** Size : 00h 01h (1 Byte)	- 02h - 05h - 08h	- 09h - 0Ah - 0Bh	8, None, 1 * 8, Even, 1 8, Odd, 1	8, None, 2 8, Space, 1 8, Mark, 1
Serial Response Time-out **PID : 00h 04h** Size : 00h 01h (1 Byte)	- 01h - 04h - 09h - 0Fh - 12h - 24h - 4Fh - 50h - 48h - 56h - 5Ah - 61h		None 200 ms 500 ms * 800 ms 1 s 2 s 3 s 4 s 5 s 8 s 10 s 15 s	
ACK/NAK Retry Count **PID : 00h 05h** Size : 00h 01h (1 Byte)	- 03h - XXh		3 times * **(See Notes)** User-defined: XXh =desired seconds(h)	
ACK/NAK Indication **PID : 00h 06h** Size : 00h 01h (1 Byte)	**Bit 0** - 0 - 1 **Bit 1 ~ 7**		**ACK/NAK Transmission Fail Indication** Disable Enable * **Reserved (Always 0)**	

. ***Notes***

ACK/NAK Retry Count ranges from **00h** (never retry) to **FFh** (always retry).

Get USB COM (TS, SE, FM)

Descriptions

Request the desired one or more parameters of the USB COM Interface settings
Available for F, L & A series; SE380, SE390 & SE480 series; FM480 & SM380 series; FA470 & SM5700 Series

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	C3h 00h 03h	00h	Variable	See Below	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	Variable	1 Byte	1 Byte

Parameter(s)				
First Parameter		.....	Last Parameter	
PID	Size	.....	PID	Size
2 Bytes	2 Bytes	.....	2 Bytes	2 Bytes
See Next Page				

. Host Requirements

If the device successfully received the above command issued by the host, the device will pack all requested parameters into a "**Reply USB COM"** message string then send to the host. Please refer to the "Reply USB COM" command for details. Otherwise, a "**Device NAK"** will be sent to host to indicate issue a command error. However, if the host can receive any response from the device within the **user preset time-out duration**, please resend the above command.

. Parameter(s) Field

Get USB COM can request multiple parameters at one time, so it takes compound parameters.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

"Opcode" XOR "Status" XOR "Length" XOR "Parameter(s)"

. Size

Total size (bytes) of the Options field

Parameter(s)

< Table 5-1-2 > Get USB COM Parameter(s) Field

Parameter	PID	Size
STX/ETX Transmission	**00h 00h**	00h 00h
Handshaking Protocol	**00h 01h**	00h 00h
Baud Rate	**00h 02h**	00h 00h
Data Frame	**00h 03h**	00h 00h
Serial Response Time-out	**00h 04h**	00h 00h
ACK/NAK Retry Count	**00h 05h**	00h 00h
ACK/NAK Indication	**00h 06h**	00h 00h

Reply USB COM (TS, SE, FM)

Descriptions

Reply the desired one or more parameters of the USB COM Interface settings

Reply USB COM is sent by the device in response to the Get USB COM command. It sends the values for all the desired parameters requested in the Get USB COM command.

Available for F, L & A series; SE380, SE390 & SE480 series; FM480 & SM380 series; FA470 & SM5700 Series

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	04h 00h 03h	00h	Variable	See Below	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	Variable	1 Byte	1 Byte

Parameter(s)						
First Parameter			.....	Last Parameter		
PID	Size	Options	.....	PID	Size	Options
2 Bytes	2 Bytes	Variable	.....	2 Bytes	2 Bytes	Variable
See Next Page						

. Host Requirements

Since Reply USB COM is a device-to-host message, there is no response for this message.

. Parameter(s) Field

Set USB COM can change multiple parameters at one time, so it takes compound parameters.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

”Opcode” XOR “Status” XOR “Length” XOR “Parameter(s)”

. Size

Total size (bytes) of the Options field

Parameter(s)

< Table 5-1-3 > Reply USB COM Parameter(s) Field

Parameter / PID / Size	Options		Descriptions	
STX/ETX Transmission **PID : 00h 00h** Size : 00h 01h (1 Byte)	- 00h - 01h		Disable * Enable	
Handshaking Protocol **PID : 00h 01h** Size : 00h 03h (3 Bytes)	**1st~3rd Byte** - 00h 00h 00h - 00h 00h 01h - 00h 01h 00h		None * ACK/NAK Xon/Xoff	
Baud Rate **PID : 00h 02h** Size : 00h 01h (1 Byte)	- 02h - 03h - 04h - 05h	- 06h - 07h - 08h - 09h	1200 BPS 2400 BPS 4800 BPS 9600 BPS *	19200 BPS 38400 BPS 57600 BPS 115200 BPS
Data Frame **(Data Bit, Parity, Stop Bit)** **PID : 00 03** Size : 00h 01h (1 Byte)	- 02h - 05h - 08h	- 09h - 0Ah - 0Bh	8, None, 1 * 8, Even, 1 8, Odd, 1	8, None, 2 8, Space, 1 8, Mark, 1
Serial Response Time-out **PID : 00h 04h** Size : 00h 01h (1 Byte)	- 01h - 04h - 09h - 0Fh - 12h - 24h - 4Fh - 50h - 48h - 56h - 5Ah - 61h		None 200 ms 500 ms * 800 ms 1 s 2 s 3 s 4 s 5 s 8 s 10 s 15 s	
ACK/NAK Retry Count **PID : 00h 05h** Size : 00h 01h (1 Byte)	- 03h - XXh		3 times * **(See Notes)** User-defined: XXh =desired seconds(h)	
ACK/NAK Indication **PID : 00h 06h** Size : 00h 01h (1 Byte)	**Bit 0** - 0 - 1 **Bit 1 ~ 7**		**ACK/NAK Transmission Fail Indication** Disable Enable * **Reserved (Always 0)**	

. ***Notes***

ACK/NAK Retry Count ranges from **00h** (never retry) to **FFh** (always retry).

Set RS232 (TS, SE, FM)

Descriptions

Change the desired one or more parameters of the RS232 Interface settings
Available for F, L & A series; SE380, SE390 & SE480 series; FM480 & SM380 series; FA470 & SM5700 Series

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	82h 00h 00h	00h	Variable	See Below	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	Variable	1 Byte	1 Byte

Parameter(s)						
First Parameter			.....	Last Parameter		
PID	Size	Options	.....	PID	Size	Options
2 Bytes	2 Bytes	Variable	.....	2 Bytes	2 Bytes	Variable
See Next Page						

. Host Requirements

If the device successfully received the above command issued by the host, a "**Device ACK**" will send to the host right after the device performed the action. Otherwise, a "**Device NAK**" will be sent to host to issue a command error. However, if the host can not receive any response from the device within the **user preset time-out duration**, please resend the above command.

. Parameter(s) Field

Set RS232 command can change multiple parameters at one time, so it takes compound parameters.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

"Opcode" XOR "Status" XOR "Length" XOR "Parameter(s)"

. Size

Total size (bytes) of the Options field

Parameter(s)

< Table 5-2-1 > Set RS232 Parameter(s) Field

Parameter / PID / Size	Options		Descriptions	
STX/ETX Transmission **PID : 00h 00h** Size : 00h 01h (1 Byte)	- 00h - 01h		Disable * Enable	
Handshaking Protocol **PID : 00h 01h** Size : 00h 03h (3 Bytes)	**1st~3rd Byte** - 00h 00h 00h - 01h 00h 00h - 00h 00h 01h - 00h 01h 00h		None * RTS/CTS ACK/NAK Xon/Xoff	
Baud Rate **PID : 00h 02h** Size : 00h 01h (1 Byte)	- 02h - 03h - 04h - 05h	- 06h - 07h - 08h - 09h	1200 BPS 2400 BPS 4800 BPS 9600 BPS *	19200 BPS 38400 BPS 57600 BPS 115200 BPS
Data Frame **(Data Bit, Parity, Stop Bit)** **PID : 00 03** Size : 00h 01h (1 Byte)	- 02h - 05h - 08h	- 09h - 0Ah - 0Bh	8, None, 1 * 8, Even, 1 8, Odd, 1	8, None, 2 8, Space, 1 8, Mark, 1
Serial Response Time-out **PID : 00h 04h** Size : 00h 01h (1 Byte)	- 01h - 04h - 09h - 0Fh - 12h - 24h - 4Fh - 50h - 48h - 56h - 5Ah - 61h		None 200 ms 500 ms * 800 ms 1 s 2 s 3 s 4 s 5 s 8 s 10 s 15 s	
ACK/NAK Retry Count **PID : 00h 05h** Size : 00h 01h (1 Byte)	- 03h - XXh		3 times * **(See Notes)** User-defined: XXh =desired seconds(h)	
ACK/NAK Indication **PID : 00h 06h** Size : 00h 01h (1 Byte)	**Bit 0** - 0 - 1 **Bit 1 ~ 7**		**ACK/NAK Transmission Fail Indication** Disable Enable * **Reserved (Always 0)**	

. ***Notes***

ACK/NAK Retry Count ranges from **00h** (never retry) to **FFh** (always retry).

Get RS232 (TS, SE, FM)

Descriptions

Request the desired one or more parameters of the RS232 Interface settings
Available for F, L & A series; SE380, SE390 & SE480 series; FM480 & SM380 series; FA470 & SM5700 Series

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	C3h 00h 00h	00h	Variable	See Below	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	Variable	1 Byte	1 Byte

Parameter(s)				
First Parameter		.....	Last Parameter	
PID	Size	.....	PID	Size
2 Bytes	2 Bytes	.....	2 Bytes	2 Bytes
See Next Page				

. Host Requirements

If the device successfully received the above command issued by the host, the device will pack all requested parameters into a "**Reply RS232"** message string then send to the host. Please refer to the "Reply RS232" command for details. Otherwise, a "**Device NAK"** will be sent to host to indicate issue a command error. However, if the host can receive any response from the device within the **user preset time-out duration**, please resend the above command.

. Parameter(s) Field

Get RS232 command can request multiple parameters at one time, so it takes compound parameters.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

"Opcode" XOR "Status" XOR "Length" XOR "Parameter(s)"

. Size

Total size (bytes) of the Options field

Parameter(s)

< Table 5-2-2 > Get RS232 Parameter(s) Field

Parameter	PID	Size
STX/ETX Transmission	**00h 00h**	00h 00h
Handshaking Protocol	**00h 01h**	00h 00h
Baud Rate	**00h 02h**	00h 00h
Data Frame	**00h 03h**	00h 00h
Serial Response Time-out	**00h 04h**	00h 00h
ACK/NAK Retry Count	**00h 05h**	00h 00h
ACK/NAK Indication	**00h 06h**	00h 00h

Reply RS232 (TS, SE, FM)

Descriptions

Reply RS232 Interface Settings

Reply RS232 is sent by the device in response to the Get RS232 command. It sends the values for all the desired parameters requested in the Get RS232 command.

Available for F, L & A series; SE380, SE390 & SE480 series; FM480 & SM380 series; FA470 & SM5700 Series

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	04h 00h 00h	00h	Variable	See Below	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	Variable	1 Byte	1 Byte

Parameter(s)						
First Parameter			.....	Last Parameter		
PID	Size	Options	.....	PID	Size	Options
2 Bytes	2 Bytes	Variable	.....	2 Bytes	2 Bytes	Variable
See Next Page						

. Host Requirements

Since Reply RS232 is a device-to-host message, there is no response for this message.

. Parameter(s) Field

Set RS232 command can change multiple parameters at one time, so it takes compound parameters.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

”Opcode” XOR “Status” XOR “Length” XOR “Parameter(s)”

. Size

Total size (bytes) of the Options field

Parameter(s)

< Table 5-2-3 > Reply RS232 Parameter(s) Field

Parameter / PID / Size	Options		Descriptions	
STX/ETX Transmission **PID : 00h 00h** Size : 00h 01h (1 Byte)	- 00h - 01h		Disable * Enable	
Handshaking Protocol **PID : 00h 01h** Size : 00h 03h (3 Bytes)	**1st~3rd Byte** - 00h 00h 00h - 01h 00h 00h - 00h 00h 03h - 00h 01h 00h		None * RTS/CTS ACK/NAK Xon/Xoff	
Baud Rate **PID : 00h 02h** Size : 00h 01h (1 Byte)	- 02h - 03h - 04h - 05h	- 06h - 07h - 08h - 09h	1200 BPS 2400 BPS 4800 BPS 9600 BPS *	19200 BPS 38400 BPS 57600 BPS 115200 BPS
Data Frame **(Data Bit, Parity, Stop Bit)** **PID : 00 03** Size : 00h 01h (1 Byte)	- 02h - 05h - 08h	- 09h - 0Ah - 0Bh	8, None, 1 * 8, Even, 1 8, Odd, 1	8, None, 2 8, Space, 1 8, Mark, 1
Serial Response Time-out **PID : 00h 04h** Size : 00h 01h (1 Byte)	- 01h - 04h - 09h - 0Fh - 12h - 24h - 4Fh - 50h - 48h - 56h - 5Ah - 61h		None 200 ms 500 ms * 800 ms 1 s 2 s 3 s 4 s 5 s 8 s 10 s 15 s	
ACK/NAK Retry Count **PID : 00h 05h** Size : 00h 01h (1 Byte)	- 03h - XXh		3 times * **(See Notes)** User-defined: XXh =desired seconds(h)	
ACK/NAK Indication **PID : 00h 06h** Size : 00h 01h (1 Byte)	**Bit 0** - 0 - 1 **Bit 1 ~ 7**		**ACK/NAK Transmission Fail Indication** Disable Enable * **Reserved (Always 0)**	

. ***Notes***

ACK/NAK Retry Count ranges from **00h** (never retry) to **FFh** (always retry).

Set USB COM (BT)

Descriptions

Change the desired one or more parameters of the USB COM Interface settings
Available for F, L & A series

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	82h 00h 03h	00h	Variable	See Below	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	Variable	1 Byte	1 Byte

Parameter(s)						
First Parameter			.....	Last Parameter		
PID	Size	Options	.....	PID	Size	Options
2 Bytes	2 Bytes	Variable	.....	2 Bytes	2 Bytes	Variable
See Next Page						

. Host Requirements

If the device successfully received the above command issued by the host, a "**Device ACK**" will send to the host right after the device performed the action. Otherwise, a "**Device NAK**" will be sent to host to issue a command error. However, if the host can not receive any response from the device within the **user preset time-out duration**, please resend the above command.

. Parameter(s) Field

Set USB COM can change multiple parameters at one time, so it takes compound parameters.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

"Opcode" XOR "Status" XOR "Length" XOR "Parameter(s)"

. Size

Total size (bytes) of the Options field

Parameter(s)

< Table 5-3-1 > Set USB COM Parameter(s) Field

Parameter / PID / Size	Options		Descriptions	
STX/ETX Transmission **PID : 00h 00h** Size : 00h 01h (1 Byte)	- 00h - 01h		Disable * Enable	
Baud Rate **PID : 00h 02h** Size : 00h 01h (1 Byte)	- 02h - 03h - 04h - 05h	- 06h - 07h - 08h - 09h	1200 BPS 2400 BPS 4800 BPS 9600 BPS *	19200 BPS 38400 BPS 57600 BPS 115200 BPS
Data Frame **(Data Bit, Parity, Stop Bit)** **PID : 00 03** Size : 00h 01h (1 Byte)	- 02h - 08h - 05h - 0Ah - 0Bh - 09h - 06h - 03h	- 0Ch - 0Dh - 01h - 07h - 04h - 0Eh - 0Fh	8, None, 1 * 8, Odd, 1 8, Even, 1 8, Space, 1 8, Mark, 1 8, None, 2 7, Odd, 1 7, Even, 1	7, Space, 1 7, Mark, 1 7, None, 2 7, Odd, 2 7, Even, 2 7, Space, 2 7, Mark, 2

Get USB COM (BT)

Descriptions

Request the desired one or more parameters of the USB COM Interface settings
Available for F, L & A series

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	C3h 00h 03h	00h	Variable	See Below	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	Variable	1 Byte	1 Byte

Parameter(s)				
First Parameter		.....	Last Parameter	
PID	Size	.....	PID	Size
2 Bytes	2 Bytes	.....	2 Bytes	2 Bytes
See Next Page				

. Host Requirements

If the device successfully received the above command issued by the host, the device will pack all requested parameters into a "**Reply USB COM"** message string then send to the host. Please refer to the "Reply USB COM" command for details. Otherwise, a "**Device NAK"** will be sent to host to indicate issue a command error. However, if the host can receive any response from the device within the **user preset time-out duration**, please resend the above command.

. Parameter(s) Field

Get USB COM can request multiple parameters at one time, so it takes compound parameters.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

"Opcode" XOR "Status" XOR "Length" XOR "Parameter(s)"

. Size

Total size (bytes) of the Options field

Parameter(s)

< Table 5-3-2 > Get USB COM Parameter(s) Field

Parameter	PID	Size
STX/ETX Transmission	**00h 00h**	00h 00h
Baud Rate	**00h 02h**	00h 00h
Data Frame	**00h 03h**	00h 00h

Reply USB COM (BT)

Descriptions

Reply the desired one or more parameters of the USB COM Interface settings

Reply USB COM is sent by the device in response to the Get USB COM command. It sends the values for all the desired parameters requested in the Get USB COM command.

Available for F, L & A series

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	04h 00h 03h	00h	Variable	See Below	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	Variable	1 Byte	1 Byte

Parameter(s)						
First Parameter			.....	Last Parameter		
PID	Size	Options	.....	PID	Size	Options
2 Bytes	2 Bytes	Variable	.....	2 Bytes	2 Bytes	Variable
See Next Page						

. Host Requirements

Since Reply USB COM is a device-to-host message, there is no response for this message.

. Parameter(s) Field

Set USB COM can change multiple parameters at one time, so it takes compound parameters.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

”Opcode” XOR “Status” XOR “Length” XOR “Parameter(s)”

. Size

Total size (bytes) of the Options field

Parameter(s)

< Table 5-3-3 > Reply USB COM Parameter(s) Field

Parameter / PID / Size	Options		Descriptions	
STX/ETX Transmission **PID : 00h 00h** Size : 00h 01h (1 Byte)	- 00h - 01h		Disable * Enable	
Baud Rate **PID : 00h 02h** Size : 00h 01h (1 Byte)	- 02h - 03h - 04h - 05h	- 06h - 07h - 08h - 09h	1200 BPS 2400 BPS 4800 BPS 9600 BPS *	19200 BPS 38400 BPS 57600 BPS 115200 BPS
Data Frame **(Data Bit, Parity, Stop Bit)** **PID : 00 03** Size : 00h 01h (1 Byte)	- 02h - 08h - 05h - 0Ah - 0Bh - 09h - 06h - 03h	- 0Ch - 0Dh - 01h - 07h - 04h - 0Eh - 0Fh	8, None, 1 * 8, Odd, 1 8, Even, 1 8, Space, 1 8, Mark, 1 8, None, 2 7, Odd, 1 7, Even, 1	7, Space, 1 7, Mark, 1 7, None, 2 7, Odd, 2 7, Even, 2 7, Space, 2 7, Mark, 2

Set RS232 (BT)

Descriptions

Change the desired one or more parameters of the RS232 Interface settings
Available for F, L & A series

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	82h 00h 00h	00h	Variable	See Below	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	Variable	1 Byte	1 Byte

Parameter(s)						
First Parameter			.....	Last Parameter		
PID	Size	Options	.....	PID	Size	Options
2 Bytes	2 Bytes	Variable	.....	2 Bytes	2 Bytes	Variable
See Next Page						

. Host Requirements

If the device successfully received the above command issued by the host, a "**Device ACK**" will send to the host right after the device performed the action. Otherwise, a "**Device NAK**" will be sent to host to issue a command error. However, if the host can not receive any response from the device within the **user preset time-out duration**, please resend the above command.

. Parameter(s) Field

Set RS232 command can change multiple parameters at one time, so it takes compound parameters.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

"Opcode" XOR "Status" XOR "Length" XOR "Parameter(s)"

. Size

Total size (bytes) of the Options field

Parameter(s)

< Table 5-4-1 > Set RS232 Parameter(s) Field

Parameter / PID / Size	Options		Descriptions	
STX/ETX Transmission **PID : 00h 00h** Size : 00h 01h (1 Byte)	- 00h - 01h		Disable * Enable	
Handshaking Protocol **PID : 00h 01h** Size : 00h 03h (3 Bytes)	**1st~3rd Byte** - 00h 00h 00h - 01h 00h 00h - 00h 00h 01h - 00h 01h 00h		None * RTS/CTS ACK/NAK Xon/Xoff	
Baud Rate **PID : 00h 02h** Size : 00h 01h (1 Byte)	- 02h - 03h - 04h - 05h	- 06h - 07h - 08h - 09h	1200 BPS 2400 BPS 4800 BPS 9600 BPS *	19200 BPS 38400 BPS 57600 BPS 115200 BPS
Data Frame **(Data Bit, Parity, Stop Bit)** **PID : 00 03** Size : 00h 01h (1 Byte)	- 02h - 05h - 08h	- 09h - 0Ah - 0Bh	8, None, 1 * 8, Even, 1 8, Odd, 1	8, None, 2 8, Space, 1 8, Mark, 1
Serial Response Time-out **PID : 00h 04h** Size : 00h 01h (1 Byte)	- 01h - 04h - 09h - 0Fh - 12h - 24h - 4Fh - 50h - 48h - 56h - 5Ah - 61h		None 200 ms 500 ms * 800 ms 1 s 2 s 3 s 4 s 5 s 8 s 10 s 15 s	
ACK/NAK Retry Count **PID : 00h 05h** Size : 00h 01h (1 Byte)	- 03h - XXh		3 times * **(See Notes)** User-defined: XXh =desired seconds(h)	
ACK/NAK Indication **PID : 00h 06h** Size : 00h 01h (1 Byte)	**Bit 0** - 0 - 1 **Bit 1 ~ 7**		**ACK/NAK Transmission Fail Indication** Disable Enable * **Reserved (Always 0)**	

. ***Notes***

ACK/NAK Retry Count ranges from **00h** (never retry) to **FFh** (always retry).

Get RS232 (BT)

Descriptions

Request the desired one or more parameters of the RS232 Interface settings
Available for F, L & A series

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	C3h 00h 00h	00h	Variable	See Below	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	Variable	1 Byte	1 Byte

Parameter(s)				
First Parameter		.....	Last Parameter	
PID	Size	.....	PID	Size
2 Bytes	2 Bytes	.....	2 Bytes	2 Bytes
See Next Page				

. Host Requirements

If the device successfully received the above command issued by the host, the device will pack all requested parameters into a "**Reply RS232"** message string then send to the host. Please refer to the "Reply RS232" command for details. Otherwise, a "**Device NAK"** will be sent to host to indicate issue a command error. However, if the host can receive any response from the device within the **user preset time-out duration**, please resend the above command.

. Parameter(s) Field

Get RS232 command can request multiple parameters at one time, so it takes compound parameters.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

"Opcode" XOR "Status" XOR "Length" XOR "Parameter(s)"

. Size

Total size (bytes) of the Options field

Parameter(s)

< Table 5-4-2 > Get RS232 Parameter(s) Field

Parameter	PID	Size
STX/ETX Transmission	**00h 00h**	00h 00h
Handshaking Protocol	**00h 01h**	00h 00h
Baud Rate	**00h 02h**	00h 00h
Data Frame	**00h 03h**	00h 00h
Serial Response Time-out	**00h 04h**	00h 00h
ACK/NAK Retry Count	**00h 05h**	00h 00h
ACK/NAK Indication	**00h 06h**	00h 00h

Reply RS232 (BT)

Descriptions

Reply RS232 Interface Settings

Reply RS232 is sent by the device in response to the Get RS232 command. It sends the values for all the desired parameters requested in the Get RS232 command.

Available for F, L & A series

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	04h 00h 00h	00h	Variable	See Below	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	Variable	1 Byte	1 Byte

Parameter(s)						
First Parameter			.....	Last Parameter		
PID	Size	Options	.....	PID	Size	Options
2 Bytes	2 Bytes	Variable	.....	2 Bytes	2 Bytes	Variable
See Next Page						

. Host Requirements

Since Reply RS232 is a device-to-host message, there is no response for this message.

. Parameter(s) Field

Set RS232 command can change multiple parameters at one time, so it takes compound parameters.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

”Opcode” XOR “Status” XOR “Length” XOR “Parameter(s)”

. Size

Total size (bytes) of the Options field

Parameter(s)

< Table 5-4-3 > Reply RS232 Parameter(s) Field

Parameter / PID / Size	Options		Descriptions	
STX/ETX Transmission **PID : 00h 00h** Size : 00h 01h (1 Byte)	- 00h - 01h		Disable * Enable	
Handshaking Protocol **PID : 00h 01h** Size : 00h 03h (3 Bytes)	**1st~3rd Byte** - 00h 00h 00h - 01h 00h 00h - 00h 00h 01h - 00h 01h 00h		None * RTS/CTS ACK/NAK Xon/Xoff	
Baud Rate **PID : 00h 02h** Size : 00h 01h (1 Byte)	- 02h - 03h - 04h - 05h	- 06h - 07h - 08h - 09h	1200 BPS 2400 BPS 4800 BPS 9600 BPS *	19200 BPS 38400 BPS 57600 BPS 115200 BPS
Data Frame **(Data Bit, Parity, Stop Bit)** **PID : 00 03** Size : 00h 01h (1 Byte)	- 02h - 05h - 08h	- 09h - 0Ah - 0Bh	8, None, 1 * 8, Even, 1 8, Odd, 1	8, None, 2 8, Space, 1 8, Mark, 1
Serial Response Time-out **PID : 00h 04h** Size : 00h 01h (1 Byte)	- 01h - 04h - 09h - 0Fh - 12h - 24h - 4Fh - 50h - 48h - 56h - 5Ah - 61h		None 200 ms 500 ms * 800 ms 1 s 2 s 3 s 4 s 5 s 8 s 10 s 15 s	
ACK/NAK Retry Count **PID : 00h 05h** Size : 00h 01h (1 Byte)	- 03h - XXh		3 times * **(See Notes)** User-defined: XXh =desired seconds(h)	
ACK/NAK Indication **PID : 00h 06h** Size : 00h 01h (1 Byte)	**Bit 0** - 0 - 1 **Bit 1 ~ 7**		**ACK/NAK Transmission Fail Indication** Disable Enable * **Reserved (Always 0)**	

. ***Notes***

ACK/NAK Retry Count ranges from **00h** (never retry) to **FFh** (always retry).

Set Bluetooth (BT)

Descriptions

Change the desired one or more parameters of the Bluetooth settings
Available for F, L & A series

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	98h 00h 00h	00h	Variable	See Below	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	Variable	1 Byte	1 Byte

Parameter(s)						
First Parameter			.....	Last Parameter		
PID	Size	Options	.....	PID	Size	Options
2 Bytes	2 Bytes	Variable	.....	2 Bytes	2 Bytes	Variable
See Next Page						

. Host Requirements

If the device successfully received the above command issued by the host, a "**Device ACK**" will send to the host right after the device performed the action. Otherwise, a "**Device NAK**" will be sent to host to issue a command error. However, if the host can not receive any response from the device within the **user preset time-out duration**, please resend the above command.

. Parameter(s) Field

Set USB COM can change multiple parameters at one time, so it takes compound parameters.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

"Opcode" XOR "Status" XOR "Length" XOR "Parameter(s)"

. Size

Total size (bytes) of the Options field

Parameter(s)

< Table 5-5-1 > Set Bluetooth Parameter(s) Field

Parameter / PID / Size	Options	Descriptions
Bluetooth Device Name (F & L Series) **PID : 00h 00h** Size : 00h 11h (17 Bytes)	- 00h FFh…FFh (sixteen "FFh"s) - XXh XXh…XXh	Default * (For example: F680BT-012E) User defined(See Notes)
Bluetooth PIN Code **PID : 00h 01h** Size : 00h 09h (9 Bytes)	- 30h…30h 00h (eight "30h"s) - XXh XXh…XXh	Defaults to "00000000" User defined(See Notes)
BT Authentication **PID : 00h 02h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable Enable *
Sleep Timeout Control **PID : 00h 03h** Size : 00h 02h (2 Bytes)	**1st Byte** - 00h - 06h - XXh **2nd Byte** - 00h - 01h - XXh	**Sleep Timeout of Connect State** Never enter sleep mode 6 (x5) minutes * User defined 0~99 (x5) minutes **Sleep Timeout of Disconnect State** Never enter sleep mode 1 minute * User defined 0~99 minutes
Link Supervision Timeout **PID : 00h 04h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h - 03h - 04h	1 s 3 s * 5 s 7 s 9 s
HID Link Quality Setting **PID : 00h 05h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable Enable *
Bluetooth Power Saving Mode **PID : 00h 06h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable * Enable
Variable PIN Code **PID : 00h 07h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable * Enable

. ***Notes***

1. User Defined Bluetooth Device Name (F & L Series) can be set to a 16-character name, the device name should be followed by a 00h. If the device name is less than 16 characters, the rest should be set to FFh. For example, if you want to set the name to "BT-1", this parameter should be "42, 54, 2D, 31, 00, FF, FF, FF, FF, FF, FF, FF, FF, FF, FF, FF, FF"
2. User Defined Bluetooth PIN Code can be set to an 8-character name, the PIN Code should be followed by a 00h. If the PIN Code is less than 8 characters, the rest should be set to FFh. For example, to set PIN code to "1234", this parameter should be "31, 32, 33, 34, 00, FF, FF, FF, FF"

Parameter(s)

< Table 5-5-1 > Set Bluetooth Parameter(s) Field

Parameter / PID / Size	Options	Descriptions
Auto Power Off Timeout **PID : 00h 08h** Size : 00h 01h (1 Byte)	- 06h - 00h~0Ch	(See Notes) 6 (x5) minutes * User defined 0~12 (x5) minutes
Bluetooth Device Name (A Series) **PID : 00h 09h** Size : 00h 21h (33 Bytes)	- 00h FFh…FFh (thirty-two "FFh"s) - XXh XXh…XXh	Default * User defined (See Notes)

. Notes

1. Auto Power Off Timeout is available for A Series only.
2. User Defined Bluetooth Device Name (A Series) can be set to a 32-character name, the device name should be followed by a 00h. If the device name is less than 32 characters, the rest should be set to FFh. For example, if you want to set the name to "BT-1", this parameter should be "42, 54, 2D, 31, 00, FF, FF, FF, FF, FF, FF, FF, FF, FF, FF, FF, FF, FF, FF, FF, FF, FF, FF, FF, FF, FF, FF, FF, FF, FF, FF, FF, FF,"

Get Bluetooth (BT)

Descriptions

Request the desired one or more parameters of the Bluetooth Settings
Available for F, L & A series

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	D9h 00h 00h	00h	Variable	See Below	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	Variable	1 Byte	1 Byte

Parameter(s)				
First Parameter		.....	Last Parameter	
PID	Size	.....	PID	Size
2 Bytes	2 Bytes	.....	2 Bytes	2 Bytes
See Next Page				

. Host Requirements

If the device successfully received the above command issued by the host, the device will pack all requested parameters into a "**Reply Bluetooth**" message string then send to the host. Please refer to the "Reply Bluetooth" command for details. Otherwise, a "**Device NAK**" will be sent to host to indicate issue a command error. However, if the host can receive any response from the device within the **user preset time-out duration**, please resend the above command.

. Parameter(s) Field

Get Bluetooth can request multiple parameters at one time, so it takes compound parameters.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

"Opcode" XOR "Status" XOR "Length" XOR "Parameter(s)"

. Size

Total size (bytes) of the Options field

Parameter(s)

< Table 5-5-2 > Get Bluetooth Parameter(s) Field

Parameter	PID	Size
Bluetooth Device Name (F & L Series)	00h 00h	00h 00h
Bluetooth PIN Code	00h 01h	00h 00h
BT Authentication	00h 02h	00h 00h
Sleep Timeout Control	00h 03h	00h 00h
Link Supervision Timeout	00h 04h	00h 00h
HID Link Quality Settings	00h 05h	00h 00h
Bluetooth Power Saving Mode	00h 06h	00h 00h
Variable PIN Code	00h 07h	00h 00h
Auto Power Off Timeout	00h 08h	00h 00h
Bluetooth Device Name (A Series)	00h 09h	00h 00h

Reply Bluetooth (BT)

Descriptions

Reply the desired one or more parameters of the Bluetooth Settings

Reply Bluetooth is sent by the device in response to the Get Bluetooth command. It sends the values for all the desired parameters requested in the Get Bluetooth command.

Available for F, L & A series

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	1Ah 00h 00h	00h	Variable	See Below	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	Variable	1 Byte	1 Byte

Parameter(s)						
First Parameter			.....	Last Parameter		
PID	Size	Options	.....	PID	Size	Options
2 Bytes	2 Bytes	Variable	.....	2 Bytes	2 Bytes	Variable
See Next Page						

. Host Requirements

If the device successfully received the above command issued by the host, a "**Device ACK**" will send to the host right after the device performed the action. Otherwise, a "**Device NAK**" will be sent to host to issue a command error. However, if the host can not receive any response from the device within the **user preset time-out duration**, please resend the above command.

. Parameter(s) Field

Set USB COM can change multiple parameters at one time, so it takes compound parameters.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

"Opcode" XOR "Status" XOR "Length" XOR "Parameter(s)"

. Size

Total size (bytes) of the Options field

Parameter(s)

< Table 5-5-3 > Reply Bluetooth Parameter(s) Field

Parameter / PID / Size	Options		Descriptions	
Bluetooth Device Name (F & L Series) **PID : 00h 00h** Size : 00h 11h (17 Bytes)	- 00h FFh…FFh (sixteen "FFh"s) - XXh XXh…XXh		Default * (For example: F680BT-012E) User defined(See Notes)	
Bluetooth PIN Code **PID : 00h 01h** Size : 00h 09h (9 Bytes)	- 30h…30h 00h (eight "30h"s) - XXh XXh…XXh		Defaults to "00000000" User defined(See Notes)	
BT Authentication **PID : 00h 02h** Size : 00h 01h (1 Byte)	- 00h - 01h		Disable Enable *	
Sleep Timeout Control **PID : 00h 03h** Size : 00h 02h (2 Bytes)	**1st Byte** - 00h - 06h - XXh **2nd Byte** - 00h - 01h - XXh		**Sleep Timeout of Connect State** Never enter sleep mode 6 (x5) minutes * User defined 0~99 (x5) minutes **Sleep Timeout of Disconnect State** Never enter sleep mode 1 minute * User defined 0~99 minutes	
Link Supervision Timeout **PID : 00h 04h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h	- 03h - 04h	1 s 3 s * 5 s	7 s 9 s
HID Link Quality Setting **PID : 00h 05h** Size : 00h 01h (1 Byte)	- 00h - 01h		Disable Enable *	
Bluetooth Power Saving Mode **PID : 00h 06h** Size : 00h 01h (1 Byte)	- 00h - 01h		Disable * Enable	
Variable PIN Code **PID : 00h 07h** Size : 00h 01h (1 Byte)	- 00h - 01h		Disable * Enable	

. ***Notes***

1. User Defined Bluetooth Device Name is a maximum 16-character name, which is followed by a 00h. If the device name is less than 16 characters, the rest should be set to FFh. For example, if the name is "BT-1", this parameter should be "42, 54, 2D, 31, 00, FF, FF, FF, FF, FF, FF, FF, FF, FF, FF, FF, FF"
2. User Defined Bluetooth PIN Code is a maximum 8-character name, the PIN Code is followed by a 00h. If the PIN Code is less than 8 characters, the rest is filled with FFh. For example, if the PIN code is "1234", this parameter should be "31, 32, 33, 34, 00, FF, FF, FF, FF"

Parameter(s)

< Table 5-5-3 > Reply Bluetooth Parameter(s) Field

Parameter / PID / Size	Options	Descriptions
Auto Power Off Timeout **PID : 00h 08h** Size : 00h 01h (1 Byte)	- 06h - 00h~0Ch	(See Notes) 6 (x5) minutes * User defined 0~12 (x5) minutes
Bluetooth Device Name (A Series) **PID : 00h 09h** Size : 00h 21h (33 Bytes)	- 00h FFh…FFh (thirty-two “FFh”s) - XXh XXh…XXh	Default * User defined(See Notes)

. *Notes*

1. Auto Power Off Timeout is available for A Series only.
2. User Defined Bluetooth Device Name (A Series) can be set to a 32-character name, the device name should be followed by a 00h. If the device name is less than 32 characters, the rest should be set to FFh. For example, if you want to set the name to “BT-1”, this parameter should be “42, 54, 2D, 31, 00, FF, FF, FF, FF, FF, FF, FF, FF, FF, FF, FF, FF, FF, FF, FF, FF, FF, FF, FF, FF, FF, FF, FF, FF, FF, FF, FF, FF,”

Set USB HID (WF)

Descriptions

Change the desired one or more parameters of the USB HID Interface settings
Available for F & L series

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	82h 00h 02h	00h	Variable	See Below	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	Variable	1 Byte	1 Byte

Parameter(s)						
First Parameter			.....	Last Parameter		
PID	Size	Options	.....	PID	Size	Options
2 Bytes	2 Bytes	Variable	.....	2 Bytes	2 Bytes	Variable
See Next Page						

. Host Requirements

If the device successfully received the above command issued by the host, a "**Device ACK**" will send to the host right after the device performed the action. Otherwise, a "**Device NAK**" will be sent to host to issue a command error. However, if the host can not receive any response from the device within the **user preset time-out duration**, please resend the above command.

. Parameter(s) Field

Set USB HID command can change multiple parameters at one time, so it takes compound parameters.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

"Opcode" XOR "Status" XOR "Length" XOR "Parameter(s)"

. Size

Total size (bytes) of the Options field

Parameter(s)

< Table 5-6-1 > Set USB HID Parameter(s) Field

Parameter / PID / Size	Options	Descriptions
Keyboard Layout **PID : 00h 01h** Size : 00h 01h (1 Byte)	- 00h - 03h - 04h - 07h - 0Bh - 0Ah - 02h - 0Ch - 09h - 0Dh - 05h - 0Eh - 08h - 01h - 06h - 0Fh - 10h - 11h - 62h	USA (QWERTY) * France (AZERTY) Germany (QWERTZ) United Kingdom – UK (QWERTY) Canadian French (QWERTY) Spain (Spanish, QWERTY) Sweden/Finland (QWERTY) Portugal (QWERTY) Norway (QWERTY) Spain (Latin America, QWERTY) Italy (QWERTY) Netherlands (QWERTY) Denmark (QWERTY) Belgium Switzerland – Germany (QWERTY) Iceland (QWERTY) Japan (DOS/V) Czech (QWERTY) Universal
Caps Lock Release **PID : 00h 02h** Size : 00h 01h (1 Byte)	- 00h - 01h	“Caps Lock On, Caps Off” “Caps Lock On, Shift Off”
Caps Lock **PID : 00h 03h** Size : 00h 01h (1 Byte)	- 00h - 01h - 06h	“Caps Lock Off” State * “Caps Lock On” State Auto Detect
Function Key Emulation **PID : 00h 04h** Size : 00h 01h (1 Byte)	- 00h - 01h	Enable ASCII 00-31 code as keyboard function code * Ctrl-Output
Key Pad Emulation **PID : 00h 05h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable * Enable
Upper/Lower Case **PID : 00h 06h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h - 03h	Normal case * Inverse case Upper case Lower case

Get USB HID (WF)

Descriptions

Request the desired one or more parameters of the USB HID Interface settings
Available for F & L series

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	C3h 00h 02h	00h	Variable	See Below	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	Variable	1 Byte	1 Byte

Parameter(s)				
First Parameter		.....	Last Parameter	
PID	Size	.....	PID	Size
2 Bytes	2 Bytes	.....	2 Bytes	2 Bytes
See Next Page				

. Host Requirements

If the device successfully received the above command issued by the host, the device will pack all requested parameters into a "**Reply USB HID"** message string then send to the host. Please refer to the "**Reply USB HID**" command for details. Otherwise, a "**Device NAK"** will be sent to host to indicate issue a command error. However, if the host can receive any response from the device within the **user preset time-out duration**, please resend the above command.

. Parameter(s) Field

Get USB HID command can request multiple parameters at one time, so it takes compound parameters.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

"Opcode" XOR "Status" XOR "Length" XOR "Parameter(s)"

. Size

Total size (bytes) of the Options field

Parameter(s)

< Table 5-6-2 > Get USB HID Parameter(s) Field

Parameter	PID	Size
Keyboard Layout	**00h 01h**	00h 00h
Caps Lock Release	**00h 02h**	00h 00h
Caps Lock	**00h 03h**	00h 00h
Function Key Emulation	**00h 04h**	00h 00h
Key Pad Emulation	**00h 05h**	00h 00h
Upper/Lower Case	**00h 06h**	00h 00h

Reply USB HID (WF)

Descriptions

Reply USB HID Interface Settings

Reply USB HID is sent by the device in response to the Get USB HID command. It sends the values for all the desired parameters requested in the Get USB HID command.

Available for F & L series

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	04h 00h 02h	00h	Variable	See Below	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	Variable	1 Byte	1 Byte

Parameter(s)						
First Parameter			.....	Last Parameter		
PID	Size	Options	.....	PID	Size	Options
2 Bytes	2 Bytes	Variable	.....	2 Bytes	2 Bytes	Variable
See Next Page						

. Host Requirements

Since Reply USB HID is a device-to-host message, there is no response for this message.

. Parameter(s) Field

Set USB HID command can change multiple parameters at one time, so it takes compound parameters.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

”Opcode” XOR “Status” XOR “Length” XOR “Parameter(s)”

. Size

Total size (bytes) of the Options field

Parameter(s)

< Table 5-6-3 > Reply USB HID Parameter(s) Field

Parameter / PID / Size	Options	Descriptions
Keyboard Layout **PID : 00h 01h** Size : 00h 01h (1 Byte)	- 00h - 03h - 04h - 07h - 0Bh - 0Ah - 02h - 0Ch - 09h - 0Dh - 05h - 0Eh - 08h - 01h - 06h - 0Fh - 10h - 11h - 62h	USA (QWERTY) * France (AZERTY) Germany (QWERTZ) United Kingdom – UK (QWERTY) Canadian French (QWERTY) Spain (Spanish, QWERTY) Sweden/Finland (QWERTY) Portugal (QWERTY) Norway (QWERTY) Spain (Latin America, QWERTY) Italy (QWERTY) Netherlands (QWERTY) Denmark (QWERTY) Belgium Switzerland – Germany (QWERTY) Iceland (QWERTY) Japan (DOS/V) Czech (QWERTY) Universal
Caps Lock Release **PID : 00h 02h** Size : 00h 01h (1 Byte)	- 00h - 01h	“Caps Lock On, Caps Off” “Caps Lock On, Shift Off”
Caps Lock **PID : 00h 03h** Size : 00h 01h (1 Byte)	- 00h - 01h - 06h	“Caps Lock Off” State * “Caps Lock On” State Auto Detect
Function Key Emulation **PID : 00h 04h** Size : 00h 01h (1 Byte)	- 00h - 01h	Enable ASCII 00-31 code as keyboard function code * Ctrl-Output
Key Pad Emulation **PID : 00h 05h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable * Enable
Upper/Lower Case **PID : 00h 06h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h - 03h	Normal case * Inverse case Upper case Lower case

Set USB COM (WF)

Descriptions

Change the desired one or more parameters of the USB COM Interface settings
Available for F & L series

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	82h 00h 03h	00h	Variable	See Below	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	Variable	1 Byte	1 Byte

Parameter(s)						
First Parameter			.....	Last Parameter		
PID	Size	Options	.....	PID	Size	Options
2 Bytes	2 Bytes	Variable	.....	2 Bytes	2 Bytes	Variable
See Next Page						

. Host Requirements

If the device successfully received the above command issued by the host, a "**Device ACK**" will send to the host right after the device performed the action. Otherwise, a "**Device NAK**" will be sent to host to issue a command error. However, if the host can not receive any response from the device within the **user preset time-out duration**, please resend the above command.

. Parameter(s) Field

Set USB COM can change multiple parameters at one time, so it takes compound parameters.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

"Opcode" XOR "Status" XOR "Length" XOR "Parameter(s)"

. Size

Total size (bytes) of the Options field

Parameter(s)

< Table 5-7-1 > Set USB COM Parameter(s) Field

Parameter / PID / Size	Options		Descriptions	
STX/ETX Transmission **PID : 00h 00h** Size : 00h 01h (1 Byte)	- 00h - 01h		Disable * Enable	
Baud Rate **PID : 00h 02h** Size : 00h 01h (1 Byte)	- 02h - 03h - 04h - 05h	- 06h - 07h - 08h - 09h	1200 BPS 2400 BPS 4800 BPS 9600 BPS *	19200 BPS 38400 BPS 57600 BPS 115200 BPS
Data Frame **(Data Bit, Parity, Stop Bit)** **PID : 00 03** Size : 00h 01h (1 Byte)	- 02h - 08h - 05h - 0Ah - 0Bh - 09h - 06h - 03h	- 0Ch - 0Dh - 01h - 07h - 04h - 0Eh - 0Fh	8, None, 1 * 8, Odd, 1 8, Even, 1 8, Space, 1 8, Mark, 1 8, None, 2 7, Odd, 1 7, Even, 1	7, Space, 1 7, Mark, 1 7, None, 2 7, Odd, 2 7, Even, 2 7, Space, 2 7, Mark, 2

Get USB COM (WF)

Descriptions

Request the desired one or more parameters of the USB COM Interface settings
Available for F & L series

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	C3h 00h 03h	00h	Variable	See Below	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	Variable	1 Byte	1 Byte

Parameter(s)				
First Parameter		.....	Last Parameter	
PID	Size	.....	PID	Size
2 Bytes	2 Bytes	.....	2 Bytes	2 Bytes
See Next Page				

. Host Requirements

If the device successfully received the above command issued by the host, the device will pack all requested parameters into a "**Reply USB COM"** message string then send to the host. Please refer to the "Reply USB COM" command for details. Otherwise, a "**Device NAK"** will be sent to host to indicate issue a command error. However, if the host can receive any response from the device within the **user preset time-out duration**, please resend the above command.

. Parameter(s) Field

Get USB COM can request multiple parameters at one time, so it takes compound parameters.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

"Opcode" XOR "Status" XOR "Length" XOR "Parameter(s)"

. Size

Total size (bytes) of the Options field

Parameter(s)

< Table 5-7-2 > Get USB COM Parameter(s) Field

Parameter	PID	Size
STX/ETX Transmission	**00h 00h**	00h 00h
Baud Rate	**00h 02h**	00h 00h
Data Frame	**00h 03h**	00h 00h

Reply USB COM (WF)

Descriptions

Reply the desired one or more parameters of the USB COM Interface settings
Reply USB COM is sent by the device in response to the Get USB COM command. It sends the values for all the desired parameters requested in the Get USB COM command.
Available for F & L series

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	04h 00h 03h	00h	Variable	See Below	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	Variable	1 Byte	1 Byte

Parameter(s)						
First Parameter			.....	Last Parameter		
PID	Size	Options	.....	PID	Size	Options
2 Bytes	2 Bytes	Variable	.....	2 Bytes	2 Bytes	Variable
See Next Page						

. Host Requirements

Since Reply USB COM is a device-to-host message, there is no response for this message.

. Parameter(s) Field

Set USB COM can change multiple parameters at one time, so it takes compound parameters.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

”Opcode” XOR “Status” XOR “Length” XOR “Parameter(s)”

. Size

Total size (bytes) of the Options field

Parameter(s)

< Table 5-7-3 > Reply USB COM Parameter(s) Field

Parameter / PID / Size	Options		Descriptions	
STX/ETX Transmission **PID : 00h 00h** Size : 00h 01h (1 Byte)	- 00h - 01h		Disable * Enable	
Baud Rate **PID : 00h 02h** Size : 00h 01h (1 Byte)	- 02h - 03h - 04h - 05h	- 06h - 07h - 08h - 09h	1200 BPS 2400 BPS 4800 BPS 9600 BPS *	19200 BPS 38400 BPS 57600 BPS 115200 BPS
Data Frame **(Data Bit, Parity, Stop Bit)** **PID : 00 03** Size : 00h 01h (1 Byte)	- 02h - 08h - 05h - 0Ah - 0Bh - 09h - 06h - 03h	- 0Ch - 0Dh - 01h - 07h - 04h - 0Eh - 0Fh	8, None, 1 * 8, Odd, 1 8, Even, 1 8, Space, 1 8, Mark, 1 8, None, 2 7, Odd, 1 7, Even, 1	7, Space, 1 7, Mark, 1 7, None, 2 7, Odd, 2 7, Even, 2 7, Space, 2 7, Mark, 2

Set Wi-Fi (WF)

Descriptions

Change the desired one or more parameters of the Wi-Fi settings
Available for F & L series

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	9Bh 00h 00h	00h	Variable	See Below	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	Variable	1 Byte	1 Byte

Parameter(s)						
First Parameter			.....	Last Parameter		
PID	Size	Options	.....	PID	Size	Options
2 Bytes	2 Bytes	Variable	.....	2 Bytes	2 Bytes	Variable
See Next Page						

. Host Requirements

If the device successfully received the above command issued by the host, a "**Device ACK**" will send to the host right after the device performed the action. Otherwise, a "**Device NAK**" will be sent to host to issue a command error. However, if the host can not receive any response from the device within the **user preset time-out duration**, please resend the above command.

. Parameter(s) Field

Set USB COM can change multiple parameters at one time, so it takes compound parameters.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

"Opcode" XOR "Status" XOR "Length" XOR "Parameter(s)"

. Size

Total size (bytes) of the Options field

Parameter(s)

< Table 5-8-1 > Set Wi-Fi Parameter(s) Field

Parameter / PID / Size	Options	Descriptions
Sleep Timeout Control **PID : 00h 14h** Size : 00h 02h (2 Bytes)	**1st Byte** - 00h - 06h - XXh **2nd Byte** - 00h - 05h - XXh	**Sleep Timeout of Connect State** Never enter sleep mode 6 (x5) minutes * User defined 0~99 (x5) minutes **Sleep Timeout of Disconnect State** Never enter sleep mode 5 minute * User defined 0~99 minutes
Keep Alive Timeout **PID : 00h 15h** Size : 00h 02h (2 Bytes)	**1st Byte** - 00h - 01h - 03h - 06h **2nd Byte** - 00h	**Keep Alive Timeout** Disable 10 seconds * 30 seconds 60 seconds **Reserved (Always Zero)**
Reconnect Interval **PID : 00h 16h** Size : 00h 01h (1 Byte)	- 02h - XXh	2 seconds * User defined 0~255 seconds
Power Saving Mode **PID : 00h 17h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable * Enable
COM Port Validation **PID : 01h 00h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable * Enable

Get Wi-Fi (WF)

Descriptions

Request the desired one or more parameters of the Wi-Fi settings
Available for F & L series

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	DCh 00h 00h	00h	Variable	See Below	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	Variable	1 Byte	1 Byte

Parameter(s)				
First Parameter		.....	Last Parameter	
PID	Size	.....	PID	Size
2 Bytes	2 Bytes	.....	2 Bytes	2 Bytes
See Next Page				

. Host Requirements

If the device successfully received the above command issued by the host, the device will pack all requested parameters into a "**Reply Wi-Fi"** message string then send to the host. Please refer to the "Reply Wi-Fi" command for details. Otherwise, a "**Device NAK"** will be sent to host to indicate issue a command error. However, if the host can receive any response from the device within the **user preset time-out duration**, please resend the above command.

. Parameter(s) Field

Get USB COM can request multiple parameters at one time, so it takes compound parameters.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

"Opcode" XOR "Status" XOR "Length" XOR "Parameter(s)"

. Size

Total size (bytes) of the Options field

Parameter(s)

< Table 5-8-2 > Get Wi-Fi Parameter(s) Field

Parameter	PID	Size
Wi-Fi MAC Address	**00h 0Ch**	00h 00h
Sleep Timeout Control	**00h 14h**	00h 00h
Keep Alive Timeout	**00h 15h**	00h 00h
Reconnect Interval	**00h 16h**	00h 00h
Power Saving Mode	**00h 17h**	00h 00h
COM Port Validation	**01h 00h**	00h 00h

Reply Wi-Fi (WF)

Descriptions

Reply the desired one or more parameters of the Wi-Fi Interface settings
Reply Wi-Fi is sent by the device in response to the Get Wi-Fi command. It sends the values for all the desired parameters requested in the Get Wi-Fi command.
Available for F & L series

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	1Dh 00h 00h	00h	Variable	See Below	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	Variable	1 Byte	1 Byte

Parameter(s)						
First Parameter			.....	Last Parameter		
PID	Size	Options	.....	PID	Size	Options
2 Bytes	2 Bytes	Variable	.....	2 Bytes	2 Bytes	Variable
See Next Page						

. Host Requirements

Since Reply USB COM is a device-to-host message, there is no response for this message.

. Parameter(s) Field

Set USB COM can change multiple parameters at one time, so it takes compound parameters.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

”Opcode” XOR “Status” XOR “Length” XOR “Parameter(s)”

. Size

Total size (bytes) of the Options field

Parameter(s)

< Table 5-8-3 > Reply Wi-Fi Parameter(s) Field

Parameter / PID / Size	Options	Descriptions
Wi-Fi MAC Address **PID : 00h 0Ch** Size : 00h 06h (6 Bytes)	**1st Byte** - XXh **2nd Byte** - XXh **3rd Byte** - XXh **4th Byte** - XXh **5th Byte** - XXh **6th Byte** - XXh	**The 6th number of MAC Address** User defined XX **The 5th number of MAC Address** User defined XX **The 4th number of MAC Address** User defined XX **The 3rd number of MAC Address** User defined XX **The 2nd number of MAC Address** User defined XX **The 1st number of MAC Address** User defined XX
Sleep Timeout Control **PID : 00h 14h** Size : 00h 02h (2 Bytes)	**1st Byte** - 00h - 06h - XXh **2nd Byte** - 00h - 05h - XXh	**Sleep Timeout of Connect State** Never enter sleep mode 6 (x5) minutes * User defined 0~99 (x5) minutes **Sleep Timeout of Disconnect State** Never enter sleep mode 5 minute * User defined 0~99 minutes
Keep Alive Timeout **PID : 00h 15h** Size : 00h 02h (2 Bytes)	**1st Byte** - 00h - 01h - 03h - 06h **2nd Byte** - 00h	**Keep Alive Timeout** Disable 10 seconds * 30 seconds 60 seconds **Reserved (Always Zero)**
Reconnect Interval **PID : 00h 16h** Size : 00h 01h (1 Byte)	- 02h - XXh	2 seconds * User defined 0~255 seconds
Power Saving Mode **PID : 00h 17h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable * Enable
COM Port Validation **PID : 01h 00h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable * Enable

2.6 OPERATION

Set TS Operation (TS)

Descriptions

Change the desired one or more parameters of the Operation Settings for Tethered Scanner Available for F, L & A series

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	88h 00h 00h	00h	Variable	See Below	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	Variable	1 Byte	1 Byte

Parameter(s)						
First Parameter			.....	Last Parameter		
PID	Size	Options	.....	PID	Size	Options
2 Bytes	2 Bytes	Variable	.....	2 Bytes	2 Bytes	Variable
See Next Page						

. Host Requirements

If the device successfully received the above command issued by the host, a "**Device ACK**" will send to the host right after the device performed the action. Otherwise, a "**Device NAK**" will be sent to host to issue a command error. However, if the host can not receive any response from the device within the **user preset time-out duration**, please resend the above command.

. Parameter(s) Field

Set TS Operation can change multiple parameters at one time, so it takes compound parameters.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

"Opcode" XOR "Status" XOR "Length" XOR "Parameter(s)"

. Size

Total size (bytes) of the Options field

Parameter(s)

< Table 6-1-1 > Set TS Operation Parameter(s) Field (To be continued)

Parameter / PID / Size	Options		Descriptions	
Presentation Control **PID : 00h 01h** Size : 00h 01h (1 Byte)	- 01h - 02h - 08h		Force mode Presentation mode * Flash mode (See Notes)	
Presentation Auto-sense **PID : 00h 02h** Size : 00h 01h (1 Byte)	- 00h - 01h		Disable * Enable	
Presentation Sensitivity **PID : 00h 03h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h - 03h	- 04h - 05h - 06h	Level 1 Level 2 Level 3 Level 4	Level 5 * Level 6 Level 7
Reread Delay **PID : 00h 04h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h - 03h - 04h - 05h		Disable Immediate time-out duration * Short time-out duration Medium time-out duration Long time out-duration Force Verification	
Flash Duty Cycle **PID : 00h 05h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h - 03h		1/2 duty cycle * (See Notes) 2/3 duty cycle 3/4 duty cycle 4/5 duty cycle	
Good Read Delay **PID : 00h 06h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h - 03h	- 04h - 05h - 06h	None* 200 ms 500 ms 1 s	1.5 s 2 s 3 s
Light Source On Time **PID : 00h 07h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h - 03h		Short (about 2 s) * Medium (about 3~4 s) Long (about 5~6 s) Extremely Long (about 7~8 s)	
Hands Free Time-out **PID : 00h 08h** Size : 00h 01h (1 Byte)	- 00h - 06h - 0Ah	- 0Eh - 12h	Disable Short * Medium	Long Extremely long
Time Delay To Low Power Mode **PID : 00h 09h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h	- 03h - 04h - 05h	1 s 3 s 5 s	7 s 9 s 0 s (Immediately)*

. ***Notes***

Flash mode is not available for A Series.

Parameter(s)

< Table 6-1-1 > Set TS Operation Parameter(s) Field (Continued)

Parameter / PID / Size	Options		Descriptions	
Trigger Control(F460/468 only) **PID : 00h 0Ah** Size : 00h 01h (2 Bytes)	- 00h - 01h - 02h		Enable left trigger, disable right trigger Enable right trigger, disable left trigger Enable left and right trigger *	
Scan Rate Control **PID : 00h 0Bh** Size : 00h 01h (1 Byte)	- 00h - 01h		Dynamic * Fixed	
Buzzer Tone Adjust **PID : 01h 00h** Size : 00h 02h (2 Bytes)	**1st~2nd Byte** - 00h 00h - 01h 01h - 01h 02h - 01h 03h - 01h 04h		Mute Low Medium * High Extremely High	
Power on beep **PID : 01h 01h** Size : 00h 01h (1 Byte)	- 00h - 01h		Enable Disable	
Power on Indication **PID : 01h 02h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h		LED off LED steady on * LED flash	
Vibrator **PID : 01h 03h** Size : 00h 01h (1 Byte)	- 00h - 01h		Disable Enable *	
Good Read Duration **PID : 01h 04h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h	- 03h - 04h	Short Medium * Long	Extremely long Extremely short
Good Read Indicator **PID : 01h 05h** Size : 00h 01h (1 Byte)	- 00h - 01h		(See Notes) Disable Enable *	
1D Barcode Inverse Reading **PID : 02h 00h** Size : 00h 01h (1 Byte)	- 00h - 01h		Disable * Enable	
Dollar Sign Control **PID : 02h 01h** Size : 00h 01h (1 Byte)	- 00h - 80h - A2h	- A3h - A5h	Output as “$” * Output as “€“ Output as “¢“	Output as “£“ Output as “¥”
Redundancy **PID : 02h 02h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h	- 03h - 04h - 05h	None 1 time * 2 times	3 times 4 times 5 times

. Notes

Good Read Indicator: If enabled, the Green LED flashes once after a good decode.

Parameter(s)

< Table 6-1-1 > Set TS Operation Parameter(s) Field (Continued)

Parameter / PID / Size	Options		Descriptions	
Data Transmission Packet **PID : 02h 04h** Size : 00h 01h (1 Byte)	- 00h - 01h		Disable * Enable	
UPC/EAN Security Level **PID : 02h 06h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h		Level 0 Level 1 * Level 2	
Supplement Scan Voting **PID : 02h 08h** Size : 00h 01h (1 Byte)	- 00h - 06h - 08h - 0Ah - 0Ch - 0Eh - 10h	- 12h - 14h - 16h - 18h - 1Ah - 1Ch - 1Eh	None Level 1 Level 2 Level 3 * Level 4 Level 5 Level 6	Level 7 Level 8 Level 9 Level 10 Level 11 Level 12 Level 13
Laser Aiming Control **PID : 02h 09h** Size : 00h 01h (1 Byte)	- 00h - 01h		(See Notes) Disable Enable *	
LED Illumination **PID : 02h 0Bh** Size : 00h 01h (1 Byte)	- 00h - 01h		(See Notes) Always on Intelligent Scanning *	
Illumination Delay Duration **PID : 02h 0Ch** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h - 03h - 04h		(See Notes) 100ms 200ms 300ms 400ms 500ms	
Motion Control **PID : 03h 00h** Size: 00h 01h (1 Byte)	- 00h - 01h - 02h - 03h		(See Notes) Disable* Level 1 Level 2 Level 3	
Operation Mode **(Tethered Scanner)** **PID : 10h 00h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h - 04h - 05h - 06h - 07h - 08h - 09h		(See Notes) Trigger mode (External triggering) * Force mode (Continued power on) Presentation mode (Auto detection) Level mode (Auto power off) Diagnostic mode (Test reading) Alternative mode (Periodic power off) Toggle mode (Repeat reading) Flash mode (Pulse driven reading) Low Power mode (Low Power triggering)	

. ***Notes***

1. **LED Illumination, Illumination Delay Duration** are only available for L680, L688, L780, L788
2. **Laser Aiming Control** is only available for L688, L788
3. **Motion Control** is only available for A Series

Parameter(s)

< Table 6-1-1 > Set TS Operation Parameter(s) Field (Continued)

Parameter / PID / Size	Options	Descriptions
Operation Mode (Tethered A Series) **PID : 70h 00h** Size : 00h 03h (3 Bytes)	- 00h 01h 01h - 01h 01h 01h - 02h 01h 01h - 04h 01h 00h - 05h 01h 01h - 06h 01h 00h - 07h 01h 00h - 09h 01h 01h - 0Dh 01h 01h	Trigger mode * Force mode Presentation mode Level mode Diagnostic mode Alternative mode Toggle mode Low Power mode Multiple mode
Hand-Held Mode Illumination & Aiming Control **PID : 70h 01h** Size : 00h 01h (1 Byte)	**Bit 0** - 0 - 1 **Bit 1** - 0 - 1	**Hand-Held Decode Aiming Control** Disable Enable * **Hand-Held Illumination Control** Disable Enable *
Hand-Free Mode Decode Aiming Control **PID : 70h 02h** Size : 00h 01h (1 Byte)	- 02h - 03h	Disable Enable *
Aiming Control **PID : 70h 03h** Size : 00h 02h (2 Bytes)	- 00h 00h - 01h 00h - 00h 03h	Regular Aiming Intelligent Aiming * Delay Aiming Control
Delay Aiming Timeout Control **PID : 70h 04h** Size : 00h 01h (1 Byte)	- 02h - 04h - 08h - 0Ah - 0Fh - 14h - 1Eh - 28h	200ms 400ms * 800ms 1000ms 1500ms 2000ms 3000ms 4000ms
Presentation Background Lighting **PID : 70h 05h** Size : 00h 02h (2 Bytes)	- 00h 00h - 00h FFh	LEDs Off LEDs On *
Center Alignment **PID : 70h 06h** Size : 00h 02h (2 Bytes)	**1st Byte** - 00h - 01h **2nd Byte** - 00h - 01h	**Hand-Held Mode** Disable * Enable **Hand-Free Mode** Disable * Enable

Parameter(s)

< Table 6-1-1 > Set TS Operation Parameter(s) Field (Continued)

Parameter / PID / Size	Options	Descriptions
Mobile Phone Capture **PID : 70h 07h** Size : 00h 01h (1 Byte)	 - 00h - 01h	 Disable * Enable
Unique Barcode Reporting **PID : 70h 08h** Size : 00h 01h (1 Byte)	 - 00h - 01h	 Disable * Enable

Get TS Operation (TS)

Descriptions

Request the desired one or more parameters of the Operation Settings for Tethered Scanner Available for F, L & A series

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	C9h 00h 00h	00h	Variable	See Below	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	Variable	1 Byte	1 Byte

Parameter(s)				
First Parameter		.....	Last Parameter	
PID	Size	.....	PID	Size
2 Bytes	2 Bytes	.....	2 Bytes	2 Bytes
See Next Page				

. Host Requirements

If the device successfully received the above command issued by the host, the device will pack all requested parameters into a "**Reply TS Operation**" message string then send to the host. Please refer to the "Reply TS Operation" command for details. Otherwise, a "**Device NAK**" will be sent to host to indicate issue a command error. However, if the host can receive any response from the device within the **user preset time-out duration**, please resend the above command.

. Parameter(s) Field

Get TS Operation can request multiple parameters at one time, so it takes compound parameters.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

"Opcode" XOR "Status" XOR "Length" XOR "Parameter(s)"

. Size

Total size (bytes) of the Options field

Parameter(s)

< Table 6-1-2 > Get TS Operation Parameter(s) Field

Parameter	PID	Size
Presentation Control	00h 01h	00h 00h
Presentation Auto-sense	00h 02h	00h 00h
Presentation Sensitivity	00h 03h	00h 00h
Reread Delay	00h 04h	00h 00h
Flash Duty Cycle	00h 05h	00h 00h
Good Read Delay	00h 06h	00h 00h
Light Source On Time	00h 07h	00h 00h
Hands Free Time-out	00h 08h	00h 00h
Time Delay To Low Power Mode	00h 09h	00h 00h
Trigger Control	00h 0Ah	00h 00h
Scan Rate Control	00h 0Bh	00h 00h
Buzzer Tone Adjust	01h 00h	00h 00h
Power on beep	01h 01h	00h 00h
Power on Indication	01h 02h	00h 00h
Vibrator	01h 03h	00h 00h
Good Read Duration	01h 04h	00h 00h
Good Read Indicator	01h 05h	00h 00h
1D Barcode Inverse Reading	02h 00h	00h 00h
Dollar Sign Control	02h 01h	00h 00h
Redundancy	02h 02h	00h 00h
Data Transmission Packet	02h 04h	00h 00h
UPC/EAN Security Level	02h 06h	00h 00h
Supplement Scan Voting	02h 08h	00h 00h
Laser Aiming Control	02h 09h	00h 00h
LED Illumination	02h 0Bh	00h 00h
Illumination Delay Duration	02h 0Ch	00h 00h
Motion Control	03h 00h	00h 00h
Operation Mode (Tethered Scanner)	10h 00h	00h 00h
Operation Mode (Tethered A Series)	70h 00h	00h 00h
Hand-Held Mode Illumination & Aiming Control	70h 01h	00h 00h
Hand-Free Mode Decode Aiming Control	70h 02h	00h 00h
Aiming Control	70h 03h	00h 00h
Delay Aiming Timeout	70h 04h	00h 00h
Presentation Background Lighting	70h 05h	00h 00h
Center Alignment	70h 06h	00h 00h
Mobile Phone Capture	70h 07h	00h 00h
Unique Barcode Reporting	70h 08h	00h 00h

Reply TS Operation (TS)

Descriptions

Reply the desired one or more parameters of the Operation Settings for Tethered Scanner
Reply TS Operation is sent by the device in response to the Get TS Operation command. It sends the values for all the desired parameters requested in the Get TS Operation command.
Available for F, L & A series

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	**0Ah 00h 00h**	00h	Variable	See Below	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	Variable	1 Byte	1 Byte

Parameter(s)						
First Parameter			.....	Last Parameter		
PID	Size	Options	.....	PID	Size	Options
2 Bytes	2 Bytes	Variable	.....	2 Bytes	2 Bytes	Variable
See Next Page						

. Host Requirements

Since Reply TS Operation is a device-to-host message, there is no response for this message.

. Parameter(s) Field

Set TS Operation can change multiple parameters at one time, so it takes compound parameters.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

”Opcode” XOR “Status” XOR “Length” XOR “Parameter(s)”

. Size

Total size (bytes) of the Options field

Parameter(s)

< Table 6-1-3 > Reply TS Operation Parameter(s) Field (To be continued)

Parameter / PID / Size	Options		Descriptions	
Presentation Control **PID : 00h 01h** Size : 00h 01h (1 Byte)	- 01h - 02h - 08h		Force mode Presentation mode * Flash mode (See Notes)	
Presentation Auto-sense **PID : 00h 02h** Size : 00h 01h (1 Byte)	- 00h - 01h		Disable * Enable	
Presentation Sensitivity **PID : 00h 03h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h - 03h	- 04h - 05h - 06h	Level 1 Level 2 Level 3 Level 4	Level 5 * Level 6 Level 7
Reread Delay **PID : 00h 04h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h - 03h - 04h - 05h		Disable Immediate time-out duration * Short time-out duration Medium time-out duration Long time out-duration Force Verification	
Flash Duty Cycle **PID : 00h 05h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h - 03h		1/2 duty cycle * (See Notes) 2/3 duty cycle 3/4 duty cycle 4/5 duty cycle	
Good Read Delay **PID : 00h 06h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h - 03h	- 04h - 05h - 06h	None* 200 ms 500 ms 1 s	1.5 s 2 s 3 s
Light Source On Time **PID : 00h 07h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h - 03h		Short (about 2 s) * Medium (about 3~4 s) Long (about 5~6 s) Extremely Long (about 7~8 s)	
Hands Free Time-out **PID : 00h 08h** Size : 00h 01h (1 Byte)	- 00h - 06h - 0Ah	- 0Eh - 12h	Disable Short * Medium	Long Extremely long
Time Delay To Low Power Mode **PID : 00h 09h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h	- 03h - 04h - 05h	1 s 3 s 5 s	7 s 9 s 0 s (Immediately)*

. ***Notes***

Flash mode is not available for A Series.

Parameter(s)

< Table 6-1-3 > Reply TS Operation Parameter(s) Field (Continued)

Parameter / PID / Size	Options		Descriptions	
Trigger Control(F460/468 only) **PID : 00h 0Ah** Size : 00h 01h (2 Bytes)	- 00h - 01h - 02h		Enable left trigger, disable right trigger Enable right trigger, disable left trigger Enable left and right trigger *	
Scan Rate Control **PID : 00h 0Bh** Size : 00h 01h (1 Byte)	- 00h - 01h		Dynamic * Fixed	
Buzzer Tone Adjust **PID : 01h 00h** Size : 00h 02h (2 Bytes)	**1st~2nd Byte** - 00h 00h - 01h 01h - 01h 02h - 01h 03h - 01h 04h		Mute Low Medium * High Extremely High	
Power on beep **PID : 01h 01h** Size : 00h 01h (1 Byte)	- 00h - 01h		Enable Disable	
Power on Indication **PID : 01h 02h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h		LED off LED steady on * LED flash	
Vibrator **PID : 01h 03h** Size : 00h 01h (1 Byte)	- 00h - 01h		Disable Enable *	
Good Read Duration **PID : 01h 04h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h	- 03h - 04h	Short Medium * Long	Extremely long Extremely short
Good Read Indicator **PID : 01h 05h** Size : 00h 01h (1 Byte)	- 00h - 01h		(See Notes) Disable Enable *	
1D Barcode Inverse Reading **PID : 02h 00h** Size : 00h 01h (1 Byte)	- 00h - 01h		Disable * Enable	
Dollar Sign Control **PID : 02h 01h** Size : 00h 01h (1 Byte)	- 00h - 80h - A2h	- A3h - A5h	Output as “$” * Output as “€“ Output as “¢“	Output as “£“ Output as “¥”
Redundancy **PID : 02h 02h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h	- 03h - 04h - 05h	None 1 time * 2 times	3 times 4 times 5 times

. ***Notes***

Good Read Indicator: If enabled, the Green LED flashes once after a good decode.

Parameter(s)

< Table 6-1-3 > Reply TS Operation Parameter(s) Field (Continued)

Parameter / PID / Size	Options		Descriptions	
Data Transmission Packet **PID : 02h 04h** Size : 00h 01h (1 Byte)	- 00h - 01h		Disable * Enable	
UPC/EAN Security Level **PID : 02h 06h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h		Level 0 Level 1 * Level 2	
Supplement Scan Voting **PID : 02h 08h** Size : 00h 01h (1 Byte)	- 00h - 06h - 08h - 0Ah - 0Ch - 0Eh - 10h	- 12h - 14h - 16h - 18h - 1Ah - 1Ch - 1Eh	None Level 1 Level 2 Level 3 * Level 4 Level 5 Level 6	Level 7 Level 8 Level 9 Level 10 Level 11 Level 12 Level 13
Laser Aiming Control **PID : 02h 09h** Size : 00h 01h (1 Byte)	- 00h - 01h		(See Notes) Disable Enable *	
LED Illumination **PID : 02h 0Bh** Size : 00h 01h (1 Byte)	- 00h - 01h		(See Notes) Always on Intelligent Scanning *	
Illumination Delay Duration **PID : 02h 0Ch** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h - 03h - 04h		(See Notes) 100ms 200ms 300ms 400ms 500ms	
Operation Mode **(Tethered Scanner)** **PID : 10h 00h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h - 04h - 05h - 06h - 07h - 08h - 09h		Trigger mode (External triggering) * Force mode (Continued power on) Presentation mode (Auto detection) Level mode (Auto power off) Diagnostic mode (Test reading) Alternative mode (Periodic power off) Toggle mode (Repeat reading) Flash mode (Pulse driven reading) Low Power mode (Low Power triggering)	

. ***Notes***

1. **LED Illumination, Illumination Delay Duration** are only available for L680, L688, L780, L788
2. **Laser Aiming Control** is only available for L688, L788

Parameter(s)

< Table 6-1-3 > Reply TS Operation Parameter(s) Field (Continued)

Parameter / PID / Size	Options	Descriptions
Operation Mode (Tethered A Series) **PID : 70h 00h** Size : 00h 03h (3 Bytes)	- 00h 01h 01h - 01h 01h 01h - 02h 01h 01h - 04h 01h 00h - 05h 01h 01h - 06h 01h 00h - 07h 01h 00h - 09h 01h 01h - 0Dh 01h 01h	Trigger mode * Force mode Presentation mode Level mode Diagnostic mode Alternative mode Toggle mode Low Power mode Multiple mode
Hand-Held Mode Illumination & Aiming Control **PID : 70h 01h** Size : 00h 01h (1 Byte)	**Bit 0** - 0 - 1 **Bit 1** - 0 - 1	**Hand-Held Decode Aiming Control** Disable Enable * **Hand-Held Illumination Control** Disable Enable *
Hand-Free Mode Decode Aiming Control **PID : 70h 02h** Size : 00h 01h (1 Byte)	- 02h - 03h	Disable Enable *
Aiming Control **PID : 70h 03h** Size : 00h 02h (2 Bytes)	- 00h 00h - 01h 00h - 00h 03h	Regular Aiming Intelligent Aiming * Delay Aiming Control
Delay Aiming Timeout Control **PID : 70h 04h** Size : 00h 01h (1 Byte)	- 02h - 04h - 08h - 0Ah - 0Fh - 14h - 1Eh - 28h	200ms 400ms * 800ms 1000ms 1500ms 2000ms 3000ms 4000ms
Presentation Background Lighting **PID : 70h 05h** Size : 00h 02h (2 Bytes)	- 00h 00h - 00h FFh	LEDs Off LEDs On *
Center Alignment **PID : 70h 06h** Size : 00h 02h (2 Bytes)	**1st Byte** - 00h - 01h **2nd Byte** - 00h - 01h	**Hand-Held Mode** Disable * Enable **Hand-Free Mode** Disable * Enable

Parameter(s)

< Table 6-1-3 > Reply TS Operation Parameter(s) Field (Continued)

Parameter / PID / Size	Options	Descriptions
Mobile Phone Capture **PID : 70h 07h** Size : 00h 01h (1 Byte)	 - 00h - 01h	 Disable * Enable
Unique Barcode Reporting **PID : 70h 08h** Size : 00h 01h (1 Byte)	 - 00h - 01h	 Disable * Enable

Set SE Operation (SE)

Descriptions

Change the desired one or more parameters of the Operation Settings for Scan Engine
Available for SE380, SE390 & SE480 series

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	88h 00h 00h	00h	Variable	See Below	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	Variable	1 Byte	1 Byte

Parameter(s)						
First Parameter			.....	Last Parameter		
PID	Size	Options	.....	PID	Size	Options
2 Bytes	2 Bytes	Variable	.....	2 Bytes	2 Bytes	Variable
See Next Page						

. Host Requirements

If the device successfully received the above command issued by the host, a "**Device ACK**" will send to the host right after the device performed the action. Otherwise, a "**Device NAK**" will be sent to host to issue a command error. However, if the host can not receive any response from the device within the **user preset time-out duration**, please resend the above command.

. Parameter(s) Field

Set SE Operation can change multiple parameters at one time, so it takes compound parameters.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

"Opcode" XOR "Status" XOR "Length" XOR "Parameter(s)"

. Size

Total size (bytes) of the Options field

Parameter(s)

< Table 6-2-1 > Set SE Operation Parameter(s) Field (To be continued)

Parameter / PID / Size	Options		Descriptions	
Presentation Sensitivity **PID : 00h 03h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h - 03h	- 04h - 05h - 06h	Level 1 Level 2 Level 3 Level 4	Level 5 * Level 6 Level 7
Reread Delay **PID : 00h 04h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h - 03h - 04h - 05h		Disable Immediate time-out duration * Short time-out duration Medium time-out duration Long time out-duration Force Verification	
Good Read Delay **PID : 00h 06h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h - 03h	- 04h - 05h - 06h	None* 200 ms 500 ms 1 s	1.5 s 2 s 3 s
Scan Input Time-out **PID : 00h 07h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h - 03h - 04h - 05h	- 06h - 07h - 08h - XXh	100ms 200ms 300ms 400ms 500ms 600ms	700ms 800ms 900ms * User-defined 1-99 s: XXh = desired seconds(h) + 80h
Hands Free Time-out **PID : 00h 08h** Size : 00h 01h (1 Byte)	- 00h - 06h - 0Ah	- 0Eh - 12h	Disable Short * Medium	Long Extremely long
Time Delay To Low Power Mode **PID : 00h 09h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h	- 03h - 04h - 05h	1 s 3 s 5 s	7 s 9 s 0 s (Immediately)*
Scan Rate Control **PID : 00h 0Bh** Size : 00h 01h (1 Byte)	- 00h - 01h		Dynamic * Fixed	
Buzzer Tone Adjust **PID : 01h 00h** Size : 00h 02h (2 Bytes)	**1st~2nd Byte** - 00h 00h - 01h 01h - 01h 02h - 01h 03h - 01h 04h		Mute Low Medium * High Extremely High	
Power on beep **PID : 01h 01h** Size : 00h 01h (1 Byte)	- 00h - 01h		Enable (SE380/SE388-9 *) Disable (SE380/SE388-0, SE380/SE388-1 *)	

Parameter(s)

< Table 6-2-1 > Set SE Operation Parameter(s) Field (Continued)

Parameter / PID / Size	Options		Descriptions	
Good Read Duration **PID : 01h 04h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h	- 03h - 04h	Short Medium * Long	Extremely long Extremely short
Good Read Indicator **PID : 01h 05h** Size : 00h 01h (1 Byte)	- 00h - 01h		Disable(SE380-0,SE380-1,SE390-0,SE390-1, SE480-0, SE480-1*) Enable(SE380-9,SE390-9, SE480-9 *)	
1D Barcode Inverse Reading **PID : 02h 00h** Size : 00h 01h (1 Byte)	- 00h - 01h		Disable * Enable	
Dollar Sign Control **PID : 02h 01h** Size : 00h 01h (1 Byte)	- 00h - 80h - A2h	- A3h - A5h	Output as “$” * Output as “€“ Output as “¢“	Output as “£“ Output as “¥”
Redundancy **PID : 02h 02h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h	- 03h - 04h - 05h	None 1 time * 2 times	3 times 4 times 5 times
Data Transmission Packet **PID : 02h 04h** Size : 00h 01h (1 Byte)	- 00h - 01h		Disable * Enable	
UPC/EAN Security Level **PID : 02h 06h** Size : 00h 01h (1 Byte)	- 00h - 01h	- 02h	Level 0 Level 1 *	Level 2
Supplement Scan Voting **PID : 02h 08h** Size : 00h 01h (1 Byte)	- 00h - 06h - 08h - 0Ah - 0Ch - 0Eh - 10h	- 12h - 14h - 16h - 18h - 1Ah - 1Ch - 1Eh	None Level 1 Level 2 Level 3 * Level 4 Level 5 Level 6	Level 7 Level 8 Level 9 Level 10 Level 11 Level 12 Level 13
Operation Mode (Scan Engine) **PID : 30h 00h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h - 04h - 06h - 09h		Trigger mode (External triggering) * Force mode (Continued power on) **(See Notes)** Presentation mode (Auto Detection) Level mode (Auto power off) Alternative mode (Periodic power off) Low Power mode (Low Power triggering)	
I/O Active State **PID : 30h 01h** Size : 00h 01h (1 Byte)	- 00h - 01h		High Low *	

. ***Notes***

Force mode is not available for SE390 and SE480 series.

Parameter(s)

< Table 6-2-1 > Set SE Operation Parameter(s) Field (Continued)

Parameter / PID / Size	Options	Descriptions
Laser Aiming Control **PID : 02h 09h** Size : 00h 01h (1 Byte)	 - 00h - 01h	 Disable Enable *
LED Illumination **PID : 02h 0Bh** Size : 00h 01h (1 Byte)	 - 00h - 01h	**(See Notes)** Always on Intelligent Scanning *
Illumination Delay Duration **PID : 02h 0Ch** Size : 00h 01h (1 Byte)	 - 00h - 01h - 02h - 03h - 04h	**(See Notes)** 100ms 200ms 300ms 400ms 500ms

. ***Warning***

1. LED Illumination, Illumination Delay Duration are only available for SE390 and SE480 series.
2. Laser Aiming Control is only available for SE398 and SE488

Get SE Operation (SE)

Descriptions

Request the desired one or more parameters of the Operation Settings for Scan Engine
Available for SE380, SE390 & SE480 series

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	C9h 00h 00h	00h	Variable	See Below	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	Variable	1 Byte	1 Byte

Parameter(s)				
First Parameter		.....	Last Parameter	
PID	Size	.....	PID	Size
2 Bytes	2 Bytes	.....	2 Bytes	2 Bytes
See Next Page				

. Host Requirements

If the device successfully received the above command issued by the host, the device will pack all requested parameters into a "**Reply SE Operation**" message string then send to the host. Please refer to the "Reply SE Operation" command for details. Otherwise, a "**Device NAK**" will be sent to host to indicate issue a command error. However, if the host can receive any response from the device within the **user preset time-out duration**, please resend the above command.

. Parameter(s) Field

Get SE Operation can request multiple parameters at one time, so it takes compound parameters.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

"Opcode" XOR "Status" XOR "Length" XOR "Parameter(s)"

. Size

Total size (bytes) of the Options field

Parameter(s)

< Table 6-2-2 > Get SE Operation Parameter(s) Field

Parameter	PID	Size
Presentation Sensitivity	00h 03h	00h 00h
Reread Delay	00h 04h	00h 00h
Good Read Delay	00h 06h	00h 00h
Scan Input Time-out	00h 07h	00h 00h
Hands Free Time-out	00h 08h	00h 00h
Time Delay To Low Power Mode	00h 09h	00h 00h
Scan Rate Control	00h 0Bh	00h 00h
Buzzer Tone Adjust	01h 00h	00h 00h
Power on beep	01h 01h	00h 00h
Good Read Duration	01h 04h	00h 00h
Good Read Indicator	01h 05h	00h 00h
1D Barcode Inverse Reading	02h 00h	00h 00h
Dollar Sign Control	02h 01h	00h 00h
Redundancy	02h 02h	00h 00h
Data Transmission Packet	02h 04h	00h 00h
UPC/EAN Security Level	02h 06h	00h 00h
Supplement Scan Voting	02h 08h	00h 00h
Operation Mode (Scan Engine)	30h 00h	00h 00h
I/O Active State	30h 01h	00h 00h
Laser Aiming Control	02h 09h	00h 00h
LED Illumination	02h 0Bh	00h 00h
Illumination Delay Duration	02h 0Ch	00h 00h

Reply SE Operation (SE)

Descriptions

Reply the desired one or more parameters of the Operation Settings for Scan Engine
Reply SE Operation is sent by the device in response to the Get SE Operation command. It sends the values for all the desired parameters requested in the Get SE Operation command.
Available for SE380, SE390 & SE480 series

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	0Ah 00h 00h	00h	Variable	See Below	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	Variable	1 Byte	1 Byte

Parameter(s)						
First Parameter			.....	Last Parameter		
PID	Size	Options	.....	PID	Size	Options
2 Bytes	2 Bytes	Variable	.....	2 Bytes	2 Bytes	Variable
See Next Page						

. Host Requirements

Since Reply SE Operation is a device-to-host message, there is no response for this message.

. Parameter(s) Field

Set SE Operation can change multiple parameters at one time, so it takes compound parameters.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

”Opcode” XOR “Status” XOR “Length” XOR “Parameter(s)”

. Size

Total size (bytes) of the Options field

Parameter(s)

< Table 6-2-3 > Reply SE Operation Parameter(s) Field (To be continued)

Parameter / PID / Size	Options		Descriptions	
Presentation Sensitivity **PID : 00h 03h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h - 03h	- 04h - 05h - 06h	Level 1 Level 2 Level 3 Level 4	Level 5 * Level 6 Level 7
Reread Delay **PID : 00h 04h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h - 03h - 04h - 05h		Disable Immediate time-out duration * Short time-out duration Medium time-out duration Long time out-duration Force Verification	
Good Read Delay **PID : 00h 06h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h - 03h	- 04h - 05h - 06h	None* 200 ms 500 ms 1 s	1.5 s 2 s 3 s
Scan Input Time-out **PID : 00h 07h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h - 03h - 04h - 05h	- 06h - 07h - 08h - XXh	100ms 200ms 300ms 400ms 500ms 600ms	700ms 800ms 900ms * User-defined 1-99 s: XXh = desired seconds(h) + 80h
Hands Free Time-out **PID : 00h 08h** Size : 00h 01h (1 Byte)	- 00h - 06h - 0Ah	- 0Eh - 12h	Disable Short * Medium	Long Extremely long
Time Delay To Low Power Mode **PID : 00h 09h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h	- 03h - 04h - 05h	1 s 3 s 5 s	7 s 9 s 0 s (Immediately)*
Scan Rate Control **PID : 00h 0Bh** Size : 00h 01h (1 Byte)	- 00h - 01h		Dynamic * Fixed	
Buzzer Tone Adjust **PID : 01h 00h** Size : 00h 02h (2 Bytes)	**1st~2nd Byte** - 00h 00h - 01h 01h - 01h 02h - 01h 03h - 01h 04h		Mute Low Medium * High Extremely High	

Parameter(s)

< Table 6-2-3 > Reply SE Operation Parameter(s) Field (Continued)

Parameter / PID / Size	Options		Descriptions	
Power on beep **PID : 01h 01h** Size : 00h 01h (1 Byte)	- 00h - 01h		Enable (SE380/SE388-9 *) Disable (SE380/SE388-0, SE380/SE388-1 *)	
Good Read Duration **PID : 01h 04h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h	- 03h - 04h	Short Medium * Long	Extremely long Extremely short
Good Read Indicator **PID : 01h 05h** Size : 00h 01h (1 Byte)	- 00h - 01h		Disable(SE380-0,SE380-1,SE390-0,SE390-1, SE480-0, SE480-1*) Enable(SE380-9,SE390-9, SE480-9 *)	
1D Barcode Inverse Reading **PID : 02h 00h** Size : 00h 01h (1 Byte)	- 00h - 01h		Disable * Enable	
Dollar Sign Control **PID : 02h 01h** Size : 00h 01h (1 Byte)	- 00h - 80h - A2h	- A3h - A5h	Output as “$” * Output as “€“ Output as “¢“	Output as “£“ Output as “¥”
Redundancy **PID : 02h 02h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h	- 03h - 04h - 05h	None 1 time * 2 times	3 times 4 times 5 times
Data Transmission Packet **PID : 02h 04h** Size : 00h 01h (1 Byte)	- 00h - 01h		Disable * Enable	
UPC/EAN Security Level **PID : 02h 06h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h		Level 0 Level 1 * Level 2	
Supplement Scan Voting **PID : 02h 08h** Size : 00h 01h (1 Byte)	- 00h - 06h - 08h - 0Ah - 0Ch - 0Eh - 10h	- 12h - 14h - 16h - 18h - 1Ah - 1Ch - 1Eh	None Level 1 Level 2 Level 3 * Level 4 Level 5 Level 6	Level 7 Level 8 Level 9 Level 10 Level 11 Level 12 Level 13
Operation Mode (Scan Engine) **PID : 30h 00h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h - 04h - 06h - 09h		Trigger mode (External triggering) * Force mode (Continued power on) Presentation mode (Auto Detection) Level mode (Auto power off) Alternative mode (Periodic power off) Low Power mode (Low Power triggering)	
I/O Active State **PID : 30h 01h** Size : 00h 01h (1 Byte)	- 00h - 01h		High Low *	

Parameter(s)

< Table 6-2-3 > Reply SE Operation Parameter(s) Field (Continued)

Parameter / PID / Size	Options	Descriptions
Laser Aiming Control **PID : 02h 09h** Size : 00h 01h (1 Byte)	 - 00h - 01h	 Disable Enable *
LED Illumination **PID : 02h 0Bh** Size : 00h 01h (1 Byte)	 - 00h - 01h	 Always on Intelligent Scanning *
Illumination Delay Duration **PID : 02h 0Ch** Size : 00h 01h (1 Byte)	 - 00h - 01h - 02h - 03h - 04h	 100ms 200ms 300ms 400ms 500ms

. ***Warning***

1. LED Illumination, Illumination Delay Duration are only available for SE390 and SE480 series.
2. Laser Aiming Control is only available for SE398 and SE488

Set FS Operation (FS)

Descriptions

Change the desired one or more parameters of the Operation Settings for Fixed Mount and Scan Module

Available for FM480, FA470, SM380 & SM5700 series

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	88h 00h 00h	00h	Variable	See Below	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	Variable	1 Byte	1 Byte

Parameter(s)						
First Parameter			.....	Last Parameter		
PID	Size	Options	.....	PID	Size	Options
2 Bytes	2 Bytes	Variable	.....	2 Bytes	2 Bytes	Variable
See Next Page						

. Host Requirements

If the device successfully received the above command issued by the host, a "**Device ACK**" will send to the host right after the device performed the action. Otherwise, a "**Device NAK**" will be sent to host to issue a command error. However, if the host can not receive any response from the device within the **user preset time-out duration**, please resend the above command.

. Parameter(s) Field

Set FS Operation can change multiple parameters at one time, so it takes compound parameters.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

"Opcode" XOR "Status" XOR "Length" XOR "Parameter(s)"

. Size

Total size (bytes) of the Options field

Parameter(s)

< Table 6-3-1 > Set FS Operation Parameter(s) Field (To be continued)

Parameter / PID / Size	Options		Descriptions	
Presentation Sensitivity **PID : 00h 03h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h - 03h	- 04h - 05h - 06h	Level 1 Level 2 Level 3 Level 4	Level 5 * Level 6 Level 7
Reread Delay **PID : 00h 04h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h - 03h - 04h - 05h		Disable Immediate time-out duration * Short time-out duration Medium time-out duration Long time out-duration Force Verification	
Good Read Delay **PID : 00h 06h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h - 03h	- 04h - 05h - 06h	None* 200 ms 500 ms 1 s	1.5 s 2 s 3 s
Hands Free Time-out **PID : 00h 08h** Size : 00h 01h (1 Byte)	- 00h - 06h - 0Ah	- 0Eh - 12h	Disable Short * Medium	Long Extremely long
Scan Rate Control **PID : 00h 0Bh** Size : 00h 01h (1 Byte)	- 00h - 01h		(See Notes) Dynamic * Fixed	
Buzzer Tone Adjust **PID : 01h 00h** Size : 00h 02h (2 Bytes)	**1st~2nd Byte** - 00h 00h - 01h 01h - 01h 02h - 01h 03h - 01h 04h		Mute Low Medium * High Extremely High	
Power on beep **PID : 01h 01h** Size : 00h 01h (1 Byte)	- 00h - 01h		Enable * Disable	
Power on Indication **PID : 01h 02h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h		LED Off LED On * LED Flash	
Good Read Duration **PID : 01h 04h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h	- 03h - 04h	Short Medium * Long	Extremely long Extremely short

. Notes

Scan Rate Control is available for FM480 & SM380 only.

Parameter(s)

< Table 6-3-1 > Set FS Operation Parameter(s) Field (Continued)

Parameter / PID / Size	Options		Descriptions	
1D Barcode Inverse Reading **PID : 02h 00h** Size : 00h 01h (1 Byte)	- 00h - 01h		Disable * Enable	
Dollar Sign Control **PID : 02h 01h** Size : 00h 01h (1 Byte)	- 00h - 80h - A2h	- A3h - A5h	Output as "$" * Output as "€" Output as "¢"	Output as "£" Output as "¥"
Redundancy **PID : 02h 02h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h	- 03h - 04h - 05h	None 1 time * 2 times	3 times 4 times 5 times
Data Transmission Packet **PID : 02h 04h** Size : 00h 01h (1 Byte)	- 00h - 01h		Disable * Enable	
UPC/EAN Security Level **PID : 02h 06h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h		Level 0 Level 1 * Level 2	
Supplement Scan Voting **PID : 02h 08h** Size : 00h 01h (1 Byte)	- 00h - 06h - 08h - 0Ah - 0Ch - 0Eh - 10h	- 12h - 14h - 16h - 18h - 1Ah - 1Ch - 1Eh	None Level 1 Level 2 Level 3 * Level 4 Level 5 Level 6	Level 7 Level 8 Level 9 Level 10 Level 11 Level 12 Level 13
Operation Mode **(FM480 & SM380 series)** **PID : 20h 00h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h - 04h - 06h		Trigger mode (External triggering) * Force mode (Continued power on) Presentation mode (Auto Detection) Level mode (Auto power off) Alternative mode (Periodic power off)	
NG Message Output **PID : 20h 04h** Size : 00h 10h (16 Bytes)	**1st~16th Byte** - 00h 00h…00h - 02h 4Eh 47h 00h…00h - XXh XXh...XXh		Disable * (Totally sixteen "00h"s) Output "NG" (Totally thirteen "00h"s) (See Notes under the table) Output User-defined message	

. ***Notes***

NG Message Output carries 16 bytes in the Options Field. The 1st byte which indicates the length of the message is followed by the message characters. If the desired ASCII characters for setting the message are shorter than 15 bytes, the rest bytes should be set to **00h**. For example, to output "BAD", the 1st byte is 03h (length of "BAD"), the 2nd to 4th byte is 42h 41h 44h (ASCII value of "BAD"), and from the 5th byte to the 16th byte are all 00h.

Parameter(s)

< Table 6-3-1 > Set FS Operation Parameter(s) Field (Continued)

Parameter / PID / Size	Options	Descriptions
OK/NG Active Signal Control **PID : 20h 01h** Size : 00h 03h (3 Bytes)	**1st Byte** - 00h - 01h - 02h - 03h **2nd Byte** - 00h - 01h - 02h - 03h **3rd Byte** - 01h - 02h - 03h - 04h - 05h - 06h - 07h - 08h - 09h - 0Ah - XXh	**OK/NG Active Signal Output** Disable Enable NG only Enable OK only Enable* **OK/NG Active Signal State** OK Low/ NG Low* OK Low/ NG High OK High/ NG Low OK High/ NG High **OK/NG Active Duration** 10ms 20ms 30ms 40ms 50ms 60ms 70ms 80ms 90ms 100ms * User-defined (See Notes under the table)
OK/NG Beep Control **PID : 20h 02h** Size : 00h 02h (2 Bytes)	**1st~2nd Byte** - 00h 00h - 01h 01h - 00h 01h - 01h 00h	 Disable Enable * Enable OK only Enable NG only
Scan Input Time-out **PID : 20h 03h** Size : 00h 01h (1 Byte)	 - 00h - 01h - 02h - 03h - 04h - 05h - 06h - 07h - 08h - XXh	 100ms 200ms 300ms 400ms 500ms 600ms 700ms 800ms 900ms* User-defined (See Notes under the table)

. Notes

1. **OK/ NG Active Duration** can be set to User-defined 1~99(×5) milliseconds. XXh = desired milliseconds (h) + 80h. For example, if you want to set it to 99 (×5) ms (the actual value is 495 ms), you need to convert 99 from Dec to Hex, that is, 63h. Then, XXh = 63h + 80h = E3h.
2. **Scan Input Time-out** can be set to User-defined 1~99 seconds. XXh =desired seconds (h) + 80h. For example, if you want to set this parameter to 99 seconds, you need to convert 99 from Dec to Hex, that is, 63h. Then, XXh = 63h + 80h = E3h.

Parameter(s)

< Table 6-3-1 > Set FS Operation Parameter(s) Field (Continued)

Parameter / PID / Size	Options	Descriptions
Operation Mode (FA470 & SM5700 series) **PID : 70h 00h** Size : 00h 03h (3 Bytes)	- 00h 01h 01h - 01h 01h 01h - 02h 01h 01h - 04h 01h 00h - 06h 01h 00h	(See Notes) Trigger mode * Force mode Presentation mode Level mode Alternative mode
Hand-Held Mode Illumination & Aiming Control **PID : 70h 01h** Size : 00h 01h (1 Byte)	**Bit 0** - 0 - 1 **Bit 1** - 0 - 1	**Hand-Held Decode Aiming Control** Disable Enable * **Hand-Held Illumination Control** Disable Enable *
Hand-Free Mode Decode Aiming Control **PID : 70h 02h** Size : 00h 01h (1 Byte)	- 02h - 03h	(See Notes) Disable Enable *
Aiming Control **PID : 70h 03h** Size : 00h 02h (2 Bytes)	- 00h 00h - 01h 00h - 00h 03h	(See Notes) Regular Aiming Intelligent Aiming * Delay Aiming Control
Delay Aiming Timeout Control **PID : 70h 04h** Size : 00h 01h (1 Byte)	- 02h - 04h - 08h - 0Ah - 0Fh - 14h - 1Eh - 28h	(See Notes) 200ms 400ms * 800ms 1000ms 1500ms 2000ms 3000ms 4000ms
Presentation Background Lighting **PID : 70h 05h** Size : 00h 02h (2 Bytes)	- 00h 00h - 00h FFh	(See Notes) LEDs Off LEDs On *
Center Alignment **PID : 70h 06h** Size : 00h 02h (2 Bytes)	**1st Byte** - 00h - 01h **2nd Byte** - 00h - 01h	(See Notes) **Hand-Held Mode** Disable * Enable **Hand-Free Mode** Disable * Enable
Mobile Phone Capture **PID : 70h 07h** Size : 00h 01h (1 Byte)	- 00h - 01h	(See Notes) Disable * Enable

. Notes

Hand-Held Mode Illumination & Aiming Control, Motion Control, Hand-Free Mode Decode Aiming Control, Aiming Control, Delay Aiming Timeout, Presentation Background Lighting, Center Alignment and Mobile Phone Capture are available for FA470 & SM5700 only.

Parameter(s)

< Table 6-3-1 > Set FS Operation Parameter(s) Field (Continued)

Parameter / PID / Size	Options	Descriptions
Motion Control **PID : 03h 00h** Size: 00h 01h (1 Byte)	 - 00h - 01h - 02h - 03h	(See Notes) Disable* Level 1 Level 2 Level 3

. ***Notes***

Motion Control is available for FA470 & SM5700 only.

Get FS Operation (FS)

Descriptions

Request the desired one or more parameters of the Operation Settings for Fixed Mount and Scan Module

Available for FM480, FA470, SM380 & SM5700 series

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	C9h 00h 00h	00h	Variable	See Below	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	Variable	1 Byte	1 Byte

Parameter(s)				
First Parameter		.....	Last Parameter	
PID	Size	.....	PID	Size
2 Bytes	2 Bytes	.....	2 Bytes	2 Bytes
See Next Page				

. Host Requirements

If the device successfully received the above command issued by the host, the device will pack all requested parameters into a "**Reply FS Operation**" message string then send to the host. Please refer to the "Reply FS Operation" command for details. Otherwise, a "**Device NAK**" will be sent to host to indicate issue a command error. However, if the host can receive any response from the device within the **user preset time-out duration**, please resend the above command.

. Parameter(s) Field

Get FS Operation can request multiple parameters at one time, so it takes compound parameters.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

"Opcode" XOR "Status" XOR "Length" XOR "Parameter(s)"

. Size

Total size (bytes) of the Options field

Parameter(s)

< Table 6-3-2 > Get FS Operation Parameter(s) Field

Parameter	PID	Size
Presentation Sensitivity	00h 03h	00h 00h
Reread Delay	00h 04h	00h 00h
Good Read Delay	00h 06h	00h 00h
Hands Free Time-out	00h 08h	00h 00h
Scan Rate Control	00h 0Bh	00h 00h
Buzzer Tone Adjust	01h 00h	00h 00h
Power on beep	01h 01h	00h 00h
Power on Indication	01h 02h	00h 00h
Good Read Duration	01h 04h	00h 00h
1D Barcode Inverse Reading	02h 00h	00h 00h
Dollar Sign Control	02h 01h	00h 00h
Redundancy	02h 02h	00h 00h
Data Transmission Packet	02h 04h	00h 00h
UPC/EAN Security Level	02h 06h	00h 00h
Supplement Scan Voting	02h 08h	00h 00h
Operation Mode(FM480 & SM380 series)	20h 00h	00h 00h
NG Message Output	20h 04h	00h 00h
OK/NG Active Signal Control	20h 01h	00h 00h
OK/NG Beep Control	20h 02h	00h 00h
Scan Input Time-out	20h 03h	00h 00h
Operation Mode (FA470 & SM5700 series)	70h 00h	00h 00h
Hand-Held Mode Illumination & Aiming Control	70h 01h	00h 00h
Hand-Free Mode Decode Aiming Control	70h 02h	00h 00h
Aiming Control	70h 03h	00h 00h
Delay Aiming Timeout	70h 04h	00h 00h
Presentation Background Lighting	70h 05h	00h 00h
Center Alignment	70h 06h	00h 00h
Mobile Phone Capture	70h 07h	00h 00h
Motion Control	03h 00h	00h 00h

Reply FS Operation (FS)

Descriptions

Reply the desired one or more parameters of the Operation Settings for Fixed Mount and Scan Module

Reply FS Operation is sent by the device in response to the Get FS Operation command. It sends the values for all the desired parameters requested in the Get FS Operation command.

Available for FM480, FA470, SM380 & SM5700 series

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	0Ah 00h 00h	00h	Variable	See Below	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	Variable	1 Byte	1 Byte

Parameter(s)						
First Parameter			.....	Last Parameter		
PID	Size	Options	.....	PID	Size	Options
2 Bytes	2 Bytes	Variable	.....	2 Bytes	2 Bytes	Variable
See Next Page						

. Host Requirements

Since Reply FS Operation is a device-to-host message, there is no response for this message.

. Parameter(s) Field

Set FS Operation can change multiple parameters at one time, so it takes compound parameters.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

”Opcode” XOR “Status” XOR “Length” XOR “Parameter(s)”

. Size

Total size (bytes) of the Options field

Parameter(s)

< Table 6-3-3 > Reply FS Operation Parameter(s) Field (To be continued)

Parameter / PID / Size	Options		Descriptions	
Presentation Sensitivity **PID : 00h 03h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h - 03h	- 04h - 05h - 06h	Level 1 Level 2 Level 3 Level 4	Level 5 * Level 6 Level 7
Reread Delay **PID : 00h 04h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h - 03h - 04h - 05h		Disable Immediate time-out duration * Short time-out duration Medium time-out duration Long time out-duration Force Verification	
Good Read Delay **PID : 00h 06h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h - 03h	- 04h - 05h - 06h	None* 200 ms 500 ms 1 s	1.5 s 2 s 3 s
Hands Free Time-out **PID : 00h 08h** Size : 00h 01h (1 Byte)	- 00h - 06h - 0Ah	- 0Eh - 12h	Disable Short * Medium	Long Extremely long
Scan Rate Control **PID : 00h 0Bh** Size : 00h 01h (1 Byte)	- 00h - 01h		(See Notes) Dynamic * Fixed	
Buzzer Tone Adjust **PID : 01h 00h** Size : 00h 02h (2 Bytes)	**1st~2nd Byte** - 00h 00h - 01h 01h - 01h 02h - 01h 03h - 01h 04h		Mute Low Medium * High Extremely High	
Power on beep **PID : 01h 01h** Size : 00h 01h (1 Byte)	- 00h - 01h		Enable * Disable	
Power on Indication **PID : 01h 02h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h		LED Off LED On * LED Flash	
Good Read Duration **PID : 01h 04h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h	- 03h - 04h	Short Medium * Long	Extremely long Extremely short

. Notes

Scan Rate Control is available for FM480 & SM380 only.

Parameter(s)

< Table 6-3-3 > Reply FS Operation Parameter(s) Field (Continued)

Parameter / PID / Size	Options		Descriptions	
1D Barcode Inverse Reading **PID : 02h 00h** Size : 00h 01h (1 Byte)	- 00h - 01h		Disable * Enable	
Dollar Sign Control **PID : 02h 01h** Size : 00h 01h (1 Byte)	- 00h - 80h - A2h	- A3h - A5h	Output as "$" * Output as "€" Output as "¢"	Output as "£" Output as "¥"
Redundancy **PID : 02h 02h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h	- 03h - 04h - 05h	None 1 time * 2 times	3 times 4 times 5 times
Data Transmission Packet **PID : 02h 04h** Size : 00h 01h (1 Byte)	- 00h - 01h		Disable * Enable	
UPC/EAN Security Level **PID : 02h 06h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h		Level 0 Level 1 * Level 2	
Supplement Scan Voting **PID : 02h 08h** Size : 00h 01h (1 Byte)	- 00h - 06h - 08h - 0Ah - 0Ch - 0Eh - 10h	- 12h - 14h - 16h - 18h - 1Ah - 1Ch - 1Eh	None Level 1 Level 2 Level 3 * Level 4 Level 5 Level 6	Level 7 Level 8 Level 9 Level 10 Level 11 Level 12 Level 13
Operation Mode **(FM480 & SM380 series)** **PID : 20h 00h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h - 04h - 06h		Trigger mode (External triggering) * Force mode (Continued power on) Presentation mode (Auto Detection) Level mode (Auto power off) Alternative mode (Periodic power off)	
NG Message Output **PID : 20h 04h** Size : 00h 10h (16 Bytes)	**1st~16th Byte** - 00h 00h…00h - 02h 4Eh 47h 00h…00h - XXh XXh...XXh		Disable * (Totally sixteen "00h"s) Output "NG" (Totally thirteen "00h"s) (See Notes under the table) Output User-defined message	

. ***Notes***

NG Message Output carries 16 bytes in the Options Field. The 1st byte which indicates the length of the message is followed by the message characters. If the desired ASCII characters for setting the message are shorter than 15 bytes, the rest bytes should be set to **00h**. For example, to output "BAD", the 1st byte is 03h (length of "BAD"), the 2nd to 4th byte is 42h 41h 44h (ASCII value of "BAD"), and from the 5th byte to the 16th byte are all 00h.

Parameter(s)

< Table 6-3-3 > Reply FS Operation Parameter(s) Field (Continued)

Parameter / PID / Size	Options	Descriptions
OK/NG Active Signal Control **PID : 20h 01h** Size : 00h 03h (3 Bytes)	**1st Byte** - 00h - 01h - 02h - 03h **2nd Byte** - 00h - 01h - 02h - 03h **3rd Byte** - 01h - 02h - 03h - 04h - 05h - 06h - 07h - 08h - 09h - 0Ah - XXh	**OK/NG Active Signal Output** Disable Enable NG only Enable OK only Enable* **OK/NG Active Signal State** OK Low/ NG Low* OK Low/ NG High OK High/ NG Low OK High/ NG High **OK/NG Active Duration** 10ms 20ms 30ms 40ms 50ms 60ms 70ms 80ms 90ms 100ms * User-defined (See Notes under the table)
OK/NG Beep Control **PID : 20h 02h** Size : 00h 02h (2 Bytes)	**1st~2nd Byte** - 00h 00h - 01h 01h - 00h 01h - 01h 00h	 Disable Enable * Enable OK only Enable NG only
Scan Input Time-out **PID : 20h 03h** Size : 00h 01h (1 Byte)	 - 00h - 01h - 02h - 03h - 04h - 05h - 06h - 07h - 08h - XXh	 100ms 200ms 300ms 400ms 500ms 600ms 700ms 800ms 900ms* User-defined (See Notes under the table)

. ***Notes***

1. **OK/ NG Active Duration** can be set to User-defined 1~99(×5) milliseconds. XXh = desired milliseconds (h) + 80h. For example, if you want to set it to 99 (×5) ms (the actual value is 495 ms), you need to convert 99 from Dec to Hex, that is, 63h. Then, XXh = 63h + 80h = E3h.
2. **Scan Input Time-out** can be set to User-defined 1~99 seconds. XXh =desired seconds (h) + 80h. For example, if you want to set this parameter to 99 seconds, you need to convert 99 from Dec to Hex, that is, 63h. Then, XXh = 63h + 80h = E3h.

Parameter(s)

< Table 6-3-3 > Reply FS Operation Parameter(s) Field (Continued)

Parameter / PID / Size	Options	Descriptions
Operation Mode (FA470 & SM5700 series) **PID : 70h 00h** Size : 00h 03h (3 Bytes)	- 00h 01h 01h - 01h 01h 01h - 02h 01h 01h - 04h 01h 00h - 06h 01h 00h	(See Notes) Trigger mode * Force mode Presentation mode Level mode Alternative mode
Hand-Held Mode Illumination & Aiming Control **PID : 70h 01h** Size : 00h 01h (1 Byte)	**Bit 0** - 0 - 1 **Bit 1** - 0 - 1	**Hand-Held Decode Aiming Control** Disable Enable * **Hand-Held Illumination Control** Disable Enable *
Hand-Free Mode Decode Aiming Control **PID : 70h 02h** Size : 00h 01h (1 Byte)	- 02h - 03h	(See Notes) Disable Enable *
Aiming Control **PID : 70h 03h** Size : 00h 02h (2 Bytes)	- 00h 00h - 01h 00h - 00h 03h	(See Notes) Regular Aiming Intelligent Aiming * Delay Aiming Control
Delay Aiming Timeout Control **PID : 70h 04h** Size : 00h 01h (1 Byte)	- 02h - 04h - 08h - 0Ah - 0Fh - 14h - 1Eh - 28h	(See Notes) 200ms 400ms * 800ms 1000ms 1500ms 2000ms 3000ms 4000ms
Presentation Background Lighting **PID : 70h 05h** Size : 00h 02h (2 Bytes)	- 00h 00h - 00h FFh	(See Notes) LEDs Off LEDs On *
Center Alignment **PID : 70h 06h** Size : 00h 02h (2 Bytes)	**1st Byte** - 00h - 01h **2nd Byte** - 00h - 01h	(See Notes) **Hand-Held Mode** Disable * Enable **Hand-Free Mode** Disable * Enable
Mobile Phone Capture **PID : 70h 07h** Size : 00h 01h (1 Byte)	- 00h - 01h	(See Notes) Disable * Enable

. Notes

Hand-Held Mode Illumination & Aiming Control, Hand-Free Mode Decode Aiming Control, Aiming Control, Delay Aiming Timeout, Presentation Background Lighting, Center Alignment and Mobile Phone Capture are available for FA470 & SM5700 only.

Set BT Operation (BT)

Descriptions

Change the desired one or more parameters of the Operation Settings for Bluetooth Scanner Available for F, L & A series

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	88h 00h 00h	00h	Variable	See Below	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	Variable	1 Byte	1 Byte

Parameter(s)						
First Parameter			.....	Last Parameter		
PID	Size	Options	.....	PID	Size	Options
2 Bytes	2 Bytes	Variable	.....	2 Bytes	2 Bytes	Variable
See Next Page						

. Host Requirements

If the device successfully received the above command issued by the host, a "**Device ACK**" will send to the host right after the device performed the action. Otherwise, a "**Device NAK**" will be sent to host to issue a command error. However, if the host can not receive any response from the device within the **user preset time-out duration**, please resend the above command.

. Parameter(s) Field

Set BT Operation can change multiple parameters at one time, so it takes compound parameters.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

"Opcode" XOR "Status" XOR "Length" XOR "Parameter(s)"

. Size

Total size (bytes) of the Options field

Parameter(s)

< Table 6-4-1 > Set BT Operation Parameter(s) Field (To be continued)

Parameter / PID / Size	Options		Descriptions	
Presentation Auto-sense **PID : 00h 02h** Size : 00h 01h (1 Byte)	- 00h - 01h		Disable * Enable	
Presentation Sensitivity **PID : 00h 03h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h - 03h	- 04h - 05h - 06h	Level 1 Level 2 Level 3 Level 4	Level 5 * Level 6 Level 7
Reread Delay **PID : 00h 04h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h - 03h - 04h - 05h		Disable Immediate time-out duration * Short time-out duration Medium time-out duration Long time out-duration Force Verification	
Good Read Delay **PID : 00h 06h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h - 03h	- 04h - 05h - 06h	None* 200 ms 500 ms 1 s	1.5 s 2 s 3 s
Light Source On Time **PID : 00h 07h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h - 03h		Short (about 2 s) (L & F Series *) Medium (about 3~4 s) Long (about 5~6 s) (A Series *) Extremely Long (about 7~8 s)	
Hands Free Time-out **PID : 00h 08h** Size : 00h 01h (1 Byte)	- 00h - 06h - 0Ah	- 0Eh - 12h	Disable Short * Medium	Long Extremely long
Time Delay To Low Power Mode **PID : 00h 09h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h	- 03h - 04h - 05h	1 s 3 s 5 s	7 s 9 s 0 s (Immediately)*
Scan Rate Control **PID : 00h 0Bh** Size : 00h 01h (1 Byte)	- 00h - 01h		Dynamic * Fixed	
Buzzer Tone Adjust **PID : 01h 00h** Size : 00h 02h (2 Bytes)	**1st~2nd Byte** - 00h 00h - 01h 01h - 01h 02h - 01h 03h - 01h 04h		Mute Low Medium * High Extremely High	
Power on beep **PID : 01h 01h** Size : 00h 01h (1 Byte)	- 00h - 01h		Enable * Disable	

Parameter(s)

< Table 6-4-1 > Set BT Operation Parameter(s) Field (Continued)

Parameter / PID / Size	Options		Descriptions	
Power on Indication **PID : 01h 02h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h		LED Off LED On * LED Flash	
Vibrator **PID : 01h 03h** Size : 00h 01h (1 Byte)	- 00h - 01h		Disable Enable *	
Good Read Duration **PID : 01h 04h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h	- 03h - 04h	Short Medium * Long	Extremely long Extremely short
Good Read Indicator **PID : 01h 05h** Size : 00h 01h (1 Byte)	- 00h - 01h		Disable Enable *	
Beeping Control **PID : 01h 06h** Size : 00h 01h (1 Byte)	**Bit 0** - 0 - 1 **Bit 1** - 0 - 1		**Radio Connection Beep** Enable * Disable **Battery Power Low Beep** Enable * Disable	
1D Barcode Inverse Reading **PID : 02h 00h** Size : 00h 01h (1 Byte)	- 00h - 01h		Disable * Enable	
Dollar Sign Control **PID : 02h 01h** Size : 00h 01h (1 Byte)	- 00h - 80h - A2h	- A3h - A5h	Output as “$” * Output as “€“ Output as “¢“	Output as “£“ Output as “¥”
Redundancy **PID : 02h 02h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h	- 03h - 04h - 05h	None 1 time * 2 times	3 times 4 times 5 times
Data Transmission Packet (PAIR / PICO Mode) **PID : 52h 00h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h - 03h	- 04h - 05h - 06h - 07h	Disable packet * With MAC With ID With MAC and ID	Enable packet MAC packet ID packet MAC and ID packet
Data Transmission Packet (HID/ SPP Mode) **PID : 52h 00h** Size : 00h 01h (1 Byte)	- 00h - 01h		Disable packet * Enable packet	

. ***Warning***

If you are using the SmartCradle to communicate with the Scanner, “**BT Synchronization**” command should be sent to the scanner after the setting of the “**Dollar Sign Control**” and “**Data Transmission Packet**” to sync the Scanner with the SmartCradle, so that the settings will take effect immediately.

Parameter(s)

< Table 6-4-1 > Set BT Operation Parameter(s) Field (Continued)

Parameter / PID / Size	Options		Descriptions	
UPC/EAN Security Level **PID : 02h 06h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h		Level 0 Level 1 * Level 2	
Supplement Scan Voting **PID : 02h 08h** Size : 00h 01h (1 Byte)	- 00h - 06h - 08h - 0Ah - 0Ch - 0Eh - 10h	- 12h - 14h - 16h - 18h - 1Ah - 1Ch - 1Eh	None Level 1 Level 2 Level 3 * Level 4 Level 5 Level 6	Level 7 Level 8 Level 9 Level 10 Level 11 Level 12 Level 13
Operation Mode **(Bluetooth F & L Series)** **PID : 50h 00h** Size : 00h 01h (1 Byte)	- 00h - 02h		Trigger mode (External triggering) * Presentation mode (Auto Detection)	
Batch Scanning Link Control **PID : 51h 00h** Size : 00h 01h (1 Byte)	- 00h - 01h		Radio Disable Radio Enable *	
Stored Data Transmission **PID : 51h 01h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h		All * On-cradle Scan Barcode	
Delete Stored Data After Transmission **PID : 51h 02h** Size : 00h 01h (1 Byte)	- 00h - 01h		Disable * Enable	
Field Delimiter **PID : 51h 03h** Size : 00h 01h (1 Byte)	- 00h - 2Ch - 20h	- 2Dh - 2Eh - XXh	None <,> * <SPACE>	<-> <.> User-defined 00~7Fh
Batch Data Quantity Output Format **PID : 51h 04h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h		As many times as the quantity indicates * <Quantity><Field Delimiter><Data> <Data><Field Delimiter><Quantity>	

. ***Warning***

If you are using the SmartCradle to communicate with the Scanner, "**BT Synchronization**" command should be sent to the scanner after the setting of the "**Field Delimiter**" to sync the Scanner with the SmartCradle, so that the settings will take effect immediately.

Parameter(s)

< Table 6-4-1 > Set BT Operation Parameter(s) Field (Continued)

Parameter / PID / Size	Options	Descriptions
Laser Aiming Control **PID : 02h 09h** Size : 00h 01h (1 Byte)	 - 00h - 01h	 Disable Enable *
LED Illumination **PID : 02h 0Bh** Size : 00h 01h (1 Byte)	 - 00h - 01h	 Always on Intelligent Scanning *
Illumination Delay Duration **PID : 02h 0Ch** Size : 00h 01h (1 Byte)	 - 00h - 01h - 02h - 03h - 04h	 100ms 200ms 300ms 400ms 500ms
Operation Mode **(Bluetooth A Series)** **PID : 70h 00h** Size : 00h 03h (3 Bytes)	 - 00h 01h 01h - 02h 01h 01h	 Trigger mode * Presentation mode
Hand-Held Mode Illumination & Aiming Control **PID : 70h 01h** Size : 00h 01h (1 Byte)	**Bit 0** - 0 - 1 **Bit 1** - 0 - 1	**Hand-Held Decode Aiming Control** Disable Enable * **Hand-Held Illumination Control** Disable Enable *
Hand-Free Mode Decode Aiming Control **PID : 70h 02h** Size : 00h 01h (1 Byte)	 - 02h - 03h	 Disable Enable *
Aiming Control **PID : 70h 03h** Size : 00h 02h (2 Bytes)	 - 00h 00h - 01h 00h - 00h 03h	 Regular Aiming * Intelligent Aiming Delay Aiming Control

. Notes

1. LED Illumination, Illumination Delay Duration are only available for L680BT, L688BT, L780BT, L788BT.
2. Laser Aiming Control is only available for L688BT, L788BT
3. Hand-Held Mode Illumination & Aiming Control, Hand-Free Mode Decode Aiming Control and Aiming Control are available for A Series only.

Parameter(s)

< Table 6-4-1 > Set BT Operation Parameter(s) Field (Continued)

Parameter / PID / Size	Options	Descriptions
Delay Aiming Timeout Control **PID : 70h 04h** Size : 00h 01h (1 Byte)	 - 02h - 04h - 08h - 0Ah - 0Fh - 14h - 1Eh - 28h	 200ms 400ms * 800ms 1000ms 1500ms 2000ms 3000ms 4000ms
Presentation Background Lighting **PID : 70h 05h** Size : 00h 02h (2 Bytes)	 - 00h 00h - 00h FFh	 LEDs Off LEDs On *
Center Alignment **PID : 70h 06h** Size : 00h 02h (2 Bytes)	**1st Byte** - 00h - 01h **2nd Byte** - 00h - 01h	**Hand-Held Mode** Disable * Enable **Hand-Free Mode** Disable * Enable
Mobile Phone Capture **PID : 70h 07h** Size : 00h 01h (1 Byte)	 - 00h - 01h	 Disable * Enable
Motion Control **PID : 03h 00h** Size: 00h 01h (1 Byte)	 - 00h - 01h - 02h - 03h	 Disable* Level 1 Level 2 Level 3

. Notes

Delay Aiming Timeout, Presentation Background Lighting, Center Alignment, Mobile Phone Capture and Motion Control are available for A Series only.

Get BT Operation (BT)

Descriptions

Request the desired one or more parameters of the Operation Settings for Bluetooth Scanner Available for F, L & A series

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	C9h 00h 00h	00h	Variable	See Below	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	Variable	1 Byte	1 Byte

Parameter(s)				
First Parameter		.....	Last Parameter	
PID	Size	.....	PID	Size
2 Bytes	2 Bytes	.....	2 Bytes	2 Bytes
See Next Page				

. Host Requirements

If the device successfully received the above command issued by the host, the device will pack all requested parameters into a "**Reply BT Operation**" message string then send to the host. Please refer to the "Reply BT Operation" command for details. Otherwise, a "**Device NAK**" will be sent to host to indicate issue a command error. However, if the host can receive any response from the device within the **user preset time-out duration**, please resend the above command.

. Parameter(s) Field

Get BT Operation can request multiple parameters at one time, so it takes compound parameters.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

"Opcode" XOR "Status" XOR "Length" XOR "Parameter(s)"

. Size

Total size (bytes) of the Options field

Parameter(s)

< Table 6-4-2 > Get BT Operation Parameter(s) Field

Parameter	PID	Size
Presentation Auto-sense	00h 02h	00h 00h
Presentation Sensitivity	00h 03h	00h 00h
Reread Delay	00h 04h	00h 00h
Good Read Delay	00h 06h	00h 00h
Light Source On Time	00h 07h	00h 00h
Hands Free Time-out	00h 08h	00h 00h
Time Delay To Low Power Mode	00h 09h	00h 00h
Scan Rate Control	00h 0Bh	00h 00h
Buzzer Tone Adjust	01h 00h	00h 00h
Power on beep	01h 01h	00h 00h
Power on Indication	01h 02h	00h 00h
Vibrator	01h 03h	00h 00h
Good Read Duration	01h 04h	00h 00h
Good Read Indicator	01h 05h	00h 00h
Beeping Control	01h 06h	00h 00h
1D Barcode Inverse Reading	02h 00h	00h 00h
Dollar Sign Control	02h 01h	00h 00h
Redundancy	02h 02h	00h 00h
Data Transmission Packet	52h 00h	00h 00h
UPC/EAN Security Level	02h 06h	00h 00h
Supplement Scan Voting	02h 08h	00h 00h
Operation Mode (Bluetooth F & L Series)	50h 00h	00h 00h
Batch Scanning Link Control	51h 00h	00h 00h
Stored Data Transmission	51h 01h	00h 00h
Delete Stored Data After Transmission	51h 02h	00h 00h
Field Delimiter	51h 03h	00h 00h
Batch Data Quantity Output Format	51h 04h	00h 00h
Laser Aiming Control	02h 09h	00h 00h
LED Illumination	02h 0Bh	00h 00h
Illumination Delay Duration	02h 0Ch	00h 00h
Operation Mode (Bluetooth A Series)	70h 00h	00h 00h
Hand-Held Mode Illumination & Aiming Control	70h 01h	00h 00h
Hand-Free Mode Decode Aiming Control	70h 02h	00h 00h
Aiming Control	70h 03h	00h 00h
Delay Aiming Timeout	70h 04h	00h 00h
Presentation Background Lighting	70h 05h	00h 00h
Center Alignment	70h 06h	00h 00h
Mobile Phone Capture	70h 07h	00h 00h

Reply BT Operation (BT)

Descriptions

Reply the desired one or more parameters of the Operation Settings for Bluetooth Scanner
Reply BT Operation is sent by the device in response to the Get BT Operation command. It sends the values for all the desired parameters requested in the Get BT Operation command.
Available for F, L & A series

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	0Ah 00h 00h	00h	Variable	See Below	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	Variable	1 Byte	1 Byte

Parameter(s)						
First Parameter			.....	Last Parameter		
PID	Size	Options	.....	PID	Size	Options
2 Bytes	2 Bytes	Variable	.....	2 Bytes	2 Bytes	Variable
See Next Page						

. Host Requirements

Since Reply BT Operation is a device-to-host message, there is no response for this message.

. Parameter(s) Field

Reply BT Operation can change multiple parameters at one time, so it takes compound parameters.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

”Opcode” XOR “Status” XOR “Length” XOR “Parameter(s)”

. Size

Total size (bytes) of the Options field

Parameter(s)

< Table 6-4-3 > Reply BT Operation Parameter(s) Field (To be continued)

Parameter / PID / Size	Options		Descriptions	
Presentation Auto-sense **PID : 00h 02h** Size : 00h 01h (1 Byte)	- 00h - 01h		Disable * Enable	
Presentation Sensitivity **PID : 00h 03h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h - 03h	- 04h - 05h - 06h	Level 1 Level 2 Level 3 Level 4	Level 5 * Level 6 Level 7
Reread Delay **PID : 00h 04h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h - 03h - 04h - 05h		Disable Immediate time-out duration * Short time-out duration Medium time-out duration Long time out-duration Force Verification	
Good Read Delay **PID : 00h 06h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h - 03h	- 04h - 05h - 06h	None* 200 ms 500 ms 1 s	1.5 s 2 s 3 s
Light Source On Time **PID : 00h 07h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h - 03h		Short (about 2 s) (L & F Series *) Medium (about 3~4 s) Long (about 5~6 s) (A Series *) Extremely Long (about 7~8 s)	
Hands Free Time-out **PID : 00h 08h** Size : 00h 01h (1 Byte)	- 00h - 06h - 0Ah	- 0Eh - 12h	Disable Short * Medium	Long Extremely long
Time Delay To Low Power Mode **PID : 00h 09h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h	- 03h - 04h - 05h	1 s 3 s 5 s	7 s 9 s 0 s (Immediately)*
Scan Rate Control **PID : 00h 0Bh** Size : 00h 01h (1 Byte)	- 00h - 01h		Dynamic * Fixed	
Buzzer Tone Adjust **PID : 01h 00h** Size : 00h 02h (2 Bytes)	**1st~2nd Byte** - 00h 00h - 01h 01h - 01h 02h - 01h 03h - 01h 04h		Mute Low Medium * High Extremely High	
Power on beep **PID : 01h 01h** Size : 00h 01h (1 Byte)	- 00h - 01h		Enable * Disable	

Parameter(s)

< Table 6-4-3 > Reply BT Operation Parameter(s) Field (Continued)

Parameter / PID / Size	Options		Descriptions	
Power on Indication **PID : 01h 02h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h		LED Off LED On * LED Flash	
Vibrator **PID : 01h 03h** Size : 00h 01h (1 Byte)	- 00h - 01h		Disable Enable *	
Good Read Duration **PID : 01h 04h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h	- 03h - 04h	Short Medium * Long	Extremely long Extremely short
Good Read Indicator **PID : 01h 05h** Size : 00h 01h (1 Byte)	- 00h - 01h		Disable Enable *	
Beeping Control **PID : 01h 06h** Size : 00h 01h (1 Byte)	**Bit 0** - 0 - 1 **Bit 1** - 0 - 1		**Radio Connection Beep** Enable * Disable **Battery Power Low Beep** Enable * Disable	
1D Barcode Inverse Reading **PID : 02h 00h** Size : 00h 01h (1 Byte)	- 00h - 01h		Disable * Enable	
Dollar Sign Control **PID : 02h 01h** Size : 00h 01h (1 Byte)	- 00h - 80h - A2h	- A3h - A5h	Output as “$” * Output as “€“ Output as “¢“	Output as “£“ Output as “¥”
Redundancy **PID : 02h 02h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h	- 03h - 04h - 05h	None 1 time * 2 times	3 times 4 times 5 times
Data Transmission Packet (PAIR / PICO Mode) **PID : 52h 00h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h - 03h	- 04h - 05h - 06h - 07h	Disable packet * With MAC With ID With MAC and ID	Enable packet MAC packet ID packet MAC and ID packet
Data Transmission Packet (HID/ SPP Mode) **PID : 52h 00h** Size : 00h 01h (1 Byte)	- 00h - 01h		Disable packet * Enable packet	

. ***Warning***

If you are using the SmartCradle to communicate with the Scanner, “**BT Synchronization**” command should be sent to the scanner after the setting of the “**Dollar Sign Control**” and “**Data Transmission Packet**” to sync the Scanner with the SmartCradle, so that the settings will take effect immediately.

Parameter(s)

< Table 6-4-3 > Reply BT Operation Parameter(s) Field (Continued)

Parameter / PID / Size	Options		Descriptions	
UPC/EAN Security Level **PID : 02h 06h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h		Level 0 Level 1 * Level 2	
Supplement Scan Voting **PID : 02h 08h** Size : 00h 01h (1 Byte)	- 00h - 06h - 08h - 0Ah - 0Ch - 0Eh - 10h	- 12h - 14h - 16h - 18h - 1Ah - 1Ch - 1Eh	None Level 1 Level 2 Level 3 * Level 4 Level 5 Level 6	Level 7 Level 8 Level 9 Level 10 Level 11 Level 12 Level 13
Operation Mode **(Bluetooth F & L Series)** **PID : 50h 00h** Size : 00h 01h (1 Byte)	- 00h - 02h		Trigger mode (External triggering) * Presentation mode (Auto Detection)	
Batch Scanning Link Control **PID : 51h 00h** Size : 00h 01h (1 Byte)	- 00h - 01h		Radio Disable Radio Enable *	
Stored Data Transmission **PID : 51h 01h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h		All * On-cradle Scan Barcode	
Delete Stored Data After Transmission **PID : 51h 02h** Size : 00h 01h (1 Byte)	- 00h - 01h		Disable * Enable	
Field Delimiter **PID : 51h 03h** Size : 00h 01h (1 Byte)	- 00h - 2Ch - 20h	- 2Dh - 2Eh - XXh	None <,> * <SPACE>	<-> <.> User-defined 00~7Fh
Batch Data Quantity Output Format **PID : 51h 04h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h		As many times as the quantity indicates * <Quantity><Field Delimiter><Data> <Data><Field Delimiter><Quantity>	

. ***Warning***

If you are using the SmartCradle to communicate with the Scanner, "**BT Synchronization**" command should be sent to the scanner after the setting of the "**Field Delimiter**" to sync the Scanner with the SmartCradle, so that the settings will take effect immediately.

Parameter(s)

< Table 6-4-3 > Reply BT Operation Parameter(s) Field (Continued)

Parameter / PID / Size	Options	Descriptions
Laser Aiming Control **PID : 02h 09h** Size : 00h 01h (1 Byte)	 - 00h - 01h	 Disable Enable *
LED Illumination **PID : 02h 0Bh** Size : 00h 01h (1 Byte)	 - 00h - 01h	 Always on Intelligent Scanning *
Illumination Delay Duration **PID : 02h 0Ch** Size : 00h 01h (1 Byte)	 - 00h - 01h - 02h - 03h - 04h	 100ms 200ms 300ms 400ms 500ms
Operation Mode **(Bluetooth A Series)** **PID : 70h 00h** Size : 00h 03h (3 Bytes)	 - 00h 01h 01h - 02h 01h 01h	 Trigger mode * Presentation mode
Hand-Held Mode Illumination & Aiming Control **PID : 70h 01h** Size : 00h 01h (1 Byte)	**Bit 0** - 0 - 1 **Bit 1** - 0 - 1	**Hand-Held Decode Aiming Control** Disable Enable * **Hand-Held Illumination Control** Disable Enable *
Hand-Free Mode Decode Aiming Control **PID : 70h 02h** Size : 00h 01h (1 Byte)	 - 02h - 03h	 Disable Enable *
Aiming Control **PID : 70h 03h** Size : 00h 02h (2 Bytes)	 - 00h 00h - 01h 00h - 00h 03h	 Regular Aiming * Intelligent Aiming Delay Aiming Control

. Notes

1. LED Illumination, Illumination Delay Duration are only available for L680BT, L688BT, L780BT, L788BT.
2. Laser Aiming Control is only available for L688BT, L788BT
3. Hand-Held Mode Illumination & Aiming Control, Hand-Free Mode Decode Aiming Control and Aiming Control are available for A Series only.

Parameter(s)

< Table 6-1-1 > Set BT Operation Parameter(s) Field (Continued)

Parameter / PID / Size	Options	Descriptions
Delay Aiming Timeout Control **PID : 70h 04h** Size : 00h 01h (1 Byte)	 - 02h - 04h - 08h - 0Ah - 0Fh - 14h - 1Eh - 28h	 200ms 400ms * 800ms 1000ms 1500ms 2000ms 3000ms 4000ms
Presentation Background Lighting **PID : 70h 05h** Size : 00h 02h (2 Bytes)	 - 00h 00h - 00h FFh	 LEDs Off LEDs On *
Center Alignment **PID : 70h 06h** Size : 00h 02h (2 Bytes)	**1st Byte** - 00h - 01h **2nd Byte** - 00h - 01h	**Hand-Held Mode** Disable * Enable **Hand-Free Mode** Disable * Enable
Mobile Phone Capture **PID : 70h 07h** Size : 00h 01h (1 Byte)	 - 00h - 01h	 Disable * Enable

. Notes

Delay Aiming Timeout, Presentation Background Lighting, Center Alignment and Mobile Phone Capture are available for A Series only.

Set WF Operation (WF)

Descriptions

Change the desired one or more parameters of the Operation Settings for Wi-Fi Scanner.
Available for F & L series

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	88h 00h 00h	00h	Variable	See Below	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	Variable	1 Byte	1 Byte

Parameter(s)						
First Parameter			.....	Last Parameter		
PID	Size	Options	.....	PID	Size	Options
2 Bytes	2 Bytes	Variable	.....	2 Bytes	2 Bytes	Variable
See Next Page						

. Host Requirements

If the device successfully received the above command issued by the host, a "**Device ACK**" will send to the host right after the device performed the action. Otherwise, a "**Device NAK**" will be sent to host to issue a command error. However, if the host can not receive any response from the device within the **user preset time-out duration**, please resend the above command.

. Parameter(s) Field

Set SE Operation can change multiple parameters at one time, so it takes compound parameters.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

"Opcode" XOR "Status" XOR "Length" XOR "Parameter(s)"

. Size

Total size (bytes) of the Options field

Parameter(s)

< Table 6-5-1 > Set WF Operation Parameter(s) Field (To be continued)

Parameter / PID / Size	Options		Descriptions	
Power Saving Timeout **PID : 00h 09h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h	- 03h - 04h - 05h	1 second 5 seconds * 10 seconds	20 seconds 30 seconds Immediately
Buzzer Tone Adjust **PID : 01h 00h** Size : 00h 02h (2 Bytes)	**1st~2nd Byte** - 00h 00h - 01h 01h - 01h 02h - 01h 03h - 01h 04h		Mute Low Medium * High Extremely High	
Power on beep **PID : 01h 01h** Size : 00h 01h (1 Byte)	- 00h - 01h		Enable * Disable	
Power on Indication **PID : 01h 02h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h		Disable (LED off) LED steady on * LED flash	
Vibrator **PID : 01h 03h** Size : 00h 01h (1 Byte)	- 00h - 01h		Disable * Enable	
1D Barcode Inverse Reading **PID : 02h 00h** Size : 00h 01h (1 Byte)	- 00h - 01h		Disable * Enable	
Dollar Sign Control **PID : 02h 01h** Size : 00h 01h (1 Byte)	- 00h - 80h - A2h	- A3h - A5h	Output as “$” * Output as “€“ Output as “¢“	Output as “£“ Output as “¥”
Redundancy **PID : 02h 02h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h	- 03h - 04h - 05h	None Level 1 * Level 2	Level 3 Level 4 Level 5
Good Read Delay **PID : 00h 06h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h - 03h	- 04h - 05h - 06h	None* 200 ms 500 ms 1 s	1.5 s 2 s 3 s
Good Read Duration **PID : 01h 04h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h	- 03h - 04h	Short Medium * Long	Extremely long Extremely short
Good Read Indicator **PID : 01h 05h** Size : 00h 01h (1 Byte)	- 00h - 01h		Disable Enable *	

Parameter(s)

< Table 6-5-1 > Set WF Operation Parameter(s) Field (Continued)

Parameter / PID / Size	Options	Descriptions
Beeping Control **PID : 01h 06h** Size : 00h 01h (1 Byte)	**Bit 0** - 0 - 1 **Bit 1** - 0 - 1	**Radio Connection Beep** Enable * Disable **Battery Power Low Beep** Enable * Disable
Scan Rate Control **PID : 00h 0Bh** Size : 00h 01h (1 Byte)	 - 00h - 01h	 Dynamic * Fixed
Laser Aiming Control **PID : 02h 09h** Size : 00h 01h (1 Byte)	 - 00h - 01h	 Disable Enable *
LED Illumination **PID : 02h 0Bh** Size : 00h 01h (1 Byte)	 - 00h - 01h	 Always on Intelligent Scanning *
Illumination Delay Duration **PID : 02h 0Ch** Size : 00h 01h (1 Byte)	 - 00h - 01h - 02h - 03h - 04h	 100ms 200ms 300ms 400ms 500ms

. Notes

1. **Laser Aiming Control** is only available for L788WD
2. **LED Illumination, Illumination Delay Duration** are only available for L780WD, L788WD

Get WF Operation (WF)

Descriptions

Request the desired one or more parameters of the Operation Settings for Wi-Fi Scanner
Available for F & L series

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	C9h 00h 00h	00h	Variable	See Below	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	Variable	1 Byte	1 Byte

Parameter(s)				
First Parameter		.....	Last Parameter	
PID	Size	.....	PID	Size
2 Bytes	2 Bytes	.....	2 Bytes	2 Bytes
See Next Page				

. Host Requirements

If the device successfully received the above command issued by the host, the device will pack all requested parameters into a "**Reply SE Operation**" message string then send to the host. Please refer to the "Reply SE Operation" command for details. Otherwise, a "**Device NAK**" will be sent to host to indicate issue a command error. However, if the host can receive any response from the device within the **user preset time-out duration**, please resend the above command.

. Parameter(s) Field

Get SE Operation can request multiple parameters at one time, so it takes compound parameters.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

"Opcode" XOR "Status" XOR "Length" XOR "Parameter(s)"

. Size

Total size (bytes) of the Options field

Parameter(s)

< Table 6-5-2 > Get WF Operation Parameter(s) Field

Parameter	PID	Size
Power Saving Timeout	00h 09h	00h 00h
Buzzer Tone Adjust	01h 00h	00h 00h
Power on beep	01h 01h	00h 00h
Power on Indication	01h 02h	00h 00h
Vibrator	01h 03h	00h 00h
1D Barcode Inverse Reading	02h 00h	00h 00h
Dollar Sign Control	02h 01h	00h 00h
Redundancy	02h 02h	00h 00h
Good Read Delay	00h 06h	00h 00h
Good Read Duration	01h 04h	00h 00h
Good Read Indicator	01h 05h	00h 00h
Beeping Control	01h 06h	00h 00h
Scan Rate Control	00h 0Bh	00h 00h
Laser Aiming Control	02h 09h	00h 00h
LED Illumination	02h 0Bh	00h 00h
Illumination Delay Duration	02h 0Ch	00h 00h

Reply WF Operation (WF)

Descriptions

Reply the desired one or more parameters of the Operation Settings for Wi-Fi Scanner
Reply WF Operation is sent by the device in response to the Get WF Operation command. It sends the values for all the desired parameters requested in the Get WF Operation command.
Available for F & L series

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	0Ah 00h 00h	00h	Variable	See Below	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	Variable	1 Byte	1 Byte

Parameter(s)						
First Parameter			.....	Last Parameter		
PID	Size	Options	.....	PID	Size	Options
2 Bytes	2 Bytes	Variable	.....	2 Bytes	2 Bytes	Variable
See Next Page						

. Host Requirements

Since Reply SE Operation is a device-to-host message, there is no response for this message.

. Parameter(s) Field

Set SE Operation can change multiple parameters at one time, so it takes compound parameters.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

”Opcode” XOR “Status” XOR “Length” XOR “Parameter(s)”

. Size

Total size (bytes) of the Options field

Parameter(s)

< Table 6-5-3 > Reply WF Operation Parameter(s) Field (To be continued)

Parameter / PID / Size	Options		Descriptions	
Power Saving Timeout **PID : 00h 09h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h	- 03h - 04h - 05h	1 second 5 seconds * 10 seconds	20 seconds 30 seconds Immediately
Buzzer Tone Adjust **PID : 01h 00h** Size : 00h 02h (2 Bytes)	**1st~2nd Byte** - 00h 00h - 01h 01h - 01h 02h - 01h 03h - 01h 04h		Mute Low Medium * High Extremely High	
Power on beep **PID : 01h 01h** Size : 00h 01h (1 Byte)	- 00h - 01h		Enable * Disable	
Power on Indication **PID : 01h 02h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h		Disable (LED off) LED steady on * LED flash	
Vibrator **PID : 01h 03h** Size : 00h 01h (1 Byte)	- 00h - 01h		Disable * Enable	
1D Barcode Inverse Reading **PID : 02h 00h** Size : 00h 01h (1 Byte)	- 00h - 01h		Disable * Enable	
Dollar Sign Control **PID : 02h 01h** Size : 00h 01h (1 Byte)	- 00h - 80h - A2h	- A3h - A5h	Output as “$” * Output as “€“ Output as “¢“	Output as “£“ Output as “¥”
Redundancy **PID : 02h 02h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h	- 03h - 04h - 05h	None Level 1 * Level 2	Level 3 Level 4 Level 5
Good Read Delay **PID : 00h 06h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h - 03h	- 04h - 05h - 06h	None* 200 ms 500 ms 1 s	1.5 s 2 s 3 s
Good Read Duration **PID : 01h 04h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h	- 03h - 04h	Short Medium * Long	Extremely long Extremely short
Good Read Indicator **PID : 01h 05h** Size : 00h 01h (1 Byte)	- 00h - 01h		Disable Enable *	

Parameter(s)

< Table 6-5-3 > Reply WF Operation Parameter(s) Field (Continued)

Parameter / PID / Size	Options	Descriptions
Beeping Control **PID : 01h 06h** Size : 00h 01h (1 Byte)	**Bit 0** - 0 - 1 **Bit 1** - 0 - 1	**Radio Connection Beep** Enable * Disable **Battery Power Low Beep** Enable * Disable
Scan Rate Control **PID : 00h 0Bh** Size : 00h 01h (1 Byte)	 - 00h - 01h	 Dynamic * Fixed
Laser Aiming Control **PID : 02h 09h** Size : 00h 01h (1 Byte)	 - 00h - 01h	 Disable * Enable
LED Illumination **PID : 02h 0Bh** Size : 00h 01h (1 Byte)	 - 00h - 01h	 Always on Intelligent Scanning *
Illumination Delay Duration **PID : 02h 0Ch** Size : 00h 01h (1 Byte)	 - 00h - 01h - 02h - 03h - 04h	 100ms 200ms 300ms 400ms 500ms

. Notes

1. **Laser Aiming Control** is only available for L788WD
2. **LED Illumination, Illumination Delay Duration** are only available for L780WD, L788WD

Set WF System (WF)

Descriptions

Change the desired one or more parameters of the System Settings for Wi-Fi Scanner.
Available for F & L series

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	A1h 00h 00h	00h	Variable	See Below	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	Variable	1 Byte	1 Byte

Parameter(s)						
First Parameter			.....	Last Parameter		
PID	Size	Options	.....	PID	Size	Options
2 Bytes	2 Bytes	Variable	.....	2 Bytes	2 Bytes	Variable
See Next Page						

. Host Requirements

If the device successfully received the above command issued by the host, a "**Device ACK**" will send to the host right after the device performed the action. Otherwise, a "**Device NAK**" will be sent to host to issue a command error. However, if the host can not receive any response from the device within the **user preset time-out duration**, please resend the above command.

. Parameter(s) Field

Set SE Operation can change multiple parameters at one time, so it takes compound parameters.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

"Opcode" XOR "Status" XOR "Length" XOR "Parameter(s)"

. Size

Total size (bytes) of the Options field

Parameter(s)

< Table 6-6-1 > Set WF System Parameter(s) Field (To be continued)

Parameter / PID / Size	Options	Descriptions
Wi-Fi Device Name **PID : 00h 00h** Size : 00h 11h (17 Bytes)	**1st Byte** - XXh **2nd~17th Byte** - XXh XXh...XXh	Total number of the Device Name in characters User defined 1~16 character(s) **(See Notes)**
Admin Password **PID : 00h 01h** Size : 00h 04h (4 Bytes)	- 00h 00h 00h 00h - XXh XXh…XXh	Default * User defined 4 digits **(See Notes)**
User Password **PID : 00h 02h** Size : 00h 04h (4 Bytes)	- 00h 00h 00h 00h -XXh XXh…XXh	Default * User defined 4 digits **(See Notes)**
User Available Functions **PID : 00h 03h** Size : 00h 01h (3 Bytes)	**1st Byte** - 00h - 01h **2nd Byte** - 00h - 01h **3rd Byte** - 00h - 01h	**Online Mode** Disable Enable * **Batch Mode** Disable Enable * **Tools** Disable Enable *
Brightness **PID : 00h 04h** Size : 00h 01h (1 Byte)	- 00h - 01h	High * Low
Backlight Duration **PID : 00h 05h** Size : 00h 01h (1 Byte)	- 05h - 0Ah - 0Fh - 14h - 19h - 1Eh - 2Dh - 3Ch	5 seconds 10 seconds 15 seconds 20 seconds 25 seconds 30 seconds * 45 seconds 60 seconds
Key Tones **PID : 00h 06h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h - 03h - 04h	Extremely High * High Medium Low Mute
Wake Up Key **PID : 00h 07h** Size : 00h 01h (1 Byte)	- 00h - 01h	Trigger * Trigger + R

. ***Notes***

1. **Device Name**: If the desired ASCII characters are shorter than 16 bytes, the rest bytes should be set to **00h**. To set to default device name, this parameter should be set to: 00h FFh…FFh (sixteen "FFh"s)
2. **Admin Password/ User Password** should be set to four 0~9 digit numbers, because the password Keyboard is preset to Numeric Keyboard, and you can only enter digit number.

Get WF System (WF)

Descriptions

Request the desired one or more parameters of the System Settings for Wi-Fi Scanner
Available for F & L series

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	E2h 00h 00h	00h	Variable	See Below	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	Variable	1 Byte	1 Byte

Parameter(s)				
First Parameter		.....	Last Parameter	
PID	Size	.....	PID	Size
2 Bytes	2 Bytes	.....	2 Bytes	2 Bytes
See Next Page				

. Host Requirements

If the device successfully received the above command issued by the host, the device will pack all requested parameters into a "**Reply WF System**" message string then send to the host. Please refer to the "Reply WF System" command for details. Otherwise, a "**Device NAK**" will be sent to host to indicate issue a command error. However, if the host can receive any response from the device within the **user preset time-out duration**, please resend the above command.

. Parameter(s) Field

Get SE Operation can request multiple parameters at one time, so it takes compound parameters.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

"Opcode" XOR "Status" XOR "Length" XOR "Parameter(s)"

. Size

Total size (bytes) of the Options field

Parameter(s)

< Table 6-6-2 > Get WF System Parameter(s) Field

Parameter	PID	Size
Wi-Fi Device Name	**00h 00h**	00h 00h
Admin Password	**00h 01h**	00h 00h
User Password	**00h 02h**	00h 00h
User Available Functions	**00h 03h**	00h 00h
Brightness	**00h 04h**	00h 00h
Backlight Duration	**00h 05h**	00h 00h
Key Tones	**00h 06h**	00h 00h
Wake Up Key	**00h 07h**	00h 00h

Reply WF System (WF)

Descriptions

Reply the desired one or more parameters of the System Settings for Wi-Fi Scanner
Reply WF System is sent by the device in response to the Get WF System command. It sends the values for all the desired parameters requested in the Get WF System command.
Available for F & L series

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	23h 00h 00h	00h	Variable	See Below	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	Variable	1 Byte	1 Byte

Parameter(s)						
First Parameter			.....	Last Parameter		
PID	Size	Options	.....	PID	Size	Options
2 Bytes	2 Bytes	Variable	.....	2 Bytes	2 Bytes	Variable
See Next Page						

. Host Requirements

Since Reply SE Operation is a device-to-host message, there is no response for this message.

. Parameter(s) Field

Set SE Operation can change multiple parameters at one time, so it takes compound parameters.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

”Opcode” XOR “Status” XOR “Length” XOR “Parameter(s)”

. Size

Total size (bytes) of the Options field

Parameter(s)

< Table 6-6-3 > Reply WF System Parameter(s) Field (To be continued)

Parameter / PID / Size	Options	Descriptions
Wi-Fi Device Name **PID : 00h 00h** Size : 00h 11h (17 Bytes)	**1st Byte** - XXh **2nd~17th Byte** - XXh XXh...XXh	Total number of the Device Name in characters User defined 1~16 character(s) **(See Notes)**
Admin Password **PID : 00h 01h** Size : 00h 04h (4 Bytes)	- 00h 00h 00h 00h - XXh XXh…XXh	Default * User defined 4 digits
User Password **PID : 00h 02h** Size : 00h 04h (4 Bytes)	- 00h 00h 00h 00h -XXh XXh…XXh	Default * User defined 4 digits
User Available Functions **PID : 00h 03h** Size : 00h 01h (3 Bytes)	**1st Byte** - 00h - 01h **2nd Byte** - 00h - 01h **3rd Byte** - 00h - 01h	**Online Mode** Disable Enable * **Batch Mode** Disable Enable * **Tools** Disable Enable *
Brightness **PID : 00h 04h** Size : 00h 01h (1 Byte)	- 00h - 01h	High * Low
Backlight Duration **PID : 00h 05h** Size : 00h 01h (1 Byte)	- 05h - 0Ah - 0Fh - 14h - 19h - 1Eh - 2Dh - 3Ch	5 seconds 10 seconds 15 seconds 20 seconds 25 seconds 30 seconds * 45 seconds 60 seconds
Key Tones **PID : 00h 06h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h - 03h - 04h	Extremely High * High Medium Low Mute
Wake Up Key **PID : 00h 07h** Size : 00h 01h (1 Byte)	- 00h - 01h	Trigger * Trigger + R

Set WF Scanning (WF)

Descriptions

Change the desired one or more parameters of the Scanning Settings for Wi-Fi Scanner.
Available for F & L series

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	9Eh 00h 00h	00h	Variable	See Below	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	Variable	1 Byte	1 Byte

Parameter(s)						
First Parameter			.....	Last Parameter		
PID	Size	Options	.....	PID	Size	Options
2 Bytes	2 Bytes	Variable	.....	2 Bytes	2 Bytes	Variable
See Next Page						

. Host Requirements

If the device successfully received the above command issued by the host, a "**Device ACK**" will send to the host right after the device performed the action. Otherwise, a "**Device NAK**" will be sent to host to issue a command error. However, if the host can not receive any response from the device within the **user preset time-out duration**, please resend the above command.

. Parameter(s) Field

Set SE Operation can change multiple parameters at one time, so it takes compound parameters.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

"Opcode" XOR "Status" XOR "Length" XOR "Parameter(s)"

. Size

Total size (bytes) of the Options field

Parameter(s)

< Table 6-7-1 > Set WF Scanning Parameter(s) Field (To be continued)

Parameter / PID / Size	Options	Descriptions
Barcode Type **PID : 00h 00h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable Enable *
Font Size **PID : 00h 01h** Size : 00h 01h (1 Byte)	- 00h - 01h	Compact * Normal
Record Suffix **PID : 00h 02h** Size : 00h 02h (2 Bytes)	**1st~2nd Byte** - FFh FFh - 0Dh FFh - 0Ah FFh - 0Dh 0Ah - 09h FFh - 20h FFh - 04h FFh - XXh FFh	None CR * LF * CRLF TAB SPACE EOT User defined ASCII value
Host ACK **PID : 00h 03h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable Enable *
Transmission Format **PID : 00h 04h** Size : 00h 01h (1 Byte)	- 00h - 01h	Raw Data * Packet Data
Host ACK Timeout **PID : 00h 05h** Size : 00h 01h (1 Byte)	- 01h - 04h - 09h - 0Fh - 12h - 24h - 4Fh - 50h - 48h - 56h - 5Ah - 61h	None 200 mseconds 500 mseconds 800 mseconds 1 second * 2 seconds 3 seconds 4 seconds 5 seconds 8 seconds 10 seconds 15 seconds
ACK Indication **PID : 00h 07h** Size : 00h 01h (1 Byte)	**Bit 0** - 0h - 1h **Bit 1** - 0h - 1h	**Transmission Timeout Indication** Disable Enable * **ACK Indication** Disable Enable *
Field Delimiter **PID : 00h 09h** Size : 00h 01h (1 Byte)	- 2Ch - XXh	, * User defined ASCII value
Record Delimiter **PID : 00h 0Ah** Size : 00h 01h (1 Byte)	- 0Dh - XXh	[CR] * User defined ASCII value
Timestamp Format **PID : 00h 0Bh** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h - 03h - 04h - 05h	hh:mm dd/mm/yyyy * hh:mm mm/dd/yyyy hh:mm yyyy/mm/dd dd/mm/yyyy hh:mm mm/dd/yyyy hh:mm yyyy/mm/dd hh:mm

Parameter(s)

< Table 6-7-1 > Set WF Scanning Parameter(s) Field (Continued)

Parameter / PID / Size	Options	Descriptions
Auto Save **PID : 00h 0Ch** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h	Disable Enable with tip Enable without tip *
Link Control **PID : 00h 0Dh** Size : 00h 01h (1 Byte)	- 00h - 01h	Radio Disable Radio Enable *
Delete Stored Data **PID : 00h 0Eh** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable * Enable
Data Transmission **PID : 00h 0Fh** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h	Via Wi-Fi * Via USB HID Via USB COM

Get WF Scanning (WF)

Descriptions

Request the desired one or more parameters of the Scanning Settings for Wi-Fi Scanner
Available for F & L series

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	DFh 00h 00h	00h	Variable	See Below	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	Variable	1 Byte	1 Byte

Parameter(s)				
First Parameter		.....	Last Parameter	
PID	Size	.....	PID	Size
2 Bytes	2 Bytes	.....	2 Bytes	2 Bytes
See Next Page				

. Host Requirements

If the device successfully received the above command issued by the host, the device will pack all requested parameters into a "**Reply WF Scanning**" message string then send to the host. Please refer to the "Reply WF Scanning" command for details. Otherwise, a "**Device NAK**" will be sent to host to indicate issue a command error. However, if the host can receive any response from the device within the **user preset time-out duration**, please resend the above command.

. Parameter(s) Field

Get SE Operation can request multiple parameters at one time, so it takes compound parameters.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

"Opcode" XOR "Status" XOR "Length" XOR "Parameter(s)"

. Size

Total size (bytes) of the Options field

Parameter(s)

< Table 6-7-2 > Get WF Scanning Parameter(s) Field

Parameter	PID	Size
Barcode Type	00h 00h	00h 00h
Font Size	00h 01h	00h 00h
Record Suffix	00h 02h	00h 00h
Host ACK	00h 03h	00h 00h
Transmission Format	00h 04h	00h 00h
Host ACK Timeout	00h 05h	00h 00h
ACK Indication	00h 07h	00h 00h
Field Delimiter	00h 09h	00h 00h
Record Delimiter	00h 0Ah	00h 00h
Timestamp Format	00h 0Bh	00h 00h
Auto Save	00h 0Ch	00h 00h
Link Control	00h 0Dh	00h 00h
Delete Stored Data	00h 0Eh	00h 00h
Data Transmission	00h 0Fh	00h 00h

Reply WF Scanning (WF)

Descriptions

Reply the desired one or more parameters of the Scanning Settings for Wi-Fi Scanner
Reply WF Scanning is sent by the device in response to the Get WF Scanning command. It sends the values for all the desired parameters requested in the Get WF Scanning command.
Available for F & L series

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	20h 00h 00h	00h	Variable	See Below	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	Variable	1 Byte	1 Byte

Parameter(s)						
First Parameter			.....	Last Parameter		
PID	Size	Options	.....	PID	Size	Options
2 Bytes	2 Bytes	Variable	.....	2 Bytes	2 Bytes	Variable
See Next Page						

. Host Requirements

Since Reply SE Operation is a device-to-host message, there is no response for this message.

. Parameter(s) Field

Set SE Operation can change multiple parameters at one time, so it takes compound parameters.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

”Opcode” XOR “Status” XOR “Length” XOR “Parameter(s)”

. Size

Total size (bytes) of the Options field

Parameter(s)

< Table 6-7-3 > Reply WF Scanning Parameter(s) Field (To be continued)

Parameter / PID / Size	Options	Descriptions
Barcode Type **PID : 00h 00h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable Enable *
Font Size **PID : 00h 01h** Size : 00h 01h (1 Byte)	- 00h - 01h	Compact * Normal
Record Suffix **PID : 00h 02h** Size : 00h 02h (2 Bytes)	**1st~2nd Byte** - FFh FFh - 0Dh FFh - 0Ah FFh - 0Dh 0Ah - 09h FFh - 20h FFh - 04h FFh - XXh FFh	None CR * LF * CRLF TAB SPACE EOT User defined ASCII value
Host ACK **PID : 00h 03h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable Enable *
Transmission Format **PID : 00h 04h** Size : 00h 01h (1 Byte)	- 00h - 01h	Raw Data * Packet Data
Host ACK Timeout **PID : 00h 05h** Size : 00h 01h (1 Byte)	- 01h - 04h - 09h - 0Fh - 12h - 24h - 4Fh - 50h - 48h - 56h - 5Ah - 61h	None 200 mseconds 500 mseconds 800 mseconds 1 second * 2 seconds 3 seconds 4 seconds 5 seconds 8 seconds 10 seconds 15 seconds
ACK Indication **PID : 00h 07h** Size : 00h 01h (1 Byte)	**Bit 0** - 0h - 1h **Bit 1** - 0h - 1h	**Transmission Timeout Indication** Disable Enable * **ACK Indication** Disable Enable *
Field Delimiter **PID : 00h 09h** Size : 00h 01h (1 Byte)	- 2Ch - XXh	, * User defined ASCII value
Record Delimiter **PID : 00h 0Ah** Size : 00h 01h (1 Byte)	- 0Dh - XXh	[CR] * User defined ASCII value
Timestamp Format **PID : 00h 0Bh** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h - 03h - 04h - 05h	hh:mm dd/mm/yyyy * hh:mm mm/dd/yyyy hh:mm yyyy/mm/dd dd/mm/yyyy hh:mm mm/dd/yyyy hh:mm yyyy/mm/dd hh:mm

Parameter(s)

< Table 6-7-3 > Reply WF Scanning Parameter(s) Field (Continued)

Parameter / PID / Size	Options	Descriptions
Auto Save **PID : 00h 0Ch** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h	Disable Enable with tip Enable without tip *
Link Control **PID : 00h 0Dh** Size : 00h 01h (1 Byte)	- 00h - 01h	Radio Disable Radio Enable *
Delete Stored Data **PID : 00h 0Eh** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable * Enable
Data Transmission **PID : 00h 0Fh** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h	Via Wi-Fi * Via USB HID Via USB COM

2.7 TRANSMISSION

Set Transmission (ALL)

Descriptions

Change the desired one or more parameters of the Transmission settings as well as DataWizard Premium parameters including Data Script Active Setting, Data Script Setting, Security Script Setting and Data Wizard Premium Error Message.

DataWizard Premium parameters are only available for Scanners that support DataWizard Premium. For more details about DataWizard Premium, please refer to *FuzzyScan DataWizard Premium User Manual.*

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	8Bh 00h 00h	00h	Variable	See Below	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	Variable	1 Byte	1 Byte

Parameter(s)						
First Parameter			.....	Last Parameter		
PID	Size	Options	.....	PID	Size	Options
2 Bytes	2 Bytes	Variable	.....	2 Bytes	2 Bytes	Variable
See Next Page						

. Host Requirements

If the device successfully received the above command issued by the host, a "**Device ACK**" will send to the host right after the device performed the action. Otherwise, a "**Device NAK**" will be sent to host to issue a command error. However, if the host can not receive any response from the device within the **user preset time-out duration**, please resend the above command.

. Parameter(s) Field

Set Transmission can change multiple parameters at one time, so it takes compound parameters.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

"Opcode" XOR "Status" XOR "Length" XOR "Parameter(s)"

. Size

Total size (bytes) of the Options field

Parameter(s)

< Table 7-1-1 > Set Transmission Parameter(s) Field (To be continued)

Parameter / PID / Size	Options	Descriptions
Interface Delay Settings **PID : 00h 00h** Size : 00h 03h (3 Bytes)	**1st Byte** - 00h - 01h~63h **2nd Byte** - 00h - 01h~63h **3rd Byte** - 00h - 01h~63h	**Intermessage Delay** None * 1~99(×5)ms **Intercharacter Delay** None * 1~99(×5)ms **Interfunction Delay** None * 1~99(×5)ms
Record Suffix (KB) **PID : 01h 00h** Size : 00h 02h (2 Bytes)	**1st~2nd Byte** - FFh FFh - 0Dh FFh - 09h FFh - 20h FFh - FEh FFh - XXh FFh	None CR (0Dh) * TAB (09h) SPACE (20h) ENTER (Numeric Key Pad) User-defined one ASCII character (XXh)
Record Suffix (Serial) **PID : 01h 00h** Size : 00h 02h (2 Bytes)	**1st~2nd Byte** - FFh FFh - 0Dh FFh - 0Ah FFh - 0Dh 0Ah - 09h FFh - 20h FFh - XXh FFh	None CR (0Dh) * LF (0Ah) CR (0Dh) LF (0Ah) TAB (09h) SPACE (20h) User-defined one ASCII character (XXh)
Preamble **PID : 01h 01h** Size : 00h 10h (16 Bytes)	**1st Byte** - XXh **2nd~16th Byte** - XXh XXh...XXh	Total number of the Preamble characters 1~15 character(s) **(See Notes)**
Postamble **PID : 01h 02h** Size : 00h 10h (16 Bytes)	**1st Byte** - XXh **2nd~16th Byte** - XXh XXh...XXh	Total number of the Postamble characters 1~15 character(s) **(See Notes)**
Symbol ID Transmission **PID : 01h 03h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h - 03h - 04h - 05h - 06h	Disable * Enable prefix ID Enable suffix ID Enable both prefix and suffix ID Enable prefix AIM ID Enable suffix AIM ID Enable both prefix and suffix AIM ID

. ***Notes***

1. Intercharacter Delay, Interfunction Delay settings are not available for serial communications via USB Virtual COM port.
2. Preamble/ Postamble 2nd~16th byte: If the desired ASCII characters for setting the Preamble/ Postamble are shorter than 15 bytes, the rest bytes should be set to **00h**.

Parameter(s)

< Table 7-1-1 > Set Transmission Parameter(s) Field (Continued)

Parameter / PID / Size	Options	Descriptions
Data Script Active Setting **PID : 02h 00h** Size : 00h 01h (1 Byte)	 - 01h - 02h …… - 10h	**(See Notes)** Active 1st Data Script * Active 2nd Data Script …… Active 16th Data Script
Data Script Setting **PID : 02h 01h** Size : 00h 01h (1 Byte)	**Bit 1** - 0 - 1 **Bit 0, Bit 2 ~ 7**	**Data Script (See Notes)** Disable * Enable **Reserved**
Security Script Setting **PID : 02h 02h** Size : 00h 01h (1 Byte)	 - 00h - 01h	**(See Notes)** Disable Security Script * Enable Security Script
DataWizard Premium Error Message **PID : 02h 03h** Size : 00h 01h (1 Byte)	 - 00h - 01h	**(See Notes)** Disable Error Message * Enable Error Message

. Notes

1. Data Script Active Setting, Data Script Setting, Security Script Setting and Data Wizard Premium Error Message are all DataWizard Premium parameters which are available for Scanners that support DataWizard Premium. For more details about DataWizard Premium, please refer to *FuzzyScan DataWizard Premium User Manual*.

Parameter(s)

< Table 7-1-1 > Set Transmission Parameter(s) Field (Continued)

Parameter / PID / Size	Options	Descriptions
Barcode Encoding Format **PID : 03h 00h** Size : 00h 01h (1 Byte)		**(See Notes)**
	- 00h	UTF-8
	- 10h	Codepage 950 (Traditional Chinese)
	- 11h	Codepage 949 (Korean)
	- 12h	Codepage 936 (Simplified Chinese)
	- 13h	Codepage 932 (Japanese)
	- 14h	Codepage 874 (Thai)
	- 15h	WIN 1250
	- 16h	WIN 1251
	- 17h	WIN 1252*
	- 18h	WIN 1253
	- 19h	WIN 1254
	- 1Ah	WIN 1255
	- 1Bh	WIN 1256
	- 1Ch	WIN 1257
	- 1Dh	WIN 1258
	- 1Eh	ISO 8859-1 Latin 1, Western European
	- 1Fh	ISO 8859-2 Latin 2, Central European
	- 20h	ISO 8859-3 Latin 3, Southern European
	- 21h	ISO 8859-4 Latin 4, Northern European
	- 22h	ISO 8859-5 Cyrillic
	- 23h	ISO 8859-6 Arabic
	- 24h	ISO 8859-7 Greek
	- 25h	ISO 8859-8 Hebrew
	- 26h	ISO 8859-9 Latin 5, Turkish
	- 27h	ISO 8859-10 Latin 6, Nordic
	- 28h	ISO 8859-11 Thai
	- 29h	ISO 8859-13 Latin 7, Baltic
	- 2Ah	ISO 8859-14 Latin 8, Celtic
	- 2Bh	ISO 8859-15 Latin 9, Turkish_2
	- 2Ch	ISO 8859-16 Latin 10, South-Eastern European
Keyboard Output **PID : 03h 01h** Size : 00h 01h (1 Byte)		**(See Notes)**
	- 01h	MAC Unicode Output(*3)
	- 02h	WIN Notepad Unicode Output
	- 03h	WIN Wordpad Unicode Output
		WIN Notepad Codepage Output
	- 10h	Codepage 950 (Traditional Chinese)
	- 11h	Codepage 949 (Korean)
	- 12h	Codepage 936 (Simplified Chinese)
	- 13h	Codepage 932 (Japanese)
	- 14h	Codepage 874 (Thai)
	- 15h	WIN 1250 Output
	- 16h	WIN 1251 Output
	- 17h	WIN 1252 Output*
	- 18h	WIN 1253 Outpur
	- 19h	WIN 1254 Output
	- 1Ah	WIN 1255 Output
	- 1Bh	WIN 1256 Output
	- 1Ch	WIN 1257 Output
	- 1Dh	WIN 1258 Output
	- 30h	Codepage 852 Output
	- 31h	Codepage 855 Output

	- 32h - 33h - 34h - 35h - 36h - 37h - 38h - 39h	Codepage 866 Output Codepage 850 Output Codepage 437 Output Codepage 737 Output Codepage 857 Output Codepage 862 Output Codepage 720 Output Codepage 755 Output

. Notes

1. Barcode Encoding Format: A 2D barcode can be encoded using different code pages. For your scanner to properly decode the content of a 2D barcode, select the code page that corresponds to the content's language. Select UTF8 if the 2D barcode was encoded in Unicode (UTF-8).
2. Keyboard Output: Different languages use different code pages. For your scanner to properly display the content of a 2D barcode, select the code page that corresponds to the content's language. Please check your system locale setting in Windows and make sure that it also matches this language.
3. To properly display the content of a 2D barcode in MAC Unicode Hex Input and WIN Notepad Unicode Hexadecimal, additional settings are required.

Get Transmission (ALL)

Descriptions

Request the desired one or more parameters of the Transmission settings as well as DataWizard Premium parameters including Data Script Active Setting, Data Script Setting, Security Script Setting and Data Wizard Premium Error Message.

DataWizard Premium parameters are only available for Scanners that support DataWizard Premium. For more details about DataWizard Premium, please refer to *FuzzyScan DataWizard Premium User Manual.*

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	CCh 00h 00h	00h	Variable	See Below	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	Variable	1 Byte	1 Byte

Parameter(s)				
First Parameter		.....	Last Parameter	
PID	Size	.....	PID	Size
2 Bytes	2 Bytes	.....	2 Bytes	2 Bytes
See Next Page				

. Host Requirements

If the device successfully received the above command issued by the host, the device will pack all requested parameters into a "**Reply Transmission**" message string then send to the host. Please refer to the "Reply Transmission" command for details. Otherwise, a "**Device NAK**" will be sent to host to indicate issue a command error. However, if the host can receive any response from the device within the **user preset time-out duration**, please resend the above command.

. Parameter(s) Field

Get Transmission can request multiple parameters at one time, so it takes compound parameters.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

"Opcode" XOR "Status" XOR "Length" XOR "Parameter(s)"

. Size

Total size (bytes) of the Options field

Parameter(s)

< Table 7-1-2 > Get Transmission Parameter(s) Field

Parameter	PID	Size
Interface Delay Settings	**00h 00h**	00h 00h
Record Suffix	**01h 00h**	00h 00h
Preamble	**01h 01h**	00h 00h
Postamble	**01h 02h**	00h 00h
Symbology ID Transmission	**01h 03h**	00h 00h
Data Script Active Setting	**02h 00h**	00h 00h
Data Script Setting	**02h 01h**	00h 00h
Security Script Setting	**02h 02h**	00h 00h
DataWizard Premium Error Message	**02h 03h**	00h 00h

Reply Transmission (ALL)

Descriptions

Reply the desired one or more parameters of the Transmission settings as well as DataWizard Premium parameters including Data Script Active Setting, Data Script Setting, Security Script Setting and Data Wizard Premium Error Message.

Reply Transmission is sent by the device in response to the Get Transmission command. It sends the values for all the desired parameters requested in the Get Transmission command.

DataWizard Premium parameters are only available for Scanners that support DataWizard Premium. For more details about DataWizard Premium, please refer to *FuzzyScan DataWizard Premium User Manual.*

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	**0Dh 00h 00h**	00h	Variable	See Below	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	Variable	1 Byte	1 Byte

Parameter(s)						
First Parameter			.....	Last Parameter		
PID	Size	Options	.....	PID	Size	Options
2 Bytes	2 Bytes	Variable	.....	2 Bytes	2 Bytes	Variable
See Next Page						

. Host Requirements

Since Reply Transmission is a device-to-host message, there is no response for this message.

. Parameter(s) Field

Reply Transmission can change multiple parameters at one time, so it takes compound parameters.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

”Opcode” XOR “Status” XOR “Length” XOR “Parameter(s)”

. Size

Total size (bytes) of the Options field

Parameter(s)

< Table 7-1-3 > Reply Transmission Parameter(s) Field

Parameter / PID / Size	Options	Descriptions
Interface Delay Settings **PID : 00h 00h** Size : 00h 03h (3 Bytes)	**1st Byte** - 00h - 01h~63h **2nd Byte** - 00h - 01h~63h **3rd Byte** - 00h - 01h~63h	**Intermessage Delay** None * 1~99(×5)ms **Intercharacter Delay** None * 1~99(×5)ms **Interfunction Delay** None * 1~99(×5)ms
Record Suffix (KB) **PID : 01h 00h** Size : 00h 02h (2 Bytes)	**1st~2nd Byte** - FFh FFh - 0Dh FFh - 09h FFh - 20h FFh - FEh FFh - XXh FFh	None CR (0Dh) * TAB (09h) SPACE (20h) ENTER (Numeric Key Pad) User-defined one ASCII character (XXh)
Record Suffix (Serial) **PID : 01h 00h** Size : 00h 02h (2 Bytes)	**1st~2nd Byte** - FFh FFh - 0Dh FFh - 0Ah FFh - 0Dh 0Ah - 09h FFh - 20h FFh - XXh FFh	None CR (0Dh) * LF (0Ah) CR (0Dh) LF (0Ah) TAB (09h) SPACE (20h) User-defined one ASCII character (XXh)
Preamble **PID : 01h 01h** Size : 00h 10h (16 Bytes)	**1st Byte** - XXh **2nd~16th Byte** - XXh XXh...XXh	Total number of the Preamble characters 1~15 character(s) **(See Notes)**
Postamble **PID : 01h 02h** Size : 00h 10h (16 Bytes)	**1st Byte** - XXh **2nd~16th Byte** - XXh XXh...XXh	Total number of the Postamble characters 1~15 character(s) **(See Notes)**
Symbol ID Transmission **PID : 01h 03h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h - 03h - 04h - 05h - 06h	Disable * Enable prefix ID Enable suffix ID Enable both prefix and suffix ID Enable prefix AIM ID Enable suffix AIM ID Enable both prefix and suffix AIM ID

. ***Notes***

1. Intercharacter Delay, Interfunction Delay settings are not available for serial communications via USB Virtual COM port.
2. Preamble/ Postamble: If the desired ASCII characters for setting the Preamble/ Postamble are shorter than 15 bytes, the rest bytes should be set to **00h**.

Parameter(s)

< Table 7-1-3 > Reply Transmission Parameter(s) Field (Continued)

Parameter / PID / Size	Options	Descriptions
Data Script Active Setting **PID : 02h 00h** Size : 00h 01h (1 Byte)	 - 01h - 02h …… - 10h	**(See Notes)** Active 1st Data Script * Active 2nd Data Script …… Active 16th Data Script
Data Script Setting **PID : 02h 01h** Size : 00h 01h (1 Byte)	**Bit 1** - 0 - 1 **Bit 0, Bit 2 ~ 7**	**Data Script (See Notes)** Disable * Enable **Reserved**
Security Script Setting **PID : 02h 02h** Size : 00h 01h (1 Byte)	 - 00h - 01h	**(See Notes)** Disable Security Script * Enable Security Script
DataWizard Premium Error Message **PID : 02h 03h** Size : 00h 01h (1 Byte)	 - 00h - 01h	**(See Notes)** Disable Error Message * Enable Error Message

. Notes

1. Data Script Active Setting, Data Script Setting, Security Script Setting and Data Wizard Premium Error Message are all DataWizard Premium parameters which are available for Scanners that support DataWizard Premium. For more details about DataWizard Premium, please refer to *FuzzyScan DataWizard Premium User Manual*.

Set Transmission (WF)

Descriptions

Change the desired one or more parameters of the Transmission settings as well as DataWizard Premium parameters including Data Script Active Setting, Data Script Setting, Security Script Setting and Data Wizard Premium Error Message.
Available for F & L series

Note that DataWizard Premium parameters are only available for Scanners that support DataWizard Premium. For more details about DataWizard Premium, please refer to *FuzzyScan DataWizard Premium User Manual.*

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	8Bh 00h 00h	00h	Variable	See Below	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	Variable	1 Byte	1 Byte

Parameter(s)						
First Parameter			.....	Last Parameter		
PID	Size	Options	.....	PID	Size	Options
2 Bytes	2 Bytes	Variable	.....	2 Bytes	2 Bytes	Variable
See Next Page						

. Host Requirements

If the device successfully received the above command issued by the host, a "**Device ACK**" will send to the host right after the device performed the action. Otherwise, a "**Device NAK**" will be sent to host to issue a command error. However, if the host can not receive any response from the device within the **user preset time-out duration**, please resend the above command.

. Parameter(s) Field

Set Transmission can change multiple parameters at one time, so it takes compound parameters.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

"Opcode" XOR "Status" XOR "Length" XOR "Parameter(s)"

. Size

Total size (bytes) of the Options field

Parameter(s)

< Table 7-1-1 > Set Transmission Parameter(s) Field

Parameter / PID / Size	Options	Descriptions
Interface Delay Settings **PID : 00h 00h** Size : 00h 03h (3 Bytes)	**1st Byte** - 00h - 01h~63h **2nd Byte** - 00h - 01h~63h **3rd Byte** - 00h - 01h~63h	**Intermessage Delay** None * 1~99(×5)ms **Intercharacter Delay** None * 1~99(×5)ms **Interfunction Delay** None * 1~99(×5)ms
Preamble **PID : 01h 01h** Size : 00h 10h (16 Bytes)	**1st Byte** - XXh **2nd~16th Byte** - XXh XXh...XXh	Total number of the Preamble characters 1~15 character(s) **(See Notes)**
Postamble **PID : 01h 02h** Size : 00h 10h (16 Bytes)	**1st Byte** - XXh **2nd~16th Byte** - XXh XXh...XXh	Total number of the Postamble characters 1~15 character(s) **(See Notes)**
Symbol ID Transmission **PID : 01h 03h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h - 03h - 04h - 05h - 06h	Disable * Enable prefix ID Enable suffix ID Enable both prefix and suffix ID Enable prefix AIM ID Enable suffix AIM ID Enable both prefix and suffix AIM ID

. ***Notes***

1. Intercharacter Delay, Interfunction Delay settings are not available for serial communications via USB Virtual COM port.
2. Preamble/ Postamble 2nd~16th byte: If the desired ASCII characters for setting the Preamble/ Postamble are shorter than 15 bytes, the rest bytes should be set to **00h**.

Parameter(s)

< Table 7-1-1 > Set Transmission Parameter(s) Field (Continued)

Parameter / PID / Size	Options	Descriptions
Data Script Active Setting **PID : 02h 00h** Size : 00h 01h (1 Byte)	 - 01h - 02h …… - 10h	**(See Notes)** Active 1st Data Script * Active 2nd Data Script …… Active 16th Data Script
Data Script Setting **PID : 02h 01h** Size : 00h 01h (1 Byte)	**Bit 1** - 0 - 1 **Bit 0, Bit 2 ~ 7**	**Data Script (See Notes)** Disable * Enable **Reserved**
Security Script Setting **PID : 02h 02h** Size : 00h 01h (1 Byte)	 - 00h - 01h	**(See Notes)** Disable Security Script * Enable Security Script
DataWizard Premium Error Message **PID : 02h 03h** Size : 00h 01h (1 Byte)	 - 00h - 01h	**(See Notes)** Disable Error Message * Enable Error Message

. Notes

1. Data Script Active Setting, Data Script Setting, Security Script Setting and Data Wizard Premium Error Message are all DataWizard Premium parameters which are available for Scanners that support DataWizard Premium. For more details about DataWizard Premium, please refer to *FuzzyScan DataWizard Premium User Manual*.

Get Transmission (WF)

Descriptions

Request the desired one or more parameters of the Transmission settings as well as DataWizard Premium parameters including Data Script Active Setting, Data Script Setting, Security Script Setting and Data Wizard Premium Error Message.
Available for F & L series

Note that DataWizard Premium parameters are only available for Scanners that support DataWizard Premium. For more details about DataWizard Premium, please refer to *FuzzyScan DataWizard Premium User Manual.*

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	CCh 00h 00h	00h	Variable	See Below	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	Variable	1 Byte	1 Byte

Parameter(s)				
First Parameter		……	Last Parameter	
PID	Size	……	PID	Size
2 Bytes	2 Bytes	……	2 Bytes	2 Bytes
See Next Page				

. Host Requirements

If the device successfully received the above command issued by the host, the device will pack all requested parameters into a "**Reply Transmission**" message string then send to the host. Please refer to the "Reply Transmission" command for details. Otherwise, a "**Device NAK**" will be sent to host to indicate issue a command error. However, if the host can receive any response from the device within the **user preset time-out duration**, please resend the above command.

. Parameter(s) Field

Get Transmission can request multiple parameters at one time, so it takes compound parameters.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

"Opcode" XOR "Status" XOR "Length" XOR "Parameter(s)"

. Size

Total size (bytes) of the Options field

Parameter(s)

< Table 7-1-2 > Get Transmission Parameter(s) Field

Parameter	PID	Size
Interface Delay Settings	**00h 00h**	00h 00h
Preamble	**01h 01h**	00h 00h
Postamble	**01h 02h**	00h 00h
Symbology ID Transmission	**01h 03h**	00h 00h
Data Script Active Setting	**02h 00h**	00h 00h
Data Script Setting	**02h 01h**	00h 00h
Security Script Setting	**02h 02h**	00h 00h
DataWizard Premium Error Message	**02h 03h**	00h 00h
Codepage Encode Setting	**03h 00h**	00h 00h
Codepage Output Setting	**03h 01h**	00h 00h

Reply Transmission (WF)

Descriptions

Reply the desired one or more parameters of the Transmission settings as well as DataWizard Premium parameters including Data Script Active Setting, Data Script Setting, Security Script Setting and Data Wizard Premium Error Message.
Reply Transmission is sent by the device in response to the Get Transmission command. It sends the values for all the desired parameters requested in the Get Transmission command.
Available for F & L series

Note that DataWizard Premium parameters are only available for Scanners that support DataWizard Premium. For more details about DataWizard Premium, please refer to *FuzzyScan DataWizard Premium User Manual.*

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	**0Dh 00h 00h**	00h	Variable	See Below	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	Variable	1 Byte	1 Byte

Parameter(s)						
First Parameter			.....	Last Parameter		
PID	Size	Options	.....	PID	Size	Options
2 Bytes	2 Bytes	Variable	.....	2 Bytes	2 Bytes	Variable
See Next Page						

. Host Requirements

Since Reply Transmission is a device-to-host message, there is no response for this message.

. Parameter(s) Field

Reply Transmission can change multiple parameters at one time, so it takes compound parameters.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

”Opcode” XOR “Status” XOR “Length” XOR “Parameter(s)”

. Size

Total size (bytes) of the Options field

Parameter(s)

< Table 7-1-3 > Reply Transmission Parameter(s) Field (To be continued)

Parameter / PID / Size	Options	Descriptions
Interface Delay Settings **PID : 00h 00h** Size : 00h 03h (3 Bytes)	**1st Byte** - 00h - 01h~63h **2nd Byte** - 00h - 01h~63h **3rd Byte** - 00h - 01h~63h	**Intermessage Delay** None * 1~99(×5)ms **Intercharacter Delay** None * 1~99(×5)ms **Interfunction Delay** None * 1~99(×5)ms
Preamble **PID : 01h 01h** Size : 00h 10h (16 Bytes)	**1st Byte** - XXh **2nd~16th Byte** - XXh XXh...XXh	Total number of the Preamble characters 1~15 character(s) **(See Notes)**
Postamble **PID : 01h 02h** Size : 00h 10h (16 Bytes)	**1st Byte** - XXh **2nd~16th Byte** - XXh XXh...XXh	Total number of the Postamble characters 1~15 character(s) **(See Notes)**
Symbol ID Transmission **PID : 01h 03h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h - 03h - 04h - 05h - 06h	Disable * Enable prefix ID Enable suffix ID Enable both prefix and suffix ID Enable prefix AIM ID Enable suffix AIM ID Enable both prefix and suffix AIM ID

. Notes

1. Intercharacter Delay, Interfunction Delay settings are not available for serial communications via USB Virtual COM port.
2. Preamble/ Postamble: If the desired ASCII characters for setting the Preamble/ Postamble are shorter than 15 bytes, the rest bytes should be set to **00h**.

Parameter(s)

< Table 7-1-3 > Reply Transmission Parameter(s) Field (Continued)

Parameter / PID / Size	Options	Descriptions
Data Script Active Setting **PID : 02h 00h** Size : 00h 01h (1 Byte)	 - 01h - 02h …… - 10h	**(See Notes)** Active 1st Data Script * Active 2nd Data Script …… Active 16th Data Script
Data Script Setting **PID : 02h 01h** Size : 00h 01h (1 Byte)	**Bit 1** - 0 - 1 **Bit 0, Bit 2 ~ 7**	**Data Script (See Notes)** Disable * Enable **Reserved**
Security Script Setting **PID : 02h 02h** Size : 00h 01h (1 Byte)	 - 00h - 01h	**(See Notes)** Disable Security Script * Enable Security Script
DataWizard Premium Error Message **PID : 02h 03h** Size : 00h 01h (1 Byte)	 - 00h - 01h	**(See Notes)** Disable Error Message * Enable Error Message

. Notes

1. Data Script Active Setting, Data Script Setting, Security Script Setting and Data Wizard Premium Error Message are all DataWizard Premium parameters which are available for Scanners that support DataWizard Premium. For more details about DataWizard Premium, please refer to *FuzzyScan DataWizard Premium User Manual*.

2.8 SYMBOLOGY

Set Symbology (ALL)

Descriptions

Change the desired one or more parameters of the Symbology settings

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	**85h 00h 00h**	00h	Variable	See Below	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	Variable	1 Byte	1 Byte

Parameter(s)						
First Parameter			.....	Last Parameter		
PID	Size	Options	.....	PID	Size	Options
2 Bytes	2 Bytes	Variable	.....	2 Bytes	2 Bytes	Variable
See Next Page						

. Host Requirements

If the device successfully received the above command issued by the host, a "**Device ACK**" will send to the host right after the device performed the action. Otherwise, a "**Device NAK**" will be sent to host to issue a command error. However, if the host can not receive any response from the device within the **user preset time-out duration**, please resend the above command.

. Parameter(s) Field

Set Symbology can change multiple parameters at one time, so it takes compound parameters.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

"Opcode" XOR "Status" XOR "Length" XOR "Parameter(s)"

. Size

Total size (bytes) of the Options field

Parameter(s)

< Table 8-1-1 > Set Symbology Parameter(s) Field (To be continued)

Parameter / PID / Size	Options	Descriptions
Code 39 Readability **PID : 00h 00h** Size : 00h 01h (1 Byte)	 - 00h - 01h	 Disable Enable *
Code 39 Setting **PID : 00h 01h** Size : 00h 06h (6 Bytes)	**1st Byte** - 00h - 01h - 02h **2nd Byte** - 00h - 01h **3rd Byte** - 00h - 01h **4th Byte** - 00h - 01h **5th Byte** - 00h - 01h **6th Byte** - 00h - 01h	**Primary Format Selection** Standard Code 39 * Full ASCII Code 39 Code 32 (Italian Pharmaceutical) **Start/ Stop Symbol Transmission** Disable * Enable **Code 32 Leading A Transmission** Disable * Enable **MOD 43 Check Digit Verification** Disable * Enable **Check Digit Transmission** Disable * Enable **Code 39 Buffering** Disable * Enable
Code 39 Length **PID : 00h 02h** Size : 00h 02h (2 Bytes)	**1st Byte** - 01h~62h **2nd Byte** - 62h~01h	**Minimum Length** 1~98 (Default: 1) **Maximum Length** 98~1 (Default: 98)
Trioptic Code 39 Readability **PID : 00h 03h** Size : 00h 01h (1 Byte)	 - 00h - 01h	 Disable * Enable
Code 39 Security Level **PID : 00h 04h** Size : 00h 01h (1 Byte)	 - 00h - 01h - 02h - 03h	 Level 0 Level 1 Level 2 * Level 3

Parameter(s)

< Table 8-1-1 > Set Symbology Parameter(s) Field (Continued)

Parameter / PID / Size	Options	Descriptions
Codabar Readability **PID : 01h 00h** Size : 00h 01h (1 Byte)	 - 00h - 01h	 Disable Enable *
Codabar Settings **PID : 01h 01h** Size : 00h 04h (4 Bytes)	**1st Byte** - 00h - 01h - 02h - 03h **2nd Byte** - 00h - 01h - 02h - 03h - 04h **3rd Byte** - 00h - 01h **4th Byte** - 00h - 01h	**Primary Format Selection** Codabar Standard format * Codabar ABC format Codabar CLSI format Codabar CX format **Start/ Stop Symbol Transmission** Disable * Enable ABCD/ABCD Enable abcd/abcd Enable ABCD/TN*E Enable abcd/tn*e **Check Digit Verification** Disable * Enable **Check Digit Transmission** Disable * Enable
Codabar Length **PID : 01h 02h** Size : 00h 02h (2 Bytes)	**1st Byte** - 01h~62h **2nd Byte** - 62h~01h	**Minimum Length** 1~98 (Default: 4) **Maximum Length** 98~1 (Default: 98)
Codabar Check Digit **PID : 01h 03h** Size : 00h 01h (1 Byte)	 - 00h - 01h - 02h - 03h - 04h - 05h - 06h	 Modulus 16* Modulus 10/Weight 3 Modulus 11 Modulus 10/Weight 2 7 Check DR Weight Modulus 11 Runes (Modulus 10/Weight 2)

Parameter(s)

< Table 8-1-1 > Set Symbology Parameter(s) Field (Continued)

Parameter / PID / Size	Options	Descriptions
UPC-A/UPC-E Readability **PID : 02h 00h** Size : 00h 02h (2 Bytes)	**1st Byte** - 00h - 01h **2nd Byte** - 00h - 01h	**UPC-A Readability** Disable Enable * **UPC-E Readability** Disable Enable *
UPC-A/UPC-E Setting **PID : 02h 01h** Size : 00h 06h (6 Bytes)	**1st Byte** - 00h - 01h **2nd Byte** - 00h - 01h **3rd Byte** - 00h - 01h **4th Byte** - 00h - 01h **5th Byte** - 00h - 01h **6th Byte** - 00h - 01h	**UPC-E Expansion** Disable * Enable **UPC Standardization** Disable * Enable **UPC Numeric System** Disable Enable * **UPC-A Check Digit Transmission** Disable Enable * **UPC-E Check Digit Transmission** Disable Enable * **UPC "leading 1" Portion** Disable * Enable
UPC-A/UPC-E Supplement **PID : 02h 02h** Size : 00h 03h (3 Bytes)	**1st Byte** - 00h - 01h - 02h - 03h **2nd Byte** - 00h - 01h **3rd Byte** - 00h - 01h	**Supplement Digits Selection** Without * With only 2 supplement digits With only 5 supplement digits With 2/5 supplement digits **Force Supplement Digits Output** Disable * Enable **UPC Family Addenda Separator** Disable * Enable

Parameter(s)

< Table 8-1-1 > Set Symbology Parameter(s) Field (Continued)

Parameter / PID / Size	Options	Descriptions
EAN-13/EAN-8 Readability **PID : 03h 00h** Size : 00h 02h (2 Bytes)	**1st Byte** - 00h - 01h **2nd Byte** - 00h - 01h	**EAN/JAN-13 Readability** Disable Enable * **EAN/JAN-8 Readability** Disable Enable *
EAN-13/EAN-8 Setting **PID : 03h 01h** Size : 00h 04h (4 Bytes)	**1st Byte** - 00h - 01h **2nd Byte** - 00h - 01h **3rd Byte** - 00h - 01h **4th Byte** - 00h - 01h	**EAN-8 Expansion** Disable * Enable **EAN-13 Check Digit Transmission** Disable Enable * **EAN-8 Check Digit Transmission** Disable Enable * **ISBN/ISSN Reading Check** Disable * Enable
EAN-13/EAN-8 Supplement **PID : 03h 02h** Size : 00h 03h (3 Bytes)	**1st Byte** - 00h - 01h - 02h - 03h **2nd Byte** - 00h - 01h **3rd Byte** - 00h - 01h	**Supplement Digits Selection** Without * With only 2 supplement digits With only 5 supplement digits With 2/5 supplement digits **Force Supplement Digits Output** Disable * Enable **EAN Family Addenda Separator** Disable * Enable
EAN Supplement Control **PID : 03h 04h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h - 03h - 04h - 05h - 06h - 07h	Disable All Specific Prefix Supplement Output * Enable All Specific Prefix Supplement Output Enable 491 Supplement Output Enable 978/979 Supplement Output Enable 977 Supplement Output Enable 378/379 Supplement Output Enable 414/419 Supplement Output Enable 434/439 Supplement Output
UCC Coupon Extended Code Readability **PID : 03h 03h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable* Enable

Parameter(s)

< Table 8-1-1 > Set Symbology Parameter(s) Field (Continued)

Parameter / PID / Size	Options	Descriptions
IATA Readability **PID : 04h 00h** Size : 00h 01h (1 Byte)	 - 00h - 01h	 Disable * Enable
IATA Setting **PID : 04h 01h** Size : 00h 04h (4 Bytes)	**1st Byte** - 00h - 01h **2nd Byte** - 00h - 01h - 02h - 03h - 04h **3rd Byte** - 00h - 01h **4th Byte** - 00h - 01h	**IATA Checking Selection** 15-digit fixed length IATA checking* Variable length IATA checking **Check Digit Verification** Disable * check digit automatic verification S/N checking digit verification only CPN checking digit verification only CPN, Airline and S/N check digit verification **Check Digit Transmission** Disable* Enable **Start/Stop Symbol Transmission** Disable * Enable
Interleaved 2 of 5 Readability **PID : 04h 02h** Size : 00h 01h (1 Byte)	 - 00h - 01h	 Disable Enable *
Interleaved 2 of 5 Settings **PID : 04h 03h** Size : 00h 03h (3 Bytes)	**1st Byte** - 00h - 01h **2nd Byte** - 00h - 01h - 02h **3rd Byte** - 00h - 01h	**Decoding Format Selection** Interleaved 2 of 5 * German Postal Code **USS/OPCC Check Digit Verification** Disable * USS check digit OPCC check digit **Check Digit Transmission** Disable * Enable
Standard/Industrial 2 of 5 Readability **PID : 04h 04h** Size : 00h 01h (1 Byte)	 - 00h - 01h	 Disable * Enable
Matrix 2 of 5 Readability **PID : 04h 05h** Size : 00h 01h (1 Byte)	 - 00h - 01h	 Disable * Enable
China Postal Code Readability **PID : 04h 06h** Size : 00h 01h (1 Byte)	 - 00h - 01h	 Disable * Enable

Parameter(s)

< Table 8-1-1 > Set Symbology Parameter(s) Field (To be continued)

Parameter / PID / Size	Options	Descriptions
Code 25 Setting **PID : 04h 07h** Size : 00h 02h (2 Bytes)	**1st Byte** - 00h - 01h **2nd Byte** - 00h - 01h	**Check Digit Verification** Disable * Enable **Check Digit Transmission** Disable * Enable
Code 25 Length **PID : 04h 08h** Size : 00h 02h (2 Bytes)	**1st Byte** - 01h~62h **2nd Byte** - 62h~01h	**Minimum Length** 1~98 (Default: 4) **Maximum Length** 98~1 (Default: 98)
Code 11 Readability **PID : 05h 00h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable * Enable
Code 11 Setting **PID : 05h 01h** Size : 00h 02h (2 Bytes)	**1st Byte** - 00h - 01h - 02h **2nd Byte** - 00h - 01h	**Check Digit Verification** Disable * 1-check digit verification 2-check digit verification **Check Digit Transmission** Disable * Enable
Code 11 Length **PID : 05h 02h** Size : 00h 02h (2 Bytes)	**1st Byte** - 01h~62h **2nd Byte** - 62h~01h	**Minimum Length** 1~98 (Default: 4) **Maximum Length** 98~1 (Default: 98)
Code 93 Readability **PID : 06h 00h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable Enable *
Code 93 Check Digit Transmission **PID : 06h 01h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable * Enable
Code 93 Length **PID : 06h 02h** Size : 00h 02h (2 Bytes)	**1st Byte** - 01h~62h **2nd Byte** - 62h~01h	**Minimum Length** 1~98 (Default: 1) **Maximum Length** 98~1 (Default: 98)

Parameter(s)

< Table 8-1-1 > Set Symbology Parameter(s) Field (Continued)

Parameter / PID / Size	Options	Descriptions
MSI/Plessey Readability **PID : 07h 00h** Size : 00h 01h (1 Byte)	 - 00h - 01h	 Disable * Enable
MSI/Plessey Setting **PID : 07h 01h** Size : 00h 02h (2 Bytes)	**1st Byte** - 00h - 01h - 02h **2nd Byte** - 00h - 01h	**Check Digit Selection** MOD 10 check digit * MOD 10-10 check digit MOD 11-10 check digit **Check Digit Transmission** Disable * Enable
MSI/Plessey Length **PID : 07h 02h** Size : 00h 02h (2 Bytes)	**1st Byte** - 01h~62h **2nd Byte** - 62h~01h	**Minimum Length** 1~98 (Default: 4) **Maximum Length** 98~1 (Default: 98)
Code 128/EAN-128 Readability **PID : 08h 00h** Size : 00h 01h (1 Byte)	 - 00h - 01h	 Disable Enable *
Code 128/EAN-128 Setting **PID : 08h 01h** Size : 00h 01 (1 Byte)	 - 00h - 01h	 ISBT Concatenation Off * ISBT Concatenation On
Code 128/EAN-128 Length **PID : 08h 02h** Size : 00h 02h (2 Bytes)	**1st Byte** - 01h~62h **2nd Byte** - 62h~01h	**Minimum Length** 1~98 (Default: 1) **Maximum Length** 98~1 (Default: 98)
Code 128/EAN-128 Security Level **PID : 08h 03h** Size : 00h 01h (1 Byte)	 - 00h - 01h	 Level 0 Level 1 *
GS1-128 Readability **PID : 08h 04h** Size : 00h 01h (1 Byte)	 - 00h - 01h	 Disable Enable *
GS1-128 Length **PID : 08h 05h** Size : 00h 02h (2 Bytes)	**1st Byte** - 01h~62h **2nd Byte** - 62h~01h	**Minimum Length** 1~98 (Default: 1) **Maximum Length** 98~1 (Default: 98)

Parameter(s)

< Table 8-1-1 > Set Symbology Parameter(s) Field (Continued)

Parameter / PID / Size	Options	Descriptions
UK/Plessey Readability **PID : 09h 00h** Size : 00h 01h (1 Byte)	 - 00h - 01h	 Disable * Enable
UK/Plessey Setting **PID : 09h 01h** Size : 00h 03h (3 Bytes)	**1st Byte** - 00h - 01h **2nd Byte** - 00h - 01h **3rd Byte** - 00h - 01h	**Primary Format Selection** Standard * CLSI **Convert X to A-F** Disable * Enable **Check Digit Transmission** Disable * Enable
UK/Plessey Length **PID : 09h 02h** Size : 00h 02h (2 Bytes)	**1st Byte** - 01h~62h **2nd Byte** - 62h~01h	**Minimum Length** 1~98 (Default: 4) **Maximum Length** 98~1 (Default: 98)
Telepen Readability **PID : 0Ah 00h** Size : 00h 01h (1 Byte)	 - 00h - 01h	 Disable * Enable
Telepen Setting **PID : 0Ah 01h** Size : 00h 02h (2 Bytes)	**1st Byte** - 00h - 01h **2nd Byte** - 00h - 01h	**Primary Format Selection** Telepen Full ASCII mode Telepen Numeric mode * **Check Digit Transmission** Disable * Enable
Telepen Length **PID : 0Ah 02h** Size : 00h 02h (2 Bytes)	**1st Byte** - 01h~62h **2nd Byte** - 62h~01h	**Minimum Length** 1~98 (Default: 4) **Maximum Length** 98~1 (Default: 98)
GS 1 DataBar Readability **PID : 20h 00h** Size : 00h 03h (3 Bytes)	**1st Byte** - 00h - 01h **2nd Byte** - 00h - 01h **3rd Byte** - 00h - 01h	**GS1 DataBar (RSS-14)** Disable Enable * **GS1 DataBar Limited** Disable Enable * **GS1 DataBar Expanded** Disable Enable *
GS 1 DataBar Expanded Length **PID : 20h 01h** Size : 00h 02h (2 Bytes)	**1st Byte** - 01h~4Ah **2nd Byte** - 4Ah~01h	**Minimum Length** 1~74 (Default: 4) **Maximum Length** 74~1 (Default: 74)

Parameter(s)

< Table 8-1-1 > Set Symbology Parameter(s) Field (Continued)

Parameter / PID / Size	Options	Descriptions
Composite Code Readability **PID : 21h 00h** Size : 00h 01h (1 Byte)	 - 00h - 01h	 Disable * Enable
UPC Composite Mode **PID : 21h 01h** Size : 00h 01h (1 Byte)	 - 00h - 01h	 Disable * Enable
PDF417/ Micro PDF417 Readability **PID : 22h 00h** Size : 00h 02h (2 Bytes)	**1st Byte** - 00h - 01h **2nd Byte** - 00h - 01h	**PDF417 Readability** Disable Enable * **Micro PDF417 Readability** Disable * Enable
Codablock F Readability **PID : 23h 00h** Size : 00h 01h (1 Byte)	 - 00h - 01h	 Disable * Enable
Code 16K Readability **PID : 24h 00h** Size : 00h 01h (1 Byte)	 - 00h - 01h	 Disable * Enable
Code 16K Length **PID : 24h 01h** Size : 00h 02h (2 Bytes)	**1st Byte** - 01h~A0h **2nd Byte** - A0h~01h	**Minimum Length** 1~160 (Default: 1) **Maximum Length** 160~1 (Default: 160)
Code 49 Readability **PID : 25h 00h** Size : 00h 01h (1 Byte)	 - 00h - 01h	 Disable * Enable
Code 49 Length **PID : 25h 01h** Size : 00h 02h (2 Bytes)	**1st Byte** - 01h~51h **2nd Byte** - 51h~01h	**Minimum Length** 1~81 (Default: 1) **Maximum Length** 81~1 (Default: 81)

Parameter(s)

< Table 8-1-1 > Set Symbology Parameter(s) Field (Continued)

Parameter / PID / Size	Options	Descriptions
QR Code Readability **PID : 30h 00h** Size : 00h 01h (1 Byte)	 - 00h - 01h	 Disable Enable *
Micro QR Code Readability **PID : 30h 01h** Size : 00h 01h (1 Byte)	 - 00h - 01h	 Disable Enable *
QR Code Setting **PID : 30h 02h** Size : 00h 02h (2 Bytes)	**1st Byte** - 00h - 01h **2nd Byte** - 00h - 01h - 02h	**QR Code Append** Disable Enable * **QR Code Inverse Reading** Disable * Enable Auto Detect
QR Code Length **PID : 30h 03h** Size : 00h 04h (4 Bytes)	**1st & 2nd Byte** - 01h~1BB1h **3rd & 4th Byte** - 1BB1h~01h	**Minimum Length**(Big Endian) 1~7089 (Default: 1) **Maximum Length**(Big Endian) 7089~1 (Default: 7089)
Data Matrix Readability **PID : 31h 00h** Size : 00h 01h (1 Byte)	 - 00h - 01h	 Disable Enable *
Data Matrix Setting **PID : 31h 01h** Size : 00h 02h (2 Bytes)	**1st Byte** - 00h - 01h **2nd Byte** - 00h - 01h - 02h	**Data Matrix Append** Disable Enable * **Data Matrix Inverse Reading** Disable * Enable Auto Detect
Data Matrix Length **PID : 31h 02h** Size : 00h 04h (4 Bytes)	**1st & 2nd Byte** - 01h~C2Ch **3rd & 4th Byte** - C2Ch~01h	**Minimum Length**(Big Endian) 1~3116 (Default: 1) **Maximum Length**(Big Endian) 3116~1 (Default: 3116)
MaxiCode Readability **PID : 32h 00h** Size : 00h 01h (1 Byte)	 - 00h - 01h	 Disable * Enable
MaxiCode Length **PID : 32h 01h** Size : 00h 02h (2 Bytes)	**1st Byte** - 01h~96h **2nd Byte** - 96h~01h	**Minimum Length** 1~150 (Default: 1) **Maximum Length** 150~1 (Default: 150)

Parameter(s)

< Table 8-1-1 > Set Symbology Parameter(s) Field (Continued)

Parameter / PID / Size	Options	Descriptions
Aztec Readability **PID : 33h 00h** Size : 00h 01h (1 Byte)	 - 00h - 01h	 Disable * Enable
Aztec Setting **PID : 33h 01h** Size : 00h 02h (2 Bytes)	**1st Byte** - 00h - 01h **2nd Byte** - 00h - 01h - 02h	**Aztec Append** Disable * Enable **Aztec Inverse Reading** Disable * Enable Auto Detect
Aztec Length **PID : 33h 02h** Size : 00h 04h (4 Bytes)	**1st & 2nd Byte** - 01h~EF8h **3rd & 4th Byte** - EF8h~01h	**Minimum Length**(Big Endian) 1~3832 (Default: 1) **Maximum Length**(Big Endian) 3832 ~1 (Default: 3832)
Chinese Sensible Readability **PID : 34h 00h** Size : 00h 01h (1 Byte)	 - 00h - 01h	 Disable * Enable
Chinese Sensible Length **PID : 34h 01h** Size : 00h 04h (4 Bytes)	**1st & 2nd Byte** - 01h~1E99h **3rd & 4th Byte** - 1E99h~01h	**Minimum Length**(Big Endian) 1~7833 (Default: 1) **Maximum Length**(Big Endian) 7833~1 (Default: 7833)
Korea Post Code **PID : 50h 00h** Size : 00h 01h (1 Byte)	 - 00h - 01h	 Disable * Enable
Australian Post Readability **PID : 51h 00h** Size : 00h 01h (1 Byte)	 - 00h - 01h	 Disable * Enable
Australian Post Output Format **PID : 51h 01h** Size : 00h 03h (3 Bytes)	 - 00h FFh FFh - 00h 00h 00h - 00h 7Fh FFh - 01h 00h FFh	 Raw format Output * Numeric Encoding Output Alphanumeric Encoding Output Autodiscriminate Output
US Planet Readability **PID : 52h 00h** Size : 00h 01h (1 Byte)	 - 00h - 01h	 Disable * Enable
US Planet Check Digit Transmission **PID : 52h 01h** Size : 00h 01h (1 Byte)	 - 00h - 01h	 Disable * Enable

Parameter(s)

< Table 8-1-1 > Set Symbology Parameter(s) Field (Continued)

Parameter / PID / Size	Options	Descriptions
US Postnet Readability **PID : 53h 00h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable * Enable
US Postnet Check Digit Transmission **PID : 53h 01h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable * Enable
British Post Readability **PID : 54h 00h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable * Enable
British Post Check Digit Transmission **PID : 54h 01h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable * Enable
Japan Post Readability **PID : 55h 00h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable * Enable
Netherlands KIX Code Readability **PID : 56h 00h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable * Enable
Intelligent Mail Readability **PID : 57h 00h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable * Enable

Get Symbology (ALL)

Descriptions

Request the desired one or more parameters of the Symbology settings

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	C6h 00h 00h	00h	Variable	See Below	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	Variable	1 Byte	1 Byte

Parameter(s)				
First Parameter		.....	Last Parameter	
PID	Size	.....	PID	Size
2 Bytes	2 Bytes	.....	2 Bytes	2 Bytes
See Next Page				

. Host Requirements

If the device successfully received the above command issued by the host, the device will pack all requested parameters into a "**Reply Symbology**" message string then send to the host. Please refer to the "Reply Symbology" command for details. Otherwise, a "**Device NAK**" will be sent to host to indicate issue a command error. However, if the host can receive any response from the device within the **user preset time-out duration**, please resend the above command.

. Parameter(s) Field

Get Symbology can request multiple parameters at one time, so it takes compound parameters.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

"Opcode" XOR "Status" XOR "Length" XOR "Parameter(s)"

. Size

Total size (bytes) of the Options field

Parameter(s)

< Table 8-1-2 > Get Symbology Parameter(s) Field (To be continued)

Parameter	PID	Size
Code 39 Readability	00h 00h	00h 00h
Code 39 Setting	00h 01h	00h 00h
Code 39 Length	00h 02h	00h 00h
Trioptic Code 39 Readability	00h 03h	00h 00h
Code 39 Security Level	00h 04h	00h 00h
Codabar Readability	01h 00h	00h 00h
Codabar Settings	01h 01h	00h 00h
Codabar Length	01h 02h	00h 00h
Codabar Check Digit	01h 03h	00h 00h
UPC-A/UPC-E Readability	02h 00h	00h 00h
UPC-A/UPC-E Setting	02h 01h	00h 00h
UPC-A/UPC-E Supplement	02h 02h	00h 00h
EAN-13/EAN-8 Readability	03h 00h	00h 00h
EAN-13/EAN-8 Setting	03h 01h	00h 00h
EAN-13/EAN-8 Supplement	03h 02h	00h 00h
UCC Coupon Extended Code Readability	03h 03h	00h 00h
EAN Supplement Control	03h 04h	00h 00h
IATA Readability	04h 00h	00h 00h
IATA Setting	04h 01h	00h 00h
Interleaved 2 of 5 Readability	04h 02h	00h 00h
Interleaved 2 of 5 Settings	04h 03h	00h 00h
Standard/Industrial 2 of 5 Readability	04h 04h	00h 00h
Matrix 2 of 5 Readability	04h 05h	00h 00h
China Postal Code Readability	04h 06h	00h 00h
Code 25 Setting	04h 07h	00h 00h
Code 25 Length	04h 08h	00h 00h
Code 11 Readability	05h 00h	00h 00h
Code 11 Setting	05h 01h	00h 00h
Code 11 Length	05h 02h	00h 00h
Code 93 Readability	06h 00h	00h 00h
Code 93 Check Digit Transmission	06h 01h	00h 00h
Code 93 Length	06h 02h	00h 00h
MSI/Plessey Readability	07h 00h	00h 00h
MSI/Plessey Setting	07h 01h	00h 00h
MSI/Plessey Length	07h 02h	00h 00h

Parameter(s)

< Table 8-1-2 > Get Symbology Parameter(s) Field (Continued)

Parameter	PID	Size
Code 128/EAN-128 Readability	08h 00h	00h 00h
Code 128/EAN-128 Setting	08h 01h	00h 00h
Code 128/EAN-128 Length	08h 02h	00h 00h
Code 128/EAN-128 Security Level	08h 03h	00h 00h
GS1-128 Readability	08h 04h	00h 00h
GS1-128 Length	08h 05h	00h 00h
UK/Plessey Readability	09h 00h	00h 00h
UK/Plessey Setting	09h 01h	00h 00h
UK/Plessey Length	09h 02h	00h 00h
Telepen Readability	0Ah 00h	00h 00h
Telepen Setting	0Ah 01h	00h 00h
Telepen Length	0Ah 02h	00h 00h
GS 1 DataBar Readability	20h 00h	00h 00h
GS 1 DataBar Expanded Length	20h 01h	00h 00h
Composite Code Readability	21h 00h	00h 00h
UPC Composite Mode	21h 01h	00h 00h
PDF417/MicroPDF417 Readability	22h 00h	00h 00h
Codablock F Readability	23h 00h	00h 00h
Code 16K Readability	24h 00h	00h 00h
Code 16K Length	24h 01h	00h 00h
Code 49 Readability	25h 00h	00h 00h
Code 49 Length	25h 01h	00h 00h
QR Code Readability	30h 00h	00h 00h
Micro QR Code Readability	30h 01h	00h 00h
QR Code Setting	30h 02h	00h 00h
QR Code Length	30h 03h	00h 00h
Data Matrix Readability	31h 00h	00h 00h
Data Matrix Setting	31h 01h	00h 00h
Data Matrix Length	31h 02h	00h 00h
MaxiCode Readability	32h 00h	00h 00h
MaxiCode Length	32h 01h	00h 00h
Aztec Code Readability	33h 00h	00h 00h
Aztec Code Setting	33h 01h	00h 00h
Aztec Code Length	33h 02h	00h 00h

Parameter(s)

< Table 8-1-2 > Get Symbology Parameter(s) Field (Continued)

Parameter	PID	Size
Chinese Sensible Readability	34h 00h	00h 00h
Chinese Sensible Length	34h 01h	00h 00h
Korea Post Code	50h 00h	00h 00h
Australian Post Readability	51h 00h	00h 00h
Australian Post Output Format	51h 01h	00h 00h
US Planet Readability	52h 00h	00h 00h
US Planet Check Digit Transmission	52h 01h	00h 00h
US Postnet Readability	53h 00h	00h 00h
US Postnet Check Digit Transmission	53h 01h	00h 00h
British Post Readability	54h 00h	00h 00h
British Post Check Digit Transmission	54h 01h	00h 00h
Japan Post Readability	55h 00h	00h 00h
Netherlands KIX Code Readability	56h 00h	00h 00h
Intelligent Mail Readability	57h 00h	00h 00h

Reply Symbology (ALL)

Descriptions

Reply the desired one or more parameters of the Symbology settings

Reply Symbology is sent by the device in response to the Get Symbology command. It sends the values for all the desired parameters requested in the Get Symbology command.

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	07h 00h 00h	00h	Variable	See Below	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	Variable	1 Byte	1 Byte

Parameter(s)						
First Parameter			.....	Last Parameter		
PID	Size	Options	.....	PID	Size	Options
2 Bytes	2 Bytes	Variable	.....	2 Bytes	2 Bytes	Variable
See Next Page						

. Host Requirements

Since Reply Symbology is a device-to-host message, there is no response for this message.

. Parameter(s) Field

Set Symbology can change multiple parameters at one time, so it takes compound parameters.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

”Opcode” XOR “Status” XOR “Length” XOR “Parameter(s)”

. Size

Total size (bytes) of the Options field

Parameter(s)

< Table 8-1-3 > Reply Symbology Parameter(s) Field (To be continued)

Parameter / PID / Size	Options	Descriptions
Code 39 Readability **PID : 00h 00h** Size : 00h 01h (1 Byte)	 - 00h - 01h	 Disable Enable *
Code 39 Setting **PID : 00h 01h** Size : 00h 06h (6 Bytes)	**1st Byte** - 00h - 01h - 02h **2nd Byte** - 00h - 01h **3rd Byte** - 00h - 01h **4th Byte** - 00h - 01h **5th Byte** - 00h - 01h **6th Byte** - 00h - 01h	**Primary Format Selection** Standard Code 39 * Full ASCII Code 39 Code 32 (Italian Pharmaceutical) **Start/ Stop Symbol Transmission** Disable * Enable **Code 32 Leading A Transmission** Disable * Enable **MOD 43 Check Digit Verification** Disable * Enable **Check Digit Transmission** Disable * Enable **Code 39 Buffering** Disable * Enable
Code 39 Length **PID : 00h 02h** Size : 00h 02h (2 Bytes)	**1st Byte** - 01h~62h **2nd Byte** - 62h~01h	**Minimum Length** 1~98 (Default: 1) **Maximum Length** 98~1 (Default: 98)
Trioptic Code 39 Readability **PID : 00h 03h** Size : 00h 01h (1 Byte)	 - 00h - 01h	 Disable * Enable
Code 39 Security Level **PID : 00h 04h** Size : 00h 01h (1 Byte)	 - 00h - 01h - 02h - 03h	 Level 0 Level 1 Level 2 * Level 3

Parameter(s)

< Table 8-1-3 > Reply Symbology Parameter(s) Field (Continued)

Parameter / PID / Size	Options	Descriptions
Codabar Readability **PID : 01h 00h** Size : 00h 01h (1 Byte)	 - 00h - 01h	 Disable Enable *
Codabar Settings **PID : 01h 01h** Size : 00h 04h (4 Bytes)	**1st Byte** - 00h - 01h - 02h - 03h **2nd Byte** - 00h - 01h - 02h - 03h - 04h **3rd Byte** - 00h - 01h **4th Byte** - 00h - 01h	**Primary Format Selection** Codabar Standard format * Codabar ABC format Codabar CLSI format Codabar CX format **Start/ Stop Symbol Transmission** Disable * Enable ABCD/ABCD Enable abcd/abcd Enable ABCD/TN*E Enable abcd/tn*e **Check Digit Verification** Disable * Enable **Check Digit Transmission** Disable * Enable
Codabar Length **PID : 01h 02h** Size : 00h 02h (2 Bytes)	**1st Byte** - 01h~62h **2nd Byte** - 62h~01h	**Minimum Length** 1~98 (Default: 4) **Maximum Length** 98~1 (Default: 98)
Codabar Check Digit **PID : 01h 03h** Size : 00h 01h (1 Byte)	 - 00h - 01h - 02h - 03h - 04h - 05h - 06h	 Modulus 16* Modulus 10/Weight 3 Modulus 11 Modulus 10/Weight 2 7 Check DR Weight Modulus 11 Runes (Modulus 10/Weight 2)

Parameter(s)

< Table 8-1-3 > Reply Symbology Parameter(s) Field (Continued)

Parameter / PID / Size	Options	Descriptions
UPC-A/UPC-E Readability **PID : 02h 00h** Size : 00h 02h (2 Bytes)	**1st Byte** - 00h - 01h **2nd Byte** - 00h - 01h	**UPC-A Readability** Disable Enable * **UPC-E Readability** Disable Enable *
UPC-A/UPC-E Setting **PID : 02h 01h** Size : 00h 06h (6 Bytes)	**1st Byte** - 00h - 01h **2nd Byte** - 00h - 01h **3rd Byte** - 00h - 01h **4th Byte** - 00h - 01h **5th Byte** - 00h - 01h **6th Byte** - 00h - 01h	**UPC-E Expansion** Disable * Enable **UPC Standardization** Disable * Enable **UPC Numeric System** Disable Enable * **UPC-A Check Digit Transmission** Disable Enable * **UPC-E Check Digit Transmission** Disable Enable * **UPC "leading 1" Portion** Disable * Enable
UPC-A/UPC-E Supplement **PID : 02h 02h** Size : 00h 03h (3 Bytes)	**1st Byte** - 00h - 01h - 02h - 03h **2nd Byte** - 00h - 01h **3rd Byte** - 00h - 01h	**Supplement Digits Selection** Without * With only 2 supplement digits With only 5 supplement digits With 2/5 supplement digits **Force Supplement Digits Output** Disable * Enable **UPC Family Addenda Separator** Disable * Enable

Parameter(s)

< Table 8-1-3 > Reply Symbology Parameter(s) Field (Continued)

Parameter / PID / Size	Options	Descriptions
EAN-13/EAN-8 Readability **PID : 03h 00h** Size : 00h 02h (2 Bytes)	**1st Byte** - 00h - 01h **2nd Byte** - 00h - 01h	**EAN/JAN-13 Readability** Disable Enable * **EAN/JAN-8 Readability** Disable Enable *
EAN-13/EAN-8 Setting **PID : 03h 01h** Size : 00h 04h (4 Bytes)	**1st Byte** - 00h - 01h **2nd Byte** - 00h - 01h **3rd Byte** - 00h - 01h **4th Byte** - 00h - 01h	**EAN-8 Expansion** Disable * Enable **EAN-13 Check Digit Transmission** Disable Enable * **EAN-8 Check Digit Transmission** Disable Enable * **ISBN/ISSN Reading Check** Disable * Enable
EAN-13/EAN-8 Supplement **PID : 03h 02h** Size : 00h 03h (3 Bytes)	**1st Byte** - 00h - 01h - 02h - 03h **2nd Byte** - 00h - 01h **3rd Byte** - 00h - 01h	**Supplement Digits Selection** Without * With only 2 supplement digits With only 5 supplement digits With 2/5 supplement digits **Force Supplement Digits Output** Disable * Enable **EAN Family Addenda Separator** Disable * Enable
EAN Supplement Control **PID : 03h 04h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h - 03h - 04h - 05h - 06h - 07h	Disable All Specific Prefix Supplement Output * Enable All Specific Prefix Supplement Output Enable 491 Supplement Output Enable 978/979 Supplement Output Enable 977 Supplement Output Enable 378/379 Supplement Output Enable 414/419 Supplement Output Enable 434/439 Supplement Output
UCC Coupon Extended Code Readability **PID : 03h 03h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable* Enable

Parameter(s)

< Table 8-1-3 > Reply Symbology Parameter(s) Field (Continued)

Parameter / PID / Size	Options	Descriptions
IATA Readability **PID : 04h 00h** Size : 00h 01h (1 Byte)	 - 00h - 01h	 Disable * Enable
IATA Setting **PID : 04h 01h** Size : 00h 04h (4 Bytes)	**1st Byte** - 00h - 01h **2nd Byte** - 00h - 01h - 02h - 03h - 04h **3rd Byte** - 00h - 01h **4th Byte** - 00h - 01h	**IATA Checking Selection** 15-digit fixed length IATA checking* Variable length IATA checking **Check Digit Verification** Disable * check digit automatic verification S/N checking digit verification only CPN checking digit verification only CPN, Airline and S/N check digit verification **Check Digit Transmission** Disable* Enable **Start/Stop Symbol Transmission** Disable * Enable
Interleaved 2 of 5 Readability **PID : 04h 02h** Size : 00h 01h (1 Byte)	 - 00h - 01h	 Disable Enable *
Interleaved 2 of 5 Settings **PID : 04h 03h** Size : 00h 03h (3 Bytes)	**1st Byte** - 00h - 01h **2nd Byte** - 00h - 01h - 02h **3rd Byte** - 00h - 01h	**Decoding Format Selection** Interleaved 2 of 5 * German Postal Code **USS/OPCC Check Digit Verification** Disable * USS check digit OPCC check digit **Check Digit Transmission** Disable * Enable
Standard/Industrial 2 of 5 Readability **PID : 04h 04h** Size : 00h 01h (1 Byte)	 - 00h - 01h	 Disable * Enable
Matrix 2 of 5 Readability **PID : 04h 05h** Size : 00h 01h (1 Byte)	 - 00h - 01h	 Disable * Enable
China Postal Code Readability **PID : 04h 06h** Size : 00h 01h (1 Byte)	 - 00h - 01h	 Disable * Enable

Parameter(s)

< Table 8-1-3 > Reply Symbology Parameter(s) Field (To be continued)

Parameter / PID / Size	Options	Descriptions
Code 25 Setting PID : 04h 07h Size : 00h 02h (2 Bytes)	1st Byte - 00h - 01h 2nd Byte - 00h - 01h	Check Digit Verification Disable * Enable Check Digit Transmission Disable * Enable
Code 25 Length PID : 04h 08h Size : 00h 02h (2 Bytes)	1st Byte - 01h~62h 2nd Byte - 62h~01h	Minimum Length 1~98 (Default: 4) Maximum Length 98~1 (Default: 98)
Code 11 Readability PID : 05h 00h Size : 00h 01h (1 Byte)	 - 00h - 01h	 Disable * Enable
Code 11 Setting PID : 05h 01h Size : 00h 02h (2 Bytes)	1st Byte - 00h - 01h - 02h 2nd Byte - 00h - 01h	Check Digit Verification Disable * 1-check digit verification 2-check digit verification Check Digit Transmission Disable * Enable
Code 11 Length PID : 05h 02h Size : 00h 02h (2 Bytes)	1st Byte - 01h~62h 2nd Byte - 62h~01h	Minimum Length 1~98 (Default: 4) Maximum Length 98~1 (Default: 98)
Code 93 Readability PID : 06h 00h Size : 00h 01h (1 Byte)	 - 00h - 01h	 Disable Enable *
Code 93 Check Digit Transmission PID : 06h 01h Size : 00h 01h (1 Byte)	 - 00h - 01h	 Disable * Enable
Code 93 Length PID : 06h 02h Size : 00h 02h (2 Bytes)	1st Byte - 01h~62h 2nd Byte - 62h~01h	Minimum Length 1~98 (Default: 1) Maximum Length 98~1 (Default: 98)

Parameter(s)

< Table 8-1-3 > Reply Symbology Parameter(s) Field (Continued)

Parameter / PID / Size	Options	Descriptions
MSI/Plessey Readability **PID : 07h 00h** Size : 00h 01h (1 Byte)	 - 00h - 01h	 Disable * Enable
MSI/Plessey Setting **PID : 07h 01h** Size : 00h 02h (2 Bytes)	**1st Byte** - 00h - 01h - 02h **2nd Byte** - 00h - 01h	**Check Digit Selection** MOD 10 check digit * MOD 10-10 check digit MOD 11-10 check digit **Check Digit Transmission** Disable * Enable
MSI/Plessey Length **PID : 07h 02h** Size : 00h 02h (2 Bytes)	**1st Byte** - 01h~62h **2nd Byte** - 62h~01h	**Minimum Length** 1~98 (Default: 4) **Maximum Length** 98~1 (Default: 98)
Code 128/EAN-128 Readability **PID : 08h 00h** Size : 00h 01h (1 Byte)	 - 00h - 01h	 Disable Enable *
Code 128/EAN-128 Setting **PID : 08h 01h** Size : 00h 01 (1 Byte)	 - 00h - 01h	 ISBT Concatenation Off * ISBT Concatenation On
Code 128/EAN-128 Length **PID : 08h 02h** Size : 00h 02h (2 Bytes)	**1st Byte** - 01h~62h **2nd Byte** - 62h~01h	**Minimum Length** 1~98 (Default: 1) **Maximum Length** 98~1 (Default: 98)
Code 128/EAN-128 Security Level **PID : 08h 03h** Size : 00h 01h (1 Byte)	 - 00h - 01h	 Level 0 Level 1 *
GS1-128 Readability **PID : 08h 04h** Size : 00h 01h (1 Byte)	 - 00h - 01h	 Disable Enable *
GS1-128 Length **PID : 08h 05h** Size : 00h 02h (2 Bytes)	**1st Byte** - 01h~62h **2nd Byte** - 62h~01h	**Minimum Length** 1~98 (Default: 1) **Maximum Length** 98~1 (Default: 98)

Parameter(s)

< Table 8-1-3 > Reply Symbology Parameter(s) Field (Continued)

Parameter / PID / Size	Options	Descriptions
UK/Plessey Readability **PID : 09h 00h** Size : 00h 01h (1 Byte)	 - 00h - 01h	 Disable * Enable
UK/Plessey Setting **PID : 09h 01h** Size : 00h 03h (3 Bytes)	**1st Byte** - 00h - 01h **2nd Byte** - 00h - 01h **3rd Byte** - 00h - 01h	**Primary Format Selection** Standard * CLSI **Convert X to A-F** Disable * Enable **Check Digit Transmission** Disable * Enable
UK/Plessey Length **PID : 09h 02h** Size : 00h 02h (2 Bytes)	**1st Byte** - 01h~62h **2nd Byte** - 62h~01h	**Minimum Length** 1~98 (Default: 4) **Maximum Length** 98~1 (Default: 98)
Telepen Readability **PID : 0Ah 00h** Size : 00h 01h (1 Byte)	 - 00h - 01h	 Disable * Enable
Telepen Setting **PID : 0Ah 01h** Size : 00h 02h (2 Bytes)	**1st Byte** - 00h - 01h **2nd Byte** - 00h - 01h	**Primary Format Selection** Telepen Full ASCII mode Telepen Numeric mode * **Check Digit Transmission** Disable * Enable
Telepen Length **PID : 0Ah 02h** Size : 00h 02h (2 Bytes)	**1st Byte** - 01h~62h **2nd Byte** - 62h~01h	**Minimum Length** 1~98 (Default: 4) **Maximum Length** 98~1 (Default: 98)
GS 1 DataBar Readability **PID : 20h 00h** Size : 00h 03h (3 Bytes)	**1st Byte** - 00h - 01h **2nd Byte** - 00h - 01h **3rd Byte** - 00h - 01h	**GS1 DataBar (RSS-14)** Disable Enable * **GS1 DataBar Limited** Disable Enable * **GS1 DataBar Expanded** Disable Enable *
GS 1 DataBar Expanded Length **PID : 20h 01h** Size : 00h 02h (2 Bytes)	**1st Byte** - 01h~4Ah **2nd Byte** - 4Ah~01h	**Minimum Length** 1~74 (Default: 4) **Maximum Length** 74~1 (Default: 74)

Parameter(s)

< Table 8-1-3 > Reply Symbology Parameter(s) Field (Continued)

Parameter / PID / Size	Options	Descriptions
Composite Code Readability **PID : 21h 00h** Size : 00h 01h (1 Byte)	 - 00h - 01h	 Disable * Enable
UPC Composite Mode **PID : 21h 01h** Size : 00h 01h (1 Byte)	 - 00h - 01h	 Disable * Enable
PDF417/ Micro PDF417 Readability **PID : 22h 00h** Size : 00h 02h (2 Bytes)	**1st Byte** - 00h - 01h **2nd Byte** - 00h - 01h	**PDF417 Readability** Disable Enable * **Micro PDF417 Readability** Disable * Enable
Codablock F Readability **PID : 23h 00h** Size : 00h 01h (1 Byte)	 - 00h - 01h	 Disable * Enable
Code 16K Readability **PID : 24h 00h** Size : 00h 01h (1 Byte)	 - 00h - 01h	 Disable * Enable
Code 16K Length **PID : 24h 01h** Size : 00h 02h (2 Bytes)	**1st Byte** - 01h~A0h **2nd Byte** - A0h~01h	**Minimum Length** 1~160 (Default: 1) **Maximum Length** 160~1 (Default: 160)
Code 49 Readability **PID : 25h 00h** Size : 00h 01h (1 Byte)	 - 00h - 01h	 Disable * Enable
Code 49 Length **PID : 25h 01h** Size : 00h 02h (2 Bytes)	**1st Byte** - 01h~51h **2nd Byte** - 51h~01h	**Minimum Length** 1~81 (Default: 1) **Maximum Length** 81~1 (Default: 81)

Parameter(s)

< Table 8-1-3 > Reply Symbology Parameter(s) Field (Continued)

Parameter / PID / Size	Options	Descriptions
QR Code Readability **PID : 30h 00h** Size : 00h 01h (1 Byte)	 - 00h - 01h	 Disable Enable *
Micro QR Code Readability **PID : 30h 01h** Size : 00h 01h (1 Byte)	 - 00h - 01h	 Disable Enable *
QR Code Setting **PID : 30h 02h** Size : 00h 02h (2 Bytes)	**1st Byte** - 00h - 01h **2nd Byte** - 00h - 01h - 02h	**QR Code Append** Disable Enable * **QR Code Inverse Reading** Disable * Enable Auto Detect
QR Code Length **PID : 30h 03h** Size : 00h 04h (4 Bytes)	**1st & 2nd Byte** - 01h~1BB1h **3rd & 4th Byte** - 1BB1h~01h	**Minimum Length**(Big Endian) 1~7089 (Default: 1) **Maximum Length**(Big Endian) 7089~1 (Default: 7089)
Data Matrix Readability **PID : 31h 00h** Size : 00h 01h (1 Byte)	 - 00h - 01h	 Disable Enable *
Data Matrix Setting **PID : 31h 01h** Size : 00h 02h (2 Bytes)	**1st Byte** - 00h - 01h **2nd Byte** - 00h - 01h - 02h	**Data Matrix Append** Disable Enable * **Data Matrix Inverse Reading** Disable * Enable Auto Detect
Data Matrix Length **PID : 31h 02h** Size : 00h 04h (4 Bytes)	**1st & 2nd Byte** - 01h~C2Ch **3rd & 4th Byte** - C2Ch~01h	**Minimum Length**(Big Endian) 1~3116 (Default: 1) **Maximum Length**(Big Endian) 3116~1 (Default: 3116)
MaxiCode Readability **PID : 32h 00h** Size : 00h 01h (1 Byte)	 - 00h - 01h	 Disable * Enable
MaxiCode Length **PID : 32h 01h** Size : 00h 02h (2 Bytes)	**1st Byte** - 01h~96h **2nd Byte** - 96h~01h	**Minimum Length** 1~150 (Default: 1) **Maximum Length** 150~1 (Default: 150)

Parameter(s)

< Table 8-1-3 > Reply Symbology Parameter(s) Field (Continued)

Parameter / PID / Size	Options	Descriptions
Aztec Readability **PID : 33h 00h** Size : 00h 01h (1 Byte)	 - 00h - 01h	 Disable * Enable
Aztec Setting **PID : 33h 01h** Size : 00h 02h (2 Bytes)	**1st Byte** - 00h - 01h **2nd Byte** - 00h - 01h - 02h	**Aztec Append** Disable * Enable **Aztec Inverse Reading** Disable * Enable Auto Detect
Aztec Length **PID : 33h 02h** Size : 00h 04h (4 Bytes)	**1st & 2nd Byte** - 01h~EF8h **3rd & 4th Byte** - EF8h~01h	**Minimum Length**(Big Endian) 1~3832 (Default: 1) **Maximum Length**(Big Endian) 3832 ~1 (Default: 3832)
Chinese Sensible Readability **PID : 34h 00h** Size : 00h 01h (1 Byte)	 - 00h - 01h	 Disable * Enable
Chinese Sensible Length **PID : 34h 01h** Size : 00h 04h (4 Bytes)	**1st & 2nd Byte** - 01h~1E99h **3rd & 4th Byte** - 1E99h~01h	**Minimum Length**(Big Endian) 1~7833 (Default: 1) **Maximum Length**(Big Endian) 7833~1 (Default: 7833)
Korea Post Code **PID : 50h 00h** Size : 00h 01h (1 Byte)	 - 00h - 01h	 Disable * Enable
Australian Post Readability **PID : 51h 00h** Size : 00h 01h (1 Byte)	 - 00h - 01h	 Disable * Enable
Australian Post Output Format **PID : 51h 01h** Size : 00h 03h (3 Bytes)	 - 00h FFh FFh - 00h 00h 00h - 00h 7Fh FFh - 01h 00h FFh	 Raw format Output * Numeric Encoding Output Alphanumeric Encoding Output Autodiscriminate Output
US Planet Readability **PID : 52h 00h** Size : 00h 01h (1 Byte)	 - 00h - 01h	 Disable * Enable
US Planet Check Digit Transmission **PID : 52h 01h** Size : 00h 01h (1 Byte)	 - 00h - 01h	 Disable * Enable

Parameter(s)

< Table 8-1-3 > Reply Symbology Parameter(s) Field (Continued)

Parameter / PID / Size	Options	Descriptions
US Postnet Readability **PID : 53h 00h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable * Enable
US Postnet Check Digit Transmission **PID : 53h 01h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable * Enable
British Post Readability **PID : 54h 00h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable * Enable
British Post Check Digit Transmission **PID : 54h 01h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable * Enable
Japan Post Readability **PID : 55h 00h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable * Enable
Netherlands KIX Code Readability **PID : 56h 00h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable * Enable
Intelligent Mail Readability **PID : 57h 00h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable * Enable

2.9 DEVICE INFO

Get Device Info (ALL)

Descriptions

Request the desired device information as well as DataWizard Premium information parameters

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	D6h 00h 01h	00h	Variable	See Below	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	Variable	1 Byte	1 Byte

Parameter(s)				
First Parameter		.....	Last Parameter	
PID	Size	.....	PID	Size
2 Bytes	2 Bytes	.....	2 Bytes	2 Bytes
See Next Page				

. Host Requirements

If the device successfully received the above command issued by the host, the device will pack all requested parameters into a “Reply Device Info” message string then send to the host. Please refer to the “Reply Device Info” command for details. Otherwise, a “Device NAK” will be sent to host to indicate issue a command error. However, if the host can receive any response from the device within the user preset time-out duration, please resend the above command.

. Parameter(s) Field

Get Device Status can request multiple parameters at one time, so it takes compound parameters.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

”Opcode” XOR “Status” XOR “Length” XOR “Parameter(s)”

. Size

Total size (bytes) of the Options field

Parameter(s)

< Table 9-1-1 > Get Device Info Parameter(s) Field

Parameter	PID	Size
Custom ID	00h 00h	00h 00h
Module No.	00h 01h	00h 00h
Hardware ID	00h 02h	00h 00h
Software ID	00h 03h	00h 00h
DataWizard Premium Info.	01h 00h	00h 00h
Total Count of Data Scripts	01h 01h	00h 00h

Reply Device Info (ALL)

Descriptions

Reply the desired device information as well as DataWizard Premium information parameters. Reply Device Status is sent by the device in response to the Get Device Info command. It sends the values for all the desired parameters requested in the Get Device Info command.

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	17h 00h 01h	00h	Variable	See Below	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	Variable	1 Byte	1 Byte

Parameter(s)						
First Parameter			.....	Last Parameter		
PID	Size	Options	.....	PID	Size	Options
2 Bytes	2 Bytes	Variable	.....	2 Bytes	2 Bytes	Variable
See Next Page						

. Host Requirements

Since Reply Device Info is a device-to-host message, there is no response for this message.

. Parameter(s) Field

Reply Device Info can change multiple parameters at one time, so it takes compound parameters.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

”Opcode” XOR “Status” XOR “Length” XOR “Parameter(s)”

. Size

Total size (bytes) of the Options field

Parameter(s)

< Table 9-1-2 > Reply Device Info Parameter(s) Field

Parameter / PID / Size	Options	Descriptions
Custom ID PID : 00h 00h Size : 00h XXh (Variable Bytes)	- XXh…XXh XXh	(For example: CINO)
Module No. PID : 00h 01h Size : 00h XXh (Variable Bytes)	- XXh…XXh XXh	(For example: FUZZYSCAN F790WD)
Hardware ID PID : 00h 02h Size : 00h XXh (Variable Bytes)	- XXh…XXh XXh	(For example: OPIH3001M2400FR)
Software ID PID : 00h 03h Size : 00h XXh (Variable Bytes)	- XXh…XXh XXh	(For example: 1.03.01)
DataWizard Premium Info. PID : 01h 00h Size : 00h 0Fh	- XXh…XXh XXh	(For example: 0.9-1.0-0.90.01)
Total Count of Data Scripts PID : 01h 01h Size : 00h 01h	- 00h - 01h - 02h - 03h - 04h - 05h - 06h - 07h - 08h - 09h - 0Ah - 0Bh - 0Ch - 0Dh - 0Eh - 0Fh - 10h	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

Get Record Count (WF)

Descriptions

Request the total record count of Batch Mode
Available for F & L series

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	D6h 00h 03h	00h	00h 00h	<Null>	D5h	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	0 Byte	1 Byte	1 Byte

. Host Requirements

If the device successfully received the above command issued by the host, the device will pack all requested parameters into a “Reply Record Count” message string then send to the host. Please refer to the “Reply Record Count” command for details. Otherwise, a “Device NAK” will be sent to host to indicate issue a command error. However, if the host can receive any response from the device within the user preset time-out duration, please resend the above command.

. Parameter(s) Field

Get Device Status can request multiple parameters at one time, so it takes compound parameters.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

”Opcode” XOR “Status” XOR “Length” XOR “Parameter(s)”

. Size

Total size (bytes) of the Options field

Reply Record Count (WF)

Descriptions

Reply the total record count of Batch Mode
Available for F & L series

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	17h 00h 03h	00h	00h 02h	See Notes	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	2 Bytes	1 Byte	1 Byte

. Host Requirements

Since Reply Device Info is a device-to-host message, there is no response for this message.

. Parameter(s) Field

Reply Device Info can change multiple parameters at one time, so it takes compound parameters.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

”Opcode” XOR “Status” XOR “Length” XOR “Parameter(s)”

. Size

Total size (bytes) of the Options field

. Notes

The two bytes record count is formatted as High Byte Low Byte. For example, number 60000 is described as EAh 60h.

2.10 ACKNOWLEDGEMENT

Device ACK (ALL)

Descriptions

Device acknowledgement

Device ACK message is used to guarantee the reliability of packet transfers for commands that have no natural response, such as Action Commands, Set commands. Device ACK can not be disabled.

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	0Fh 00h 00h	00h	00h 00h	<Null>	0F	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	0 Byte	1 Byte	1 Byte

. Host Requirements

Since Device ACK is a device-to-host message, there is no response for this message.

. Parameter(s) Field

Device ACK message takes no parameters, so the Parameter(s) field is null.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

”Opcode” XOR “Status” XOR “Length” XOR “Parameter(s)”

Device NAK (ALL)

Descriptions

Device non-acknowledgement

Device NAK message is used to guarantee the reliability of packet transfers for commands that have no natural response, such as Action Commands, Set commands. On receiving a bad command, the scanner will send a Device NAK message to issue a command error including Opcode error, LRC check digit error and so on. Device NAK may not be disabled.

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	**0Eh 00h XXh**	00h	00h 00h	<Null>	0E	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	0 Byte	1 Byte	1 Byte

. Host Requirements

On receiving a bad command, it takes the device about 1 second to clear out the command buffer. So you are **NOT** supposed to send other commands during this period of time after receiving the Device NAK message. Since Device NAK is a device-to-host message, there is no response for this message.

. Opcode Field

The third byte of the Opcode varies according to the error code. It is reserved.

. Parameter(s) Field

Device NAK message takes no parameters, so the Parameter(s) field is null.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

”Opcode” XOR “Status” XOR “Length” XOR “Parameter(s)”

Host ACK (ALL)

Descriptions

Host acknowledgement in packet format.

Host ACK message is sent from host to device to guarantee the correctness of the decode data.

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	**91h 10h 00h**	00h	00h 04h	See below	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	4 Bytes	1 Byte	1 Byte

. Host Requirements

There is no response for this message.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

”Opcode” XOR “Status” XOR “Length” XOR “Parameter(s)”

Parameter(s)

< Table 10-1 > Host ACK Parameter(s) Field

Parameter / PID / Size	Options	Descriptions
Host ACK **PID : <Null>** Size : 00h 04h (4 Bytes)	-XXh XXh…XXh	Indicates the Data Packet ID (See **Decode Data** in Chapter 2.2) to which the Host ACK is replied

Host NAK (ALL)

Descriptions

Host non-acknowledgement

Host NAK message is sent from host to device to indicate that the data received is not correct.

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	**90h 10h 00h**	00h	00h 04h	See below	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	4 Bytes	1 Byte	1 Byte

. Host Requirements

There is no response for this message.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

”Opcode” XOR “Status” XOR “Length” XOR “Parameter(s)”

Parameter(s)

< Table 10-2 > Host NAK Parameter(s) Field

Parameter / PID / Size	Options	Descriptions
Host NAK **PID : <Null>** Size : 00h 04h (4 Bytes)	-XXh XXh…XXh	Indicates the Data Packet ID (See **Decode Data** in Chapter 2.2) to which the Host NAK is replied

Host ACK Extension (WF)

Descriptions

Host acknowledgement

Host ACK Extension is an extension of **Host ACK** which added a user defined message.

Available for F & L series

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	**91h 10h 01h**	00h	02h 00h	See Next Page	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	512 Bytes	1 Byte	1 Byte

. Host Requirements

There is no response for this message.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

”Opcode” XOR “Status” XOR “Length” XOR “Parameter(s)”

Parameter(s)

Size		Parameter	Value
4 Bytes		**Data Packet ID**	XXh XXh XXh XXh(See Notes)
2 Bytes		**Code Page**	XXh XXh (See Notes)
1 Byte	Bit 7	**Manual Close**	- 0 Disable - 1 Enable
	Bit 0~6	**Auto Close**	- 0h Disable - 3h after 3 seconds - 5h after 5 seconds - 8h after 8 seconds - Ah after 10 seconds
1 Byte	Bit 7~6	**Left Align**	Set Bit 7 to 1, Bit 6 to 0
		Right Align	Set Bit 7 to 0, Bit 6 to 1
		Center Align	Set both Bit 7 and Bit 6 to 1 or 0
	Bit 5~0	**Message Type**	- 0h Tips - 1h Warning - 2h Question - 3h Information - 4h Error - 5h Lock
1 Byte	Bit 4~7	**Beeping Type**	- 0h Short - 1h Long
	Bit 0~3	**Number of Beep**	- 0h Disable - 1h Once - 2h 2 times - 3h 3 times - 5h 5 times - 8h 8 times - Ah 10 times
1 Byte	Bit 4~7	**Vibration Duration**	- 1h 100ms - 2h 200ms - 3h 300ms - 4h 400ms - 5h 500ms
	Bit 0~3	**Number of Vibration**	- 0h Disable - 1h 1 time - 2h 2 times - 3h 3 times - 4h 4 times - 5h 5 times
3 Bytes		**Message Length**	XXh XXh XXh (See Notes)
499 Bytes		**Message Content**	XXh… (See Notes)

. *Notes*

1. **Data Packet ID**: If The Transmission Format is set to “Packet Data” (SETUP->Online Scanning -> Online Options -> Transmission Format -> Packet Data), the first 4 bytes of the **Decode Data** (Chapter 2.2) Command’s Parameter field indicates the Data Packet ID.
2. The following Chart lists all available **Code Pages** and their 2-byte Hex value.

437	OEM - United States	B5h 01h
737	OEM - Greek (formerly 437G)	E1h 02h
850	OEM - Multilingual Latin I	52h 03h
852	OEM - Latin II	54h 03h
855	OEM - Cyrillic	57h 03h
857	OEM - Turkish	59h 03h
860	OEM - Portuguese	5Ch 03h
863	OEM - French Canadian	5Fh 03h
865	OEM - Nordic	61h 03h
866	OEM - Russian	62h 03h
932	ANSI/OEM Japanese (Shift-JIS)	A4h 03h
936	ANSI/OEM - Simplified Chinese (GB2312)	A8h 03h
950	ANSI/OEM - Traditional Chinese (Big5)	B6h 03h
1250	ANSI - Central European	E2h 04h
1251	ANSI - Cyrillic	E3h 04h
1252	ANSI - Latin 1	E4h 04h
1253	ANSI - Greek	E5h 04h
1254	ANSI - Turkish	E6h 04h
1255	ANSI - Hebrew	E7h 04h

3. **Message Length** has at most three bytes. If the first byte is 0xFF, the following two bytes represent the content length, formatted as High Byte Low Byte. Otherwise, the first byte represents the content length itself, and the following two bytes will become part of the message content.
4. **Message Content** uses **Little-endian UCS-2** character set. If shorter than 503 bytes, the rest bytes should be set to **00h**.

Host NAK Extension (WF)

Descriptions

Host acknowledgement

Host NAK Extension is an extension of **Host NAK** which added a user defined message.

Available for F & L series

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	**90h 10h 01h**	00h	02h 00h	See Next Page	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	512 Bytes	1 Byte	1 Byte

. Host Requirements

There is no response for this message.

. Length

Total size (bytes) of the Parameter(s) field

. LRC

”Opcode” XOR “Status” XOR “Length” XOR “Parameter(s)”

Parameter(s)

Size		Parameter	Value
4 Bytes		**Data Packet ID**	XXh XXh XXh XXh(See Notes)
2 Bytes		**Code Page**	XXh XXh (See Notes)
1 Byte	Bit 7	**Manual Close**	- 0 Disable - 1 Enable
	Bit 0~6	**Auto Close**	- 0h Disable - 3h after 3 seconds - 5h after 5 seconds - 8h after 8 seconds - Ah after 10 seconds
1 Byte	Bit 7~6	**Left Align**	Set Bit 7 to 1, Bit 6 to 0
		Right Align	Set Bit 7 to 0, Bit 6 to 1
		Center Align	Set both Bit 7 and Bit 6 to 1 or 0
	Bit 5~0	**Message Type**	- 0h Tips - 1h Warning - 2h Question - 3h Information - 4h Error - 5h Lock
1 Byte	Bit 4~7	**Beeping Type**	- 0h Short - 1h Long
	Bit 0~3	**Number of Beep**	- 0h Disable - 1h Once - 2h 2 times - 3h 3 times - 5h 5 times - 8h 8 times - Ah 10 times
1 Byte	Bit 4~7	**Vibration Duration**	- 1h 100ms - 2h 200ms - 3h 300ms - 4h 400ms - 5h 500ms
	Bit 0~3	**Number of Vibration**	- 0h Disable - 1h 1 time - 2h 2 times - 3h 3 times - 4h 4 times - 5h 5 times
3 Bytes		**Message Length**	XXh XXh XXh (See Notes)
499 Bytes		**Message Content**	XXh… (See Notes)

. *Notes*

1. **Data Packet ID**: If The Transmission Format is set to “Packet Data” (SETUP->Online Scanning -> Online Options -> Transmission Format -> Packet Data), the first 4 bytes of the **Decode Data** (Chapter 2.2) Command’s Parameter field indicates the Data Packet ID.
2. The following Chart lists all available **Code Pages** and their 2-byte Hex value.

437	OEM - United States	B5h 01h
737	OEM - Greek (formerly 437G)	E1h 02h
850	OEM - Multilingual Latin I	52h 03h
852	OEM - Latin II	54h 03h
855	OEM - Cyrillic	57h 03h
857	OEM - Turkish	59h 03h
860	OEM - Portuguese	5Ch 03h
863	OEM - French Canadian	5Fh 03h
865	OEM - Nordic	61h 03h
866	OEM - Russian	62h 03h
932	ANSI/OEM Japanese (Shift-JIS)	A4h 03h
936	ANSI/OEM - Simplified Chinese (GB2312)	A8h 03h
950	ANSI/OEM - Traditional Chinese (Big5)	B6h 03h
1250	ANSI - Central European	E2h 04h
1251	ANSI - Cyrillic	E3h 04h
1252	ANSI - Latin 1	E4h 04h
1253	ANSI - Greek	E5h 04h
1254	ANSI - Turkish	E6h 04h
1255	ANSI - Hebrew	E7h 04h

3. **Message Length** has at most three bytes. If the first byte is 0xFF, the following two bytes represent the content length, formatted as High Byte Low Byte. Otherwise, the first byte represents the content length itself, and the following two bytes will become part of the message content.
4. **Message Content** uses **Little-endian UCS-2** character set. If shorter than 503 bytes, the rest bytes should be set to **00h**.

CHAPTER 3 CUSTOMER SUPPORT

If you have any problem with your equipment, please contact Cino for technical support. Contact information is available at Cino website: www.cino.com.tw. If you purchased your product from a Cino business partner, please contact that business partner for support.

When you contact Cino for technical support, please provide following information:

- Serial number of the unit
- Model number
- System Information

www.cino.com.tw

FuzzyScan Serial Command Manual

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