cino

FUZZYSCAN

Serial Command Manual

International Edition, A11 Release

Revision History

REV.	Date	Briefing	
A1	Apr, 2013	[New]	Merged all the CMD Manuals of different series into one Manual
		[New]	Added command TS A Operation Mode
		[New]	Flash, Force, Toggle, and Diagnostic Mode in TS Operation Mode are available for L series from now on
		[New]	Change the parameter name of “Inverse Reading” to “1D Barcode Inverse Reading” in Operation
		[New]	Modified parameter Code 128 Settings in Symbology
		[New]	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
		[New]	Added LED Illumination, Illumination Delay Duration in Operation
		[New]	Added Parameters for TS Operation including Operation Mode (Corded 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
A2	Aug, 2013	[New]	Added parameters for Transmission, including Data Script Active Setting, Data Script Setting, Security Script Setting and Data Wizard Error Message
		[New]	Added Security Check
A3	Mar, 2014	[New]	Added command BT A Operation Mode
		[New]	Added command FS A Operation Mode
		[New]	Added Auto Power Off Timeout and Bluetooth Device Name (Bluetooth A Series) in Bluetooth
		[New]	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
A4	Apr, 2014	[Changed]	Modified LED Status parameter in Action
A5	Jun, 2014	[Changed]	Modified Status description in Command Structure
A6	Jun, 2016	[Changed]	Modified RS232 ACK/NAK handshaking character in Options of Reply RS232 Parameter(s) Field
A7	Jul, 2016	[Changed]	Modified the test mode description

Revision History (continued)

REV.	Date	Briefing
A8	Feb, 2019	[Changed] Modified this manual's page numbering [New] Added Motion Control information [New] Added Code Page information [Changed] Modified the parameters of Capture Image Mode
A9	Nov, 2022	[New] Added HandHeld Decode Timeout and HandFree Decode Timeout information
A10	Feb, 2024	[New] Added option Serial Baud Rate - 230.4K BPS to Set/Reply USB COM [New] Added option Serial Baud Rate – 230.4K BPS to Set/Reply RS232 [New] Added Presentation Trigger Select [New] Added IR Sensitivity [New] Added Arabic, Thai, Russian, Vietnemese, Polish to Keyboard Country Layout [New] Added Modifier Key Output Control [New] Added Alt Code Digit Control/Break Control [Changed] Changed default value of 2D scan engine to Regular Aiming under 2D Select Aiming [Changed] Renamed Composite Code to GS1 Composite Code [Changed] Renamed UPC Leading Digit 1 to UPC E1 Readability [Changed] Renamed Data Matrix Setting to Data Matrix Inverse Reading [Changed] Modified Enter Capture Image Mode parameter in Image
A11	Jan, 2025	[New] Added Good Read Beeping, Buzzer Tone, Low Power State, 2D Handheld Illumination Intensity, 2D Hands-free Illumination Intensity, Illumination Color, DPM Diffused Illumination, DPM Illumination, Illumination Rotation Interval, DPM Mode, Top of Center Window, Bottom of Center Window, Left of Center Window and Right of Center Window parameters in Operation [New] Added Exit Batch Scanning, Enter Batch Scanning, Transmit Stored Data and Clear All Stored Data parameters in Action [New] Added Get Device Info (Cradle) parameter in Device Info [Changed] Renamed 1D Reading Redundancy to Reading Redundancy [New] Added User-defined Serial Trigger On, User-defined Serial Trigger Off [New] Added Trigger Toggle, Trigger Number [New] Added ROI, Top of ROI, Bottom of ROI, Left of ROI, Right of ROI [New] Added Swift Serial Reading [Changed] Added Enter Capture Image Mode Format Descriptions

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Table of Contents

About This Manual

This manual provides complete programming information on 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 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.

Other Documentation

You may also refer to the documents below for additional information.

FuzzyScan Quick Start Guide

Quick introduction to scanner setup and operation

FuzzyScan Programming Manual

Information pertaining on using preset barcodes to program Cino barcode scanners

FuzzyScan Integration Manual

Information pertaining to the setup and operation of Cino barcode scannners

Notational Conventions

Conventions	Descriptions
ALL	All FuzzyScan Series Scanners
SE	FuzzyScan Scan Engines
TS	FuzzyScan Corded Scanners
FS	FuzzyScan Fixed-mount Scanners & Scan Module
BT	FuzzyScan Bluetooth Scanners

The following conventions are used in **2.6 Operation** only.

Conventions	Descriptions
ALL	Serial Command applies to all FuzzyScan models
2D ONLY	Serial Command only applies to FuzzyScan 2D imager models: A800/BT, A700/BT, A600/BT, A500, FA400, PA600, S600, SE6000, SM6000 and SM5000 series
1D ONLY	Serial Command only applies to FuzzyScan linear imager models: F800/BT, F700/BT, F600/BT, F500, L700/BT, L600/BT, FM400, PF600BT, PL600BT, SM400/300 series
HANDHELD	Serial Command only applies to FuzzyScan handheld models: A800/BT, A700/BT, A600/BT, A500, F700/BT, F600/BT, F500, L700/BT, L600/BT, PA600BT, PF600BT, PL600BT series
COMPANION	Serial Command only applies to FuzzyScan companion models: PA600BT, PF600BT, PL600BT series
FIXED MOUNT	Serial Command only applies to FuzzyScan fixed mount models: FA400, FM400, SM5000 series
SCAN ENGINE	Serial Command only applies to FuzzyScan scan engine/module models: SE6000, SE400/300, SM6000, SM400/300 series
ON COUNTER	Serial Command only applies to FuzzyScan on-counter models: S600 series
CORDED	Serial Command applies to FuzzyScan corded models
CORDLESS	Serial Command applies to FuzzyScan cordless models
LASER ONLY	Serial Command only applies to FuzzyScan laser imager models: L700/BT, L600/BT, PL600BT series
BLUETOOTH	Serial Command only applies to FuzzyScan Bluetooth models: A800/BT, A700BT, A600BT, F700BT, F600BT, L700BT, L600BT, PA600BT, PF600BT, PL600BT series
A800 ONLY	Serial Command only applies to A800 series imager models: A898BT, A890 series
DP ONLY	Serial command only applies to DPM models: A898BT, A890 series

1 Command Overview

This chapter provides a comprehensive view of the FuzzyScan Serial Command to help you 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.

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
Image	Enter Capture Image Mode	Corded Scanners	Host
	Exit Capture Image Mode	Corded Scanners	Host
	Capture Image Ready Notify	Corded Scanners	Host
	Get Capture Image Data	Corded Scanners	Host
Action	LED Indicator	Bluetooth, Corded 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 Synchronize	Bluetooth Scanners	Host
	FS Test Mode	Fixed-mount Scanners	Host
	Host Interface	All Series 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 Bluetooth	Bluetooth Scanners	Host/Host/Device
Operation	Set/ Get/ Reply Operation	*<See Detailed Description>*	Host/Host/Device
Transmission	Set/ Get/ Reply Transmission	All Series Scanners	Host/Host/Device
	Set/ Get/ Reply USB HID	All Series Scanners	Host/Host/Device
Symbology	Set/ Get/ Reply Symbology	All Series Scanners	Host/Host/Device
Device Info	Get/ Reply Device Info	All Series Scanners	Host/Device
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

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	0 Byte/1 Byte/2 Bytes	1 Byte

Field Name	Size	Descriptions
Prefix	1 Byte	Fixed, "7Eh" [2]
Opcode	3 Bytes	Operation code to identifies each command
Status	1 Byte	**Bit 2 ACK/NAK** 0 = Request 1 = Do not request **Bit 3 Check Digit** 0 = Enable check digit 1 = Disable check digit **Bit 4 Check Digit Select** 0 = LRC (1 Byte) 1 = CRC16 (2 Bytes) [1] **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	0 Byte	**None** (Disable check digit)
	1 Byte	**LRC**: "Opcode" XOR "Status" XOR "Length" XOR "Parameter(s)"
	2 Bytes	**CRC16**: From "Opcode" to "Parameter(s)" [1]
Suffix	1 Byte	Fixed, "7Eh" [2]

1. **CRC16** Check Digit is only used in image command which is sent from scanner to host.
2. 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.
3. 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**

Example 1

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

" 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 sends following string to host:

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

Your serial host application has to change “5Ch 02h” to “**06h**”. LRC character should also be replaced by the LRC character once it is calculated as the special function characters.

Example 2

Prefix	Opcode	Status	Length	PID	Size	Option	LRC	Suffix
7e	88 00 00	00	00 05	00 0d	00 01	94	15	7e

The above list should be replaced as the following.

Prefix	Opcode	Status	Length	PID	Size	Option	LRC	Suffix
7e	88 00 00	00	00 05	00 0d	00 01	94	5c03	7e

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.

2 Interface Settings

This chapter provides detailed information of each serial command.

2.1 Communication

This section introduces the serial commands for configuring the communications between your Bluetooth scanner and host via ID and MAC address. You will find the details of “Set, “Get” and “Reply” action commands for both identification types.

Get Connected MAC (BT)

Get the connected scanners' MAC addresses

This command is used when working with the Smart Cradle 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)

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)

Get all the paired scanners' MAC addresses

This command is used when the working with the Smart Cradle 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)

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)

Use the MAC address to select the desired scanner to communicate

This command is useful when multiple scanners are connected to the Smart Cradle 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)

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)

Use the auto-assigned ID number to select the desired scanner to communicate

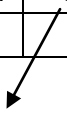
This command is useful when multiple scanners are connected to the Smart Cradle in PICO mode.

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)

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

This section introduces the serial commands for configuring the decoded data to be sent to the host.

Decode Data (ALL)

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 (see <table 6-1-1> Data Transmission Packet and Data Transmission Packet in PAIR/PICO Mode). 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)”

2.3 Image

This section introduces the serial commands for configuring how your scanner captures images. You will find the details of how to enter and exit capture image mode, as well as receive the captured image data.

Enter Capture Image Mode (TS)

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 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

Enter Capture Image Mode (TS) (continued)

Parameter(s)

Size	Parameter	Descriptions
1 Byte	**Type**	- 00h Photo - 01h Video
1 Byte	**Format**	- 00h 8 bits BMP - 01h 32 bits BMP - 02h JPEG - 04h 1 bits BMP
1 Byte	**Aimer**	- 00h Without Aimer - 01h With Aimer
1 Byte	**AE**	- 00h Fixed Exposure - 01h Auto Exposure
1 Byte	**Reserved (Always 00h)**	
1 Byte	**Exp Level** (The higher value the longer exposure time will be used)	- 0001h Level 1 - 0002h Level 2 - …(Range from Level 1 ~ 31) - 1Fh Level 31
1 Byte	**Gain**	- 0001h Level 1 - 0002h Level 2 - …(Range from Level 1 ~ 15) - 1Fh Level 15
1 Byte	**Auto Exp Max Level**	- 0001h Level 1 - 0002h Level 2 - …(Range from Level 1 ~ 31) - 1Fh Level 31
1 Byte	**Auto Expo Min Level**	- 0001h Level 1 - 0002h Level 2 - …(Range from Level 1 ~ 31) - 1Fh Level 31
1 Byte	**Reserved (Always 00h)**	

Exit Capture Image Mode (TS)

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>	9Bh	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 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)"

Capture Image Ready Notify (TS)

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>	5Ch 03h	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 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

0x5C 0x03: the escaped valued of 0x15

Get Capture Image Data (TS)

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.

Available for A series

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	80h 1Ah 02h	00h	00h 00h	<Null>	98h	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 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 Capture Image Data (TS) (continued)

Reply Format

Part 1 – First Image Data Command

Prefix	Opcode	Status	Length	Parameter	CRC16 [3]	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 [3]	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 [1]	Length [2]	Parameter	CRC16 [3]	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

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

This section introduces the serial commands for configuring various system settings, as well as specific security, synchronization, test mode and host interface settings. You will find the details of “Set, “Get” and “Reply” action command for each setting.

LED Indicator (BT, TS)

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 Corded F, L & A series

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	**80h 00h 00h**	00h	00h 02h	See <Table 4-1>	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	2 Byte	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)"

Parameter(s)

< Table 4-1 > LED Indicator Parameter(s) Field

Parameter / PID / Size	Options	Descriptions
LED Indicator **PID : <Null>** **Size : <Null>**	**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

LED Indicator (BT, TS) (continued)

Serial Command – LED Indicator

Descriptions	Prefix	Opcode	Status	Length	Options	LRC	Suffix
Red LED Off	7E	800000	00	0002	0100	83	7E
Red LED On	7E	800000	00	0002	0101	82	7E
Red LED Restore	7E	800000	00	0002	0102	81	7E
Green LED Off	7E	800000	00	0002	0200	80	7E
Green LED On	7E	800000	00	0002	0201	81	7E
Green LED Restore	7E	800000	00	0002	0202	82	7E
Blue LED Off	7E	800000	00	0002	0300	81	7E
Blue LED On	7E	800000	00	0002	0301	80	7E
Blue LED Restore	7E	800000	00	0002	0302	83	7E

Beeping (ALL)

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 4-2>	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 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)"

Beeping (ALL) (continued)

Parameter(s)

< Table 4-2 > Beeping Parameter(s) Field

Parameter / PID / Size	Options	Descriptions
Beeping **PID : <Null>** **Size : <Null>**	**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.

Beeping (ALL) (continued)

Serial Command

Descriptions	Prefix	Opcode	Status	Length	Options	LRC	Suffix
Beeping	7E	800100	00	0040	0101020203030404050 5000000000000000000 0000000000000000000 0000000000000000000 0000000000000000000 0000000000000000000 000000000000FF	3E	7E

Buzzer Volume (ALL)

Controls the scanner's buzzer volume

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	**80h 01h 03h**	00h	00h 01h	See <Table 4-3>	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	1 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)"

Parameter(s)

< Table 4-3 > Buzzer Volume Parameter(s) Field

Parameter / PID / Size	Options	Descriptions
Buzzer Volume PID : <Null> Size : <Null>	- 00h - 01h - 02h	Low Medium High ◄

Serial Command

Descriptions	Prefix	Opcode	Status	Length	Options	LRC	Suffix
Low	7E	**800103**	00	0001	**00**	83	7E
Medium	7E	**800103**	00	0001	**01**	82	7E
High	7E	**800103**	00	0001	**02**	81	7E

Serial Trigger (ALL)

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 4-4>	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 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)"

Parameter(s)

< Table 4-4 > Serial Trigger Parameter(s) Field

Parameter / PID / Size	Options	Descriptions
Serial Trigger		
PID : <Null>	- 00h	OFF
Size : <Null>	- 01h	ON

Serial Command

Descriptions	Prefix	Opcode	Status	Length	Options	LRC	Suffix
Trigger Off	7E	**800200**	00	0001	**00**	83	7E
Trigger On	7E	**800200**	00	0001	**01**	82	7E

Store Configuration (ALL)

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 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

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

Descriptions	Prefix	Opcode	Status	Length	LRC	Suffix
Store Configuration	7E	800300	00	0000	83	7E

Factory Default (ALL)

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.

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

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

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)"

Serial Command

Descriptions	Prefix	Opcode	Status	Length	LRC	Suffix
Factory Default	7E	800400	00	0000	84	7E

Master Default (ALL)

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, Out-of-range Scanning, Interface Delay 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 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

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)"

Serial Command

Descriptions	Prefix	Opcode	Status	Length	LRC	Suffix
Master Default	7E	800401	00	0000	85	7E

Security Check (ALL)

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. For more details about DataWizard, please refer to *FuzzyScan DataWizard 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 (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	Variable	Variable	Variable	7Eh
1 Byte	3 Bytes	1 Byte	2 Bytes	Variable	1 Byte	1 Byte

BT Synchronize (BT)

Synchronize BT scanner with Smart Cradle

If the BT scanner(s) are working with the Smart Cradle in PAIR mode or PICO mode, this command is used to sync the Scanner with the Smart Cradle, so that the changes of the following seven parameters will take effect instantly: “Handshaking Protocol”, “Baud Rate”, “Data Frame”, “Serial Response Timeout”, “Dollar Sign Convert”, “Field Delimiter”, “Data Transmission Packet” and “Cradle PAIR Lock”. 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 Smart Cradle 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 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

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)”

Serial Command

Descriptions	Prefix	Opcode	Status	Length	LRC	Suffix
BT Synchronize	7E	800900	00	0000	89	7E

FS Test Mode (FS)

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 <table 4-10>	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 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)”

Parameter(s)

< Table 4-10 > FS Test Mode Parameter(s) Field

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

Serial Command

Descriptions	Prefix	Opcode	Status	Length	Options	LRC	Suffix
Disable Fixed Reader Test Mode	7E	**800600**	00	0001	**00**	87	7E
Enable Fixed Reader Test Mode	7E	**800600**	00	0001	**01**	86	7E

Host Interface (ALL)

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	**80h 07h 00h**	00h	00h 01h	See <table 4-11>	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 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)"

Parameter(s)

< Table 4-11 > Host Interface Parameter(s) Field

Parameter / PID / Size	Options	Descriptions
Host Interface **PID : <Null>** **Size : <Null>**	- 00h - 06h - 02h	RS232 Serial USB CDC/Virtual COM USB HID keyboard

Serial Command

Descriptions	Prefix	Opcode	Status	Length	Options	LRC	Suffix
RS232 Serial	7E	**800700**	00	0001	**00**	86	7E
USB CDC/Virtual COM	7E	**800700**	00	0001	**06**	80	7E
USB HID keyboard	7E	**800700**	00	0001	**02**	84	7E

Exit Batch Scanning (BT)

Exit the Batch Scanning mode

This command allows your scanner to exit the batch scanning mode.

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	80h 09h 02h	00h	00h 01h	00h	8Ah	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)"

Serial Command

Description	Prefix	Opcode	Status	Length	Options	LRC	Suffix
Exit Batch Scanning	7E	800902	00	0001	00	8A	7E

Enter Batch Scanning (BT)

Enter the Batch Scanning mode

This command allows your scanner to activate the batch scanning mode and store decoded data.

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	80h 09h 02h	00h	00h 01h	01h	8Bh	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)"

Serial Command

Description	Prefix	Opcode	Status	Length	Options	LRC	Suffix
Enter Batch Scanning	7E	800902	00	0001	00	8B	7E

Transmit Stored Data (BT)

Transmit stored data to the host

This command transmits stored data to the host upon trigger activation.

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	80h 09h 03h	00h	00h 00h	<Null>	8Ah	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)"

Serial Command

Description	Prefix	Opcode	Status	Length	Options	LRC	Suffix
Transmit Stored Data	7E	800902	00	0000	00	8A	7E

Clear All Stored Data (BT)

Clear stored data from scanner

This command clears all stored data from the scanner.

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	80h 09h 04h	00h	00h 00h	<Null>	8Dh	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)"

Serial Command

Description	Prefix	Opcode	Status	Length	LRC	Suffix
Clear All Stored Data	7E	800904	00	0000	8D	7E

2.5 Interface

This section introduces the serial commands for configuring the USB, RS232 and Bluetooth interface settings. You will find the details of “Set, “Get” and “Reply” action command for each setting.

Set USB COM (ALL)

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

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

Set USB COM (ALL) (continued)

Parameter(s)

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

Parameter / PID / Size	Options		Descriptions	
Serial STX/ETX Transmit **PID : 00h 00h** Size : 00h 01h (1 Byte)	- 00h - 01h		Disable ◄ Enable	
Serial 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	
Serial Baud Rate **PID : 00h 02h** Size : 00h 01h (1 Byte)	- 02h - 03h - 04h - 05h - 06h	- 07h - 08h - 09h - 0Ah	1200 BPS 2400 BPS 4800 BPS 9600 BPS ◄ 19.2K BPS	38.4K BPS 57.6K BPS 115.2K BPS 230.4K BPS
Serial Data Frame **PID : 00h 03h** 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
Serial Response Timeout **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	

If you are using the Smart Cradle to communicate with the Scanner, "BT Synchronization" command should be sent to the scanner after the setting of the "**Serial Handshaking Portocol**", "**Serial Baud Rate**", "**Serial Data Frame**" and "**Serial Response Timeout**" to sync the Scanner with the Smart Cradle, so that the settings will take effect immediately.

Set USB COM (ALL) (continued)

Parameter(s)

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

Parameter / PID / Size	Options	Descriptions
Serial NAK Retry Count **PID : 00h 05h** Size : 00h 01h (1 Byte)	- 03h - 00h - 01h~FEh - FFh	3 times◀ Disable 1~254 times Retry unlimited times
Serial ACK 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)**

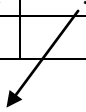
Serial NAK Retry Count ranges from **00h** (never retry) to **FFh** (always retry).

Get USB COM (ALL)

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

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

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

Get USB COM (ALL) (continued)

Parameter(s)

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

Parameter	PID	Size
Serial STX/ETX Transmit	00h 00h	00h 00h
Serial Handshaking Protocol	00h 01h	00h 00h
Serial Baud Rate	00h 02h	00h 00h
Serial Data Frame	00h 03h	00h 00h
Serial Response Timeout	00h 04h	00h 00h
Serial NAK Retry Count	00h 05h	00h 00h
Serial ACK Indication	00h 06h	00h 00h

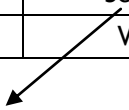
Reply USB COM (ALL)

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.

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

Reply USB COM (ALL) (continued)

Parameter(s)

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

Parameter / PID / Size	Options		Descriptions	
Serial STX/ETX Transmit **PID : 00h 00h** Size : 00h 01h (1 Byte)	- 00h - 01h		Disable ◄ Enable	
Serial 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	
Serial Baud Rate **PID : 00h 02h** Size : 00h 01h (1 Byte)	- 02h - 03h - 04h - 05h - 06h	- 07h - 08h - 09h - 0Ah	1200 BPS 2400 BPS 4800 BPS 9600 BPS ◄ 19.2K BPS	38.4K BPS 57.6K BPS 115.2K BPS 230.4K BPS
Serial Data Frame **PID : 00h 03h** 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
Serial Response Timeout **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	

If you are using the Smart Cradle to communicate with the Scanner, "BT Synchronization" command should be sent to the scanner after the setting of the "**Serial Handshaking Portocol**", "**Serial Baud Rate**", "**Serial Data Frame**" and "**Serial Response Timeout**" to sync the Scanner with the Smart Cradle, so that the settings will take effect immediately.

Reply USB COM (ALL) (continued)

Parameter(s)

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

Parameter / PID / Size	Options	Descriptions
Serial NAK Retry Count **PID : 00h 05h** Size : 00h 01h (1 Byte)	- 03h - 00h - 01h~FEh - FFh	3 times◀ Disable 1~254 times Retry unlimited times
Serial ACK 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)**

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

Set RS232 (ALL)

Change the desired one or more parameters of the RS232 Interface settings

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

Set RS232 (ALL) (continued)

Parameter(s)

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

Parameter / PID / Size	Options		Descriptions	
Serial STX/ETX Transmission **PID : 00h 00h** Size : 00h 01h (1 Byte)	- 00h - 01h		Disable ◄ Enable	
Serial 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	
Serial Baud Rate **PID : 00h 02h** Size : 00h 01h (1 Byte)	- 02h - 03h - 04h - 05h - 06h	- 07h - 08h - 09h - 0Ah	1200 BPS 2400 BPS 4800 BPS 9600 BPS ◄ 19.2K BPS	38.4K BPS 57.6K BPS 115.2K BPS 230.4K BPS
Serial Data Frame **PID : 00h 03h** 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
Serial Response Timeout **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	

If you are using the Smart Cradle to communicate with the Scanner, "BT Synchronization" command should be sent to the scanner after the setting of the "**Serial Handshaking Portocol**", "**Serial Baud Rate**", "**Serial Data Frame**" and "**Serial Response Timeout**" to sync the Scanner with the Smart Cradle, so that the settings will take effect immediately.

Set RS232 (ALL) (continued)

Parameter(s)

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

Parameter / PID / Size	Options	Descriptions
Serial NAK Retry Count **PID : 00h 05h** Size : 00h 01h (1 Byte)	- 03h - 00h - 01h~FEh - FFh	3 times◄ Disable 1~254 times Retry unlimited times
Serial ACK 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)**

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

Get RS232 (ALL)

Request the desired one or more parameters of the RS232 Interface settings

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, 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

Get RS232 (ALL) (continued)

Parameter(s)

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

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

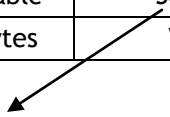
Reply RS232 (ALL)

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.

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

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

Reply RS232 (ALL) (continued)

Parameter(s)

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

Parameter / PID / Size	Options		Descriptions	
Serial STX/ETX Transmission **PID : 00h 00h** Size : 00h 01h (1 Byte)	- 00h - 01h		Disable ◄ Enable	
Serial 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	
Serial Baud Rate **PID : 00h 02h** Size : 00h 01h (1 Byte)	- 02h - 03h - 04h - 05h - 06h	- 07h - 08h - 09h - 0Ah	1200 BPS 2400 BPS 4800 BPS 9600 BPS ◄ 19.2K BPS	38.4K BPS 57.6K BPS 115.2K BPS 230.4K BPS
Serial Data Frame **PID : 00h 03h** 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
Serial Response Timeout **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	

If you are using the Smart Cradle to communicate with the Scanner, "BT Synchronization" command should be sent to the scanner after the setting of the "**Serial Handshaking Portocol**", "**Serial Baud Rate**", "**Serial Data Frame**" and "**Serial Response Timeout**" to sync the Scanner with the Smart Cradle, so that the settings will take effect immediately.

Reply RS232 (ALL) (continued)

Parameter(s)

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

Parameter / PID / Size	Options	Descriptions
Serial NAK Retry Count **PID : 00h 05h** Size : 00h 01h (1 Byte)	- 03h - 00h - 01h~FEh - FFh	3 times ◄ Disable 1~254 times Retry unlimited times
Serial ACK 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)**

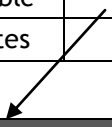
Serial NAK Retry Count ranges from **00h** (never retry) to **FFh** (always retry).

Set Bluetooth (BT)

Change the desired one or more parameters of the Bluetooth settings

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 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

Set Bluetooth (BT) (continued)

Parameter(s)

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

Parameter / PID / Size	Options	Descriptions
BT Device Name (F & L Series) [1] **PID : 00h 00h** Size : 00h 11h (17 Bytes)	- 00h FFh…FFh (sixteen "FFh"s) - XXh XXh…XXh	Default ◄ (For example: F680BT-012E) User defined
BT Radio Off Timeout **PID : 00h 03h** Size : 00h 02h (2 Bytes)	**1st Byte** - 00h - 0Ch - XXh **2nd Byte** - 00h - 01h - XXh	**BT Radio off Timeout, Connected** Disable 60 minutes ◄ User defined 1~99 (x5) minutes **BT Radio off Timeout, Disconnected** Disable 1 minute ◄ User defined 1~99 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 ◄
BT Sniff Control **PID : 00h 06h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable ◄ Enable
BT Power Off Timeout [2] **PID : 00h 08h** Size : 00h 01h (1 Byte)	- 00h - 01h - 01h~63h	Immediately 5 minutes ◄ User defined 1~99 (x5) minutes
BT Device Name (A Series) [3] **PID : 00h 09h** Size : 00h 21h (33 Bytes)	- 00h FFh…FFh (thirty-two "FFh"s) - XXh XXh…XXh	Default ◄ User defined (See Notes)

1. User Defined **BT 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. **BT Power Off Timeout** is available for A Series only.
3. User Defined **BT 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)

Request the desired one or more parameters of the Bluetooth Settings

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, 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

Get Bluetooth 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

Get Bluetooth (BT) (continued)

Parameter(s)

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

Parameter	PID	Size
BT Device Name (F & L Series)	00h 00h	00h 00h
BT Radio Off Timeout	00h 03h	00h 00h
Link Supervision Timeout	00h 04h	00h 00h
HID Link Quality Settings	00h 05h	00h 00h
BT Sniff control	00h 06h	00h 00h
BT Power Off Timeout	00h 08h	00h 00h
BT Device Name (A Series)	00h 09h	00h 00h

Reply Bluetooth (BT)

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.

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

Reply Bluetooth (BT) (continued)

Parameter(s)

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

Parameter / PID / Size	Options	Descriptions
BT Device Name (F & L Series) [1] **PID : 00h 00h** Size : 00h 11h (17 Bytes)	- 00h FFh…FFh (16 “FFh”s) - XXh XXh…XXh	Default ◄ (For example: F680BT-012E) User defined
BT Radio Off Timeout **PID : 00h 03h** Size : 00h 02h (2 Bytes)	**1st Byte** - 00h - 0Ch - XXh **2nd Byte** - 00h - 01h - XXh	**BT Radio off Timeout, Connected** Disable 60 minutes ◄ User defined 1~99 (x5) minutes **BT Radio off Timeout, Disconnected** Disable 1 minute ◄ User defined 1~99 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 ◄
BT Sniff control **PID : 00h 06h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable ◄ Enable
BT Power Off Timeout [2] **PID : 00h 08h** Size : 00h 01h (1 Byte)	- 00h - 01h - 01h~63h	Immediately 5 minutes ◄ User defined 1~99 (x5) minutes
BT Device Name (A Series) [3] **PID : 00h 09h** Size : 00h 21h (33 Bytes)	- 00h FFh…FFh (32 “FFh”s) - XXh XXh…XXh	Default ◄ User defined (See Notes)

1. User Defined **BT Device Name (F & L Series)** 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. **BT Power Off Timeout** is available for A Series only.
3. User Defined **BT 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,”

2.6 Operation

This section introduces the serial commands for configuring the operation modes of your scanner. You will find the details of “Set, “Get” and “Reply” action command for each setting.

Set Operation (ALL)

Change the desired one or more parameters of the Operation Settings for Scanners

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

Set Operation (ALL) (continued)

Parameter(s)

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

Parameter / PID / Size	Options	Descriptions	Conventions
Operation Mode **PID : 10h 00h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h - 0Dh	Trigger mode ◄ Force mode Presentation mode Multiple read mode	CORDED
Operation Mode **PID : 10h 00h** Size : 00h 01h (1 Byte)	- 00h - 02h - 0Dh	Trigger mode ◄ Presentation mode Multiple read mode	CORDLESS
Operation Mode **PID : 10h 00h** Size : 00h 01h (1 Byte)	- 00h - 0Dh	Trigger mode ◄ Multiple read mode	COMPANION
Operation Mode **PID : 10h 00h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h	Trigger mode ◄ Force mode Presentation mode	FIXED MOUNT
Operation Mode **PID : 10h 00h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h - 0Dh	Trigger mode Force mode Presentation mode ◄ Multiple read mode	ON COUNTER

Force mode is not available for SE390 and SE480 series.

Serial Command - Operation Mode

Descriptions	Prefix	Opcode	Status	Length	PID	Size	Options	LRC	Suffix
Trigger mode	7E	**880000**	00	0005	**1000**	0001	**00**	9C	7E
Force mode	7E	**880000**	00	0005	**1000**	0001	**01**	9D	7E
Presentation mode	7E	**880000**	00	0005	**1000**	0001	**02**	9E	7E
Multiple read mode	7E	**880000**	00	0005	**1000**	0001	**0D**	91	7E

Set Operation (ALL) (continued)

Parameter(s)

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

Parameter / PID / Size	Options		Descriptions		Conventions
Auto-sense Mode Select **PID : 00h 01h** Size : 00h 01h (1 Byte)	- 01h - 02h		Force mode Presentation mode ◄		HANDHELD
Auto-sense Control **PID : 00h 02h** Size : 00h 01h (1 Byte)	- 00h - 01h		Disable ◄(Default of Bluetooth scanners) Enable ◄		HANDHELD
2D Image 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	2D ONLY
Reread Delay **PID : 00h 04h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h - 03h - 04h - 05h - 06h		Disable Immediate Extremely short ◄ Short Medium Long Force verification		ALL
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	ALL
Handsfree Timeout **PID : 00h 08h** Size : 00h 01h (1 Byte)	- 00h - 06h - 0Ah	- 0Eh - 12h	Disable Short ◄ Medium	Long Extremely long	ALL
1D Scan Rate **PID : 00h 0Bh** Size : 00h 01h (1 Byte)	- 00h - 01h		Dynamic ◄ Fixed		1D ONLY

Set Operation (ALL) (continued)

Parameter(s)

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

Parameter / PID / Size	Options		Descriptions		Conventions
Handheld Decode Timeout **PID : 00h 0Ch** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h - 03h - 04h - 05h - 06h - 07h - 08h - 09h	- 81h - 82h - 84h - 86h - 88h - XXh	Disable ◄ 100 ms 200 ms 300 ms 400 ms 500 ms 600 ms 700 ms 800 ms 900 ms	1 sec 2 sec 4 sec 6 sec ◄ (Default of Bluetooth scanners) 8 sec User-defined 1-99 s: XXh = desired seconds(h) + 80h	ALL
Handsfree Decode Timeout **PID : 00h 0Dh** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h - 03h - 04h - 05h - 06h - 07h - 08h - 09h	- 81h - 82h - 84h - 86h - 88h - XXh	Disable 100 ms 200 ms 300 ms 400 ms 500 ms 600 ms 700 ms 800 ms 900 ms	1 sec 2 sec ◄ (Default of On-counter scanners) 4 sec 6 sec ◄ 8 sec User-defined 1-99 s: XXh = desired seconds(h) + 80h	ALL

Handheld Decode Timeout, Handsfree Decode Timeout can be set to User-defined 1~99 s. XXh = desired seconds (h) + 80h.

Set Operation (ALL) (continued)

Parameter(s)

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

Parameter / PID / Size	Options	Descriptions	Conventions
User-defined Serial Trigger On **PID : 00h 0Eh** Size : 00h 10h (16 Bytes)	**1st 2nd~16th Byte** - 00h FFh … FFh **1st Byte** - XXh **2nd ~ 16th Byte** - XXh XXh … XXh	None ◄ (Totally fifteen "FFh"s) Total number of the User-defined Serial Trigger On characters 1~15 character(s)	ALL
User-defined Serial Trigger Off **PID : 00h 0Fh** Size : 00h 10h (16 Bytes)	**1st 2nd~16th Byte** - 00h FFh … FFh **1st Byte** - XXh **2nd ~ 16th Byte** - XXh XXh … XXh	None ◄ (Totally fifteen "FFh"s) Total number of the User-defined Serial Trigger Off characters 1~15 character(s)	ALL
Trigger Toggle **PID : 00h 10h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h	Disable ◄ Handheld center alignment Image capture mode	2D CORDED ON COUNTER FIXED MOUNT
Trigger Toggle **PID : 00h 10h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h - 03h	Disable ◄ Handheld center alignment Image capture mode BT on-screen keyboard	2D CORDLESS
Trigger Toggle **PID : 00h 10h** Size : 00h 01h (1 Byte)	- 00h - 03h	Disable ◄ BT on-screen keyboard	1D CORDLESS
Trigger Number **PID : 00h 11h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h	2 Quick Triggers ◄ 3 Quick Triggers 4 Quick Triggers	ALL

Set Operation (ALL) (continued)

Parameter(s)

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

Parameter / PID / Size	Options		Descriptions		Conventions
Power on/off Beeping **PID : 01h 01h** Size : 00h 01h (1 Byte)	- 00h - 01h		Enable ◄ Disable		ALL
Power Indicator [1] **PID : 01h 02h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h		Disable Enable with LED steady on ◄ Enable with LED flashing		ALL
Vibration Control [2] **PID : 01h 03h** Size : 00h 01h (1 Byte)	- 00h - 01h		Disable Enable ◄		HANDHELD
Good Read Duration **PID : 01h 04h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h	- 03h - 04h	Short Medium ◄ Long	Extremely long Extremely short	ALL
Good Read Indicator [3] **PID : 01h 05h** Size : 00h 01h (1 Byte)	- 00h - 01h		Disable Enable ◄		ALL
Beeping Control **PID : 01h 06h** Size : 00h 01h (1 Byte)	**Bit 0** - 0 - 1 **Bit 1** - 0 - 1		**Connect Beep Control** Disable Enable ◄ **Battery Low Beeping** Disable Enable ◄		BLUETOOTH
Good Read Beeping **PID : 01h 07h** Size : 00h 01h (1 Bytes)	- 00h - 01h		Disable Enable ◄		ALL
Buzzer Tone **PID : 01h 08h** Size : 00h 01h (1 Bytes)	- 01h - 02h - 03h - 04h		Low (Frequency 1.20 kHz) Medium (Frequency 2.70 kHz) ◄ High (Frequency 2.81 kHz) Extremely High (Frequency 2.93 kHz)		ALL

1. **Power Indicator**: A570, A560, F560, and all BT scanners do not support this function.
2. **Vibration Control**: Option available on models with the vibration function.
3. **Good Read Indicator**: If enabled, the Green LED flashes once after a good decode.

Set Operation (ALL) (continued)

Serial Command – Buzzer Tone

Descriptions	Prefix	Opcode	Status	Length	PID	Size	Options	LRC	Suffix
Low	7E	**880000**	00	0005	**0108**	0001	**01**	84	7E
Medium ◄	7E	**880000**	00	0005	**0108**	0001	**02**	87	7E
High	7E	**880000**	00	0005	**0108**	0001	**03**	86	7E
Extremely High	7E	**880000**	00	0005	**0108**	0001	**04**	81	7E

5C02: the escaped value of 06

Set Operation (ALL) (continued)

Parameter(s)

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

Parameter / PID / Size	Options		Descriptions		Conventions
1D Inverse Reading **PID : 02h 00h** Size : 00h 01h (1 Byte)	- 00h - 01h		Disable ◄ Enable		ALL
Dollar Sign Convert **PID : 02h 01h** Size : 00h 01h (1 Byte)	- 00h - 80h - A2h	- A3h - A5h	Output as "$" ◄ Output as "€" Output as "¢"	Output as "£" Output as "¥"	ALL
Reading Redundancy **PID : 02h 02h** Size : 00h 01h (1 Byte)	- 01h - 02h - 03h	- 04h - 05h	Level 1 ◄ Level 2 Level 3	Level 4 Level 5	ALL
Data Transmission Packet **PID : 02h 04h** Size : 00h 01h (1 Byte)	- 00h - 01h		Disable ◄ Enable		CORDED BLUETOOTH

- **Data Transmission Packet** is available for Bluetooth in HID/SPP mode
- If you are using the Smart Cradle to communicate with the Scanner, "BT Synchronization" command should be sent to the scanner after the setting of the "**Dollar Sign Convert**" to sync the Scanner with the Smart Cradle, so that the settings will take effect immediately.

Serial Command - Dollar Sign Convert

Descriptions	Prefix	Opcode	Status	Length	PID	Size	Options	LRC	Suffix
Output as "$" ◄	7E	880000	00	0005	0201	0001	00	8F	7E
Output as "€"	7E	880000	00	0005	0201	0001	80	0F	7E
Output as "¢"	7E	880000	00	0005	0201	0001	A2	2D	7E
Output as "£"	7E	880000	00	0005	0201	0001	A3	2C	7E
Output as "¥"	7E	880000	00	0005	0201	0001	A5	2A	7E

Set Operation (ALL) (continued)

Parameter(s)

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

Parameter / PID / Size	Options	Descriptions	Conventions
Laser Aiming Control [1] **PID : 02h 09h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable Enable ◄	LASER ONLY
Laser Aiming Select [2] **PID : 02h 0Bh** Size : 00h 01h (1 Byte)	- 00h - 01h	Regular aiming Pre-decode aiming	LASER ONLY
Pre-decode Aim Timeout [2] **PID : 02h 0Ch** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h - 03h - 04h	100ms 150ms ◄ 200ms 250ms 300ms	LASER ONLY

1. **Laser Aiming Control** is only available for L688, L788, SE398, SE488
2. **Laser Aiming Select, Pre-decode Aim Timeout** are only available for L680, L688, L780, L788, SE390 series, SE480 series.

Set Operation (ALL) (continued)

Parameter(s)

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

Parameter / PID / Size	Options	Descriptions	Convention
OK/NG Signal Settings **PID : 20h 01h** Size : 00h 03h (3 Bytes)	**1st Byte**	**OK/NG Signal Output** [1]	
	- 00h	Disable OK/NG output; disable OK/NG indicators ◄	
	- 01h	Disable OK output; **enable NG output**; disable OK/NG indicators	
	- 02h	**Enable OK output**; disable NG output; disable OK/NG indicators	
	- 03h	**Enable OK/NG output**; disable OK/NG indicators ◄	
	- 05h	Disable OK output; **enable NG output**; disable OK indicator; **enable NG indicator**	
	- 06h	**Enable OK output**; disable NG output; **enable OK indicator**; disable NG indicator	
	- 07h	**Enable OK/NG output**; **enable OK/NG indicators**	
	- 0Dh	Disable OK/NG output; disable OK indicator; **enable NG indicator**	
	- 0Eh	Disable OK/NG output; **enable OK indicator**; disable NG indicator	
	- 0Fh	Disable OK/NG output; **enable OK/NG indicators**	FIXED MOUNT
	2nd Byte	**OK/NG Signal Active State** [1]	
	- 00h	Set OK low; set NG low◄	
	- 01h	Set OK low; set NG high	
	- 02h	Set OK high; set NG low	
	- 03h	Set OK high; set NG high	
	3rd Byte	**OK/NG Signal Duration** [1 2]	
	- 01h	10ms	
	- 02h	20ms	
	- 03h	30ms	
	- 04h	40ms	
	- 05h	50ms	
	- 06h	60ms	
	- 07h	70ms	
	- 08h	80ms	
	- 09h	90ms	
	- 0Ah	100ms ◄	
	- XXh	User-defined (See Notes under the table)	

1. **OK/NG Signal Output, OK/NG Signal Active State, OK/NG Signal Duration** are only available on scanner with Universal interface.
2. **OK/NG Signal 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.

Set Operation (ALL) (continued)

Parameter(s)

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

Parameter / PID / Size	Options	Descriptions	Conventions
OK/NG Beeping **PID : 20h 02h** Size : 00h 02h (2 Bytes)	**1st~2nd Byte** - 00h 00h - 01h 01h - 00h 01h - 01h 00h	 Disable OK beep; disable NG beep Enable OK beep; enable NG beep Enable OK beep; disable NG beep ◄ Disable OK beep; enable NG beep	FIXED MOUNT ON COUNTER
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	 None ◄ (Totally sixteen “00h”s) Default message “NG” with CRLF (Totally thirteen “00h”s) User-defined message (1~15 characters)	FIXED MOUNT ON COUNTER
I/O Active State **PID : 30h 01h** Size : 00h 01h (1 Byte)	- 00h - 01h	Active high Active low ◄	SCAN ENGINE

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.

Set Operation (ALL) (continued)

Parameter(s)

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

Parameter / PID / Size	Options		Descriptions		Conventions
Batch Scanning Link Control **PID : 51h 00h** Size : 00h 01h (1 Byte)	- 00h - 01h		Disable Enable ◄		BLUETOOTH
Batch Scanning Data Transmit **PID : 51h 01h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h		On cradle or scan “Transmit Stored Data” On cradle Scan “Transmit Stored Data” barcode ◄		BLUETOOTH
Batch Scanning Data Delete **PID : 51h 02h** Size : 00h 01h (1 Byte)	- 00h - 01h		Disable ◄ Enable		BLUETOOTH
Field Delimiter **PID : 51h 03h** Size : 00h 01h (1 Byte)	- 00h - 2Ch - 20h	- 2Dh - 2Eh - XXh	None “ , “ (Comma) ◄ SPACE	“ - “ (Dash) “ . “ (Period) User-defined 00~7Fh	BLUETOOTH
Batch Scanning Quantity Transmit **PID : 51h 04h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h		Transmit as many times as the quantity indicates ◄ <Quantity><Field delimiter><Scanned data> <Scanned data><Field delimiter><Quantity>		BLUETOOTH
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	BLUETOOTH
Cradle PAIR Lock **PID : 55h 00h** Size : 00h 01h (1 Byte)	- 00h - 01h		Locked PAIR mode Unlocked PAIR mode ◄		BLUETOOTH
Presentation Scanning Activation **PID : 60h 00h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h		Image motion sensing IR proximity sensing ◄ Image proximity sensing		ON COUNTER
IR Sensitivity **PID : 60h 01h** Size : 00h 01h (1 Byte)	- 00h - 01h		Low=10cm ◄ High=20cm		ON COUNTER

If you are using the Smart Cradle to communicate with the Scanner, “BT Synchronization” command should be sent to the scanner after the setting of the “**Field Delimiter**”, “**Data Transmission Packet**” and “**Cradle PAIR Lock**” to sync the Scanner with the Smart Cradle, so that the settings will take effect immediately.

Set Operation (ALL) (continued)

Parameter(s)

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

Parameter / PID / Size	Options	Descriptions	Conventions
2D Smart Scene **PID : 03h 00h** Size : 00h 01h (1 Bytes)	- 00h - 01h - 02h - 03h - 04h - 05h	Auto mode ◄ Handheld optimized mode Hands-free optimized mode High motion mide High density mode Smartphone mode	2D ONLY
2D Handheld Illumination & Aiming Control **PID : 70h 01h** Size : 00h 01h (1 Byte)	**Bit 0** - 0 - 1 **Bit 1** - 0 - 1	**Handheld Aiming Control** Disable Enable ◄ **Handheld Illumination Control** Disable Enable ◄	2D ONLY
2D Handsfree Illumination & Aiming Control **PID : 70h 02h** Size : 00h 01h (1 Byte)	**Bit 0** - 0 - 1 **Bit 1** - 0 - 1	**Handsfree Aiming Control** Disable Enable ◄ **Handsfree Illumination Control** Disable Enable ◄	2D ONLY

Serial Command - 2D Handheld Illumination & Aiming Control

Descriptions	Prefix	Opcode	Status	Length	PID	Size	Options	LRC	Suffix
Disable illumination, disable aiming	7E	**880000**	00	0005	**7001**	0001	**00**	FD	7E
Disable illumination, Enable aiming	7E	**880000**	00	0005	**7001**	0001	**01**	FC	7E
Enable illumination, disable aiming	7E	**880000**	00	0005	**7001**	0001	**02**	FF	7E
Enable illumination, Enable aiming ◄	7E	**880000**	00	0005	**7001**	0001	**03**	FE	7E

Set Operation (ALL) (continued)

Parameter(s)

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

Serial Command – 2D Handsfree Illumination & Aiming Control

Descriptions	Prefix	Opcode	Status	Length	PID	Size	Options	LRC	Suffix
Disable illumination, disable aiming	7E	**880000**	00	0005	**7002**	0001	**00**	FE	7E
Disable illumination, Enable aiming	7E	**880000**	00	0005	**7002**	0001	**01**	FF	7E
Enable illumination, disable aiming	7E	**880000**	00	0005	**7002**	0001	**02**	FC	7E
Enable illumination, Enable aiming ◄	7E	**880000**	00	0005	**7002**	0001	**03**	FD	7E

Set Operation (ALL) (continued)

Parameter(s)

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

Parameter / PID / Size	Options	Descriptions	Conventions
2D Aiming Select **PID : 70h 03h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h	Regular Aiming ◄ (Default of Bluetooth scanners & Scan engines) Intelligent Aiming ◄ (Default of Corded & On-counter scanners) Pre-decode Aiming	2D ONLY
2D Pre-decode Aiming Timeout **PID : 70h 04h** Size : 00h 01h (1 Byte)	- 02h - 04h - 08h - 0Ah - 0Fh - 14h - 1Eh - 28h	200ms 400ms ◄ 800ms 1 sec 1.5 sec 2 sec 3 sec 4 sec	2D ONLY
2D Presentation Background Lighting **PID : 70h 05h** Size : 00h 02h (2 Bytes)	- 00h 00h - 00h FEh	Disable ◄ (Default of On-counter scanners) Enable ◄	2D ONLY
Handheld & Hands-free Center Alignment **PID : 70h 06h** Size : 00h 02h (2 Bytes)	**1st Byte** - 00h - 01h **2nd Byte** - 00h - 01h	**Handheld Center Alignment Mode** Disable ◄ Enable ◄ (Default of On-counter scanners) **Handsfree Center Alignment Mode** Disable ◄ Enable	2D ONLY
Unique Code Reporting **PID : 70h 08h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable ◄ Enable	2D ONLY
Low Power State **PID : 70h 09h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable ◄ Enable	2D ONLY
2D Handheld Illumination Intensity **PID : 70h 0Ah** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h	High ◄ Medium Low	2D ONLY
2D Hands-free Illumination Intensity **PID : 70h 08h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h	High ◄ Medium Low	2D ONLY

Set Operation (ALL) (continued)

Parameter(s)

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

Parameter / PID / Size	Options	Descriptions	Conventions
Illumination Color **PID : 70h 0Ch** Size : 00h 01h (1 Byte)	- 00h - 01h	White Illumination ◄ Red Illumination	A800 ONLY
DPM Diffused Illumination **PID : 70h 0Dh** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h	Full Lighting ◄ Sided Lighting Bottom Lighting	DP ONLY
DPM Illumination **PID : 70h 0Eh** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h	Direct Illumination Diffused Illumination Cycle Illumination ◄	DP ONLY
Illumination Rotation Interval **PID : 70h 0Fh** Size : 00h 01h (1 Byte)	- 01h - 02h - 03h - 04h - 05h - 06h - 01h~63h	500 ms 1 Second 1.5 Seconds 2 Seconds ◄ 2.5 Seconds 3 Seconds User-defined = 0.5 second * XXh	DP ONLY
DPM Mode **PID : 70h 10h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable DPM Standard Mode ◄	DP ONLY
Swift Serial Reading **PID : 70h 11h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable ◄ Enable	FA490 ONLY
Top of Center Window **PID : 71h 00h** Size : 00h 01h (1 Byte)	- 28h - 00h~64h	40% ◄ User-defined: 0 - 100 %	2D ONLY
Bottom of Center Window **PID : 71h 01h** Size : 00h 01h (1 Byte)	- 3Ch - 00h~64h	60% ◄ User-defined: 0 - 100 %	2D ONLY
Left of Center Window **PID : 71h 02h** Size : 00h 01h (1 Byte)	- 28h - 00h~64h	40% ◄ User-defined: 0 - 100 %	2D ONLY
Right of Center Window **PID : 71h 03h** Size : 00h 01h (1 Byte)	- 3Ch - 00h~64h	60% ◄ User-defined: 0 - 100 %	2D ONLY

Set Operation (ALL) (continued)

Parameter(s)

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

Parameter / PID / Size	Options	Descriptions	Conventions
ROI **PID : 72h 04h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable ◄ Enable	FIXED MOUNT SCAN ENGINE
Top of ROI **PID : 72h 00h** Size : 00h 01h (1 Byte)	- 00h - 00h~64h	0% ◄ User-defined: 0 - 100 %	FIXED MOUNT SCAN ENGINE
Bottom of ROI **PID : 72h 01h** Size : 00h 01h (1 Byte)	- 64h - 00h~64h	100% ◄ User-defined: 0 - 100 %	FIXED MOUNT SCAN ENGINE
Left of ROI **PID : 72h 02h** Size : 00h 01h (1 Byte)	- 00h - 00h~64h	0% ◄ User-defined: 0 - 100 %	FIXED MOUNT SCAN ENGINE
Right of ROI **PID : 72h 03h** Size : 00h 01h (1 Byte)	- 64h - 00h~64h	100% ◄ User-defined: 0 - 100 %	FIXED MOUNT SCAN ENGINE

Get Operation (ALL)

Request the desired one or more parameters of the Operation Settings for Scanners

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 Operation**" message string then send to the host. Please refer to the "Reply 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 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

Get Operation (ALL) (continued)

Parameter(s)

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

Parameter	PID	Size
Operation Mode	10h 00h	00h 00h
Auto-sense Mode Select	00h 01h	00h 00h
Auto-sense Control	00h 02h	00h 00h
2D Image Sensitivity	00h 03h	00h 00h
Reread Delay	00h 04h	00h 00h
Good Read Delay	00h 06h	00h 00h
Handsfree Timeout	00h 08h	00h 00h
1D Scan Rate	00h 0Bh	00h 00h
Handheld Decode Timeout	00h 0Ch	00h 00h
User-defined Serial Trigger On	00h 0Eh	00h 00h
User-defined Serial Trigger On	00h 0Fh	00h 00h
Trigger Toggle	00h 10h	00h 00h
Trigger Number	00h 11h	00h 00h
Handsfree Decode Timeout	00h 0Dh	00h 00h
Buzzer Tone	01h 00h	00h 00h

Get Operation (ALL) (continued)

Parameter(s)

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

Parameter	PID	Size
Power on/off Beeping	**01h 01h**	00h 00h
Power Indication	**01h 02h**	00h 00h
Vibration Control	**01h 03h**	00h 00h
Good Read Duration	**01h 04h**	00h 00h
Good Read Indicator	**01h 05h**	00h 00h
Beeping Control	**01h 06h**	00h 00h
Good Read Beeping	**01h 07h**	00h 00h
Buzzer Tone	**01h 08h**	00h 00h
1D Inverse Reading	**02h 00h**	00h 00h
Dollar Sign Convert	**02h 01h**	00h 00h
Reading Redundancy	**02h 02h**	00h 00h
Data Transmission Packet	**02h 04h**	00h 00h
Laser Aiming Control	**02h 09h**	00h 00h
Laser Aiming Select	**02h 0Bh**	00h 00h
Pre-decode Aim Timeout	**02h 0Ch**	00h 00h
OK/NG Signal Settings	**20h 01h**	00h 00h
OK/NG Beeping	**20h 02h**	00h 00h
NG Message Output	**20h 04h**	00h 00h
I/O Active State	**30h 01h**	00h 00h

Get Operation (ALL) (continued)

Parameter(s)

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

Parameter	PID	Size
Batch Scanning Link Control	51h 00h	00h 00h
Batch Scanning Data Transmit	51h 01h	00h 00h
Batch Scanning Data Delete	51h 02h	00h 00h
Field Delimiter	51h 03h	00h 00h
Batch Scanning Quantity Transmit	51h 04h	00h 00h
Data Transmission Packet (PAIR / PICO Mode)	52h 00h	00h 00h
Cradle PAIR Lock	55h 00h	00h 00h
Presentation Scanning Activation	60h 00h	00h 00h
IR Sensitivity	60h 01h	00h 00h
2D Smart Scene	03h 00h	00h 00h
2D Handheld Illumination & Aiming Control	70h 01h	00h 00h
2D Handsfree Illumination & Aiming Control	70h 02h	00h 00h
2D Aiming Select	70h 03h	00h 00h
2D Pre-decode Aiming Timeout	70h 04h	00h 00h
2D Presentation Background Lighting	70h 05h	00h 00h
Handheld & Handsfree Center Alignment	70h 06h	00h 00h
Unique Barcode Reporting	70h 08h	00h 00h
Low Power State	70h 09h	00h 00h
2D Handheld Illumination Intensity	70h 0Ah	00h 00h
2D Hands-free Illumination Intensity	70h 0Bh	00h 00h
Illumination Color	70h 0Ch	00h 00h
DPM Diffused Illumination	70h 0Dh	00h 00h
DPM Illumination	70h 0Eh	00h 00h
Illumination Rotation Interval	70h 0Fh	00h 00h
DPM Mode	70h 10h	00h 00h
Swift Serial Reading	70h 11h	00h 00h
Top of Center Window	71h 00h	00h 00h
Bottom of Center Window	71h 01h	00h 00h
Left of Center Window	71h 02h	00h 00h
Right of Center Window	71h 03h	00h 00h
Top of ROI	72h 00h	00h 00h
Bottom of ROI	72h 01h	00h 00h
Left of ROI	72h 02h	00h 00h
Right of ROI	72h 03h	00h 00h
ROI	72h 04h	00h 00h

Reply Operation (ALL)

Reply the desired one or more parameters of the Operation Settings for Scanners

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

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

Parameter(s) Field

Set 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

Reply Operation (ALL) (continued)

Parameter(s)

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

Parameter / PID / Size	Options	Descriptions	Conventions
Operation Mode **PID : 10h 00h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h - 0Dh	Trigger mode ◀ Force mode Presentation mode Multiple read mode	CORDED
Operation Mode **PID : 10h 00h** Size : 00h 01h (1 Byte)	- 00h - 02h - 0Dh	Trigger mode ◀ Presentation mode Multiple read mode	CORDLESS
Operation Mode **PID : 10h 00h** Size : 00h 01h (1 Byte)	- 00h - 0Dh	Trigger mode ◀ Multiple read mode	COMPANION
Operation Mode **PID : 10h 00h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h	Trigger mode ◀ Force mode Presentation mode	FIXED MOUNT
Operation Mode **PID : 10h 00h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h - 0Dh	Trigger mode Force mode Presentation mode ◀ Multiple read mode	ON COUNTER

Force mode is not available for SE390 and SE480 series.

Reply Operation (ALL) (continued)

Parameter(s)

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

Parameter / PID / Size	Options		Descriptions		Conventions
Auto-sense Mode Select **PID : 00h 01h** Size : 00h 01h (1 Byte)	- 01h - 02h		Force mode Presentation mode ◄		HANDHELD
Auto-sense Control **PID : 00h 02h** Size : 00h 01h (1 Byte)	- 00h - 01h		Disable ◄(Default of Bluetooth scanners) Enable ◄		HANDHELD
2D Image 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	2D ONLY
Reread Delay **PID : 00h 04h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h - 03h - 04h - 05h - 06h		Disable Immediate Extremely short ◄ Short Medium Long Force verification		ALL
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	ALL
Handsfree Timeout **PID : 00h 08h** Size : 00h 01h (1 Byte)	- 00h - 06h - 0Ah	- 0Eh - 12h	Disable Short ◄ Medium	Long Extremely long	ALL
1D Scan Rate **PID : 00h 0Bh** Size : 00h 01h (1 Byte)	- 00h - 01h		Dynamic ◄ Fixed		1D ONLY

Reply Operation (ALL) (continued)

Parameter(s)

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

Parameter / PID / Size	Options		Descriptions		Conventions
Handheld Decode Timeout **PID : 00h 0Ch** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h - 03h - 04h - 05h - 06h - 07h - 08h - 09h	- 81h - 82h - 84h - 86h - 88h - XXh	Disable ◄ 100 ms 200 ms 300 ms 400 ms 500 ms 600 ms 700 ms 800 ms 900 ms	1 sec 2 sec 4 sec 6 sec ◄ (Default of Cordless Bluetooth scanners) 8 sec User-defined 1-99 s: XXh = desired seconds(h) + 80h	ALL
Handsfree Decode Timeout **PID : 00h 0Dh** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h - 03h - 04h - 05h - 06h - 07h - 08h - 09h	- 81h - 82h - 84h - 86h - 88h - XXh	Disable 100 ms 200 ms 300 ms 400 ms 500 ms 600 ms 700 ms 800 ms 900 ms	1 sec 2 sec ◄ (Default of On-counter scanners) 4 sec 6 sec ◄ 8 sec User-defined 1-99 s: XXh = desired seconds(h) + 80h	ALL

Handheld Decode Timeout, Handsfree Decode Timeout can be set to User-defined 1~99 s. XXh = desired seconds (h) + 80h. For example, if you want to set it to 20 s, you need to convert 20 from Dec to Hex, that is, 14h. Then, XXh = 14h + 80h = 94h.

Reply Operation (ALL) (continued)

Parameter(s)

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

Parameter / PID / Size	Options	Descriptions	Conventions
User-defined Serial Trigger On **PID : 00h 0Eh** Size : 00h 10h (16 Bytes)	**1st 2nd~16th Byte** - 00h FFh … FFh **1st Byte** - XXh **2nd ~ 16th Byte** - XXh XXh … XXh	None ◄ (Totally fifteen "FFh"s) Total number of the User-defined Serial Trigger On characters 1~15 character(s)	ALL
User-defined Serial Trigger Off **PID : 00h 0Fh** Size : 00h 10h (16 Bytes)	**1st 2nd~16th Byte** - 00h FFh … FFh **1st Byte** - XXh **2nd ~ 16th Byte** - XXh XXh … XXh	None ◄ (Totally fifteen "FFh"s) Total number of the User-defined Serial Trigger Off characters 1~15 character(s)	ALL
Trigger Toggle **PID : 00h 10h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h	Disable * Handheld center alignment Image capture mode	ALL
Trigger Toggle **PID : 00h 10h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h - 03h	Disable * Handheld center alignment Image capture mode BT on-screen keyboard	ALL
Trigger Toggle **PID : 00h 10h** Size : 00h 01h (1 Byte)	- 00h - 03h	Disable * BT on-screen keyboard	ALL
Trigger Number **PID : 00h 11h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h	2 Quick Triggers * 3 Quick Triggers 4 Quick Triggers	ALL

Reply Operation (ALL) (continued)

Parameter(s)

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

Parameter / PID / Size	Options		Descriptions		Conventions
Power on/off Beeping **PID : 01h 01h** Size : 00h 01h (1 Byte)	- 00h - 01h		Enable ◄ Disable		ALL
Power Indicator [1] **PID : 01h 02h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h		Disable Enable with LED steady on ◄ Enable with LED flashing		ALL
Vibration Control [2] **PID : 01h 03h** Size : 00h 01h (1 Byte)	- 00h - 01h		Disable Enable ◄		HANDHELD
Good Read Duration **PID : 01h 04h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h	- 03h - 04h	Short Medium ◄ Long	Extremely long Extremely short	ALL
Good Read Indicator [3] **PID : 01h 05h** Size : 00h 01h (1 Byte)	- 00h - 01h		Disable Enable ◄		ALL
Beeping Control **PID : 01h 06h** Size : 00h 01h (1 Byte)	**Bit 0** - 0 - 1 **Bit 1** - 0 - 1		**Connect Beep Control** Enable ◄ Disable **Battery Low Beeping** Enable ◄ Disable		BLUETOOTH
Good Read Beeping **PID : 01h 07h** Size : 00h 01h (1 Bytes)	- 00h - 01h		Disable Enable ◄		ALL
Buzzer Tone **PID : 01h 08h** Size : 00h 01h (1 Bytes)	- 01h - 02h - 03h - 04h		Low (Frequency 1.20 kHz) Medium ◄ (Frequency 2.70 kHz) High (Frequency 2.81 kHz) Extremely High (Frequency 2.93 kHz)		ALL

1. **Power Indicator**: A570, A560, F560, and all BT scanners do not support this function.
2. **Vibration Control**: Option available on models with the vibration function.
3. **Good Read Indicator**: If enabled, the Green LED flashes once after a good decode.

Reply Operation (ALL) (continued)

Parameter(s)

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

Parameter / PID / Size	Options		Descriptions		Conventions
1D Inverse Reading **PID : 02h 00h** Size : 00h 01h (1 Byte)	- 00h - 01h		Disable ◄ Enable		ALL
Dollar Sign Convert **PID : 02h 01h** Size : 00h 01h (1 Byte)	- 00h - 80h - A2h	- A3h - A5h	Output as "$" ◄ Output as "€" Output as "¢"	Output as "£" Output as "¥"	ALL
Reading Redundancy **PID : 02h 02h** Size : 00h 01h (1 Byte)	- 01h - 02h - 03h	- 04h - 05h	Level 1 ◄ Level 2 Level 3	Level 4 Level 5	ALL
Data Transmission Packet [1] **PID : 02h 04h** Size : 00h 01h (1 Byte)	- 00h - 01h		Disable ◄ Enable		CORDED BLUETOOTH
Laser Aiming Control [2] **PID : 02h 09h** Size : 00h 01h (1 Byte)	- 00h - 01h		Disable Enable ◄		LASER ONLY
Laser Aiming Select [3] **PID : 02h 0Bh** Size : 00h 01h (1 Byte)	- 00h - 01h		Regular aiming Pre-decode aiming		LASER ONLY
Pre-decode Aim Timeout [3] **PID : 02h 0Ch** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h - 03h - 04h		100ms 150ms ◄ 200ms 250ms 300ms		LASER ONLY

1. **Data Transmission Packet** is available for Bluetooth in HID/SPP mode
2. **Laser Aiming Control** is only available for L688, L788, SE398, SE488
3. **Laser Aiming Select, Pre-decode Aim Timeout** are only available for L680, L688, L780, L788, SE390 series, SE480 series.
4. If you are using the Smart Cradle to communicate with the Scanner, "BT Synchronization" command should be sent to the scanner after the setting of the "**Dollar Sign Convert**" to sync the Scanner with the Smart Cradle, so that the settings will take effect immediately.

Reply Operation (ALL) (continued)

Parameter(s)

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

Parameter / PID / Size	Options	Descriptions	Conventions
OK/NG Signal Settings **PID : 20h 01h** Size : 00h 03h (3 Bytes)	**1st Byte**	**OK/NG Signal Output** [1]	
	- 00h	Disable OK/NG output; disable OK/NG indicators ◄	
	- 01h	Disable OK output; **enable NG output**; disable OK/NG indicators	
	- 02h	**Enable OK output**; disable NG output; disable OK/NG indicators	
	- 03h	**Enable OK/NG output**; disable OK/NG indicators ◄	
	- 05h	Disable OK output; **enable NG output**; disable OK indicator; **enable NG indicator**	
	- 06h	**Enable OK output**; disable NG output; **enable OK indicator**; disable NG indicator	
	- 07h	**Enable OK/NG output**; **enable OK/NG indicators**	
	- 0Dh	Disable OK/NG output; disable OK indicator; **enable NG indicator**	
	- 0Eh	Disable OK/NG output; **enable OK indicator**; disable NG indicator	FIXED MOUNT
	- 0Fh	Disable OK/NG output; **enable OK/NG indicators**	
	2nd Byte	**OK/NG Signal Active State** [1]	
	- 00h	Set OK low; set NG low◄	
	- 01h	Set OK low; set NG high	
	- 02h	Set OK high; set NG low	
	- 03h	Set OK high; set NG high	
	3rd Byte	**OK/NG Signal Duration** [1 2]	
	- 01h	10ms	
	- 02h	20ms	
	- 03h	30ms	
	- 04h	40ms	
	- 05h	50ms	
	- 06h	60ms	
	- 07h	70ms	
	- 08h	80ms	
	- 09h	90ms	
	- 0Ah	100ms ◄	
	- XXh	User-defined (See Notes under the table)	

1. **OK/NG Signal Output, OK/NG Signal Active State, OK/NG Signal Duration** are only available on scanner with Universal interface.
2. **OK/NG Signal 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.

Reply Operation (ALL) (continued)

Parameter(s)

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

Parameter / PID / Size	Options	Descriptions	Conventions
OK/NG Beeping **PID : 20h 02h** Size : 00h 02h (2 Bytes)	**1st~2nd Byte** - 00h 00h - 01h 01h - 00h 01h - 01h 00h	 Disable OK beep; disable NG beep Enable OK beep; enable NG beep Enable OK beep; disable NG beep ◄ Disable OK beep; enable NG beep	FIXED MOUNT ON COUNTER
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	 None ◄ (Totally sixteen “00h”s) Default message “NG” with CRLF (Totally thirteen “00h”s) User-defined message (1~15 characters)	FIXED MOUNT ON COUNTER
I/O Active State **PID : 30h 01h** Size : 00h 01h (1 Byte)	- 00h - 01h	Active high Active low ◄	SCAN ENGINE

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.

Reply Operation (ALL) (continued)

Parameter(s)

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

Parameter / PID / Size	Options		Descriptions		Conventions
Batch Scanning Link Control **PID : 51h 00h** Size : 00h 01h (1 Byte)	- 00h - 01h		Disable Enable ◄		BLUETOOTH
Batch Scanning Data Transmit **PID : 51h 01h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h		On cradle or scan “Transmit Stored Data” On cradle Scan “Transmit Stored Data” barcode ◄		BLUETOOTH
Batch Scanning Data Delete **PID : 51h 02h** Size : 00h 01h (1 Byte)	- 00h - 01h		Disable ◄ Enable		BLUETOOTH
Field Delimiter **PID : 51h 03h** Size : 00h 01h (1 Byte)	- 00h - 2Ch - 20h	- 2Dh - 2Eh - XXh	None “ , “ (Comma) ◄ SPACE	“ - “ (Dash) “ . “ (Period) User-defined 00~7Fh	BLUETOOTH
Batch Scanning Quantity Transmit **PID : 51h 04h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h		Transmit as many times as the quantity indicates ◄ <Quantity><Field delimiter><Scanned data> <Scanned data><Field delimiter><Quantity>		BLUETOOTH
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	BLUETOOTH
Cradle PAIR Lock **PID : 55h 00h** Size : 00h 01h (1 Byte)	- 00h - 01h		Locked PAIR mode Unlocked PAIR mode ◄		BLUETOOTH
Presentation Scanning Activation **PID : 60h 00h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h		Image motion sensing IR proximity sensing ◄ Image proximity sensing		ON COUNTER
IR Sensitivity **PID : 60h 01h** Size : 00h 01h (1 Byte)	- 00h - 01h		Low=10cm ◄ High=20cm		ON COUNTER

If you are using the Smart Cradle to communicate with the Scanner, “BT Synchronization” command should be sent to the scanner after the setting of the “**Field Delimiter**”, “**Data Transmission Packet**” and “**Cradle PAIR Lock**” to sync the Scanner with the Smart Cradle, so that the settings will take effect immediately.

Reply Operation (ALL) (continued)

Parameter(s)

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

Parameter / PID / Size	Options	Descriptions	Conventions
2D Smart Scene **PID : 03h 00h** Size : 00h 01h (1 Bytes)	- 00h - 01h - 02h - 03h - 04h - 05h	Auto mode ◄ Handheld optimized mode Hands-free optimized mode High motion mide High density mode Smartphone mode	2D ONLY
2D Handheld Illumination & Aiming Control **PID : 70h 01h** Size : 00h 01h (1 Byte)	**Bit 0** - 0 - 1 **Bit 1** - 0 - 1	**Handheld Aiming Control** Disable Enable ◄ **Handheld Illumination Control** Disable Enable ◄	2D ONLY
2D Handsfree Illumination & Aiming Control **PID : 70h 02h** Size : 00h 01h (1 Byte)	**Bit 0** - 0 - 1 **Bit 1** - 0 - 1	**Handsfree Aiming Control** Disable Enable ◄ **Handsfree Illumination Control** Disable Enable ◄	2D ONLY
2D Aiming Select **PID : 70h 03h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h	Regular Aiming ◄ (Default of Bluetooth scanners & Scan engines) Intelligent Aiming ◄ (Default of Corded & On-counter scanners) Pre-decode Aiming	2D ONLY
2D Pre-decode Aiming Timeout **PID : 70h 04h** Size : 00h 01h (1 Byte)	- 02h - 04h - 08h - 0Ah - 0Fh - 14h - 1Eh - 28h	200ms 400ms ◄ 800ms 1 sec 1.5 sec 2 sec 3 sec 4 sec	2D ONLY
2D Presentation Background Lighting **PID : 70h 05h** Size : 00h 02h (2 Bytes)	- 00h 00h - 00h FEh	Disable ◄ (Default of On-counter scanners) Enable ◄	2D ONLY

Reply Operation (ALL) (continued)

Parameter(s)

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

Parameter / PID / Size	Options	Descriptions	Conventions
Handheld & Handsfree Center Alignment **PID : 70h 06h** Size : 00h 02h (2 Bytes)	**1st Byte** - 00h - 01h **2nd Byte** - 00h - 01h	**Handheld Center Alignment Mode** Disable ◄ Enable ◄ (Default of On-counter scanners) **Handsfree Center Alignment Mode** Disable ◄ Enable	2D ONLY
Unique Code Reporting **PID : 70h 08h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable ◄ Enable	2D ONLY
Low Power State **PID : 70h 09h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable ◄ Enable	2D ONLY
2D Handheld Illumination Intensity **PID : 70h 0Ah** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h	High ◄ Medium Low	2D ONLY
2D Hands-free Illumination Intensity **PID : 70h 0Bh** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h	High ◄ Medium Low	2D ONLY
Illumination Color **PID : 70h 0Ch** Size : 00h 01h (1 Byte)	- 00h - 01h	White Illumination ◄ Red Illumination	A800 ONLY
DPM Diffused Illumination **PID : 70h 0Dh** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h	Full Lighting ◄ Sided Lighting Bottom Lighting	DP ONLY
DPM Illumination **PID : 70h 0Eh** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h	Direct Illumination Diffused Illumination Cycle Illumination ◄	DP ONLY
Illumination Rotation Interval **PID : 70h 0Fh** Size : 00h 01h (1 Byte)	- 01h - 02h - 03h - 04h - 05h - 06h - 01h~63h	500 ms 1 Second 1.5 Seconds 2 Seconds ◄ 2.5 Seconds 3 Seconds User-defined = 0.5 second * XXh	DP ONLY

Reply Operation (ALL) (continued)

Parameter(s)

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

Parameter / PID / Size	Options	Descriptions	Conventions
DPM Mode **PID : 70h 10h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable DPM Standard Mode ◄	DP ONLY
Swift Serial Reading **PID : 70h 11h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable ◄ Enable	FA490 ONLY
Top of Center Window **PID : 71h 00h** Size : 00h 01h (1 Byte)	- 28h - 00h~64h	40% ◄ User-defined: 0 – 100 %	2D ONLY
Bottom of Center Window **PID : 71h 01h** Size : 00h 01h (1 Byte)	- 3Ch - 00h~64h	60% ◄ User-defined: 0 – 100 %	2D ONLY
Left of Center Window **PID : 71h 02h** Size : 00h 01h (1 Byte)	- 28h - 00h~64h	40% ◄ User-defined: 0 – 100 %	2D ONLY
Right of Center Window **PID : 71h 03h** Size : 00h 01h (1 Byte)	- 3Ch - 00h~64h	60% ◄ User-defined: 0 – 100 %	2D ONLY
ROI **PID : 72h 04h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable ◄ Enable	FIXED MOUNT SCAN ENGINE
Top of ROI **PID : 72h 00h** Size : 00h 01h (1 Byte)	- 00h - 00h~64h	0% ◄ User-defined: 0 – 100 %	FIXED MOUNT SCAN ENGINE
Bottom of ROI **PID : 72h 01h** Size : 00h 01h (1 Byte)	- 64h - 00h~64h	100% ◄ User-defined: 0 – 100 %	FIXED MOUNT SCAN ENGINE
Left of ROI **PID : 72h 02h** Size : 00h 01h (1 Byte)	- 00h - 00h~64h	0% ◄ User-defined: 0 – 100 %	FIXED MOUNT SCAN ENGINE
Right of ROI **PID : 72h 03h** Size : 00h 01h (1 Byte)	- 64h - 00h~64h	100% ◄ User-defined: 0 – 100 %	FIXED MOUNT SCAN ENGINE

2.7 Transmission

This section introduces the serial commands for configuring the data transmissions of your scanner. You will find the details of “Set, “Get” and “Reply” action command for each setting.

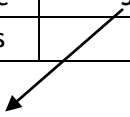
Set Transmission (ALL)

Change the desired one or more parameters of the Transmission settings as well as DataWizard parameters including Data Script Active Setting, Data Script Setting, Security Script Setting and Data Script Error Info Output.

DataWizard parameters are only available for Scanners that support DataWizard. For more details about DataWizard, please refer to *FuzzyScan DataWizard 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

Set Transmission (ALL) (continued)

Parameter(s)

< Table 7-1-1 > Set Transmission Parameter(s) Field

Parameter / PID / Size	Options	Descriptions
Intermessage, Intercharacter, Interfunction Delay **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** [1] None ◄ 1~99(×5)ms (All corded series) 1~99(×10)ms (All Bluetooth series) **Intercharacter Delay** [1] None ◄ 1~99(×5)ms **Interfunction Delay** [1] None ◄ 1~99(×5)ms
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) CRLF (0Dh 0Ah) TAB (09h) SPACE (20h) User-defined character (1 character)
Preamble **PID : 01h 01h** Size : 00h 10h (16 Bytes)	**1st 2nd~16th Byte** - 00h FFh...FFh **1st Byte** - XXh **2nd~16th Byte** [2] - XXh XXh...XXh	None ◄ (Totally fifteen “FFh”s) Total number of the Preamble characters 1~15 character(s)
Postamble **PID : 01h 02h** Size : 00h 10h (16 Bytes)	**1st 2nd~16th Byte** - 00h FFh...FFh **1st Byte** - XXh **2nd~16th Byte** [2] - XXh XXh...XXh	None ◄ (Totally fifteen “FFh”s) Total number of the Postamble characters 1~15 character(s)

1. For the A and PA series Bluetooth scanners, **Intermessage Delay, Intercharacter Delay, Interfunction Delay** functions are not available under Bluetooth SPP and Bluetooth HID mode.
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**.

Set Transmission (ALL) (continued)

Parameter(s)

< Table 7-1-1 > Set Transmission Parameter(s) Field

Parameter / PID / Size	Options	Descriptions
Code ID Transmit **PID : 01h 03h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h - 03h - 04h - 05h - 06h	Disable ◄ Transmit Cino ID as prefix Transmit Cino ID as suffix Transmit Cino ID as prefix and suffix Transmit AIM ID as prefix Transmit AIM ID as suffix Transmit AIM ID as prefix and suffix
Data Length Transmit **PID : 01h 04h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable ◄ Enable
FNC1 Transmit **PID : 01h 06h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable Enable ◄
ECI Transmit **PID : 01h 07h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable ◄ Enable
Record Suffix (Keyboard) **PID : 01h 08h** Size : 00h 01h (1 Byte)	- FFh - 0Dh - 09h - 20h - XXh	None RETURN ◄ TAB SPACE User-defined character (1 character)

ECI Transmit is available for A Series only.

Set Transmission (ALL) (continued)

Parameter(s)

< Table 7-1-1 > Set Transmission Parameter(s) Field

Parameter / PID / Size	Options	Descriptions
Data Script Active Setting **PID : 02h 00h** Size : 00h 01h (1 Byte)	- 01h - 02h ..... - 10h	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** Disable ◄ Enable **Reserved**
Security Script Setting **PID : 02h 02h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable Security Script ◄ Enable Security Script
Data Script Error Info Output **PID : 02h 03h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable Error Info Output ◄ Enable Error Info Output

Data Script Active Setting, Data Script Setting, Security Script Setting and **Data Script Error Info Output** are all DataWizard parameters which are available for Scanners that support DataWizard. For more details about DataWizard, please refer to *FuzzyScan DataWizard User Manual*.

Set Transmission (ALL) (continued)

Parameter(s)

< Table 7-1-1 > Set Transmission Parameter(s) Field

Parameter / PID / Size	Options	Descriptions
Encoding Country Code Page **PID : 03h 00h** Size : 00h 01h (1 Byte)	- 00h - 10h - 11h - 12h - 13h - 14h - 15h - 16h - 17h - 18h - 19h - 1Ah - 1Bh - 1Ch - 1Dh - 1Eh - 1Fh - 20h - 21h - 22h - 23h - 24h - 25h - 26h - 27h - 28h - 29h - 2Ah - 2Bh - 2Ch	UTF-8 Code Page 950 Code Page 949 Code Page 936 Code Page 932 Code Page 874 WIN 1250 WIN 1251 WIN 1252 ◄ WIN 1253 WIN 1254 WIN 1255 WIN 1256 WIN 1257 WIN 1258 ISO 8859-1 Latin 1, West Euro ISO 8859-2 Latin 2, Central Euro ISO 8859-3 Latin 3, South Euro ISO 8859-4 Latin 4, North Euro ISO 8859-5 Cyrillic ISO 8859-6 Arabic ISO 8859-7 Greek ISO 8859-8 Hebrew ISO 8859-9 Latin 5, Turkish ISO 8859-10 Latin 6, Nordic ISO 8859-11 Thai ISO 8859-13 Latin 7, Baltic ISO 8859-14 Latin 8, Celtic ISO 8859-15 Latin 9 ISO 8859-16 Latin 10, SE Euro

- **Encoding Country Code Page**: 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). Encoding Country Code Page is only available for 2D scanners.
- To properly display the content of a 2D barcode in MAC Unicode Hex Input and WIN Notepad Unicode Hexadecimal, additional settings are required.

Set Transmission (ALL) (continued)

Parameter(s)

< Table 7-1-1 > Set Transmission Parameter(s) Field

Parameter / PID / Size	Options	Descriptions
Keyboard Output Country Code Page **PID : 03h 01h** Size : 00h 01h (1 Byte)	- 01h - 02h - 03h - 10h - 11h - 12h - 13h - 14h - 15h - 16h - 17h - 18h - 19h - 1Ah - 1Bh - 1Ch - 1Dh - 30h - 31h - 32h - 33h - 34h - 35h - 36h - 37h - 38h - 39h	MAC Unicode WIN Notepad Unicode WIN Wordpad Unicode Code Page 950 Code Page 949 Code Page 936 Code Page 932 Code Page 874 WIN 1250 WIN 1251 WIN 1252 ◄ WIN 1253 WIN 1254 WIN 1255 WIN 1256 WIN 1257 WIN 1258 Code Page 852 Code Page 855 Code Page 866 Code Page 850 Code Page 437 Code Page 737 Code Page 857 Code Page 862 Code Page 720 Code Page 755

- **Keyboard Output Country Code Page**: 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. **Keyboard Output Country Code Page** is only available for 2D scanners.
- 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)

Request the desired one or more parameters of the Transmission settings as well as DataWizard parameters including Data Script Active Setting, Data Script Setting, Security Script Setting and Data Script Error Info Output.

DataWizard parameters are only available for Scanners that support DataWizard. For more details about DataWizard, please refer to *FuzzyScan DataWizard 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 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

Get Transmission (ALL) (continued)

Parameter(s)

< Table 7-1-2 > Get Transmission Parameter(s) Field

Parameter	PID	Size
Intermessage, Intercharacter, Interfunction Delay	00h 00h	00h 00h
Record Suffix (Serial)	01h 00h	00h 00h
Preamble	01h 01h	00h 00h
Postamble	01h 02h	00h 00h
Code ID Transmit	01h 03h	00h 00h
Data Length Transmit	01h 04h	00h 00h
FNC1 Transmit	01h 06h	00h 00h
ECI Transmit	01h 07h	00h 00h
Record Suffix (Keyboard)	01h 08h	00h 00h
Data Script Active Setting	02h 00h	00h 00h
Data Script Setting	02h 01h	00h 00h
Security Script Setting	02h 02h	00h 00h
Data Script Error Info Output	02h 03h	00h 00h
Encoding Country Code Page	03h 00h	00h 00h
Keyboard Output Country Code Page	03h 01h	00h 00h

Reply Transmission (ALL)

Reply the desired one or more parameters of the Transmission settings as well as DataWizard parameters including Data Script Active Setting, Data Script Setting, Security Script Setting and Data Script Error Info Output.

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 parameters are only available for Scanners that support DataWizard. For more details about DataWizard, please refer to *FuzzyScan DataWizard 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

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

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

Reply Transmission (ALL) (continued)

Parameter(s)

< Table 7-1-3 > Reply Transmission Parameter(s) Field

Parameter / PID / Size	Options	Descriptions
Intermessage, Intercharacter, Interfunction Delay **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** [1] None ◄ 1~99(×5)ms (All corded series) 1~99(×10)ms (All Bluetooth series) **Intercharacter Delay** [1] None ◄ 1~99(×5)ms **Interfunction Delay** [1] None ◄ 1~99(×5)ms
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) CRLF (0Dh 0Ah) TAB (09h) SPACE (20h) User-defined character (1 character)
Preamble **PID : 01h 01h** Size : 00h 10h (16 Bytes)	**1st 2nd~16th Byte** - 00h FFh...FFh **1st Byte** - XXh **2nd~16th Byte** [2] - XXh XXh...XXh	None ◄ (Totally fifteen “FFh”s) Total number of the Preamble characters 1~15 character(s)
Postamble **PID : 01h 02h** Size : 00h 10h (16 Bytes)	**1st 2nd~16th Byte** - 00h FFh...FFh **1st Byte** - XXh **2nd~16th Byte** [2] - XXh XXh...XXh	None ◄ (Totally fifteen “FFh”s) Total number of the Postamble characters 1~15 character(s)

1. For the A and PA series Bluetooth scanners, **Intermessage Delay, Intercharacter Delay, Interfunction Delay** functions are not available under Bluetooth SPP and Bluetooth HID mode.
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**.

Reply Transmission (ALL) (continued)

Parameter(s)

< Table 7-1-3 > Reply Transmission Parameter(s) Field

Parameter / PID / Size	Options	Descriptions
Code ID Transmit **PID : 01h 03h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h - 03h - 04h - 05h - 06h	Disable ◄ Transmit Cino ID as prefix Transmit Cino ID as suffix Transmit Cino ID as prefix and suffix Transmit AIM ID as prefix Transmit AIM ID as suffix Transmit AIM ID as prefix and suffix
Data Length Transmit **PID : 01h 04h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable ◄ Enable
FNC1 Transmit **PID : 01h 06h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable Enable ◄
ECI Transmit **PID : 01h 07h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable ◄ Enable
Record Suffix (Keyboard) **PID : 01h 08h** Size : 00h 01h (1 Byte)	- FFh - 0Dh - 09h - 20h - XXh	None RETURN ◄ TAB SPACE User-defined character (1 character)

ECI Transmit is available for A Series only.

Reply Transmission (ALL) (continued)

Parameter(s)

< Table 7-1-3 > Reply Transmission Parameter(s) Field

Parameter / PID / Size	Options	Descriptions
Data Script Active Setting **PID : 02h 00h** Size : 00h 01h (1 Byte)	- 01h - 02h ..... - 10h	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** Disable ◄ Enable **Reserved**
Security Script Setting **PID : 02h 02h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable Security Script ◄ Enable Security Script
Data Script Error Info Output **PID : 02h 03h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable Error Info Output ◄ Enable Error Info Output

Data Script Active Setting, Data Script Setting, Security Script Setting and **Data Script Error Info Output** are all DataWizard parameters which are available for Scanners that support DataWizard. For more details about DataWizard, please refer to *FuzzyScan DataWizard User Manual*.

Reply Transmission (ALL) (continued)

Parameter(s)

< Table 7-1-3 > Reply Transmission Parameter(s) Field

Parameter / PID / Size	Options	Descriptions
Encoding Country Code Page **PID : 03h 00h** Size : 00h 01h (1 Byte)	- 00h - 10h - 11h - 12h - 13h - 14h - 15h - 16h - 17h - 18h - 19h - 1Ah - 1Bh - 1Ch - 1Dh - 1Eh - 1Fh - 20h - 21h - 22h - 23h - 24h - 25h - 26h - 27h - 28h - 29h - 2Ah - 2Bh - 2Ch	UTF-8 Code Page 950 Code Page 949 Code Page 936 Code Page 932 Code Page 874 WIN 1250 WIN 1251 WIN 1252 ◄ WIN 1253 WIN 1254 WIN 1255 WIN 1256 WIN 1257 WIN 1258 ISO 8859-1 Latin 1, West Euro ISO 8859-2 Latin 2, Central Euro ISO 8859-3 Latin 3, South Euro ISO 8859-4 Latin 4, North Euro ISO 8859-5 Cyrillic ISO 8859-6 Arabic ISO 8859-7 Greek ISO 8859-8 Hebrew ISO 8859-9 Latin 5, Turkish ISO 8859-10 Latin 6, Nordic ISO 8859-11 Thai ISO 8859-13 Latin 7, Baltic ISO 8859-14 Latin 8, Celtic ISO 8859-15 Latin 9 ISO 8859-16 Latin 10, SE Euro

- **Encoding Country Code Page**: 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). Encoding Country Code Page is only available for 2D scanners.
- To properly display the content of a 2D barcode in MAC Unicode Hex Input and WIN Notepad Unicode Hexadecimal, additional settings are required.

Reply Transmission (ALL) (continued)

Parameter(s)

< Table 7-1-3 > Reply Transmission Parameter(s) Field

Parameter / PID / Size	Options	Descriptions
Keyboard Output Country Code Page **PID : 03h 01h** Size : 00h 01h (1 Byte)	- 01h - 02h - 03h - 10h - 11h - 12h - 13h - 14h - 15h - 16h - 17h - 18h - 19h - 1Ah - 1Bh - 1Ch - 1Dh - 30h - 31h - 32h - 33h - 34h - 35h - 36h - 37h - 38h - 39h	MAC Unicode WIN Notepad Unicode WIN Wordpad Unicode Code Page 950 Code Page 949 Code Page 936 Code Page 932 Code Page 874 WIN 1250 WIN 1251 WIN 1252 ◄ WIN 1253 WIN 1254 WIN 1255 WIN 1256 WIN 1257 WIN 1258 Code Page 852 Code Page 855 Code Page 866 Code Page 850 Code Page 437 Code Page 737 Code Page 857 Code Page 862 Code Page 720 Code Page 755

- **Encoding Country Code Page**: 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). Keyboard Output Country Code Page is only available for 2D scanners.
- To properly display the content of a 2D barcode in MAC Unicode Hex Input and WIN Notepad Unicode Hexadecimal, additional settings are required.

Set USB HID (ALL)

Change the desired one or more parameters of the USB HID Interface settings

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

Set USB HID (ALL) (continued)

Parameter(s)

< Table 7-2-1 > Set USB HID Parameter(s) Field

Parameter / PID / Size	Options	Descriptions
Keyboard Country 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 - 14h - 17h - 18h - 1Ah -1Bh - 63h	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 (AZERTY) Swiss German (QWERTZ) Iceland (QWERTY) Japan (DOS/V) Czech (QWERTY) Arabic (101) Thailand Russian (JCUKEN) Vietnamese (QWERTY) Polish Universal
Keyboard Caps Lock Release **PID : 00h 02h** Size : 00h 01h (1 Byte)	- 00h - 01h	“Caps Lock On, Caps Off” “Caps Lock On, Shift Off”
Keyboard Caps Lock **PID : 00h 03h** Size : 00h 01h (1 Byte)	- 00h - 01h - 06h	Caps Lock Off ◄ Caps Lock On Auto Detect

Set USB HID (ALL) (continued)

Parameter(s)

< Table 7-2-1 > Set USB HID Parameter(s) Field

Parameter / PID / Size	Options	Descriptions
Key Pad Emulation **PID : 00h 05h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable ◄ Enable
Keyboard Upper/Lower Case **PID : 00h 06h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h - 03h	Normal case ◄ Inverse case Upper case Lower case
Modifier Key Output Control **PID : 00h 08h** Size : 00h 01h (1 Byte)	- 00h - 01h	MAKE key + BREAK key output ◄ Composite output
Alt Code Output **PID : 00h 09h** Size : 00h 01h (1 Byte)	- 00h - 01h	3 digits 4 digits ◄
Alt Code Break Control **PID : 00h 0Ah** Size : 00h 01h (1 Byte)	- 00h - 01h	Transmit Alt Code with BREAK keys Transmit Alt Code without BREAK keys ◄

Get USB HID (ALL)

Request the desired one or more parameters of the USB HID Interface settings

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, 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

Get USB HID (ALL) (continued)

Parameter(s)

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

Parameter	PID	Size
Keyboard Country Layout	00h 01h	00h 00h
Keyboard Caps Lock Release	00h 02h	00h 00h
Keyboard Caps Lock	00h 03h	00h 00h
Key Pad Emulation	00h 05h	00h 00h
Keyboard Upper/Lower Case	00h 06h	00h 00h
Modifier Key Output Control	00h 08h	00h 00h
Alt Code Output	00h 09h	00h 00h
Alt Code Break Control	00h 0Ah	00h 00h

Reply USB HID (ALL)

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.

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

Reply USB HID (ALL) (continued)

Parameter(s)

< Table 7-2-3 > Reply USB HID Parameter(s) Field

Parameter / PID / Size	Options	Descriptions
Keyboard Country 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 - 14h - 17h - 18h - 1Ah - 1Bh - 63h	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 (AZERTY) Swiss German (QWERTZ) Iceland (QWERTY) Japan (DOS/V) Czech (QWERTY) Arabic (101) Thailand Russian (JCUKEN) Vietnamese (QWERTY) Polish Universal
Keyboard Caps Lock Release **PID : 00h 02h** Size : 00h 01h (1 Byte)	- 00h - 01h	“Caps Lock On, Caps Off” “Caps Lock On, Shift Off”
Keyboard Caps Lock **PID : 00h 03h** Size : 00h 01h (1 Byte)	- 00h - 01h - 06h	Caps Lock Off ◄ Caps Lock On Auto Detect

Reply USB HID (ALL) (continued)

Parameter(s)

< Table 7-2-3 > Reply USB HID Parameter(s) Field

Parameter / PID / Size	Options	Descriptions
Key Pad Emulation **PID : 00h 05h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable ◄ Enable
Keyboard Upper/Lower Case **PID : 00h 06h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h - 03h	Normal case ◄ Inverse case Upper case Lower case
Modifier Key Output Control **PID : 00h 08h** Size : 00h 01h (1 Byte)	- 00h - 01h	MAKE key + BREAK key output ◄ Composite output
Alt Code Output **PID : 00h 09h** Size : 00h 01h (1 Byte)	- 00h - 01h	3 digits 4 digits ◄
Alt Code Break Control **PID : 00h 0Ah** Size : 00h 01h (1 Byte)	- 00h - 01h	Transmit Alt Code with BREAK keys Transmit Alt Code without BREAK keys ◄

2.8 Symbology

This section introduces the serial commands for configuring your scanner's decoding capability on different symbologies. You will find the details of "Set, "Get" and "Reply" action command for each setting.

Set Symbology (ALL)

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

Set Symbology (ALL) (continued)

Serial Command – Readability (Enable)

Descriptions	Prefix	Opcode	Status	Length	PID	Size	Option	LRC	Suffix
Code 39 ◄	7E	850000	00	0005	0000	0001	01	80	7E
Trioptic Code 39	7E	850000	00	0005	0003	0001	01	83	7E
Codabar ◄	7E	850000	00	0005	0100	0001	01	81	7E
UPC A ◄/UPC E ◄	7E	850000	00	005C02	0200	0002	0101	83	7E
EAN 13 ◄/EAN 8 ◄	7E	850000	00	005C02	0300	0002	0101	82	7E
UCC Coupon Extended Code	7E	850000	00	0005	0303	0001	01	80	7E
IATA	7E	850000	00	0005	0400	0001	01	84	7E
Interleaved 25 ◄	7E	850000	00	0005	0402	0001	01	86	7E
Industrial 25	7E	850000	00	0005	0404	0001	01	80	7E
Matrix 25	7E	850000	00	0005	0405	0001	01	81	7E
China Postal Code	7E	850000	00	0005	045C02	0001	01	82	7E
Code 11	7E	850000	00	0005	0500	0001	01	85	7E
Code 93 ◄	7E	850000	00	0005	5C0200	0001	01	86	7E
MSI	7E	850000	00	0005	0700	0001	01	87	7E
Code 128 ◄	7E	850000	00	0005	0800	0001	01	88	7E
GS1 128 ◄	7E	850000	00	0005	0804	0001	01	8C	7E
UK/Plessey	7E	850000	00	0005	0900	0001	01	89	7E
Telepen	7E	850000	00	0005	0A00	0001	01	8A	7E
GS1 DataBar ◄	7E	850000	00	0007	2000	0003	010101	A0	7E
Composite Code	7E	850000	00	0005	2100	0001	01	A1	7E
PDF417 ◄ MicroPDF417	7E	850000	00	005C02	2200	0002	0101	A3	7E
QR Code ◄	7E	850000	00	0005	3000	0001	01	B0	7E
Micro QR Code ◄	7E	850000	00	0005	3001	0001	01	B1	7E
Data Matrix ◄	7E	850000	00	0005	3100	0001	01	B1	7E
MaxiCode	7E	850000	00	0005	3200	0001	01	B2	7E
Aztec Code ◄	7E	850000	00	0005	3300	0001	01	B3	7E
Korea Post Code	7E	850000	00	0005	5000	0001	01	D0	7E
Australia Post	7E	850000	00	0005	5100	0001	01	D1	7E
US Planet	7E	850000	00	0005	5200	0001	01	D2	7E
US Postnet	7E	850000	00	0005	5300	0001	01	D3	7E
British Post	7E	850000	00	0005	5400	0001	01	D4	7E
Japan Post	7E	850000	00	0005	5500	0001	01	D5	7E
Netherlands KIX Code	7E	850000	00	0005	5600	0001	01	D6	7E
Intelligent Mail	7E	850000	00	0005	5700	0001	01	D7	7E

5C02: the escaped value of 06

Set Symbology (ALL) (continued)

Parameter(s)

< Table 8-1-1 > Set Symbology Parameter(s) Field

Parameter / PID / Size	Options	Descriptions
Code 39/32 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	**C39 Primary Format** Standard Code 39 ◄ Full ASCII Code 39 Code 32 (PARAF, Italian Pharmaceutical) **C39 Start/ Stop Transmit** Disable ◄ Enable **C32 Leading A Transmit** Disable ◄ Enable **C39 Check Digit Verify** Disable ◄ Enable **C39 Check Digit Transmit** Disable ◄ Enable **C39 Buffering** Disable ◄ Enable
Code 39 Length **PID : 00h 02h** Size : 00h 02h (2 Bytes)	**1st Byte** - 01h~62h **2nd Byte** - 62h~01h	**C39 Minimum Length** 1~98 (Default: 1) **C39 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

Set Symbology (ALL) (continued)

Parameter(s)

< Table 8-1-1 > Set Symbology Parameter(s) Field

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 - 01	**Codabar Primary Format** Codabar Standard format ◄ Codabar ABC format Codabar CLSI format Codabar CX format **Codabar Start/ Stop Transmit** Disable ◄ Transmit as ABCD/ABCD Transmit as abcd/abcd Transmit as ABCD/TN◄E Transmit as abcd/tn◄e **Codabar Check Digit Verify** Disable ◄ Enable **Codabar Check Digit Transmit** Disable ◄ Enable
Codabar Length **PID : 01h 02h** Size : 00h 02h (2 Bytes)	**1st Byte** - 01h~62h **2nd Byte** - 62h~01h	**Codabar Minimum Length** 1~98 (Default: 4) **Codabar Maximum Length** 98~1 (Default: 98)
Codabar Check Digit Select **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)

Set Symbology (ALL) (continued)

Parameter(s)

< Table 8-1-1 > Set Symbology Parameter(s) Field

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 Transmit** Disable Enable ◄ **UPC E Check Digit Transmit** Disable Enable ◄ **UPC E1 Readability** 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	**UPC Supplement Digits Select** Ignore supplement digits ◄ UPC with 2-digit supplement UPC with 5-digit supplement UPC with 2- or 5-digit supplement **UPC Supplement Digits Output** Disable ◄ Enable **UPC Addenda Separator** Disable ◄ Enable

Set Symbology (ALL) (continued)

Parameter(s)

< Table 8-1-1 > Set Symbology Parameter(s) Field

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 Transmit** Disable Enable ◄ **EAN 8 Check Digit Transmit** Disable Enable ◄ **EAN ISBN/ISSN Convert** 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	**EAN Supplement Digits Selection** Ignore supplement digits ◄ EAN with 2-digit supplement EAN with 5-digit supplement EAN with 2- or 5-digit supplement **EAN Supplement Digits Output** Disable ◄ Enable **EAN Addenda Separator** Disable ◄ Enable

Set Symbology (ALL) (continued)

Parameter(s)

< Table 8-1-1 > Set Symbology Parameter(s) Field

Parameter / PID / Size	Options	Descriptions
EAN Supplement Prefix **PID : 03h 04h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h - 03h - 04h - 05h - 06h - 07h	Ignore supplement digits ◄ Transmit supplemented EAN with all prefix types Transmit supplemented EAN with prefix 491 Transmit supplemented EAN with prefix 978/979 Transmit supplemented EAN with prefix 977 Transmit supplemented EAN with prefix 378/379 Transmit supplemented EAN with prefix 414/419 Transmit supplemented EAN with prefix 434/439
UCC Coupon Extended Code Readability **PID : 03h 03h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable ◄ Enable

Set Symbology (ALL) (continued)

Parameter(s)

< Table 8-1-1 > Set Symbology Parameter(s) Field

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 Length** 15-digit fixed length checking Variable length checking ◄ **IATA Check Digit Verify** Disable ◄ Enable automatic check digit Verify check digit on S/N only Verify check digit on CPN only Verify check digit on CPN, Airline and S/N **IATA Check Digit Transmit** Disable◄ Enable **IATA Start/Stop Transmit** Disable ◄ Enable
Interleaved 25 Readability **PID : 04h 02h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable Enable ◄
Interleaved 25 Settings **PID : 04h 03h** Size : 00h 03h (3 Bytes)	**1st Byte** - 00h - 01h **2nd Byte** - 00h - 01h - 02h **3rd Byte** - 00h - 01h	**I25 Primary Format** Interleaved 25 ◄ German Postal Code **I25 Check Digit Verify** Disable ◄ Verify with USS check digit Verify with OPCC check digit **I25 Check Digit Transmit** Disable ◄ Enable

Set Symbology (ALL) (continued)

Parameter(s)

< Table 8-1-1 > Set Symbology Parameter(s) Field

Parameter / PID / Size	Options	Descriptions
Industrial 25 Readability **PID : 04h 04h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable ◄ Enable
Matrix 25 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

Set Symbology (ALL) (continued)

Parameter(s)

< Table 8-1-1 > Set Symbology Parameter(s) Field

Parameter / PID / Size	Options	Descriptions
Code 25 Setting **PID : 04h 07h** Size : 00h 02h (2 Bytes)	**1st Byte** - 00h - 01h **2nd Byte** - 00h - 01h	**Code 25 Check Digit Verify** Disable ◄ Enable **Code 25 Check Digit Transmit** Disable ◄ Enable
Code 25 Length **PID : 04h 08h** Size : 00h 02h (2 Bytes)	**1st Byte** - 01h~62h **2nd Byte** - 62h~01h	**Code 25 Minimum Length** 1~98 (Default: 4) **Code 25 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	**Code 11 Check Digit Verify** Disable ◄ Verify with 1 modulo-11 check digit Verify with 2 modulo-11 check digit **Code 11 Check Digit Transmit** Disable ◄ Enable
Code 11 Length **PID : 05h 02h** Size : 00h 02h (2 Bytes)	**1st Byte** - 01h~62h **2nd Byte** - 62h~01h	**Code 11 Minimum Length** 1~98 (Default: 4) **Code 11 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 Transmit **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	**C93 Minimum Length** 1~98 (Default: 1) **C93 Maximum Length** 98~1 (Default: 98)

Set Symbology (ALL) (continued)

Parameter(s)

< Table 8-1-1 > Set Symbology Parameter(s) Field

Parameter / PID / Size	Options	Descriptions
MSI Readability **PID : 07h 00h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable ◄ Enable
MSI Setting **PID : 07h 01h** Size : 00h 02h (2 Bytes)	**1st Byte** - 00h - 01h - 02h **2nd Byte** - 00h - 01h	**MSI Check Digit Select** Verify with MOD 10 check digit ◄ Verify with MOD 10-10 check digit Verify with MOD 11-10 check digit **MSI Check Digit Transmit** Disable ◄ Enable
MSI Length **PID : 07h 02h** Size : 00h 02h (2 Bytes)	**1st Byte** - 01h~62h **2nd Byte** - 62h~01h	**MSI Minimum Length** 1~98 (Default: 4) **MSI Maximum Length** 98~1 (Default: 98)
Code 128 Readability **PID : 08h 00h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable Enable ◄
Code 128 ISBT Concatenate **PID : 08h 01h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h - 03h	Disable ISBT Concatenation ◄ Enable ISBT Concatenation Enable ISBT Concatenation with table check Enable ISBT Concatenation Auto
Code 128 Length **PID : 08h 02h** Size : 00h 02h (2 Bytes)	**1st Byte** - 01h~62h **2nd Byte** - 62h~01h	**C128 Minimum Length** 1~98 (Default: 1) **C128 Maximum Length** 98~1 (Default: 98)
Code 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	**GS1 128 Minimum Length** 1~98 (Default: 1) **GS1 128 Maximum Length** 98~1 (Default: 98)

Set Symbology (ALL) (continued)

Parameter(s)

< Table 8-1-1 > Set Symbology Parameter(s) Field

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	**UK/Plessey Primary Format** Standard ◄ CLSI format **UK/Plessey X to A-F Convert** Disable ◄ Enable **UK/Plessey Check Digit Transmit** Disable ◄ Enable
UK/Plessey Length **PID : 09h 02h** Size : 00h 02h (2 Bytes)	**1st Byte** - 01h~62h **2nd Byte** - 62h~01h	**UK/Plessey Minimum Length** 1~98 (Default: 4) **UK/Plessey 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	**Telepen Primary Format** Telepen Full ASCII mode ◄ Telepen Numeric mode **Telepen Check Digit Transmit** Disable ◄ Enable
Telepen Length **PID : 0Ah 02h** Size : 00h 02h (2 Bytes)	**1st Byte** - 01h~62h **2nd Byte** - 62h~01h	**Telepen Minimum Length** 1~98 (Default: 4) **Telepen Maximum Length** 98~1 (Default: 98)

Set Symbology (ALL) (continued)

Parameter(s)

< Table 8-1-1 > Set Symbology Parameter(s) Field

Parameter / PID / Size	Options	Descriptions
GS1 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 ◄
GS1 DataBar Expanded Length **PID : 20h 01h** Size : 00h 02h (2 Bytes)	**1st Byte** - 01h~4Ah **2nd Byte** - 4Ah~01h	**GS1 DataBar Expanded Minimum Length** 1~74 (Default: 4) **GS1 DataBar Expanded Maximum Length** 74~1 (Default: 74)

Set Symbology (ALL) (continued)

Parameter(s)

< Table 8-1-1 > Set Symbology Parameter(s) Field

Parameter / PID / Size	Options	Descriptions
GS1 Composite Code Readability **PID : 21h 00h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable ◄ Enable
GS1 Composite Code UPC Link **PID : 21h 01h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable ◄ Enable
PDF417/ MicroPDF417 Readability **PID : 22h 00h** Size : 00h 02h (2 Bytes)	**1st Byte** - 00h - 01h **2nd Byte** - 00h - 01h	**PDF417 Readability** Disable Enable ◄ **MicroPDF417 Readability** Disable ◄ Enable

Set Symbology (ALL) (continued)

Parameter(s)

< Table 8-1-1 > Set Symbology Parameter(s) Field

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 Append** Disable Enable ◄ **QR 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** 1~7089 (Default: 1) **Maximum Length** 7089~1 (Default: 7089)
QR Code Mirror Images **PID : 30h 04h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h	Disable Enable Auto detect ◄
Data Matrix Readability **PID : 31h 00h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable Enable ◄
Data Matrix Inverse Reading **PID : 31h 01h** Size : 00h 02h (2 Bytes)	**1st ~ 2nd Byte** - 01h 00h - 01h 01h - 01h 02h	 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	**DM Minimum Length** 1~3116 (Default: 1) **DM Maximum Length** 3116~1 (Default: 3116)

Set Symbology (ALL) (continued)

Parameter(s)

< Table 8-1-1 > Set Symbology Parameter(s) Field

Parameter / PID / Size	Options	Descriptions
Data Matrix Mirror Images **PID : 31h 03h** Size : 00h 01h	- 00h - 01h - 02h	Disable Enable Auto detect ◄
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	**MaxiCode Minimum Length** 1~150 (Default: 1) **MaxiCode Maximum Length** 150~1 (Default: 150)

Set Symbology (ALL) (continued)

Parameter(s)

< Table 8-1-1 > Set Symbology Parameter(s) Field

Parameter / PID / Size	Options	Descriptions
Aztec Code Readability **PID : 33h 00h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable Enable ◄
Aztec Code 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 Code Length **PID : 33h 02h** Size : 00h 04h (4 Bytes)	**1st & 2nd Byte** - 01h~EF8h **3rd & 4th Byte** - EF8h~01h	**Aztec Minimum Length** 1~3832 (Default: 1) **Aztec Maximum Length** 3832 ~1 (Default: 3832)
Korea Post Code **PID : 50h 00h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable ◄ Enable
Australia Post Readability **PID : 51h 00h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable ◄ Enable
Australia Post Encode **PID : 51h 01h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h - 03h	Transmit with raw format ◄ Transmit with numeric encoding (N Table) Transmit with alphanumeric encoding (C Table) Auto-discriminate encoding (Combined C & N Table)
US Planet Readability **PID : 52h 00h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable ◄ Enable
US Planet Check Digit Transmit **PID : 52h 01h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable ◄ Enable

Set Symbology (ALL) (continued)

Parameter(s)

< Table 8-1-1 > Set Symbology Parameter(s) Field

Parameter / PID / Size	Options	Descriptions
US Postnet Readability **PID : 53h 00h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable ◄ Enable
US Postnet Check Digit Transmit **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 Transmit **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)

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 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

Get Symbology (ALL) (continued)

Parameter(s)

< Table 8-1-2 > Get Symbology Parameter(s) Field

Parameter	PID	Size
Code 39/32 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 Select	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 Prefix	03h 04h	00h 00h
IATA Readability	04h 00h	00h 00h
IATA Setting	04h 01h	00h 00h
Interleaved 25 Readability	04h 02h	00h 00h
Interleaved 25 Settings	04h 03h	00h 00h
Industrial 25 Readability	04h 04h	00h 00h
Matrix 25 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 Transmit	06h 01h	00h 00h
Code 93 Length	06h 02h	00h 00h
MSI Readability	07h 00h	00h 00h
MSI Setting	07h 01h	00h 00h
MSI Length	07h 02h	00h 00h

Get Symbology (ALL) (continued)

Parameter(s)

< Table 8-1-2 > Get Symbology Parameter(s) Field

Parameter	PID	Size
Code 128 Readability	08h 00h	00h 00h
Code 128 ISBT Concatenate	08h 01h	00h 00h
Code 128 Length	08h 02h	00h 00h
Code 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
GS1 DataBar Readability	20h 00h	00h 00h
GS1 DataBar Expanded Length	20h 01h	00h 00h
Composite Code Readability	21h 00h	00h 00h
Composite Code UPC Link	21h 01h	00h 00h
PDF417/MicroPDF417 Readability	22h 00h	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
QR Code Mirror Images	30h 04h	00h 00h
Data Matrix Readability	31h 00h	00h 00h
Data Matrix Inverse Reading	31h 01h	00h 00h
Data Matrix Length	31h 02h	00h 00h
Data Matrix Mirror Images	31h 03h	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

Get Symbology (ALL) (continued)

Parameter(s)

< Table 8-1-2 > Get Symbology Parameter(s) Field

Parameter	PID	Size
Korea Post Code	**50h 00h**	00h 00h
Australia Post Readability	**51h 00h**	00h 00h
Australia Post Encode	**51h 01h**	00h 00h
US Planet Readability	**52h 00h**	00h 00h
US Planet Check Digit Transmit	**52h 01h**	00h 00h
US Postnet Readability	**53h 00h**	00h 00h
US Postnet Check Digit Transmit	**53h 01h**	00h 00h
British Post Readability	**54h 00h**	00h 00h
British Post Check Digit Transmit	**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)

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

Reply Symbology (ALL) (continued)

Parameter(s)

< Table 8-1-3 > Reply Symbology Parameter(s) Field

Parameter / PID / Size	Options	Descriptions
Code 39/32 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	**C39 Primary Format** Standard Code 39 ◄ Full ASCII Code 39 Code 32 (PARAF, Italian Pharmaceutical) **C39 Start/ Stop Transmit** Disable ◄ Enable **C32 Leading A Transmit** Disable ◄ Enable **C39 Check Digit Verify** Disable ◄ Enable **C39 Check Digit Transmit** Disable ◄ Enable **C39 Buffering** Disable ◄ Enable
Code 39 Length **PID : 00h 02h** Size : 00h 02h (2 Bytes)	**1st Byte** - 01h~62h **2nd Byte** - 62h~01h	**C39 Minimum Length** 1~98 (Default: 1) **C39 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

Reply Symbology (ALL) (continued)

Parameter(s)

< Table 8-1-3 > Reply Symbology Parameter(s) Field

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 - 01	**Codabar Primary Format** Codabar Standard format ◄ Codabar ABC format Codabar CLSI format Codabar CX format **Codabar Start/ Stop Transmit** Disable ◄ Transmit as ABCD/ABCD Transmit as abcd/abcd Transmit as ABCD/TN◄E Transmit as abcd/tn◄e **Codabar Check Digit Verify** Disable ◄ Enable **Codabar Check Digit Transmit** Disable ◄ Enable
Codabar Length **PID : 01h 02h** Size : 00h 02h (2 Bytes)	**1st Byte** - 01h~62h **2nd Byte** - 62h~01h	**Codabar Minimum Length** 1~98 (Default: 4) **Codabar Maximum Length** 98~1 (Default: 98)
Codabar Check Digit Select **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)

Reply Symbology (ALL) (continued)

Parameter(s)

< Table 8-1-3 > Reply Symbology Parameter(s) Field

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 Transmit** Disable Enable ◄ **UPC E Check Digit Transmit** Disable Enable ◄ **UPC E1 Readability** 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	**UPC Supplement Digits Select** Ignore supplement digits ◄ UPC with 2-digit supplement UPC with 5-digit supplement UPC with 2- or 5-digit supplement **UPC Supplement Digits Output** Disable ◄ Enable **UPC Addenda Separator** Disable ◄ Enable

Reply Symbology (ALL) (continued)

Parameter(s)

< Table 8-1-3 > Reply Symbology Parameter(s) Field

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 Transmit** Disable Enable ◄ **EAN 8 Check Digit Transmit** Disable Enable ◄ **EAN ISBN/ISSN Convert** 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	**EAN Supplement Digits Selection** Ignore supplement digits ◄ EAN with 2-digit supplement EAN with 5-digit supplement EAN with 2- or 5-digit supplement **EAN Supplement Digits Output** Disable ◄ Enable **EAN Addenda Separator** Disable ◄ Enable

Reply Symbology (ALL) (continued)

Parameter(s)

< Table 8-1-3 > Reply Symbology Parameter(s) Field

Parameter / PID / Size	Options	Descriptions
EAN Supplement Prefix **PID : 03h 04h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h - 03h - 04h - 05h - 06h - 07h	Ignore supplement digits ◄ Transmit supplemented EAN with all prefix types Transmit supplemented EAN with prefix 491 Transmit supplemented EAN with prefix 978/979 Transmit supplemented EAN with prefix 977 Transmit supplemented EAN with prefix 378/379 Transmit supplemented EAN with prefix 414/419 Transmit supplemented EAN with prefix 434/439
UCC Coupon Extended Code Readability **PID : 03h 03h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable ◄ Enable

Reply Symbology (ALL) (continued)

Parameter(s)

< Table 8-1-3 > Reply Symbology Parameter(s) Field

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 Length** 15-digit fixed length checking Variable length checking ◄ **IATA Check Digit Verify** Disable ◄ Enable automatic check digit Verify check digit on S/N only Verify check digit on CPN only Verify check digit on CPN, Airline and S/N **IATA Check Digit Transmit** Disable◄ Enable **IATA Start/Stop Transmit** Disable ◄ Enable
Interleaved 25 Readability **PID : 04h 02h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable Enable ◄
Interleaved 25 Settings **PID : 04h 03h** Size : 00h 03h (3 Bytes)	**1st Byte** - 00h - 01h **2nd Byte** - 00h - 01h - 02h **3rd Byte** - 00h - 01h	**I25 Primary Format** Interleaved 25 ◄ German Postal Code **I25 Check Digit Verify** Disable ◄ Verify with USS check digit Verify with OPCC check digit **I25 Check Digit Transmit** Disable ◄ Enable
Industrial 25 Readability **PID : 04h 04h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable ◄ Enable
Matrix 25 Readability **PID : 04h 05h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable ◄ Enable

Reply Symbology (ALL) (continued)

Parameter(s)

< Table 8-1-3 > Reply Symbology Parameter(s) Field

Parameter / PID / Size	Options	Descriptions
China Postal Code Readability **PID : 04h 06h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable ◄ Enable
Code 25 Setting **PID : 04h 07h** Size : 00h 02h (2 Bytes)	**1st Byte** - 00h - 01h **2nd Byte** - 00h - 01h	**Code 25 Check Digit Verify** Disable ◄ Enable **Code 25 Check Digit Transmit** Disable ◄ Enable
Code 25 Length **PID : 04h 08h** Size : 00h 02h (2 Bytes)	**1st Byte** - 01h~62h **2nd Byte** - 62h~01h	**Code 25 Minimum Length** 1~98 (Default: 4) **Code 25 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	**Code 11 Check Digit Verify** Disable ◄ Verify with 1 modulo-11 check digit Verify with 2 modulo-11 check digit **Code 11 Check Digit Transmit** Disable ◄ Enable
Code 11 Length **PID : 05h 02h** Size : 00h 02h (2 Bytes)	**1st Byte** - 01h~62h **2nd Byte** - 62h~01h	**Code 11 Minimum Length** 1~98 (Default: 4) **Code 11 Maximum Length** 98~1 (Default: 98)

Reply Symbology (ALL) (continued)

Parameter(s)

< Table 8-1-3 > Reply Symbology Parameter(s) Field

Parameter / PID / Size	Options	Descriptions
Code 93 Readability **PID : 06h 00h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable Enable ◄
Code 93 Check Digit Transmit **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	**C93 Minimum Length** 1~98 (Default: 1) **C93 Maximum Length** 98~1 (Default: 98)

Reply Symbology (ALL) (continued)

Parameter(s)

< Table 8-1-3 > Reply Symbology Parameter(s) Field

Parameter / PID / Size	Options	Descriptions
MSI Readability **PID : 07h 00h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable ◄ Enable
MSI Setting **PID : 07h 01h** Size : 00h 02h (2 Bytes)	**1st Byte** - 00h - 01h - 02h **2nd Byte** - 00h - 01h	**MSI Check Digit Select** Verify with MOD 10 check digit ◄ Verify with MOD 10-10 check digit Verify with MOD 11-10 check digit **MSI Check Digit Transmit** Disable ◄ Enable
MSI Length **PID : 07h 02h** Size : 00h 02h (2 Bytes)	**1st Byte** - 01h~62h **2nd Byte** - 62h~01h	**MSI Minimum Length** 1~98 (Default: 4) **MSI Maximum Length** 98~1 (Default: 98)
Code 128 Readability **PID : 08h 00h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable Enable ◄
Code 128 ISBT Concatenate **PID : 08h 01h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h - 03h	Disable ISBT Concatenation ◄ Enable ISBT Concatenation Enable ISBT Concatenation with table check Enable ISBT Concatenation Auto
Code 128 Length **PID : 08h 02h** Size : 00h 02h (2 Bytes)	**1st Byte** - 01h~62h **2nd Byte** - 62h~01h	**C128 Minimum Length** 1~98 (Default: 1) **C128 Maximum Length** 98~1 (Default: 98)
Code 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	**GS1 128 Minimum Length** 1~98 (Default: 1) **GS1 128 Maximum Length** 98~1 (Default: 98)

Reply Symbology (ALL) (continued)

Parameter(s)

< Table 8-1-3 > Reply Symbology Parameter(s) Field

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	**UK/Plessey Primary Format** Standard ◄ CLSI format **UK/Plessey X to A-F Convert** Disable ◄ Enable **UK/Plessey Check Digit Transmit** Disable ◄ Enable
UK/Plessey Length **PID : 09h 02h** Size : 00h 02h (2 Bytes)	**1st Byte** - 01h~62h **2nd Byte** - 62h~01h	**UK/Plessey Minimum Length** 1~98 (Default: 4) **UK/Plessey 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	**Telepen Primary Format** Telepen Full ASCII mode ◄ Telepen Numeric mode **Telepen Check Digit Transmit** Disable ◄ Enable
Telepen Length **PID : 0Ah 02h** Size : 00h 02h (2 Bytes)	**1st Byte** - 01h~62h **2nd Byte** - 62h~01h	**Telepen Minimum Length** 1~98 (Default: 4) **Telepen Maximum Length** 98~1 (Default: 98)

Reply Symbology (ALL) (continued)

Parameter(s)

< Table 8-1-3 > Reply Symbology Parameter(s) Field

Parameter / PID / Size	Options	Descriptions
GS1 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 ◄
GS1 DataBar Expanded Length **PID : 20h 01h** Size : 00h 02h (2 Bytes)	**1st Byte** - 01h~4Ah **2nd Byte** - 4Ah~01h	**GS1 DataBar Expanded Minimum Length** 1~74 (Default: 4) **GS1 DataBar Expanded Maximum Length** 74~1 (Default: 74)

Reply Symbology (ALL) (continued)

Parameter(s)

< Table 8-1-3 > Reply Symbology Parameter(s) Field

Parameter / PID / Size	Options	Descriptions
GS1 Composite Code Readability **PID : 21h 00h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable ◄ Enable
GS1 Composite Code UPC Link **PID : 21h 01h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable ◄ Enable
PDF417/ MicroPDF417 Readability **PID : 22h 00h** Size : 00h 02h (2 Bytes)	**1st Byte** - 00h - 01h **2nd Byte** - 00h - 01h	**PDF417 Readability** Disable Enable ◄ **MicroPDF417 Readability** Disable ◄ Enable
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 Append** Disable Enable ◄ **QR 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** 1~7089 (Default: 1) **Maximum Length** 7089~1 (Default: 7089)
QR Code Mirror Images **PID : 30h 04h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h	Disable Enable Auto detect ◄

Reply Symbology (ALL) (continued)

Parameter(s)

< Table 8-1-3 > Reply Symbology Parameter(s) Field

Parameter / PID / Size	Options	Descriptions
Data Matrix Readability **PID : 31h 00h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable Enable ◄
Data Matrix Inverse Reading **PID : 31h 01h** Size : 00h 02h (2 Bytes)	**1st~2nd Byte** - 01h 00h - 01h 01h - 01h 02h	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	**DM Minimum Length** 1~3116 (Default: 1) **DM Maximum Length** 3116~1 (Default: 3116)
Data Matrix Mirror Images **PID : 31h 03h** Size : 00h 01h	- 00h - 01h - 02h	Disable Enable Auto detect ◄
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	**MaxiCode Minimum Length** 1~150 (Default: 1) **MaxiCode Maximum Length** 150~1 (Default: 150)

Reply Symbology (ALL) (continued)

Parameter(s)

< Table 8-1-3 > Reply Symbology Parameter(s) Field

Parameter / PID / Size	Options	Descriptions
Aztec Code Readability **PID : 33h 00h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable Enable ◄
Aztec Code 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 Code Length **PID : 33h 02h** Size : 00h 04h (4 Bytes)	**1st & 2nd Byte** - 01h~EF8h **3rd & 4th Byte** - EF8h~01h	**Aztec Minimum Length** 1~3832 (Default: 1) **Aztec Maximum Length** 3832 ~1 (Default: 3832)
Korea Post Code **PID : 50h 00h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable ◄ Enable
Australia Post Readability **PID : 51h 00h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable ◄ Enable
Australia Post Encode **PID : 51h 01h** Size : 00h 01h (1 Byte)	- 00h - 01h - 02h - 03h	Transmit with raw format ◄ Transmit with numeric encoding (N Table) Transmit with alphanumeric encoding (C Table) Auto-discriminate encoding (Combined C & N Table)
US Planet Readability **PID : 52h 00h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable ◄ Enable
US Planet Check Digit Transmit **PID : 52h 01h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable ◄ Enable

Reply Symbology (ALL) (continued)

Parameter(s)

< Table 8-1-3 > Reply Symbology Parameter(s) Field

Parameter / PID / Size	Options	Descriptions
US Postnet Readability **PID : 53h 00h** Size : 00h 01h (1 Byte)	- 00h - 01h	Disable ◄ Enable
US Postnet Check Digit Transmit **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 Transmit **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

This section introduces the serial commands for configuring the information to be displayed by your scanner. You will find the details of “Set, “Get” and “Reply” action command for each setting.

Get Device Info (ALL)

Request the desired device information as well as DataWizard 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 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

Get Device Info (ALL) (continued)

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
Software ID	00h 03h	00h 00h
Hardware ID	00h 06h	00h 00h
Scan Engine ID (2D Only)	00h 0Ah	00h 00h
DataWizard Info.	01h 00h	00h 00h
Total Count of Data Scripts	01h 01h	00h 00h

Serial Command

Descriptions	Prefix	Opcode	Status	Length	PID	Size	LRC	Suffix
Custom ID	7E	D60001	00	0004	0000	0000	D3	7E
Module No.	7E	D60001	00	0004	0001	0000	D2	7E
Software ID	7E	D60001	00	0004	0003	0000	D0	7E
Hardware ID	7E	D60001	00	0004	0006	0000	D5	7E
Scan Engine ID (2D Only)	7E	D60001	00	0004	0004	0000	D9	7E
DataWizard Info.	7E	D60001	00	0004	0100	0000	D2	7E
Total Count of Data Scripts	7E	D60001	00	0004	0101	0000	D3	7E

Reply Device Info (ALL)

Reply the desired device information as well as DataWizard 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

Reply Device Info (ALL) (continued)

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)
Software ID **PID : 00h 03h** Size : 00h XXh (Variable Bytes)	- XXh…XXh XXh	(For example: 1.03.01)
Hardware ID **PID : 00h 06h** Size : 00h XXh (Variable Bytes)	- XXh…XXh XXh	(For example: M14A)
Scan Engine ID (2D Only) **PID : 00h 0Ah** Size : 00h XXh (Variable Bytes)	- XXh…XXh XXh	(For example: 1.0.8)
DataWizard 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 Device Info (Cradle)

Request the desired device information.

Packet Format

Prefix	Opcode	Status	Length	Parameter(s)	LRC	Suffix
7Eh	D6h FFh 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 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

Get Device Info (ALL) (continued)

Parameter(s)

< Table 9-1-2 > Get Device Info Parameter(s) Field

Parameter	PID	Size
Custom ID	00h 00h	00h 00h
Module No.	00h 01h	00h 00h
Software ID	00h 03h	00h 00h
Hardware ID	00h 06h	00h 00h

Serial Command

Descriptions	Prefix	Opcode	Status	Length	PID	Size	LRC	Suffix
Custom ID	7E	D6FF01	00	0004	0000	0000	2C	7E
Module No.	7E	D6FF01	00	0004	0001	0000	2D	7E
Software ID	7E	D6FF01	00	0004	0003	0000	2F	7E
Hardware ID	7E	D6FF01	00	0004	0006	0000	2A	7E

Reply Device Info (Cradle)

Request the desired device information.

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	.....	PID	Size
2 Bytes	2 Bytes	.....	2 Bytes	2 Bytes
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

Reply Device Info (Cradle) (continued)

Parameter(s)

< Table 9-2-2 > Reply Device Info Parameter(s) Field

Parameter	PID	Size
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 HB2112)
Software ID **PID : 00h 03h** Size : 00h XXh (Variable Bytes)	- XXh…XXh XXh	(For example: 5.00.18)
Hardware ID **PID : 00h 06h** Size : 00h XXh (Variable Bytes)	- XXh…XXh XXh	(For example: A17A)

2.10 Acknowledgement

This section introduces the serial commands for configuring the packet transfers of data. You will find the details of “Set, “Get” and “Reply” action command for each setting.

Device ACK (ALL)

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 parametersm 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)

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)

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) to which the Host ACK is replied

Host NAK (ALL)

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) to which the Host NAK is replied

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

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