BTS 700 Bluetooth Scanner User's Guide

Configuration Guide

Version 1.0

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1. Device Description

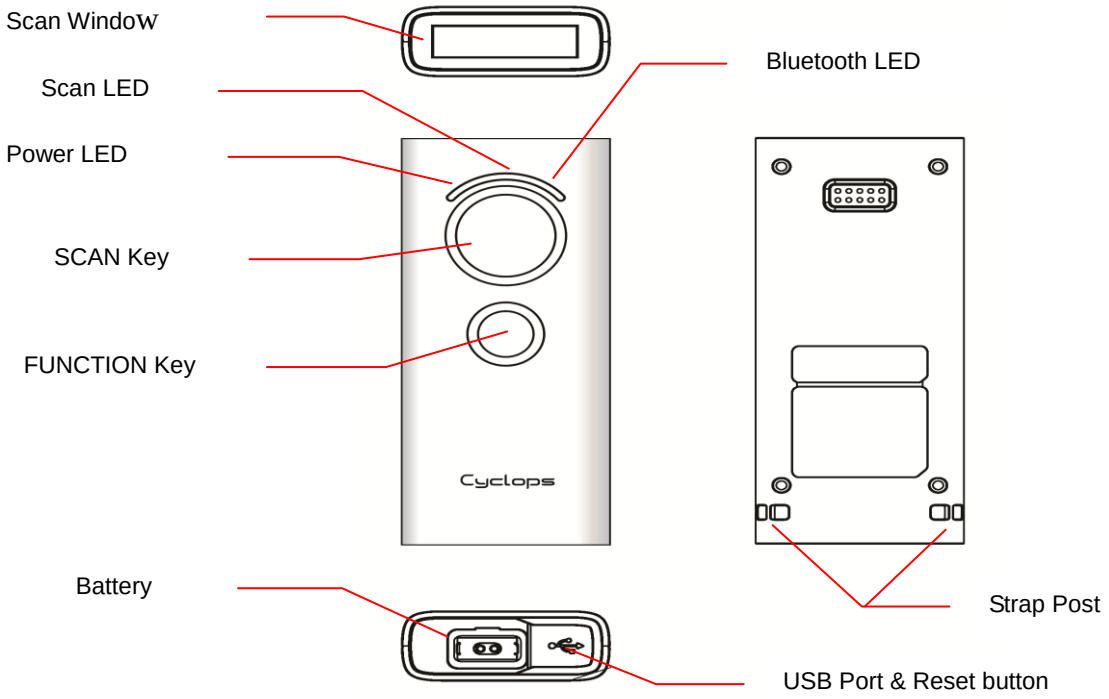


Table - 1

Item	Description
Scan Window	Scanner scans barcode via this window (DO NOT SCRATCH or BLOCK)
Power LED	Battery Status Green light ON: Charging Completed Green light blinking: Battery Low Red light ON: Battery Charging in Process Red light blinking: Charging Failed
Scan LED	Barcode Scanning Result: Green ON: Barcode decoding success Red ON: Barcode reading fail (decode time-out error) Orange blinking: System firmware update in process Orange ON: System firmware update completed
Bluetooth LED	Bluetooth Communication Status Blue fast-blinking: Radio Fail, Pairing Started, Paring Fail, Lost Connection, Not Connected, Communication Error Blue slow-blinking: Successful Connection

	USB Connection Status(Bluetooth Mode) Blue ON: USB Connected Blue slow-blinking: Data Transmitting
SCAN Key	Press and hold more then 3-second: Power ON Press: Barcode scanning
FUNCTION Key	In different Operation Modes, it will have different function. Please refer to <**3. Key Function Descriptions**>.
Battery	Connected with these contacts, AC adapter can charge the battery
USB Port	Connected with USB cable for data transfer.
Reset Button	Press this button, CYCLOPS-II will be reset and power OFF
Strap Post	For hand strap installation use

2. Operation Modes

This device has three operation modes and the default is Real-Time Mode.
Operation modes can be changed by scanning configuration barcodes. Operation mode can not be changed if there are scanned data records found in data file(data.txt)not been uploaded or sent out yet.
Descriptions of Operation Modes are listed in the following table.
Table - 2

Operation Mode	Description
Real-Time Mode	✧ Scanned data will be transmitted via Bluetooth connection. Scanned data will not be transmitted or saved in data file if the Bluetooth is disconnected. ✧ HID communication profile supported. ✧ Connection error handshake protocol of SPP profile supported in this Mode. ✧ Special application utility to handle communication handshake protocol and data receiving/transmission is needed in SPP communication profile.
Batch Mode	Scanned data will be saved in the data file of CYCLOPS-II. There are two ways to retrieve the scanned data stored in data file: ✧ Bluetooth data transmission: You can send the data via Bluetooth SPP connection. ✧ USB data transfer: You can transfer the data file via USB cable connection. There are two ways to delete the data file in the memory ✧ Scan “Factory Default” barcode command; or ✧ Delete the data file from host device via USB connection.
Hybrid Mode	✧ Scanned data will be transferred via Bluetooth connection, and, if Bluetooth is disconnected, the scanned data will be saved in the data file. After Bluetooth connection been reconnected, records of data file will be transferred to host device via SPP communication profile. After data transfer been completed, records in the data file will be deleted. ✧ Special application utility is needed to handle the handshaking protocol of SPP communication.
USB-HID	In this mode, the scanned data will be transferred via USB cable to host

Mode	device. It will function like an USB scanner. You can change it to Bluetooth Mode by configuration setting. Then, the scanned data will be transferred via Bluetooth.

※User can select the Operation Mode according to the application requirements.

3. Function Key Description

The following table gives descriptions on CYCLOPS-II responses and status incurred via various Function Key actions.

Table – 3

	Action or Status						
	Power OFF	**Batch Mode**	**Real-Time Mode**			**Hybrid Mode**	
			HID	**SPP**	**Disconnect**	**SPP**	**Disconnect**
SCAN Key (press more than 3-second)	Power ON[1]	—	—			—	
SCAN Key + FUNCTION Key	—	Bluetooth Data Transfer Mode and wait for Host Command [2]	—			—	
SCAN Key	—	Scan					
FUNCTION Key	—	Delete one recode in data file[3]	Send key code[4]	Send key code[5]	Reconnect	Send Key code	Reconnect

[1] CYCLOPS-II will power OFF automatically.
Press SCAN key and hold for more than 3-second, CYCLOPS-II will be turned ON and load system configuration parameters.

[2] When CYCLOPS-II is changed into Bluetooth Data Transfer Mode, it will wait for host command from host device (including smart phone, tablet device, or PC) .

[3] Scanned data will be saved in memory data file. Records in the data file can be deleted, too. The last record entered will be deleted first (LIFO algorithm). You can not delete multiple records at the same time.
"Delete" function can be Enabled or Disabled according to the configuration settings.

[4] The software keyboard of iPhone or iPad can be called by pressing the FUNCTION key of CYCLOPS-II under Bluetooth communication Mode. Different key codes can be Enabled or Disabled for transmission.

[5] Different key codes can be Enabled or Disabled for transmission.

4. User Alert Indications

The following table is description of the LED display and sound on the different issue.

CYCLOPS-II Status	Scan LED	Vibrator	Power LED	Bluetooth LED	Buzzer
Successful Scanning	Green (50ms)	Vibrate (100ms)			Bi
Failed Scanning (default 5s decode timeout, 0.5s~25.5s timeout setting ranged at 0.5s steps)	Red (300ms)				Bi, Bi, Bi
Successful Configuration Scanning	Green (100ms)	Vibrate 200ms & 100ms (time interval between two vibrations:30ms)			Bi~, Bi
Failed Configuration Scanning (5s decode timeout)	Red (300ms)				Bu, Bu, Bu
Entering SPP Slave Mode					Bu, Bu
Entering SPP Master Mode					Bi, Bi
Entering HID Mode					Bu, Bi
Real-Time Mode Power ON	Green	Vibrate (300ms)			
Batch Mode Power ON	Red	Vibrate (300ms)			
DO NOT RESET Date & Time (when Power ON, Batch Mode Only)	Orange Flash ON: 300 ms OFF: 500 ms (3 times)	Vibrate (300ms)			Bu~,Bu~,Bu~
Records Found in Data File (when Power ON)	Green Flash ON: 300 ms OFF: 500ms (3 times)	Vibrate (300ms)			
Memory Full	Red Flash ON: 300 ms OFF: 500ms (3 times)				Bu~, Bu~
Delete Success (remove one record from the data file)	Orange ON				Bi, Bi,
Delete Failed (under Batch Mode, record to be deleted not found in data file)	Red ON				Bu, Bu, Bu
Record Format Changed (data file stored in the memory)	Red ON (300ms)				Bu, Bu, Bu
Battery Charging in Process			Red ON		
Battery Charging Failed			Red Flash ON: 100 ms		

			OFF: 100ms		
Battery Charging Completed			Green ON		
Battery Low			Red Flash ON: 200 ms OFF: 800ms		
Bluetooth Pairing in Process				Blue Quickly Flash	
Entering PIN Code (when Bluetooth pairing in process, 60 -second timeout)				Blue Quickly Flash	Bi~, Bi~ (until pairing OK or timeout failed)
Bluetooth Pairing Failed				Blue Quickly Flash	Bu~,Bu~,Bu ~
No Bluetooth Connection				Blue Quickly Flash	
Bluetooth Connection Success		Vibrate (300ms)		Blue Slowly Flash	Bi, Bi
Bluetooth Connected		Vibrate (300ms)		Blue Slowly Flash	
Bluetooth Disconnected or Connection Failed		Vibrate (300ms)		Blue Quickly Flash	Bu, Bu
Bluetooth Reconnected and Data Transfer Under Batch Mode	Red ON (when data been transmitted)			Blue Slowly Flash	
Bluetooth Reconnected and Data Transfer under Hybrid Mode	Red ON (when data been transmitted)			Blue Slowly Flash	
USB Connected				Blue ON	
USB Data been Transmitted				Blue Quickly Flash	
Press FUNCTION Key & Wait for 6 -second While Bluetooth Been Reconnected				Blue ON	
Firmware Been Updated	Orange Flash				
Firmware Update Completed	Orange ON				
Restore Factory Default	Green Quickly Flash				

- Tone:

  Bi: Short, High Pitch Bi~: Long, High Pitch

  Bu: Short, Low Pitch Bu~: Long, Low Pitch

- Vibration:

If vibrator is enabled, then, vibration will be activated accordingly.

5.Bluetooth Connection

5.1. Specification

CYCLOPS-II is a wireless device designed following Bluetooth ver2.1+EDI Class II specification, including SPP (Serial Port) and HID (Human Interface Device) profiles. Same profile has to be installed on the pairing device (ex. iPhone, iPad, or PC and tablet) in order to establish Bluetooth communications.

Item	Description
Intensity of Bluetooth Signal	Class II Maximum transmission distance is 10-meter. The maximum distance will vary depending on the physical environment of the actual application site.
Pairing	One CYCLOPS-II can be paired with one host device only. CYCLOPS-II can't be paired with more than one host devices at the same time.
Communication	SPP: It is a serial port communication for SPP Slave Mode or SPP Master Mode.
	HID: It is Human Interface communication.
Authentication & Encryption	Authentication: Default PIN Code of CYCLOPS-II is "0000". It can be changed using configuration barcodes as shown in this Configuration Guide. Encryption: Scanned data can be encrypted during Bluetooth transmission, Default status of CYCLOPS-II is no encryption. It can be enabled / disabled using configuration barcodes as shown in this Configuration Guide.

※ To connect CYCLOPS-II with iPhone, iPad of Apple products, the version of iOS in these Apple products must be version 5.0 or beyond.

※ To connect CYCLOPS-II with products of Android OS (like smart phone or tablet PC), version of the Android OS must be version 4.0 or beyond.

※ To connect CYCLOPS-II with the BT dongle on PC or laptop, version of the BT dongle must be version 2.0 or beyond.

5.2. Data Transfer via Bluetooth Under Batch Mode

The scanned data stored under Batch Mode can be retrieved via Bluetooth. CYCLOPS-II must be configured into Bluetooth Data Transfer Mode to proceed. Please refer to <**5.3 SPP Communication Profile**> for related details.

Item	Description
How to Transfer Scanned Data	There are two ways to retrieve the scanned data stored in the memory of CYCLOPS-II: 1. Pressing " SCAN Key + FUNCTION Key "; or 2. Scan the "**BT Data Transmission Mode Change**" configuration barcode (A033A).

5.3. SPP Communication

CYCLOPS-II will execute handshaking with host device (i.e. PC, iPhone, iPad, or Android smart phone) according to the configuration status under SPP communication. An application utility has to be installed at the host device side to handle the communication handshaking with CYCLOPS-II.

The follow table illustrates SPP communications under Master or Slave mode.

Master Mode	CYCLOPS-II sends out the pairing request to host device. Please refer to <**The setting barcodes for physical address of Bluetooth module**>. Bluetooth physical address of host device can only have 12-digital, max.
Slave Mode	Host device sends out the pairing request to CYCLOPS-II. Please refer to <**The Setting barcodes for device name of CYCLOPS-II**>. BT manger application of host device will select CYCLOPS-II device name.

※ To connect CYCLOPS-II with BT dongle of PC or laptop, version of the dongle must be version 2.0 or beyond.

5.3.1. SPP Transfer Data Format

Bluetooth communication of SPP mode is simulating the communication of virtual serial port. An application utility must be installed and executed at thost device end to handle the handshaking process with CYCLOPS-II.

Data format of SPP transfer of CYCLOPS-II with host device is shown below.

[Prefix][Length][Data][Check-Sum][Suffix]

Item	Byte Number	Value	Description
Prefix	1	STX(0x02)	Start-bit of SPP Communication.
Length	2		Data Length of the Scanned Data
Data			The Scanned Data
Check-Sum	2		Check-Sum of Scanned Data
Suffix	1	ETX(0x03)	Stop-bit of SPP Communication.

5.3.2. Host Commands

Under SPP Communication Mode, host device (including Android smart phone, PC) can send Host Command to control the behavior of CYCLOPS-II. CYCLOPS-II will return the result to host device after executing the host command.

Data format of Host Command is described in the following.

[Start][Command][Option][End]

Field	Format	Description
Start	!	Host Command starting character
Command	1 ~ 8	Command number, from 1 to 8. Please refer to<**Host Command Function List**>
Option	YYYYMMDDHHMM	Date and Time information
End	CRLF(0x0D0A)	Host Command stopping character

Data format of the results of CYCLOPS-II after executing the host command will be returned to the host device are shown below.

[Start][Command][,][Response][End]

Field	Format	Description
Start	RE	Starting character of response after executing Host Command
Command	1 ~ 8	Response after executing Host Command number 1~8
,		Separator
Response	OK NG	Result after executing Host Command
	YYYYMMDDHHMM	Date & Time of CYCLOPS-II (Host

		Command 3)
	F M L	Battery status of CYCLOPS-II (Host Command 4)
	*******	Record count of data file (Host Command 8)
End	CRLF(0x0D0A)	Stopping character of response after executing Host Command

Details of Host Commands and return value are listed in the **Host Command Function List** below.

Host Commands 5 ~ 8 are used while CYCLOPS-II is in " waiting " state of "**Bluetooth Data Transmit Mode**".

Table : Host Command Function List

No	Function	Host Sends	Host Will Receive	Notes
1	Scan	!1<CRLF>	RE1,OK<CRLF> and <data> , or RE1,NG<CRLF>	CYCLOPS-II will scan when Host Command been executed. Scan result (OK or NG) will then be returned and the scanned data (if OK) will be sent back following SPP Data Transfer format.
2	Set Date and Time on CYCLOPS-II	!2YYYYMMDDHHMM <CRLF>	RE2,OK<CRLF>, or RE2,NG<CRLF> (this is data NG , ex: "20130430190000"), or RE,NG<CRLF> (This is data format NG , ex "201304312300")	CYCLOPS-II will set Date & Time accordingly after executing this Host Command.
3	Read Date and Time from CYCLOPS-II	!3<CRLF>	RE3, YYYYMMDDHHMM <CRLF>	CYCLOPS-II will return Date &Ttime accordingly to Host Device.
4	Power status	!4<CRLF>	RE4,F<CRLF>, or RE4,M<CRLF>, or RE4,L< CRLF>	CYCLOPS-II will return battery status to Host Device. F: Battery Full

				M: Battery Half-Full L: Battery Low
5	Send the scanned data file of CYCLOPS-II to Host Device	!5<CRLF>	Send data file to host **[Prefix][Length] [Time Stamp] [Delimiter] [Data][Check-Sum][Suffix]**	CYCLOPS-II will send all records of the <data.txt> in the memory to Host Device.
6	Delete the scanned data file in CYCLOPS-II memory	!6<CRLF>	RE6,OK<CRLF>, or RE6,NG<CRLF>	CYCLOLPS-II will delete the <data.txt> file in the memory.
7	" Wait " status	!7<CRLF>	RE7,OK<CRLF>, or RE7,NG<CRLF>	CYCLOPS-II will wait for the next coming Host Command. During this time, scan function of CYCLOPS-II will be disabled.
8	Send recode count of data file	!8<CRLF>	RE8, XXXX<CRLF>	CYCLOPS-II will return the record count of <data.txt> in the memory.

5.4. HID Communication

CYCLOPS-II can be paired with iPhone, iPad of Apple product, Android tablet and PC via HID communication protocol. CYCLOPS-II will be regarded as keyboard interface input device of these host devices. HID Mode is factory default Mode of CYCLOPS-II so Apple products can be connected with CYCLOPS-II easily.

As for how to connect host device with CYCLOPS-II, please refer to the Bluetooth menu. Software keyboard of Apple products (iPad, iPhone) can be called or hided via Bluetooth from CYCLOPS-II by pressing the FUNCTION key.

※ To connect CYCLOPS-II with iPhone or iPad of Apple, version of the iOS of iphone or iPad must be version 5.0 or beyond.
※ To connect CYCLOPS-II with Android products (smart phone or tablet), version of Android OS must be 4.0 or beyond.
※ To connect CYCLOPS-II with BT dongle of PC or laptop, version of the dongle must be 2.0 or beyond.

Remark:
To use CYCLOPS-II as a keyboard data entry device of iPhone or iPad, please set iPad or iPhone keyboard language to "**English Mode"** first. If they are not in "**English Mode**", screen display of scanned data entry might be scrambled or different characters (other than the actual barcode data) will be shown.

6. USB Connect

6.1. Specifications

CYCLOPS-II has an USB port but this USB port does not support charging when been connected with host device via standard USB cable.

Item	Description
Communication Spec	USB 2.0 Full speed ✧ USB Mass Storage supported ✧ USB-HID communication profile supported
Cable/Connector	Micro USB, Type-B
USB Connection	USB Mass Storage supported: If set into Bluetooth (SPP, HID) communication mode, CYCLOPS-II will be an USB Mass Storage when connected to host device via USB cable.
	USB-HID communication supported: If set into USB-HID communication mode, CYCLOPS-II will act like an USB interface scanner. Barcode data scanned will be sent to host device via USB cable linked with CYCLOPS-II.

6.2. USB Mass Storage Communication

6.2.1. USB Data Transfer Mode

Under Batch Mode, the scanned data will be stored in the <data.txt> file of CYCLOPS-II memory. User can retrieve <data.txt> file using USB interface cable.

Specification	Description
Transfer	Connecting with host device: When CYCLOPS-II is connected with host device via USB cable, the memory file of CYCLOPS-II will be treated as an USB disk. ※Please use the USB cable offered by the manufacturer.
USB Memory Function	Under Batch Mode, maximum records of <data.txt> are 8,000 records. It will include two files in the memory of CYCLOPS-II: <data.txt>: Under Batch Mode, the scanned data will be saved into this file. Using USB cable to connect host device and CYCLOPS-II, this file can be read or deleted from host device.

	<system.cfg> : This is the configuration file of CYCLOPS-II. After this file been updated, once CYCLOPS-II is powered ON, the system of CYCLOPS-II will behave according to the configuration stored in this file.
Notes	Under USB Data Transfer Mode, the follow functions will be disabled: ➢ Bluetooth Communication will be disabled (it will be disconnected); ➢ Scan function or other operations will be disabled.

6.2.2. Format of Data File Storage

The recode capacity is 2,048-Byte for <data.txt> file. The scanned data will be saved into this file. Please refer to <**9.2.4 Batch Mode Settings**> for more details.

Data format of batch mode storage is described as the following.

[Mark][Checksum][Delimiter][Time-stamp][Delimiter][Data][Terminator]

Item	Length (Byte)	Default Value	Description
Mark	1		Special Mark ＋：Added —：deleted ＃ ：Send out ok
Checksum	4		Checksum (2-digit ASCII code)
Delimiter	1		Separator
Time-stamp	19	YYYY/MM/DD,hh:mm:ss	Date & Time Separator between Date and Time is the same as Delimiter field.
Delimiter	1		Separator
Data	2020		Scanned Data If data length is shorter than 2020-byte, CYCLOPS-II will fill blanks behind the actual data in order to fill all 2020-byte.
Record Terminator	2	CRLF(0x0D0A)	Terminator of the record.

6.3. USB-HID Communication Profile

Description	Setting	Setting Barcode	Code ID
Change to USB-HID Mode	Enable	 A114A0	A114A0
Change to Bluetooth Mode	Enable	 A114A1	A114A1

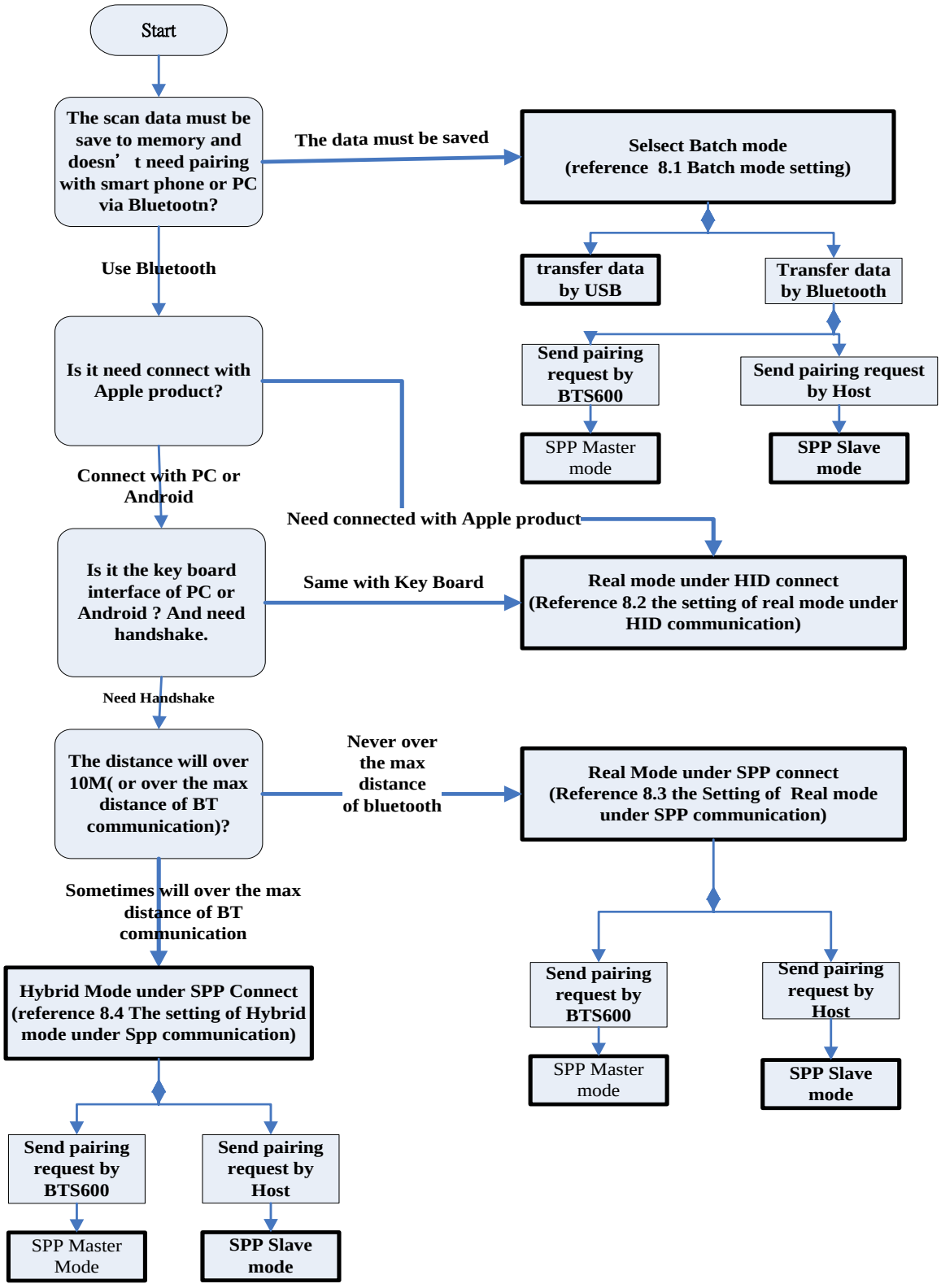
※ If set "***Change to USB-HID Mode***", after connecting the USB cable, CYCLOPS-II will be acting as an USB scanner.

※ If set "***Change to Bluetooth Mode***", after connecting the USB cable, CYCLOPS-II will be acting as an USB mass storage device.

※ Default status of CYCLOPS-II is "Bluetooth Mode".

7.Make the Best Out Of CYCLOPS-II

Please refer to the flow chart below to select the best mode needed to use CYCLOPS-II.



8. Configuring CYCLOPS-II

Please select the best mode meeting your application needs according to the suggestion as shown in <**7. The Suitable use method**> first.

8.1. Batch Mode Setting

To save the scanned barcode data into the memory of CYCLOPS-II without been sent out via Bluetooth or USB communications, Batch Mode is designed for application demands like this.

These scanned barcode data records can be retrieved via USB interface cable or Bluetooth communication, depending on the configuration settings:

※Via USB cable: If user choice the data transfer mode by USB, please reference<**6. USB Connection**>; or

※Via Bluetooth communication: To retrieve scanned data file via Bluetooth, an application utility will need to be installed on the host device (i.e. PC, Android smart phone, or tablet PC). Please refer to <**5. Bluetooth Connection**>.

8.1.1. Data Transfer via USB Communication

Description	Setting	Setting Barcode	Code ID
Communication Mode Setting	SPP Slave Mode	 A002A	A002A
Operating Mode Setting	Batch Mode	 A014A2	A014A2

※ CYCLOPS-II must be set in SPP Slaver Mode when using USB cable for data transfer.

8.1.2. Data Transfer via SPP Master Mode Communication

Description	Setting	Setting Barcode	Code ID
Entering physical address of BT Module	Input	 B001A	B001A

Communication Started	Enter SPP Master Mode	 A001B	A001B
Operating Mode Setting	Batch Mode	 A014A2	A014A2
Wait Host Command under Bluetooth Communication Mode	Start data transfer via Bluetooth Communication	 A033A	A033A

※please refer to <**The Setting Barcodes about Bluetooth Device Name of CYCLOPS-II**> of <**9.2.1 System Mode Setting**>.

8.1.3. Data Transfer via SPP Slave Mode Communication

Description	Setting	Setting Barcode	Code ID
Communication Setting	SPP Slave Mode	 A002A	A002A
Operating Mode Setting	Batch Mode	 A014A2	A014A2
Wait Host Command under Bluetooth Communication	Start data transfer by Bluetooth Communication	 A033A	A033A

8.2. Real-Time Mode Setting under HID Communication

When paired with iPhone, iPad of Apple products, or with other host devices like Android smart phone, tablet, or PC, CYCLOPS-II will act like a keyboard interface of host devices. Please use Real-Time Mode under HID Communication Profile.

The Real-Time Mode and HID Communication Profile are factory default of CYCLOPS-II so it can easily be paired with those host devices.

※ To connect CYCLOPS-II with iPhone or iPad of Apple products, the iOS must be version 5.0 or beyond.

※ To connect CYCLOPS-II with Android OS based smart phones, the Android OS must be version 4.0 or beyond.

※ To connect CYCLOPS-II with BT dongle of PC or laptop, BT version of the dongle must be version 2.0 or beyond.

Description	Setting	Setting Barcode	Code ID
Operating Mode Setting	Real-Time Mode	 A014A1	A014A1
Communication Mode Setting	HID Mode	 A003A	A003A

8.3. Real-Time Mode Setting under SPP Communication Mode

To have better fault-immunization communication quality, Real-Time SPP Communication Mode will be the best choice.

Real-Time SPP Communication Mode uses virtual serial port for data communication between CYCLOPS-II and host device. When configured in this mode, relevant communication protocols will be taken to prevent data lost.

An application utility should be installed on the host device side (like Android smart phone, PC) to handle the communication protocol. Please refer to <**5. Bluetooth Connection**>.

8.3.1. Real-Time Mode Setting under SPP Master Mode

Description	Setting	Setting Barcode	Code ID
Entering the physical address of BT Module	Input	 B001A	B001A

Communication Setting	Entering SPP Master Mode	 A001B	A001B
Operating Mode Setting	Real-Time Mode	 A014A1	A014A1

please refer to <**Setting Barcode of Bluetooth Device Name of CYCLOPS-II**> of <**9.2.1 System Mode Setting**>.

8.3.2. Real-Time Mode Setting under SPP Slave Mode

Description	Setting	Setting Barcode	Code ID
Communication Setting	SPP Slave Mode	 A002A	A002A
Operating Mode Setting	Real-Time Mode	 A014A1	A014A1

8.4. Hybrid Mode Setting under SPP Communication

Bluetooth might be disconnected due to either out of the communication range or other reasons. To avoid losing the scanned data, CYCLOPS-II will store the scanned data into the data file of memory if CYCLOPS-II is configured under Hybrid Mode. Therefore, from application point of view, Hybrid Mode is more reliable than Real-Time Mode.
After Bluetooth been reconnected, CYCLOPS-II will send the stored scanned data to the host device according to the sequence of the data scanned in.
It is necessary to have an application utility installed at the host device (like Android smart phone, PC). Please refer to <**5. Bluetooth Connection**>.

8.4.1. Hybrid Mode Setting under SPP Master Mode

Description	Setting	Setting Barcode	Code ID

Entering the physical address of BT Module	Input	 B001A	B001A
Communication Setting	Enter SPP Master Mode	 A001B	A001B
Operating Mode Setting	Hybrid Mode	 A014A3	A014A3

8.4.2. Hybrid Mode Setting under SPP Slave Mode

Description	Setting	Setting Barcode	Code ID
Communication Setting	SPP Slave Mode	 A002A	A002A
Operating Mode Setting	Hybrid Mode	 A014A3	A014A3

9. System Detail Setting

9.1. Factory Default Setting

CYCLOPS-II Factory Default parameters are listed in the following table.

Item	Default
CYCLOPS-II Operating Mode	Real-Time Mode
Communication Mode	HID Mode
Device Name	BTS700+last 4-digit of BT MAC Address
Authentication	Disable
Encryption	Disable
PIN Code	“0000”
Time-out for Auto Power-OFF	3-minute
Reconnect/Disconnect Warning Beep	Enable
Failed Scan Warning Beep	Enable
Buzzer Volume	High

Default parameters of HID communication under Real-Time Mode are listed below.

Item	Default
Record Termination Character	Return(Enter)
FUNCTION Key (Software Keyboard Activation)	Disable※
Delay Time Before Data Transmission	None
Inter-Character Delay Time	None

※Press FUNCTION Key can activate/deactivate soft keyboard on iPad and iPhone. This function can be enabled or disabled by setting.

Default parameters of SPP communication under Real-Time Mode, Batch Mode, and Hybrid Mode are as the following.

Item	Default
Master Mode Reconnection Time Interval	30-second
SPP Data Transfer Format	STX[Data Length][Data][Checksum]ETX
ACK/NAK handling of SPP Communication	※Enable

※Under Real-Time Mode and Batch Mode, the “ACK/NAK handling of SPP communication setting” can be enabled or disabled. Under Hybrid Mode, this handshaking must be enabled.

Default parameters of Batch Mode are listed as in the following table. All these parameters will not influence Real-Time Mode initialization.

Item	Default
Time-Stamp format	YYYY/MM/DD,hh:mm:ss
Record Termination Character	CRLF
Termination Character	,
Data transfer sequence	Only unsent data will be transmitted
Memory Initialization After Data Transmission	Disabled (existing data file will not be deleted)

CYCLOPS-II scanner default parameters are as listed in the following table.

Item	Default
Redundancy Level	Level-1
Security Level	Level-1
All Barcode Symbologies Disabled	All Symbologies Returned to Default
USB-HID /Bluetooth Scan Mode	Bluetooth Scan Mode
Inter-Character Gap	Normal Inter-Character Gap
Character String	No Convert
Decode Illumination	Off
Illumination Brightness	Level-5
Pick-list Mode	Disabled Always
Fuzzy 1D Processing	Enabled
Decoding AIM Pattern	Enabled
Codabar, MSI, Discrete 2of5, Interleave 2of5	Level-4
Inverse Barcode	Regular
Code ID Character	None
UPC-A	Enabled
UPE-E	Enabled
UPE-E1	Disabled
EAN-8/JAN-8	Enabled
EAN-13 / JAN-13	Enabled
Bookland EAN	Disabled
Bookland ISBN Format	ISBN-10d
UPC/EAN Supplemental (Add-On)	None

UPC/EAN/JAN Supplemental AIM Code ID Format	Combined
UPC-A Check Digit	Enabled
UPC-E Check Digit	Enabled
UPC-E1 Check Digit	Enabled
UPC-A Preamble	System
UPC-E Preamble	System
UPC-E1 Preamble	System
UPC-E Converted to UPC-A	Disabled
UPC-E1 Converted to UPC-A	Disabled
EAN-8 Converted to EAN-13	Disabled
UCC Coupon Expanded Code	Disabled
Coupon Report	Both Coupon
ISS EAN	Disabled
Code 128	Enabled
GS1-128	Enabled
ISBT-128	Enabled
ISBT- Connect	Disabled
ISBT Table Check	Enabled
Code 39	Enabled
Trioptic Code 39	Disabled
Code39 Converted to Code32	Disabled
Code32 Prefix	Disabled
Code39 Check Digit Verify	Disabled
Code39 Check Digit Transfer	Disabled
Code39 Full ASCII Transfer	Disabled
Code 93	Disabled
Code 11	Disabled
Code 11 Check Digit Verify	Disabled
Code 11 Check Digit Transfer	Disabled
I 2 of 5(Interleave 2 of 5)	Enabled
I 2 of 5 Check Digit Verify	Disabled
I2 of 5 Check Digit Transfer	Disabled
I2 of 5 Converted to EAN13	Disabled
Discrete 2 of 5	Disabled
Chinese 2 of 5	Disabled
Matrix 2 of 5	Disabled

Matrix 2 of 5 Check Digit Verify	Disabled
Matrix 2 of 5 Check Digit Transfer	Disabled
Codabar (NW7)	Enabled
CLSI Editing	Disabled
NOTIS Editing	Disabled
MSI	Disabled
MSI Check Digit	One
MSI Check Digit Transfer	Disable
MSI Check Digit Algorithm	MOD 10 /MOD 16
GS1 Databar	Enabled
GS1 DataBar Limited	Enabled
GS1 DataBar Expanded	Enabled
GS1 DataBar Converted to UPC/EAN	Disabled
Micro QR	Enabled
Korean 2 of 5	Disabled
US Postnet	Disabled
US Planet	Disabled
Transmit US Postal Check Digit	Transmit US postal Check Digit
UK Postal	Disabled
Transmit UK Postal Check Digit	Transmit UK postal Check Digit
Japan Postal	Disabled
Australia Post	Disabled
Australia Post Format	Auto discriminate
Netherlands KIX Code	Disabled
USPS 4CB/One Code/Inteligent Mail	Disabled
UPS FICS Postal	Disabled
GS1 DataBar Limited Security Level	Level-3
Composite CC-C	Disabled
Composite CC-A/B	Disabled
Composite TLC-39	Disabled
UPC Composite Mode	UPC Always Linked
GS1-128 Emulation Mode for UCC/EAN Composite Codes	Disabled
PDF 417	Enabled

Micro PDF 417	Disabled
Code128 Emulation	Disabled
Data Matrix	Enabled
Data Matrix Inverse	Regular
Decode Mirror Images (Data Matrix only)	Auto
Maxicode	Disabled
QR Code	Enabled
QR Inverse	Regular
Aztec	Enabled
Aztec Inverse	Regular

9.2. System Configuration Barcodes

CYCLOPS-II was dispatched from the factory with all parameters set as listed in **<9.1 Factory Default Setting>**. Based on actual application demands, CYCLOPS-II can be configured via the setting barcodes in the following sections.

9.2.1. System Mode Setting

Configuration barcodes for Operating Modes and Bluetooth Communication are explained below.

Real-Time Mode:

When CYCLOPS-II is in Batch Mode or Hybrid Mode, if there is still any scanned data located in the <data.txt> file in the memory, CYCLOPS-II will not be able to be switched into Real-Time Mode until either record(s) in the <data.txt> file been deleted or transmitted.

Description	Setting	Setting Barcode	Code ID
Real-Time Mode	SPP Master Communication Mode	 A001B	A001B
		 A014A1	A014A1

	SPP Slave Communication Mode	 A002A	A002A
		 A014A1	A014A1
	HID Communication Mode	 A014A1	A014A1
		 A003A	A003A

※ Please enter the physical address of BT module of the Host Device first, when use SPP Master Communication Mode.
Please refer to <**The Setting Barcode for Physical Address of Bluetooth Module**>.

Batch Mode:

When CYCLOPS-II is expected to be used in USB Data Transfer Mode, CYCLOPS-II needs to be configured in SPP Slave Communication Mode.

Description	Setting	Setting Barcode	Code ID
Batch Mode	USB Data Transmission Mode	 A002A	A002A
		 A014A2	A014A2
	Data Transmission Mode under SPP Master Communication Mode	 A001B	A001B
		 A014A2	A014A2
	Data Transmission Mode under SPP	 A002A	A002A

	Slave Communication Mode	 A014A2	A014A2

Hybrid Mode：

Description	Setting	Setting Barcode	Code ID
Hybrid Mode	SPP Master Communication Mode	 A001B	A001B
		 A014A3	A014A3
	SPP Slave Communication Mode	 A002A	A002A
		 A014A3	A014A3

※ When using SPP Master Communication Mode, please enter the physical address of BT module of the Host Device first.
Please refer to <**The Setting Barcode for Physical Address of Bluetooth Module**>.

The Setting Barcode for Physical Address of Bluetooth Module

CYCLOPS-II default setting is in SPP Master Mode so it can be quickly connected with host device.

The physical address of Bluetooth module is 12-digit and only 0~9 and A~F can be used. Please use barcodes of <**9.2.6 Alpha-Numerical Setting Barcode**> to enter the physical address of Bluetooth module.

Description	Setting	Setting Barcode	Code ID
Entering the Physical Address of BT Module	Input	 B001A	B001A

Setting Barcode for Device Name of CYCLOPS-II

CYCLOPS-II has a generic device name for Bluetooth Manager of the hose device to search and pair CYCLOPS-II via Bluetooth communication.

Default device name of CYCLOPS-II is “BTS700” + last 4-digit of physical address of BT module.

This device name can be changed using the configuration barcode below.

A total of 31-character device name can be entered and only 0~9, A~Z, and a~z are allowed to be used in the device name string..

Please use barcode of <**9.2.6 Alpha-Numerical Setting Barcode**> to enter the Device Name.

Description	Setting	Setting Barcode	Code ID
Device Name	Input	 B011A	B011A

The Setting Barcode of Bluetooth Authentication

Description	Setting	Setting Barcode	Code ID
Authentication	Enable	 A008A	A008A
	Disable	 A008B	A008B

The Setting Barcode of Bluetooth Encryption

Description	Setting	Setting Barcode	Code ID
Bluetooth Encryption	Enable	 A009A	A009A
	Disable	 A009B	A009B

The Setting Barcode of PIN Code

The customer can enter 16-character for PIN Code, you can and only enter 0~9, A~Z, a~z.

Please use barcode of <**9.2.6 Alpha-Numerical Setting Barcode**> to enter the PIN code。

Description	Setting	Setting Barcode	Code ID
PIN Code	Input	 B018A	B018A

The Setting Barcode of PIN Code

The default PIN code of CYCLOPS-II is"**0000**".

Setting	Setting Barcode	Code ID
Return Default PIN Code	 A017A	A017A

The Setting Barcode of AUTO Power-OFF Time-Out Parameter

Description	Setting	Setting Barcode	Code ID
AUTO Power-OFF Time-Out	1-min	 A004A1	A004A1
	3-min	 A004A2	A004A2
	5-min	 A004A3	A004A3
	10-min	 A004A4	A004A4
	15-min	 A004A5	A004A5
	30-min	 A004A6	A004A6
	45-min	 A004A7	A004A7

	60-min	A004A8	A004A8

The Setting Barcode of Beep ON Reconnect/Disconnect

Description	Setting	Setting Barcode	Code ID
Beep ON When Reconnect / Disconnect	Enable	A005A	A005A
	Disable	A005B	A005B

The Setting Barcode of Beep ON Failed Scan

Description	Setting	Setting Barcode	Code ID
The Beep ON for Failed Scan	Enable	A006A	A006A
	Disable	A006B	A006B

The Setting Barcode of Buzzer Sound Level

Description	Setting	Setting Barcode	Cord ID
The Buzzer Sound Level	Off	A010A0	A010A0
	Low	A010A1	A010A1
	Middle	A010A2	A010A2

	High	 A010A3	A010A3

The Setting Barcode of Restore Factory Default

Setting	Setting Barcode	Code ID
Restore Factory Default	 A012A	A012A

9.2.2. HID Communication Setting

HID Communication Mode is a more advanced application scenario for CYCLOPS-II when been configured in Real-Time Mode.

HID Termination Character Setting

Description	Setting	Setting Barcode	Code ID
HID Termination Character	0x28	 A021A	A021A

To set up " additional characters" added to the scanned data, the following barcode command can be used for this purpose.
The key code setting must be 2-digit word and the word can only be 0~9 and A ~ F.
For example, scan the barcode ID "B019B" first, then, "2", "0", "EOC". The key code entered will be "#".
Please use barcodes listed in <**9.2.6 Alpha-Numerical Setting Barcode**> to enter the additional characters.

HID Termination Character Setting

Description	Setting	Setting Barcode	Code ID
Normal Key	Input	 B021A	B021A

Additional Characters +Shift Key	Input	 B021B	B021B
Additional Characters +Alt Key	Input	 B021C	B021C
Additional Characters +Ctrl Key	Input	 B021D	B021D

To set up key code beyond “eject key”, the following barcode command can be used for this purpose.

The key code setting must be 2-digit word and the word can only be 0~9 and A ~ F.

For example, scan the barcode ID “B019B” first, then, “2”,” 0”, and” EOC”. The key code entered will be ”＃”.

Please use barcodes listed in <**9.2.6 Alpha-Numerical Setting barcode**> to enter key vodes needed.

Setting Barcode for Transfer Key Code of Function Key under Communication Mode

Description	Setting	Setting Barcode	Code ID
Transfer Key Code of Function Key Under Communication Mode	Disable	 A022A	A022A
	Enable	 A022B	A022B

Setting Barcode for Associated Key Code to be Sent While Pressing FUNCTION Key

Description	Setting	Setting Barcode	Code ID
Normal Function Key Code, Under HID Real-Time Mode	Input	 B022A	B022A

Function Key Code + Shift Key Code, Under HID Real-Time Mode	Input	 B022B	B022B
Function Key Code + Alt Key Code, under HID Real-Time Mode	Input	 B022C	B022C
Function Key Code + Ctrl Key Code, under HID Real-Time Mode	Input	 B022D	B022D

Setting Barcode for Delay Time Before Sending Scanned Data Record Under BT Communication Mode

Description	Setting	Setting Barcode	Code ID
Delay Time Before Sending Data of Each Record	None	 A023A0	A023A0
	100-ms	 A023A1	A023A1
	200-ms	 A023A2	A023A2
	300-ms	 A023A3	A023A3
	500-ms		A023A4

Setting Barcode for Inter-Character Delay Under BT Communication Mode

Description	Setting	Setting Barcode	Code ID

Inter-Character Delay Time	none	A024A0	A024A0
	10-ms	A024A1	A024A1
	20-ms	A024A2	A024A2
	30-ms	A024A3	A024A3

9.2.3. SPP Communication Setting

SPP communication is a more advanced application scenario for CYCLOPS-II under Real-Time Mode, Batch Mode (Bluetooth Data Transfer Mode), or Hybrid Mode.

Setting Barcode for SPP Master Mode Reconnecting Time Interval

Description	Setting	Setting Barcode	Code ID
SPP Master Mode Reconnecting Time Interval	None	A007A0	A007A0
	15-sec	A007A1	A007A1
	30-sec	A007A2	A007A2
	45-sec	A007A3	A007A3
	1-min	A007A4	A007A4

	5-min	 A007A5	A007A5
	10-min	 A007A6	A007A6
	15-min	 A007A7	A007A7
	30-min	 A007A8	A007A8

Data Format Setting Under SPP Communication Mode

When CYCLOPS-II is in Batch Mode or Hybrid Mode, if there is any record found in <data.txt> file in the memory, the following setting can not be executed.

Setting Barcode for Prefix

Prefix setting must be 2-digit word and the word can only be 0~9 and A ~ F.

For example, scan the barcode ID" B019A" first, then, "3"," 3", and "EOC". The prefix set will be "，".

Please use barcodes listed in <**9.2.6 Alpha-Numerical Setting Barcode**> to enter prefix.

Description	Setting	Setting Barcode	Code ID
Prefix Setting	STX(0x02)		—
	Input	 B019A	B019A

Description	Setting	Setting Barcode	Code ID
Data Length (information of the length of data)	Digit Count Exist	 A019A	A019A
	No Digit Count	 A019B	A019B

Description	Setting	Setting Barcode	Code ID
Check-sum	Check-sum Exist	A019C	A019C
	No Check-sum	A019D	A019D

Setting Barcode of Suffix

Suffix setting must be 2-digit word and the word can only be 0~9 and A ~ F.

For example, scan the barcode ID “B019A” first, then, “3”, ”3”, “EOC”. The suffix set will be “，”.

Please use barcodes listed in <**9.2.6 Alpha-Numerical Setting Barcode**> to enter suffix.

Description	Setting	Setting Barcode	Code ID
Suffix Setting	ETX(0x03)		—
	Input	B019B	B019B

Setting Barcode for SPP Communication Handshaking

When CYCLOPS-II is in Batch Mode or Real-Time Mode, “**ACK/NAC of SPP Communication**” can be set as Enabled or Disabled.

When CYCLOPS-II is in Hybrid Mode, “**ACK/NAC of SPP Communication**” must be Enabled and this can not be Disabled.

Setting Barcode for ACK/NAK of SPP Communication

Description	Setting	Setting Barcode	Code ID
ACK /NAK of SPP Communication Setting	Enable	A020A	A020A
	Disable	A020B	A020B

Setting Barcode for ACK/NAK of SPP Communication Time-Out Parameter

Description	Setting	Setting Barcode	Code ID
Time-Out Parameter of ACK /NAK of SPP Communication	100-ms	 A020C1	A020C1
	200-ms	 A020C2	A020C2
	300-ms	 A020C3	A020C3
	500-ms	 A020C4	A020C4
	1-sec	 A020C5	A020C5
	2-sec	 A020C6	A020C6
	3-sec	 A020C7	A020C7
	5-sec	 A020C8	A020C8

Setting Barcode for ACK/NAK of SPP Communication Retry Cycle

Description	Setting	Setting Barcode	Code ID
ACK /NAK of SPP Communication Retry Cycle	None	 A020D0	A020D0
	1-cycle	 A020D1	A020D1
	2-cycle	 A020D2	A020D2

	3-cycle	 A020D3	A020D3

Setting Barcode for Key Code Sent When Pressing FUNCTION Key

Key Code setting must be 2-digit word and the word can only be 0~9 and A ~ F.

For example, scan the barcode ID "B019A" first, then, "3", "3", and "EOC". The key code set will be "，".

Please use barcodes listed in <**9.2.6 Alpha-Numerical Setting Barcode**> to enter the key code.

Please refer to key codes listed in **Appendix 2**.

Description	Setting	Setting Barcode	Code ID
Key Code Sent When Pressing FUNCTION Key	None (Default)		—
Key Code Sent When Pressing FUNCTION Key	Input	 B019C	B019C

9.2.4. Batch Mode Setting

Setting Barcode for Time-Stamp

Description	Setting	Setting Barcode	Code ID
Time-Stamp Setting	Disable (_____#____) ※_ is space	 A027A0	A027A0
	Enable (YYYY/ MM/DD# hh:mm:ss)	 A027A1	A027A1

※ "#" is Termination Character. Please refer to <**Termination Character Setting**> in the following table.

Description	Setting	Setting Barcode	Code ID
Termination Character	;	 A028A1	A028A1
	Space	 A028A2	A028A2
	Tab	 A028A3	A028A3

Description	Setting	Setting Barcode	Code ID
Record Termination Character	,	 A026A1	A026A1
	Space	 A026A2	A026A2
	CR	 A026A3	A026A3
	LF	 A026A4	A026A4
	CRLF	 A026A5	A026A5
	Tab	 A026A6	A026A6

Setting Barcode for RTC Time Clock

Description	Setting	Setting Barcode	Code ID
Read RTC Date	Start	 A034A	A034A

Year: 4-digit in AD, i.e. “2014”.

Month: 2-digit, i.e. “11”.

Date: 2-digit, i.e. “11”.

Please use barcodes listed in <**9.2.6 Alpha-Numerical Setting Barcode**> to enter Date information.

Description	Setting	Setting Barcode	Code ID
Set RTC Date	Input	 B035A	B035A

Hour: 2-digit, i.e. “12”.

Minutes: 2-digit, i.e. “05”.

Please use barcodes listed in <**9.2.6 Alpha-Numerical Setting barcode**>to enter Time information.

Description	Setting	Setting Barcode	Code ID
Set RTC Time	Input	 B036A	B036A

Setting Barcode for Bluetooth Data Transfer

Description	Setting	Setting Barcode	Code ID
BT Data Transmission Mode Change	Batch Mode ⟺ BT Data Transmission Mode	 A033A	A033A

※ This works the same as pressing “Scan + FUNCTION Key”.

Description	Setting	Setting Barcode	Code ID
Data Transfer Sequence	From Top	 A038A1	A038A1
	Unsent Data Only	 A038A2	A038A2

Description	Setting	Setting Barcode	Code ID
Memory Initialization Setting After Data Transmission	Enable	 A030A	A030A
	Disable	 A030B	A030B

Setting Barcode of FUNCTION key

Description	Setting	Setting Barcode	Code ID
Function Key Setting	Enable	 A037A	A037A
	Disable	 A037B	A037B

Setting Barcode for Memory Initialization

The <data.txt> file will be deleted from the memory, including <system.cfg> file.

Description	Setting Barcode	Code ID
Memory Initialization	 A029A	A029A

9.2.5. Barcode Data and Scanner Setting

Description	Setting	Setting Barcode	Code ID
Pick List	Disable	 A127A0	A127A0
	Enable	 A127A1	A127A1

Fuzzy 1D Processing	Disable	A129A0	A129A0
	Enable	A129A1	A129A1
Decoding AIM Pattem	Disable	A130A0	A130A0
	Enable	A130A1	A130A1
Inverse 1D	Regular	A098A0	A098A0
	Only Inverse Barcode	A098A1	A098A1
	Auto	A098A2	A098A2
Code ID	None	A112A0	A112A0

	AIM Code ID	 A112A1	A112A1
	Symbol Code ID	 A112A2	A112A2
UPC-A	Disable	 A042A0	A042A0
	Enable	 A042A1	A042A1
UPE-E	Disable	 A043A0	A043A0
	Enable	 A043A1	A043A1
UPE-E1	Disable	 A044A0	A044A0
	Enable	 A044A1	A044A1
EAN-8	Disable	 A045A0	A045A0
	Enable	 A045A1	A045A1
EAN-13	Disable	 A046A0	A046A0
	Enable	 A046A1	A046A1

Bookland EAN	Disable	 A047A0	A047A0
	Enable	 A047A1	A047A1
Bookland ISBN format	ISBN-10	 A048A0	A048A0
	ISBN-13	 A048A1	A048A1
Decode UPC/EAN Supplementals	Ignore Supplemental	 A049A0	A049A0
	Decode With Supplemental	 A049A1	A049A1
	Auto-discriminate UPC/EAN Supplemental	 A049A2	A049A2
	Enable Smart Supplemental Mode	 A049A3	A049A3
	Enable 378/379 Supplemental Mode	 A049A4	A049A4
	Enable 978/979 Supplemental Mode	 A049A5	A049A5
	Enable 414/419/434/439 Supplemental Mode	 A049A6	A049A6
	Enable 977 Supplemental Mode	 A049A7	A049A7

	Enable 491 Supplemental Mode	 A049A8	A049A8
	Supplemental User-Programmable Type 1	 A049A9	A049A9
	Supplemental User-Programmable Type 1 and 2	 A049AA	A049AA
	Smart Supplemental Plus User-Programmable 1	 A049AB	A049AB
	Smart Supplemental Plus User-Programmable 1 and 2	 A049AC	A049AC
UPC/EAN/JAN AIM Code ID Format	Separate	 A051A0	A051A0
	Combined	 A051A1	A051A1
	Separate Transmissions	 A051A2	A051A2
UPC-A Check-Digit Transfer	Disable	 A052A0	A052A0
	Enable	 A052A1	A052A1
UPC-E Check-Digit Transfer	Disable	 A053A0	A053A0
	Enable	 A053A1	A053A1

UPC-E1 Check-Digit Transfer	Disable	 A054A0	A054A0
	Enable	 A054A1	A054A1
UPC-A Preamble	None	 A055A1	A055A0
	System	 A055A1	A055A1
	Country Code	 A055A2	A055A2
UPC-E Preamble	None	 A056A0	A056A0
	System	 A056A1	A056A1
	Country Code	 A056A2	A056A2
UPC-E1 Preamble	None	 A057A0	A057A0
	System	 A057A1	A057A1
	Country Code	 A057A2	A057A2
UPC-E Converted To UPC-A	Disable	 A058A0	A058A0

	Enable	 A058A1	A058A1
UPC-E1 Converted To UPC-A	Disable	 A059A0	A059A0
	Enable	 A059A1	A059A1
EAN-8 Converted To EAN-13	Disable	 A060A0	A060A0
	Enable	 A060A1	A060A1
UCC Coupon Extended Code	Disable	 A062A0	A062A0
	Enable	 A062A1	A062A1
Coupon Report	Old Coupon Report	 A063A0	A063A0
	New Coupon Report	 A063A1	A063A1
	Both Coupon	 A063A2	A063A2
ISSN EAN	Disable	 A064A0	A064A0
	Enable	 A064A1	A064A1

Code128	Disable	A065A0	A065A0
	Enable	A065A1	A065A1
GS1-128	Disable	A067A0	A067A0
	Enable	A067A1	A067A1
ISBT 128	Disable	A068A0	A068A0
	Enable	A068A1	A068A1
ISBT Concatenation	Disable	A069A0	A069A0
	Enable	A069A1	A069A1
	Auto	A069A2	A069A2
Check ISBT Table	Disable	A070A0	A070A0
	Enable	A070A1	A070A1
Code 39	Disable	A071A0	A071A0

	Enable	 A071A1	A071A1
Trioptic Code 39	Disable	 A072A0	A072A0
	Enable	 A072A1	A072A1
Convert Code39 To Code32	Disable	 A073A0	A073A0
	Enable	 A073A1	A073A1
Code32 Prefix	Disable	 A074A0	A074A0
	Enable	 A074A1	A074A1
Code39 Check-Digit Verification	Disable	 A076A0	A076A0
	Enable	 A076A1	A076A1
Transmit Code39 Check-Digit	Disable	 A077A0	A077A0
	Enable	 A077A1	A077A1
Code39 Full ASCII	Disable	 A078A0	A078A0

	Enable	 A078A1	A078A1
Code 93	Disable	 A079A0	A079A0
	Enable	 A079A1	A079A1
Code 11	Disable	 A081A0	A081A0
	Enable	 A081A1	A081A1
Code11 Check-Digit Verification	Disable	 A083A0	A083A0
	One Digit	 A083A1	A083A1
	Two Digit	 A083A2	A083A2
Transmit Code11 Check-Digit	Disable	 A084A0	A084A0
	Enable	 A084A1	A084A1
Interleaved 2 of 5	Disable	 A085A0	A085A0
	Enable	 A085A1	A085A1

I 2 of 5 Check-Digit Verification	Disable	 A087A0	A087A0
	USS Check-Digit	 A087A1	A087A1
	OPCC Check-Digit	 A087A2	A087A2
Transmit I 2 of 5 Check-Digit	Disable	 A088A0	A088A0
	Enable	 A088A1	A088A1
Convert I 2 of 5 To EAN-13	Disable	 A089A0	A089A0
	Enable	 A089A1	A089A1
Discrete 2 of 5	Disable	 A090A0	A090A0
	Enable	 A090A1	A090A1
Chinese 2 of 5	Disable	 A092A0	A092A0
	Enable	 A092A1	A092A1
Matrix 2 of 5	Disable	 A093A0	A093A0

	Enable	 A093A1	A093A1
Matrix Check-Digit Verification	Disable	 A096A0	A096A0
	Enable	 A096A1	A096A1
Transmit Matrix Check-Digit	Disable	 A097A0	A097A0
	Enable	 A097A1	A097A1
Codabar (NW7)	Disable	 A099A0	A099A0
	Enable	 A099A1	A099A1
CLSI Editing	Disable	 A101A0	A101A0
	Enable	 A101A1	A101A1
NOTIS Editing	Disable	 A102A0	A102A0
	Enable	 A102A1	A102A1
MSI	Disable	 A103A0	A103A0

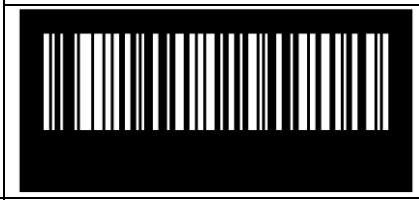
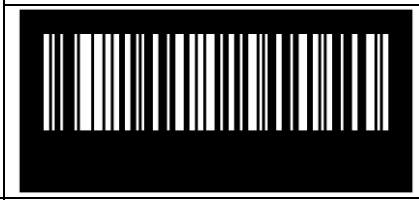
	Enable	 A103A1	A103A1
MSI Check-Digits	Disable	 A105A0	A105A0
	Enable	 A105A1	A105A1
Transmit MSI Check-Digit	Disable	 A106A0	A106A0
	Enable	 A106A1	A106A1
MSI Check-Digit Algorithm	Disable	 A107A0	A107A0
	Enable	 A107A1	A107A1
GS1-DataBar	Disable	 A108A0	A108A0
	Enable	 A108A1	A108A1
GS1 DataBar Limited	Disable	 A109A0	A109A0
	Enable	 A109A1	A109A1
GS1 DataBar Expanded	Disable	 A110A0	A110A0

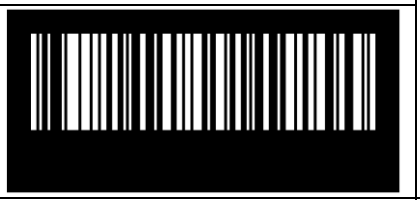
	Enable	 A110A1	A110A1
Convert GS1 DataBar To UPC/EAN	Disable	 A111A0	A111A0
	Enable	 A111A1	A111A1
Micro QR Code	Disable	 A126A0	A126A0
	Enable	 A126A1	A126A1
Korean 2 of 5	Disable	 A132A0	A132A0
	Enable	 A132A1	A132A1
US Postnet	Disable	 A133A0	A133A0
	Enable	 A133A1	A133A1
US Planet	Disable	 A134A0	A134A0
	Enable	 A134A1	A134A1
Transmit US Postal Check-Digit	Disable	 A135A0	A135A0

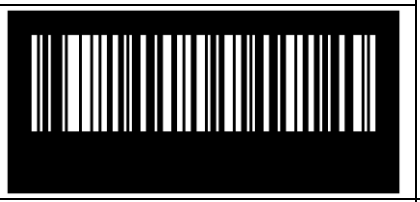
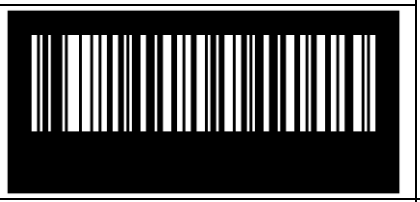
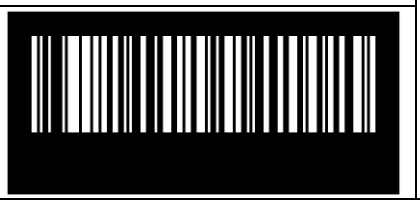
	Enable	 A135A1	A135A1
UK Postal	Disable	 A136A0	A136A0
	Enable	 A136A1	A136A1
Transmit UK Postal Check-Digital	Disable	 A137A0	A137A0
	Enable	 A137A1	A137A1
Japan Postal	Disable	 A138A0	A138A0
	Enable	 A138A1	A138A1
Australia Postal	Disable	 A139A0	A139A0
	Enable	 A139A1	A139A1
Australia Postal Format	Auto Discriminate	 A140A0	A140A0
	Raw Format	 A140A1	A140A1
	Alpha-numeric Encoding	 A140A2	A140A2

	Numeric Encoding	 A140A3	A140A3
Netherlands KIX Code	Disable	 A141A0	A141A0
	Enable	 A141A1	A141A1
USPS 4CB/One Code/Inteligent Mail	Disable	 A142A0	A142A0
	Enable	 A142A1	A142A1
UPS FICS Postal	Disable	 A143A0	A143A0
	Enable	 A143A1	A143A1
GS1 DataBar Limited Security Level	Level-1	 A144A0	A144A0
	Level-2	 A144A1	A144A1
	Level-3	 A144A2	A144A2
	Level-4	 A144A3	A144A3
Composite CC-C	Disable	 A045A0	A145A0

	Enable	 A145A1	A145A1
Composite CC-A/B	Disable	 A146A0	A146A0
	Enable	 A146A1	A146A1
Composite TLC-39	Disable	 A147A0	A147A0
	Enable	 A147A1	A147A1
UPC Composite Mode	UPC Never Linked	 A148A0	A148A0
	UPC Always Linked	 A148A1	A148A1
	Auto Discriminate UPC Composite	 A148A2	A148A2
GS1-128 Emulation Mode for UCC/EAN Composite Codes	Disable	 A149A0	A149A0
	Enable	 A149A1	A149A1
PDF 417	Disable	 A150A0	A150A0
	Enable	 A150A1	A150A1

Micro PDF 417	Disable	 A151A0	A151A0
	Enable	 A151A1	A151A1
Code 128 Emulation	Disable	 A152A0	A152A0
	Enable	 A152A1	A152A1
Data Matrix	Disable	 A153A0	A153A0
	Enable	 A153A1	A153A1
Data Matrix Inverse	Regular	 A154A0 	A154A0
	Inverse Only	 A154A1 	A154A1
	Inverse Auto-Detect	 A154A2	A154A2

			
Decode Mirror Image (Data Matrix Only)	Never	 A155A0	A155A0
	Always	 A155A1	A155A1
	Auto	 A155A2	A155A2
Maxicode	Disable	 A156A0	A156A0
	Enable	 A156A1	A156A1
QR Code	Disable	 A157A0	A157A0
	Enable	 A157A1	A157A1
QR Invers	Regular	 A158A0	A158A0
			
	Inverse Only	 A158A1	A158A1

			
	Inverse Auto Detect	 A158A2	A158A2
			
Aztec	Disable	 A159A0	A159A0
	Enable	 A159A1	A159A1
Aztec Inverse	regular	 A160A0	A160A0
			
	Inverse Only	 A160A1	A160A1
			
	Inverse Auto Detect	 A160A2	A160A2
			

Redundancy Level	Level-1	 A161A0	A161A0
	Level-2	 A161A1	A161A1
	Level-3	 A161A2	A161A2
	Level-4	 A161A3	A161A3
Security Level	Level-0	 A162A0	A162A0
	Level-1	 A162A1	A162A1
	Level-2	 A162A2	A162A2
	Level-3	 A162A3	A162A3
Inter Character Gap	Normal Character Gap	 A163A0	A163A0
	Large Character Gap	 A163A1	A163A1
Decode Illumination	Decode Illumination ON	 A164A0	A164A0
	Decode Illumination OFF	 A164A1	A164A1

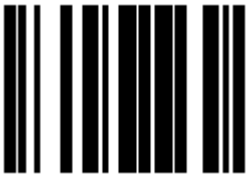
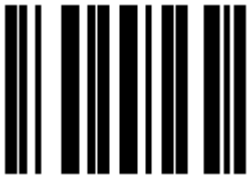
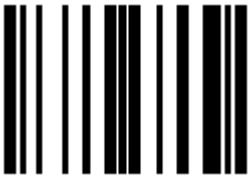
Character String	No Convert	 A165A0	A165A0
	Convert All Letters to Upper Case	 A165A1	A165A1
	Convert All Letters to Lower Case	 A165A2	A165A2
	Exchange Capital/Lower-Case Letters	 A165A3	A165A3
Illumination Brightness	Level-1	 A166A0	A166A0
	Level-2	 A166A1	A166A1
	Level-3	 A162A2	A166A2
	Level-4	 A166A3	A166A3
	Level-5	 A166A4	A166A4
	Level-6	 A166A5	A166A5
	Level-7	 A166A6	A166A6
	Level-8	 A166A7	A166A7

	Level-9	A166A8	A166A8
	Level-10	A166A9	A166A9
All Barcode Symbologies Be Disabled	All Symbologies Be Disabled	A167A0	A167A0
	All Symbologies Return to Default	A167A1	A167A1

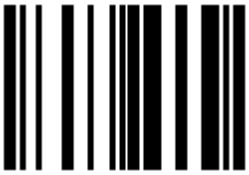
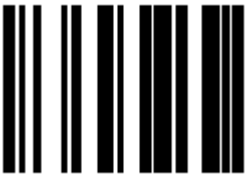
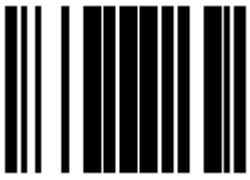
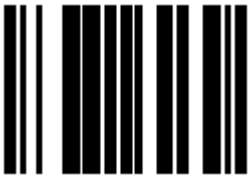
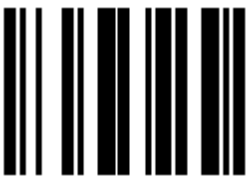
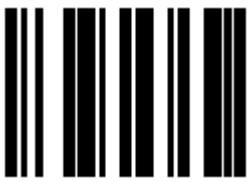
9.2.6. Alpha-Numerical Setting Barcode

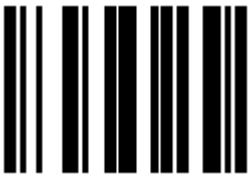
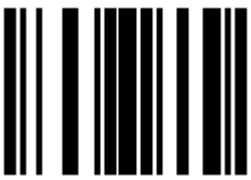
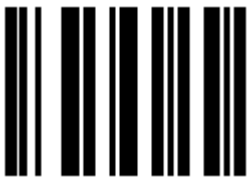
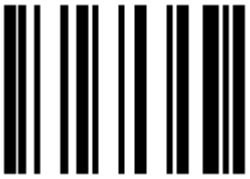
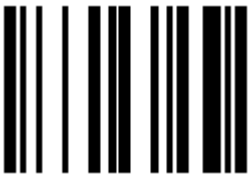
Description	Setting Barcode	Code ID
Stop Input		EOC
Cancel		CL

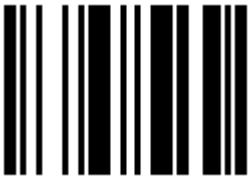
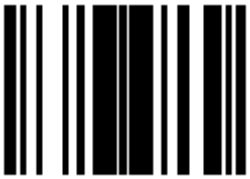
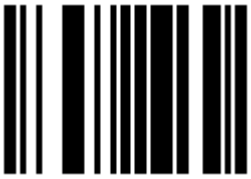
Description	Setting Barcode	Code ID	Setting Barcode	Code ID
Numerical (Including Hex)		0		1
		2		3

		4		5
		6		7
		8		9
		A		B
		C		D
		E		F

Description	Setting Barcode	Code ID	Setting Barcode	Code ID
Alphabetic Letter		A		B
		C		D

		E		F
		G		H
		I		J
		K		L
		M		N
		O		P
		Q		R
		S		T
		U		V

		W		X
		Y		Z
		a		b
		c		d
		e		f
		g		h
		i		j
		k		l
		m		n

		o		p
		q		r
		s		t
		u		v
		w		x
		y		z

10. Appendix 1

To Make Setting Barcodes

Code type of CYCLOPS-II setting code is Code128.
Setting barcodes for BT driver address and BT device name can be made easily.

How to make the setting barcode of Bluetooth Driver Address?

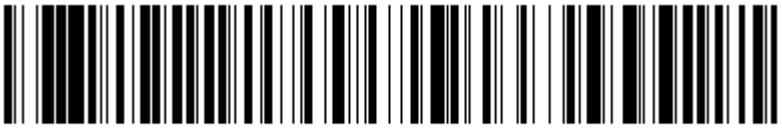
Start Code	Setting ID	Address (Alpha-Numerical)
FNC4	A001A	0 ~ 9 , A~ F

Ex. 0011223388AF	

※ The barcode muse has a space between FNC4 and A001A.

How to make the setting barcode of Bluetooth Device Name?

Start Code	Setting ID	Address (Alpha-Numerical)
FNC4	A011A	0 ~ 9 , A~ Z, a ~z

Ex. DataCollector1	

※ The barcode muse has a space between FNC4 and A001A.

11. Appendix 2

FUNCTION Key Codes

When FUNCTION Key is pressed under Real-Time Mode using HID connection, FUNCTION Key code setting will define the key code to be sent when pressing FUNCTION key.

Key codes for host device (Android , iPhone, or iPad) are listed as the following.

Key Code(Hex)	Normal	+Shift
1E	1	!
1F	2	@
20	3	#
21	4	$
22	5	%
23	6	^
24	7	&
25	8	*
26	9	(
27	0	)
28	Return（Enter）	
2B	Tab	
2C	Space	
2D	—	_
2E	=	+
2F	〔	{
30	〕	}
31	\	$
33	;	:
34	‘	“”
36	,	<
37	.	>
38	／	?