

Programming User's Manual 2D Wireless Barcode Scanner HW-855A



Restore default CCD module



Factory default for wireless module



Firmware CCD module version



Firmware wireless module version

Virtuos

v.1.2 ENG

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Wireless module settings

Introduction

Wireless barcode scanner transfers the data to computer via receiver.

If scanner & receiver need to re-pair, scan the "Pairing Function".

LED Description

Indicator Description

Indicator Type	Details Description
Battery	Four bars, charging flash
Wireless status 😽 📢	Bluetooth/2.4G connection
Pairing 😽 📢	Bluetooth/2.4G quick flash
Scanner ring light	One flash for one successful scanning Slow flash for pairing mode
Base ring light	One flash for one successful data transferring Slow flash for pairing mode

Buzzer Description

Voice Type	Details Description
One medium long high voice	Successful pairing
One long and three short voice	Back from sleep
One short and long voice (Prompt, Successful)	Successfully reading code
Three continuous short voice	Alarm prompt



CCD module Default Settings

Scanning the below barcode can restore the CCD module scanner the default.



Restore default CCD module

Wireless module Default Setting



Default setting for wireless module

Scanning the below barcode can restore the wireless module scanner the default.

Firmware Version CCD module.



Firmware CCD module version

Firmware Version wireless module



Firmware wireless module version

Battery Display



Display battery capacity

Note: Percentage display



USB cable Output Mode



USB priority output (Default)

If a USB cable is connected to the reader, data will only be sent via this port.



Output simultaneously USB and wireless

Note: USB and 2.4G or Bluetooth output at the same time (depending on the communication mode), in which 2.4g or Bluetooth output is unsuccessful, alarm will be given.

Data Transfer Mode





Automatic Storage

Note: Automatic storage mode. Data is automatically saved in scanner when exceed communication distance, scan the "Upload all data" code to complete the data transfer.



Memory

Note: Memory mode, the scanned barcode will be automatically saved in scanner. If the data need to be viewed or uploaded, then scan the "Upload all data" code to complete the data transfer.



Memory mode



Upload all data



Clear all data



Upload and clear all data (from wireless module firmware HW:VN(XLDZ)=03.70)

Note: Clear all data can be effective under Memory mode & Automatic Storage mode.



Display stored data



USB Interface Type



USB-HID (Default)



USB-COM (For old OS Driver is needed for USB Virtual Com Port)

Wireless Setting



2.4 Ghz (Default)



Bluetooth HID Mode



Bluetooth SPP Mode

Note: Scan the Bluetooth code change to Bluetooth mode. When the scanner is restored, for Bluetooth mode scan the code again.

In Bluetooth SPP Mode recommended set Never Sleep.



Bluetooth HID transmission rate



Fast



Medium (Default)



Low

IOS show/hide the Keyboard

(Under Bluetooth mode)



Show or Hide



Pairing Function



2.4G Receiver Pairing

Note: Scan this code, scanner will enter the automatic pairing mode for 1 minute, then re-insert the receiver. There will be a sound heard when pairing successfully.

For Bluetooth pairing setting, search by Bluetooth device.



Bluetooth HID Pairing

Scan the "Bluetooth HID Pairing" barcode, the scanner is ready to be connected by other bluetooth devices.

Sleeping Settings

Different Sleeping time choices:



1min





2min



5min (Default)



10min



30min



Immediate sleep – Sleep Now



Keyboard Language Settings















USB-HID Data type



ALT Mode ON -Universal language

ALT Mode must be set for send low ASCII chars like ETX, STX, LF ...

UTF-8 chars Keyboard Conversion



UTF-8 keyboards conversion

This feature works only in ALT mode.



GS (group separator) Control

Control Character Output for GS Control

This setting is for CCD module only, not for wireless module.I



Enable

GS (group separator) character conversion



None (Default)

In ALT mode transfer GS like CTRL+] (terminal emulation keys).



GS convert to <GS>



GS convert to |



GS convert to]



GS convert to ^]



Letter case conversion



Data Edit

Data sending in this format [Prefix][CodeID][Data][Suffix][Terminator]

Terminator character



None



Enter (Default)



Tab



Add Prefix and Suffix Settings

You can add characters to the front and back of the read data.

The syntax for adding is:

1. Read settings code Add Prefix or Add Suffix



Add Suffix Setting

- 2. Choose the location from which you want the characters will be added. If you want to add from the first or last position, select 0 1. Perform by reading the appropriate codes corresponding to the numbers in the Appendix Data Code Table. It is necessary to always read two numbers! The difference between a Prefix and a Suffix is in which side you count the characters from. Prefix front / Suffix back.
- 3. In the Appendix, find the appropriate codes (Tables ASCII Code Table, Function and special keys, Ctrl, Alt, GUI keys) for the characters or keystrokes you want to add. And you will gradually read them with a reader.
- 4. At the end save your settings, reading the code and Saved Finished Set.



Saved and Finished Set

If you want to clear the settings, follow steps 1 and 4 only.

Note: For a better explanation, look at the examples in the Appendix.



Hidden Character Settings

You can cut-hide characters in retrieved data. You can cut from the front or back.

The syntax for hide is:

1. Read settings code Hide front or Hide back character



Hide back character

- 2. Select the location from which you want to hide the characters. If you want to hide from the first or last position, select 0 1. Perform by reading the appropriate codes corresponding to the numbers in the Appendix Data Code Table. It is necessary to always read two numbers! The difference between a Hide front and a Hide back is in which side you count the characters from.
- 3. Now select how many characters you want to hide. Again, select two numbers from the table in the appendix, similar to point 2.
- 4. At the end save your settings, reading the code and Saved Finished Set.

Finished Set for Data Edit



Saved and Finished Set

If you want to clear the settings, follow steps 1 and 4 only.

Note: For a better explanation, look at the examples in the Appendix.



Data editing

The Data editing function can customize the barcode content into the three fields of Start/Center/End by configuring the Start/End field length. Please configure the length of the Start/End field and the transport configuration according to the actual needs.

Note: Custom pre-suffix, start, end, CODE ID, AIM ID and other non-barcode content will not be affected by the data editing function.

Transmission configuration



Field Length Configuration



Set Start field length



Set End field length



Scan Mode

Auto Sense Mode off

Decoding by pulling the trigger of the scanner when auto sense mode is off. It's default mode.



Off (Default)

Auto Sense Mode on

The scanner can sense barcode for decoding automatically.



On

Repeat Barcode Detection

Use for decode same barcode of interval time, it will decode only one time if not exceeded set time.



2s



Buzzer Configuration

Base Voice Setting



Enable Base Voice (default)



Disable Base Voice

Prompt Tone Volume Setting



Off



High (Default)



Medium



Low

Prompt Tone Setting



Sound frequency 2048Hz



Sound frequency 2700Hz



Successfully Decode Prompt Tone Setting



Successfully Decode Prompt Duration Setting



Long (Default)



Short



Error Warning Prompt Frequency Setting (Tone)

There will be four consecutive error warning tones if data transmission fails, and a single error warning tone when the unrecognized configuration code is scanned.



High



Code ID

Please check Code ID from barcode type ID Table



AIM ID

Please check AIM ID from AIM ID Table



VIRTUOS

Inverse color barcode selection





Barcode Type Selection

Enable/Disable All barcodes

Enable all barcodes will low down decoding speed. So, we suggest you switch on scanner when needed.

(Default is switch on state)



Enable/Disable All 1D barcodes





Disable All

Enable/Disable All 2D barcodes



Disable All



Codabar



Enable



Disable

Codabar Start/Terminal Character



Not Send Codabar Start/Terminal Character (Default)



Send Codabar Start/Terminal Character

Set Length Range For Codabar



Minimum Length (0~50bit)



Maximum Length (0~50bit)



Code 39



Enable



Disable

Code 39 Parity Check



Disable (Default)



Enable But Not Transfer



Enable & Transfer

Code 39 Full ASCII



Enable



Disable (Default)



Set Length Range For Code 39



Minimum Length (0~50bit)



Maximum (0~50bit)

Code 32(Enable code39 first)



Disable

Code 32 Prefix



Enable



Disable



Interleaved 2 of 5 (ITF25)



Enable



Disable

Interleaved 2 of 5 (ITF25) Check Bit



Disable Check Bit (Default)



Enable Check and Not Send Check Bit



Enable Check & Send Check Bit

Interleaved 2 of 5 (ITF25) Length Selection



Random Length (6-50bit) (Default)



6 Bit









Set Length Range for Interleaved 2 of 5



Minimum (0~50bit)



Maximum (0~50bit)

Industrial 2 of 5



Disable

Set Length Range for Industrial 2 of 5



Minimum (0~50bit)



Maximum (0~50bit)

Matrix 2 of 5 (4-24bit)



Enable





Disable

Set Length Range for Matrix 2 of 5



Minimum (0~50bit)



Maximum (0~50bit)

Code 93





Disable

Set Length Range for Code 93



Minimum (0~50bit)



Maximum (0~50bit)



Code 11



Enable



Disable (Default)

Code 11 Parity Check Output



Enable



Disable (Default)

Code 11 Parity Selection



Disable (Default)



1 Bit



2 Bit



Set Length Range for Code 11





Maximum (0~50bit)

Code 128



GS1-128



Enable



Disable

Set Length Range for CODE-128







Maximum (0~50bit)

UPC-A





UPC-A Check Bit



Send UPC-A Check Bit (Default)



Not send UPC-A Check Bit

UPC-A Convert to EAN-13



Enable UPC-A convert to EAN-13



Disable UPC-A convert to EAN-13 (Default)



UPC-E



UPC-E Check Bit





Not send UPC-E Check bit

UPC-E Expand to UPC-A





EAN/JAN-8



Disable



EAN-8 Convert to EAN-13



EAN/JAN-13



EAN 13 Check Bit – Old version of firmware





Don't Send EAN13 Check Bit

EAN 13 Check Bit – New version of firmware



Send EAN13 Check Bit (Default)



Don't Send EAN13 Check Bit



UPC/EAN/JAN Add on code



Ignore UPC/EAN/JAN (Default)



Decode UPC/EAN/JAN



Custom UPC/EAN/JANA add on code

EAN13 Convert to ISBN



Enable



Disable (Default)

EAN13 Convert to ISSN





Disable (Default)



GS1 DataBar (RSS14)



Enable



Disable

GS1 DataBar Limited





Disable

GS1 DataBar Expanded



Enable



Disable

PDF417



Enable





Disable

Micro PDF417





QR Code





Disable

QR Code URL Link



Disable



Enable



Micro QR



Enable



Disable

Data Matrix





Disable

Aztec Code



Enable



Disable



Appendix

Data Code Table



Saved and Finished Set



Direct Pressing Function Key

First must be Enable transfer function key Scan the function code to input function key directly.



F1







F9



RIGHT



INSERT



CAPS LOCK









F10



LEFT



HOME



CR









F11



DOWN



END







F12



UP





ASCII Code Table

Some special characters are conditioned by the keyboard emulation used. ALT-Mode vs. ASCII mode







VIRTUOS









Function and special keys







Ctrl, Alt, GUI keys

Note: There must always be a combination of pressing and releasing the function key. Otherwise, you will have problems with keyboard shortcuts, and your computer may be locked.







Save



Barcode type ID Table

Code type	HEX	CODE ID (Default)
All codes	99	
Codabar	61	а
Code128	6A	j
Code32	3C	<
Code93	69	i
Code39	62	b
Code11	48	Н
EAN-13	64	d
EAN-8	64	d
GS1 DataBar	52	R
GS1-128 (EAN-128)	6A	j
2 of 5 Interleaved 2 of 5	65	е
Matrix 2 of 5	76	V
Industry 2 of 5/IATA	44	D
UPC-A	63	С
UPC-E	63	С
ISBN	42	В
ISSN	6E	n
MSI	6D	m
Aztec Code	7A	Z
DataMatrix	75	u
PDF417	72	r
Micro PDF417	53	S
QR Code	51	Q
Micro QR Code	51	Q



AIM ID Table

Code type	AIM ID	Description
Codabar]Fm	m: 0~1
Code128]C0	m: 0, 1, 2, 4
Code32]A0	
Code93]G0	
Code39]Am	m: 0, 1, 3, 4, 5, 7
Code11]Hm	m: 0, 1, 3, 8, 9
EAN-13 / EAN-8]Em	m: 0, 1, 3, 4
GS1 DataBar]e0	
GS1-128 (EAN-128)]C1	
Interleaved 2 of 5]lm	m: 0, 1, 3
Matrix 2 of 5]X0	
Industry 2 of 5]S0	
UPC-A/ UPC-E]Em	m: 0, 3
ISBN]X0	
ISSN]X0	
Aztec Code]z0	
DataMatrix]dm	m: 0~6
PDF417 / Micro PDF417]Lm	m: 0~5
QR Code / Micro QR Code]Qm	m: 0~6



Visible Character ASCII Table

Dec	Hex	Char	Dec	Нех	Char	Dec	Нех	Char
32	20	<space></space>	64	40	@	96	60	``
33	21	!	65	41	А	97	61	а
34	22	u	66	42	В	98	62	b
35	23	#	67	43	с	99	63	С
36	24	\$	68	44	D	100	64	d
37	25	%	69	45	E	101	65	е
38	26	&	70	46	F	102	66	f
39	27	'	71	47	G	103	67	g
40	28	(72	48	н	104	68	h
41	29)	73	49	I	105	69	i
42	2A	*	74	4A	J	106	6A	j
43	2B	+	75	4B	к	107	6B	k
44	2C	,	76	4C	L	108	6C	Ι
45	2D	-	77	4D	м	109	6D	m
46	2E		78	4E	N	110	6E	n
47	2F	/	79	4F	0	111	6F	0
48	30	0	80	50	Р	112	70	р
49	31	1	81	51	Q	113	71	q
50	32	2	82	52	R	114	72	r
51	33	3	83	53	s	115	73	s
52	34	4	84	54	т	116	74	s
53	35	5	85	55	U	117	75	u
54	36	6	86	56	v	118	76	v
55	37	7	87	57	w	119	77	w
56	38	8	88	58	х	120	78	x
57	39	9	89	59	Y	121	79	У
58	ЗА	:	90	5A	z	122	7A	Z
59	ЗВ	;	91	5B	[123	7B	{
60	ЗС	<	92	5C	١	124	7C	I
61	3D	=	93	5D]	125	7D	}
62	3E	>	94	5E	^	126	7E	~
63	3F	?	95	5F	_			



Invisible Character ASCII Table

Decimal	Hexadecimal	Character
00	00	NUL
01	01	SOH
02	02	STX
03	03	ETX
04	04	EOT
05	05	ENQ
06	06	ACK
07	07	BEL
08	08	BS
09	09	HT
10	0A	LF
11	ОВ	VT
12	0C	FF
13	0D	CR
14	OE	SO
15	OF	SI
16	10	DLE
17	11	DC1
18	12	DC2
19	13	DC3
20	14	DC4
21	15	NAK
22	16	SYN
23	17	ETB
24	18	CAN
25	19	EM
26	1A	SUB
27	1B	ESC
28	1C	FS
29	1D	GS
30	1E	RS
31	1F	US



Example for user-defined prefix and suffix:

Example 1.1:

Set "XYZ" to the second position in the codes.

For example data in code is: 1234567890

And it should look like this: 1XYZ234567890

1. Read code from Add Prefix



-

2. Add to the second position, select two number from Appendix - Data Code Table - reading the appropriate codes corresponding to the numbers -> 0 and 2.





3. In the Appendix, find the appropriate codes for chars X Y Z (Tables ASCII Code Table) to add. And you will gradually read them with a reader. X and Y and Z.





γ



4. Save this settings reading code Saved and Finished Set.



Saved and Finished Set

Example 1.2:

Set two Arrow Down as last keystroke (remember that the last character is a terminator-CR).

1. Read code from Add Prefix



Add Suffix Setting



2. Add to the last position, select two number from Appendix - Data Code Table - reading the appropriate codes corresponding to the numbers-> 0 and 1.





3. In the Appendix, find the appropriate codes for Arrows Down (Function and special keys Tables) to add. And you will gradually read them with a reader. Arrows down .





DownArrow



4. Save this settings reading code Saved and Finished Set.



Saved and Finished Set

Example for Hidden Character Settings

Hide two chars from second position.

For example data in code is: 1234567890

- And it should look like this: 14567890
- 1. Read settings code Hide front character



Hide front character

2. Select second position select two number from Appendix - Data Code Table - reading the appropriate codes corresponding to the numbers -> 0 and 2.





3. Now select how many characters you want to hide. Again, select two numbers from the table in the appendix, similar to point 2. -> **0** and **2**.





4. Save this settings reading code **Saved and Finished Set**.



Saved and Finished Set



Example for barcode length range configuration

Please sure it not bigger than current maximum length range when set up minimum length. Otherwise, it will show error. In the same way, must be make sure it's not smaller than current minimum length range when set up maximum length. Please for numbers and Save settings code only for Appendix *Table of numbers for barcode length range configuration*!!!

Example 2.1:

Set Code 128 length range is 4-12bit Step: Set "Code 128 Minimum (0~50bit)"; Set "4"; Set "Save" Set "Code 128 Maximum (0+-50bit)"; Set "1" "2"; Set "Save"

Example 2.2:

Set Interleaved 2 of 5 length is 14bit It can set up by "ITF25 14bit", through barcode length range of Maximum /Minimum to set,too. Step: Set "Interleave 2 of 5 Minimum (0~50bit)"; Set "1" "4"; Set "Save" Set "Interleave 2 of 5 Maximum (0+50bit)"; Set "1" "4"; Set "Save"

Example 2.3:

Set Code 39 length is random length Step: Set "Code 39 Minimum (0~50bit)"; Set "0"; Set "Save" Set "Code 39 Maximum (0+50bit)"; Set "0"; Set "Save"

Read Skills

To get a good reading performance, a beam of aim light from scanner should be aimed at the centre of barcode, support to aim in any directions for read convenient, too.

More nearly barcode, the beam of aim light is smaller; More further barcode, the beam of aim light bigger. For reading barcode correctly, if barcode small, the scanner should be close to barcode, if barcode big, the scanner should be farther to barcode.

If the barcode is highly reflective (for example: coated surface), please adjust the scanner angle to read it successfully.





<u>Safety</u>

Please not direct aim eye when the scanner has a strong ray of light, to avoid causing any hurt or unwell.

