



Programming

Wireless Scanner

HW-311A

User's Manual



Restore Factory Default



S/W Version



Wireless Firmware version

Ver. 1.1

Pairing Process:

1. Press the trigger to activate the scanner.
2. Trigger Scanner about 6 seconds (one long beep and Blue LED fast flash) to disconnect the scanner from the paired device to be ready for pairing another device.
3. Reading the setting barcode

Of SPP or HID. (**HID is for Manufacture default**)

CABLE Online Mode:

The scanner provides another way to transmit data beside RF mode. Connecting Micro USB cable is to switch from RF mode to Cable online mode and also in battery charger.

Memory Mode:

1. **Memory Mode** setting: Switch RF mode to Memory Mode
2. **Data Upload** setting: Transmitting barcode data in Memory Mode
3. **Clear All Saved Data** setting: Erase all barcode data saved in Memory mode
4. **Data Upload & Clear All Data** setting: Transmitting barcode data in Memory Mode and Erase all barcode data saved in Memory mode
5. **Total Storage quantity**: Check the amount of memory storage
6. **To Normal mode** setting: Switching from Memory mode to RF mode

For the first part of the codes (pages 3-12), it is enough **to read the code directly** to set the reader.

Mode Selection



RF 2.4G Transport



***HID**



SPP ¹⁾

(Serial Port Emulation)



Unpair

¹⁾ **Warning!** In SPP mode, you must set a longer sleep time (60 Min, 2 Hours, Never Sleep), or alternatively you must set the host side to reconnect the connection after bar code reader returns from sleep mode.

Memory Mode



Memory Mode (Data storage)



Data Upload



Clear All Saved Data



Data Upload & Clear All Data



Total Storage quantity



To Normal mode

Keyboard Language



USA



Germany



*Czech



Slovak



Portugal



Japan



Turkey F



ALT mode



French



Spain



Czech QWERTY



Italy



UK



Turkey Q



Belgium FR



Canada FR



Slovenia



Finland



Netherland



Poland



Sweden



Hungary



Brazil PT



Croatia



Denmark



Latin-America ES



Norway



Serbia



Swiss

Beep Control



Mute



*Beep On



*Normal



Up Low Case Swap (A<->a)



All Upper Case (a->A)



All Lower Case (A->a)

Num Lock Set



*Num Lock off (Nums transmit by keyboard)



Num Lock on (Nums transmit by keypad)

IOS Screen Keyboard on/off



Set Sleep Mode



*1 Min



6 Min



12 Min



30 Min



60 Min



2 Hours



Never Sleep

IR Autodetect



IR Detect Disable



IR Detect Enable (default)

Change Auto Cable Mode



Auto Cable Mode OFF



Auto Cable Mode ON

USB Keyboard Speed Setting



Top Speed



Middle Speed



Low Speed



Read KB Speed

This setting also affects the speed of RF transmission of ultra-long barcodes and uploading of stored data.

Scanner ID Function

Output Format

To change the Scan Data Transmission Format, scan one of the eight bar codes corresponding to the desired format.



Default output format



Enable Scanner ID Output



Add Scanner ID

Numeric Bar Codes

For parameters requiring specific numeric values, scan the appropriately numbered bar code(s).



\$NO#0



\$NO#1



\$NO#2



\$NO#3



\$NO#4



\$NO#5



\$NO#6



\$NO#7



\$NO#8



\$NO#9



\$NO#A



\$NO#B



\$NO#C



\$NO#D



\$NO#E



\$NO#F

Step Operation Examples

To add a Scanner ID:

Step 1. Scan the output format to enable scanner id output if it's not enable.

Step 2. The length of Scanner ID is fixed to 3.

Step 3. Scan the Add Scanner ID symbol.

Step 4. Determine the hex value from the ASCII Conversion Chart, for the id you wish to enter.

Step 5. Scan the 2 digit hex value from the Programming Chart.

Step 6. Repeat Steps 4 and 5 for every id character.

e.g. Want to add "22 & Tab" as Scanner ID, Scan 'add Scanner ID', '3','2','3','2','0','9'.

Want to add "A9 & space " as Scanner ID, Scan 'Scanner ID', '4', '1', '3', '9', '2', '0'.

ASCII Table

1	2	3	4	5	6	7
0	SP	0	@	P	`	p
1	!	1	A	Q	a	q
2	"	2	B	R	b	r
3	#	3	C	S	c	s
4	\$	4	D	T	d	t
5	%	5	E	U	e	u
6	&	6	F	V	f	v
7	^	7	G	W	g	w
8	(	8	H	X	h	x
9	)	9	I	Y	i	y
A	*	:	J	Z	j	z
B	+	;	K	[	k	{
C	,	<	L	¥	l	
D	-	=	M	]	m	}
E	.	>	N	^	n	~
F	/	?	O	_	o	DEL

Keyboard Wedge function

Num Lock



<OFF>



ON

Caps Lock



<Normal>



Up Low Case Swap (A<->a)



All Upper Case (a->A)



All Lower Case (A->a)

Beep Control Setting



\$BUZZ#1

<Beep On>



\$BUZZ#0

Mute

Buzzer Tone



Volume High (Default)



Volume Medium



Volume Low

Set bInterval

The bInterval value contains the polling interval for interrupt and isochronous endpoints – USB HID peripherals.



Wireless Firmware version

Wireless Firmware version **must be**
lhm0DBP9_DE32hIR_C503CZ_RFPASBT
or newer!



Set bInterval = 1

This option cannot be used with Windows 11!!



Set bInterval = 5



Set bInterval = 10

Start Configuration((+SETF))



For the following part of the codes (pages 13-42), you must first read the **Start Configuration** code in the page header, then the configuration code(s) and finally the **End Configuration** code in the page footer.

Chap.1 System Information



Set All default((+RETF))

Do not change the settings in
the previous chapters !



S/W Version((+SFUR))

2.1 Message Terminator



None((+C9A))



CR+LF((+C9B))



<CR>((+C9C))



LF((+C9D))



TAB((+C9E))

2.2 Character Installation

The preamble and postamble character: You can put 10 ASCII at most in front of the barcode data. When the installation is “0” that means you don’t need to add the first and last character. Please find the format as below:

Preamble Character	Barcode	Postamble Character
--------------------	---------	---------------------

The process for adding the first and last character to the barcode:

1. Scan the barcode of “Start Configuration” and “The Preamble Character Installation”.
2. Check the ASCII table to get the ASCII code of the first and last character.

End Configuration((+ENDF))



Start Configuration((+SETF))



3. Scan the barcode of ASCII in the Appendix.
4. Scan the “End Configuration”.

G1/G2 character Insertion: You can put 10 ASCII at most in front of the barcode data. When the installation is “0” that means you don’t need to add the first and last character.

5. Scan the barcode of the “Start Configuration” and “G1 Insert Character”.
6. Check the ASCII table to get the ASCII code of the first and last character.
7. Scan the barcode of ASCII in the Appendix.
8. Scan the “End Configuration”.
9. Repeat the same process to the G2 insertion.
10. Scan the “End Configuration”.

The position of G1/G2 character insertion: To select a character insert to the barcode. You can’t insert any character while the installation is “0”

1. Scan the barcode of the “Start Configuration” and “G1 character insertion position”
2. Check the ASCII table to get the corresponding ASCII code of the insertion position.
3. Scan the “End Configuration”.
4. Repeat the same process to the G2 character insertion position.
5. Scan the “End Configuration”.

Code Transmission: If your application needs to transmit the code (barcode type ID), you have to set “ON” for this feature and the format is ID + Barcode data.

The Preamble Installation (Default:00)



Appendix A((+E4A))

The Postamble Installation (Default:00)



Appendix A((+E5A))

End Configuration((+ENDF))



Start Configuration((+SETF))



G1 Character Insertion (Default:00)



Appendix A((+E6A))

G2 Character Insertion (Default:00)



Appendix A((+E7A))

G1 Character Insertion Position (Default: 00)



Appendix A((+E8A))

G2 Character Insertion Position (Default: 00)



Appendix A((+E9A))

Code ID Transmission



ON((+EAA))



<OFF>((+EAB))

2.3 Other Installation

Scanning Precision: You can set to scan once or twice and then transfer the bar code data. The twice will reduce the error reading.

Bar Reverse Output Installation: This feature can read the highlight barcode.

Scanning Verify



<Single>((+EDA))



Multi-verify(Max:2)
((+EDB))

End Configuration((+ENDF))



Start Configuration((+SETF))



Chap.3 BAR-CODE

INSTALLATION

3.1 UPC-A

Reading



OFF((+F1A))



<ON>((+F1B))

Code ID (Default:F)



<20H-7EH>((+F2A))

UPC-A convert to EAN-13



<OFF>((+F3A))



ON((+F3B))

Transmit Check Character



OFF((+F4A))



<ON>((+F4B))

Truncate Leading Zero



<OFF>((+F5A))



ON((+F5B))

Truncate Leading Digit(Default:00)



<00H-0DH>((+F6A))

Truncate Last Digit(Default:00)



<00H-0DH>((+F7A))

Select Insertion(Default:00)



<00H-02H>((+F9A))

End Configuration((+ENDF))



Start Configuration((+SETF))



3.1 UPC-A

Add-On 2/5



<None>((+F8A))



2 digit((+F8B))



5 digit((+F8C))



2 or 5 digit((+F8D))



AUTO_Enable
((+F8E))

End Configuration((+ENDF))



Start Configuration((+SETF))



3.2 UPC-E

Reading



OFF((+G1A))



Code ID (Default: G)

<ON>((+G1B))



<20H-7EH>((+G2A))

UPC-E Convert to UPC-A



<OFF>((+G3A))



ON((+G3B))

Transmit Check Character



OFF((+G4A))



<ON>((+G4B))

Truncate Leading Zero



<OFF>((+G7A))



ON((+G7B))

Truncate Leading Digit(Default:00)



<00H-08H>((+G5A))

Truncate Last Digit(Default:00)



<00H-08H>((+G6A))

Select Insertion(Default:00)



<00H-02H>((+G9A))

End Configuration((+ENDF))



Start Configuration((+SETF))



3.2 UPC-E

Add-On 2/5



<None>((+G8A))



2digit((+G8B))



5digit((+G8C))



2 or 5 digit((+G8D))



AUTO_Enable

((+G8E))

End Configuration((+ENDF))



Start Configuration((+SETF))



3.3 EAN-13

Reading



OFF((+H1A))



<ON>((+H1B))

Code ID (Default: H)



<20H-7EH>((+H2A))

Transmit Check Character



OFF((+H3A))



<ON>((+H3B))

Truncate Leading Digit (Default:00)



<00H-0DH>((+H4A))

Truncate Last Digit (Default:00)



<00H-0DH>((+H5A))

Select Insertion (Default:00)



<00H-02H>((+H8A))

End Configuration((+ENDF))



Start Configuration((+SETF))



3.3 EAN-13

Add-On 2/5



<None>((+H6A))



2 Digit((+H6B))



5 Digit((+H6C))



2 or 5 Digit((+H6D))



AUTO_Enable

((+H6E))

ISBN/ISSN Convert



<OFF>((+H7A))



ON((+H7B))

End Configuration((+ENDF))



Start Configuration((+SETF))



3.4 EAN-8

Reading



OFF((+I1A))



Code ID (Default: 1)



<20H-7EH>((+I2A))

<ON>((+I1B))

Transmit Check Character



OFF((+I3A))



<ON>((+I3B))

Truncate Leading Digit (Default:00)



<00H-08H>((+I4A))

Truncate Last Digit (Default:00)



<00H-08H>((+I5A))

Select Insertion (Default:00)



<00H-02H>((+I7A))

End Configuration((+ENDF))



Start Configuration((+SETF))



Add-On 2/5



<None>((+I6A))



2 digit((+I6B))



5 digit((+I6C))



2 or 5 digit((+I6D))



AUTO_Enable

((+I6E))

End Configuration((+ENDF))



Start Configuration((+SETF))



3.5 Code 39

Reading



OFF((+J1A))



<ON>((+J1B))

Code ID (Default: J)



(20H-7EH)((+J2A))

Verification



<OFF>((+J3A))



ON((+J3B))

Transmit Check Character



OFF((+J4A))



<ON>((+J4B))

Min. Length (Default:01)



<01H-50H>((+J6A))

Max. Length (Default:50H)



<01H-50H>((+J7A))

End Configuration((+ENDF))



Start Configuration((+SETF))



3.5 Code 39

Format



<Standard Code39> ((+J9A))



Full ASCII Code39
((+J9B))



Trioptic CODE39
((+J9C))

Transfer Start / End Character



<OFF>((+JDA))



ON((+JDB))

Code 39 Concatenation



<OFF>((+JFA))



ON((+JFB))

Truncate Leading Digit(Default:00)



<00H-32H>((+JAA))

Truncate Last Digit(Default:00)



<00H-32H>((+JBA))

Select Insertion(Default:00)



<00H-02H>((+JCA))

End Configuration((+ENDF))



Start Configuration((+SETF))



3.6 Codabar

Reading



OFF((+K2A))



Code ID (Default: K)



<20H-7EH>((+K2A))

<ON>((+K1B))

Verification



<OFF>((+K3A))



ON((+K3B))

Transmit Check Character



<OFF>((+K4A))



ON((+K4B))

Truncate Leading Digit(Default:00)



<00H-7EH>((+K6A))

Truncate Last Digit(Default:00)



<00H-7EH>((+K7A))

Select Insertion (Default:00)



<00H-02H>((+KCA))

End Configuration((+ENDF))



Start Configuration((+SETF))



3.6 Codabar

Start / End Character Type



<ABCD/ABCD>((+K8A))



abcd/abcd((+K8B))



abcd/tn*e((+K8C))

Transmit Start / End Character



OFF((+K9A))



<ON>((+K9B))

Min. Length (Default:06)



<01H-50H>((+KAA))

Max. Length (Default:50H)



<01H-50H>((+KBA))

End Configuration((+ENDF))



Start Configuration((+SETF))



3.7 Code93

Reading



OFF((+L1A))



Code ID (Default: L)



<20H-7EH>((+L2A))

<ON>((+L1B))

Verification



OFF((+L3A))



<ON>((+L3B))

Transmit Check Character



<OFF>((+L4A))



ON((+L4B))

Select Insertion (Default:00)



<00H-02H>((+L9A))

Truncate Leading Digit (Default:00)



<00H-7EH>((+L7A))

Truncate Last Digit (Default:00)



<00H-7EH>((+L8A))

Min. Length(Default:03)



<01H-50H>((+L5A))

Max.

Length(Default:50H)



<01H-50H>((+L6A))

End Configuration((+ENDF))



Start Configuration((+SETF))



3.8 Code 128

Reading



OFF((+M1A))



Code ID (Default: M)



<20H-7EH>((+M2A))

<ON>((+M1B))

Verification



OFF((+M3A))



Transmit Check Character



<OFF>((+M4A))

<ON>((+M3B))



ON((+M4B))

Truncate Leading Digit(Default:00)



<00H-7FH>((+M8A))

Truncate Last Digit(Default:00)



<00H-7FH>((+M9A))

Select Insertion(Default:00)



<00H-02H>((+MCA))

Min. Length(Default:03)



<01H-50H>((+MAA))

Max.

Length(Default:50H)



<01H-50H>((+MBA))

End Configuration((+ENDF))



Start Configuration((+SETF))



UCC/EAN128



<OFF>((+M6A))



ON((+M6B))

FNC1 Transmit



<OFF>((+M7A))



ON((+M7B))

FNC2 Concatenation



<OFF>((+M5A))



ON((+M5B))

Application ID transmit



01 & Terminator ((+MDA))



OFF & Terminator

((+MDC))



01 & Terminator ((+MDA))



(01) & Terminator

((+MDB))

Application ID Terminator



<00H-7EH>((+MEA))

End Configuration((+ENDF))



Start Configuration((+SETF))



IATA Code



<OFF>((+V1A))



ON((+V1B))

3.9 Interleaved 2 of 5

Reading



OFF((+N1A))



<ON>((+N1B))

Code ID (Default: N)



<20H-7EH>((+N2A))

Verification



<OFF>((+N3A))



ON((+N3B))

Transmit Check Character



OFF((+N4A))



<ON>((+N4B))

Truncate Leading Digit(Default:00)



<00H-7EH>((+N5A))

Truncate Last Digit(Default:00)



<00H-7EH>((+N6A))

End Configuration((+ENDF))



Start Configuration((+SETF))



Select Insertion(Default:00)



<00H-02H>((+N9A))

Min. Length(Default:06)



<01H-50H>((+N7A))

Max.

Length(Default:50H)



<01H-50H>((+N8A))

3.10 Industrial 2 of 5

Reading



<OFF>((+O1A))



ON((+O1B))

Code ID (Default: 0)



<00H-7EH>((+O2A))

Verification



<OFF>((+O7A))



ON((+O7B))

Transmit Check Character



<OFF>((+O8A))



ON((+O8B))

Truncate Leading Digit(Default:00)



<00H-32H>((+O5A))

Truncate Last Digit(Default:00)



<00H-32H>((+O6A))

End Configuration((+ENDF))



Start Configuration((+SETF))



Select Insertion (Default:00)



<00H-02H>((+O9A))

Min. Length (Default:06)



<01H-50H>((+O3A))

Max. Length(Default:50H)



<01H-50H>((+O4A))

3.11 Matrix 2 of 5

Reading



<OFF>((+P1A))



ON((+P1B))

Code ID (Default: P)



<20H-7EH>((+P2A))

Verification



<OFF>((+P3A))



ON((+P3B))

Transmit Check Character



<OFF>((+P4A))



ON ((+P4B))

Truncate Leading Digit(Default:00)



<00H-50H>((+P5A))

Truncate Last Digit(Default:00)



<00H-50H>((+P6A))

End Configuration((+ENDF))



Start Configuration((+SETF))



Select Insertion(Default:00)



<00H-02H>((+P9A))

Min. Length(Default:06)



<01H-50H>((+P7A))

Max.

Length(Default:50H)



<01H-50H>((+P8A))

3.12 China Post Code

Reading



<OFF>((+Q1A))



Code ID (Default: Q)

ON((+Q1B))



<20H-7EH>((+Q2A))

Verification



<OFF>((+Q3A))



Transmit Check Character

ON((+Q3B))



<OFF>((+Q4A))



ON((+Q4B))

Truncate Leading Digit(Default:00)



<00H-50H>((+Q5A))

Truncate Last Digit(Default:00)



<00H-50H>((+Q6A))

End Configuration((+ENDF))



Start Configuration((+SETF))



Select Insertion(Default:00)



<(00H-02H)>((+Q9A))

Min. Length(Default:06)



<01H-50H>((+Q7A))

Max.

Length(Default:50H)



<01H-50H>((+Q8A))

3.13 MSI / Plessey

Reading



<OFF>((+R1A))



ON((+R1B))

Code ID (Default: R)



<20H-7EH>((+R2A))

Verification



<OFF>((+R3A))



MOD 11/10((+R3D))



MOD 10((+R3B))



MOD 10/10((+R3C))

Transmit Check Character



OFF((+R4A))



<ON>((+R4B))

End Configuration((+ENDF))



Start Configuration((+SETF))



Truncate Leading Digit (Default:00)



<00H-3CH>((+R5A))

Truncate Last Digit (Default:00)



<00H-3CH>((+R6A))

Select Insertion (Default:00)



<00H-02H>((+R9A))

End Configuration((+ENDF))



Start Configuration((+SETF))



3.13 MSI / Plessey

Min. Length (Default:06)



<01H-50H>((+R7A))

Max. Length

(Default:50H)



<01H-50H>((+R8A))

End Configuration((+ENDF))



Start Configuration((+SETF))



3.14 CODE32

Reading



<OFF>((+S1A))



ON((+S1B))

Code ID (Default: S)



<20H-7FH>((+S2A))

Verification



<OFF>((+S3A))



ON((+S3B))

Transmit Check Character



<OFF>((+S4A))



ON((+S4B))

Truncate Leading Digit(Default:00)



<00H-0AH>((+S5A))

Truncate Last Digit(Default:00)



<00H-0AH>((+S6A))

Select Insertion (Default:00)



<00-02H>((+S7A))

Transmit "A"



<OFF>((+S8A))



ON((+S8B))

End Configuration((+ENDF))



Start Configuration((+SETF))



3.15 Code 11

Reading



<OFF>((+T1A))



Code ID (Default: T)

ON((+T1B))



<20H-7EH>((+T2A))

Verification



<OFF>((+T3A))



Transmit Check Character

ON((+T3B))



<OFF>((+T4A))



ON ((+T4B))

Truncate Leading Digit (Default:00)



<00H-50H>((+T5A))

Truncate Last Digit (Default:00)



<00H-50H>((+T6A))

Select Insertion(Default:00)



<00H-02H>((+T9A))

Min. Length (Default:06)



<01H-50H>((+T7A))

Max. Length (Default:50H)



<01H-50H>((+T8A))

End Configuration((+ENDF))



Start Configuration((+SETF))



3.16 GS1 Code (Option)

GS1-14

Reading



OFF ((+U1B))



<ON> ((+U1A))

Code ID (Default: U)



<20H-7EH>((+UUA))

Application ID transmit



OFF ((+UAA))



01 ((+UAB))



(01) ((+UAC))

Symbol ID transmit



OFF((+UDA))



ON ((+UDB))

Transmit Check Character



OFF((+UGA))



<ON> ((+UGB))

GS1-14 To UPC/EAN



<OFF> ((+U4B))



ON ((+U4A))

End Configuration((+ENDF))



Start Configuration((+SETF))



GS1- Limited

Reading



<OFF> ((+U2B))



<ON >((+U2A))

Code ID (Default: V)



<20H-7EH>((+UVA))

Application ID transmit



OFF((+UBA))



01 ((+UBB))



(01) ((+UBC))

Symbol ID transmit



OFF((+UEA))



ON ((+UEB))

Transmit Check Character



OFF((+UHA))



<ON >((+UHB))

End Configuration((+ENDF))



Start Configuration((+SETF))



GS1- Expanded

Reading



OFF ((+U3B))



<ON >((+U3A))

Code ID (Default: W)



<20H-7EH>((+UWA))

Application ID transmit



01 & Terminator ((+MDD))



OFF& Terminator ((+MDC))



(01) ((+MDB))



01 ((+MDA))

FNC1 Transmit



<OFF>((+M7A))



ON((+M7B))

Application ID Terminator(Default:00)



<01H-7EH>((+MEA))

Symbol ID transmit



<OFF>((+UFA))



ON ((+UFB))

End Configuration((+ENDF))





0



1



2



3



4



5



6



7



8



9



A



B



C



D



E



F



Y



N

APPENDIX B – ASCII Table

	0	1	2	3	4	5	6	7
0	NUL	DLE	SP	0	@	P	`	p
1	SOH	DC1	!	1	A	Q	a	q
2	STX	DC2	“	2	B	R	b	r
3	ETX	DC3	#	3	C	S	c	s
4	EOT	DC4	\$	4	D	T	d	t
5	ENQ	NAK	%	5	E	U	e	u
6	ACK	SYN	&	6	F	V	f	v
7	BEL	ETB	‘	7	G	W	g	w
8	BS	CAN	(	8	H	X	h	x
9	HT	EM	)	9	I	Y	i	y
A	LF	SUB	*	:	J	Z	j	z
B	VT	ESC	+	;	K	[	k	{
C	FF	FS	,	<	L	¥	l	
D	CR	GS	–	=	M	]	m	}
E	SO	RS	.	>	N	^	n	~
F	SI	US	/	?	O	_	o	DEL

ASCII Table (Under Function Off)***Function OFF**

	0	1
0	NUL	DLE
1	SOH	DC1
2	STX	DC2
3	ETX	DC3
4	EOT	DC4
5	ENQ	NAK
6	ACK	SYN
7	BEL	ETB
8	BS	CAN
9	HT	EM
A	LF	SUB
B	VT	ESC
C	FF	FS
D	CR	GS
E	SO	RS
F	SI	US

Function key Table (Under Function on)**Function ON**

	0	1
0	NULL	CTRL
1	UP	F1
2	DOWN	F2
3	LEFT	F3
4	RIGHT	F4
5	PAGE UP	F5
6	PAGE DOWN	F6
7		F7
8	BS	F8
9	TAB	F9
A		F10
B	HOME	ESC
C	END	F11
D	ENTER	F12
E	INSERT	ALT
F	DELETE	SHIFT