



# **Programming**

## **BT Scanner**

### **For BT310N / BT310D**

### **User's Manual**



Restore Factory Default



BT Firmware version

**Ver. 1.2**

### **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 BT mode. Connecting Micro USB cable is to switch from BT mode to Cable online mode and also in battery charger.

### **Memory Mode:**

1. Memory Mode setting: Switch BT 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. To Bluetooth mode setting: Switching from Memory mode to Bluetooth mode
5. Total Storage quantity: Check the amount of memory storage

For the first part of the codes (pages 3-6), it is enough **to read the code directly** to set the reader.

## BT Mode Selection



\*Bluetooth Mode



SPP <sup>1)</sup>  
(Serial Port Emulation)



\*HID



Unpair

<sup>1)</sup> **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



Total Storage quantity



To Bluetooth mode

# Keyboard Language



USA



Germany



\*Czech



Slovak



Portugal



Japan



Turkey F



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

---

## 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



Start Configuration((+SETF))



For the following part of the codes (pages 7-36), 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))



<ON>((+G1B))

#### Code ID (Default: G)



<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))



<ON>((+I1B))

#### Code ID (Default: 1)



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

#### 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))



#### Code ID (Default: J)



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

<ON>((+J1B))

#### 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)

<ON>((+L1B))



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

#### 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)



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

ON((+Q1B))

Verification



<OFF>((+Q3A))



Transmit Check Character



<OFF>((+Q4A))

ON((+Q3B))



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))



---

APPENDIX A – ASCII CODE



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