Function Box Config Tool

User Guide

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Content

1 Introduction

Function Box is Universal RS-232 Format Converter. Use Function Box Config Tool (FBCT) to set up and configure Function Box.

2 System Requirement

Process: 1GHz above, x86 or x64

OS: Windows XP(SP3), Windows Vista, Windows 7, Windows 8

Language: English, Simplified Chinese, Traditional Chinese

RAM: 2GB above

Display: VGA 1024 x 768

3 Install

3.1 Install PL2303 driver

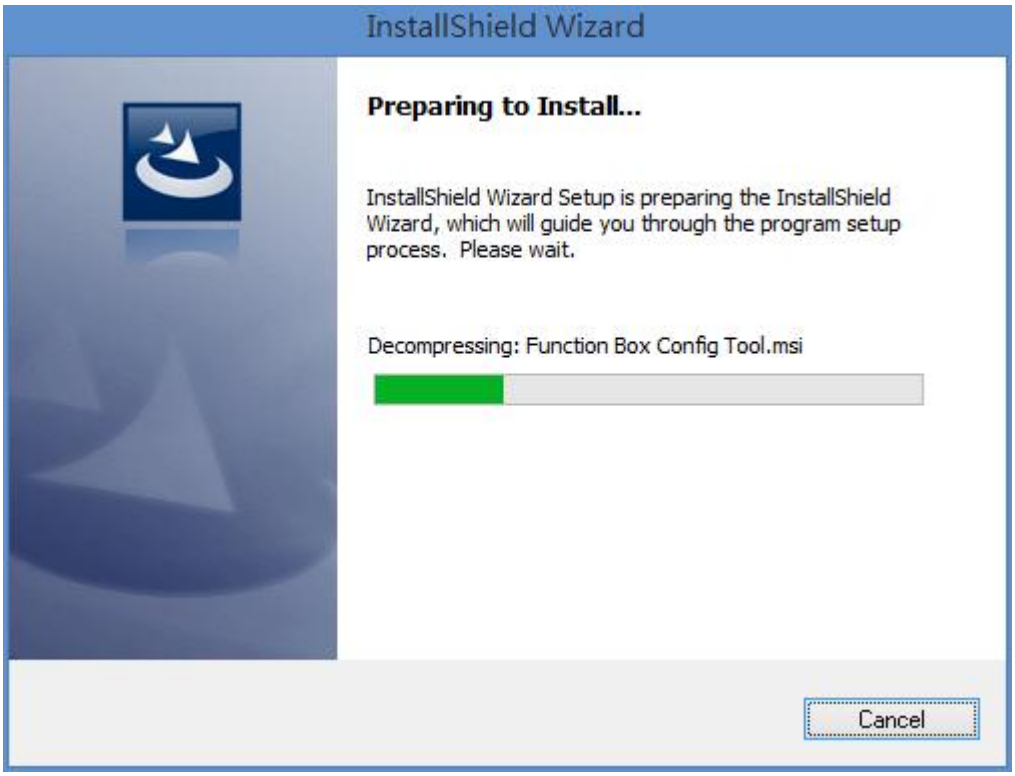
Download site

http://www.prolific.com.tw/US/supportDownload.aspx?FileType=56&FileID=133&pcid=85&Page=0

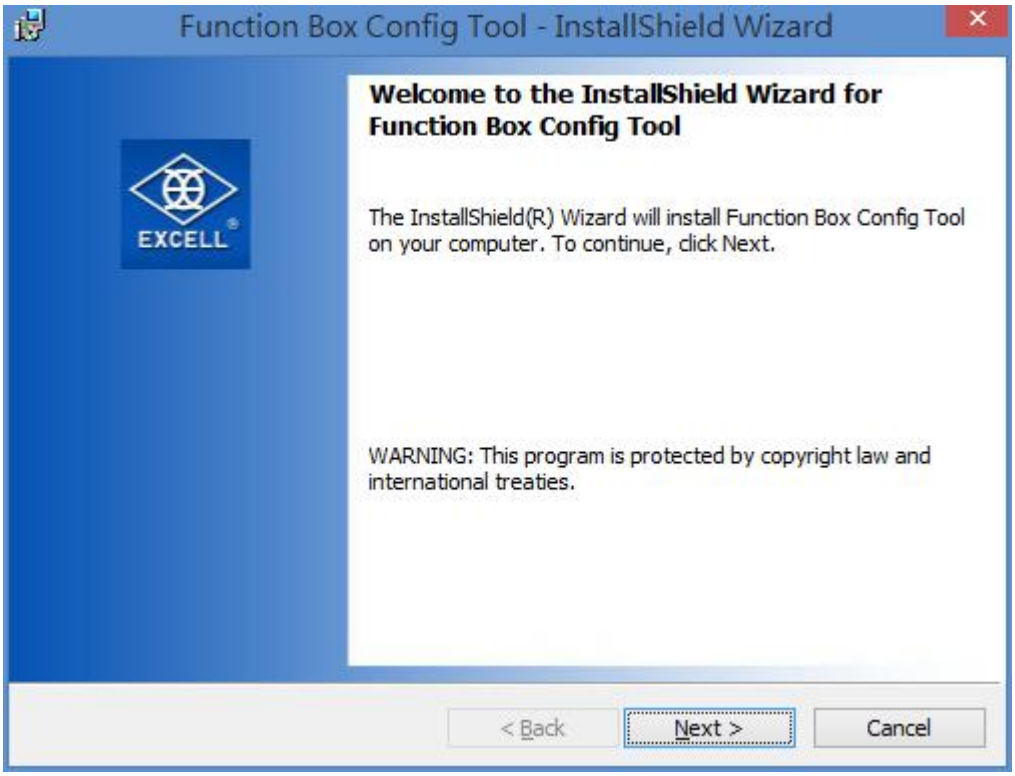
3.2 Install FBCT

1. Run FunctionBoxConfigTool_Setup_X_X_X_X.exe

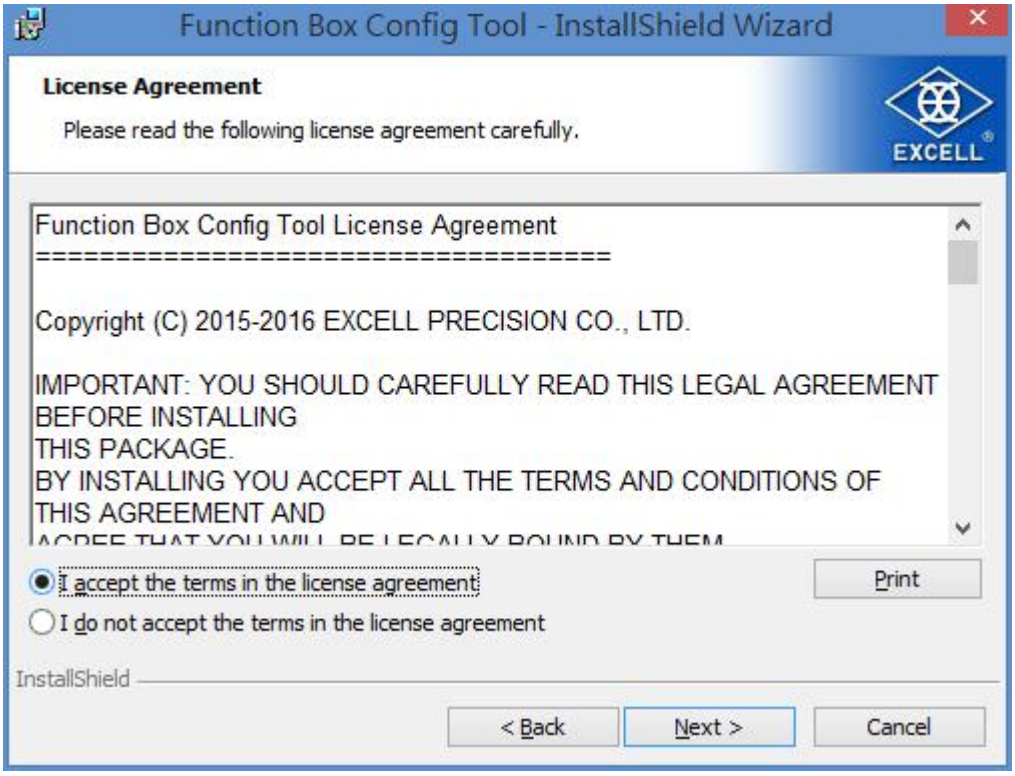
X is version number.



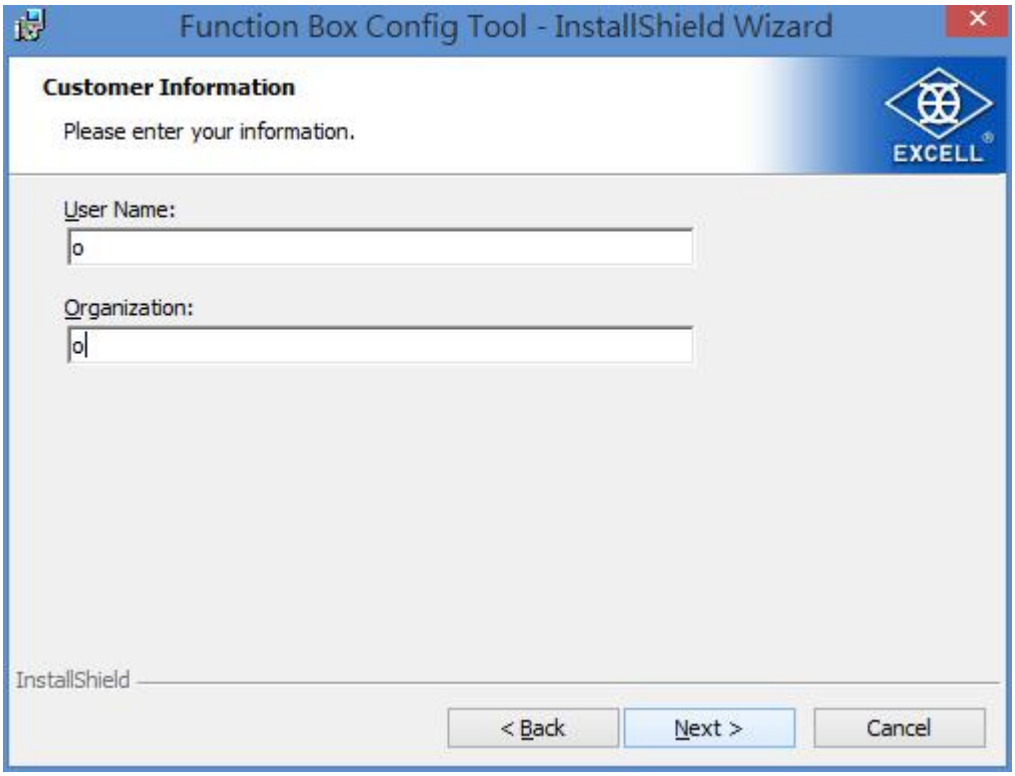
2. Press Next



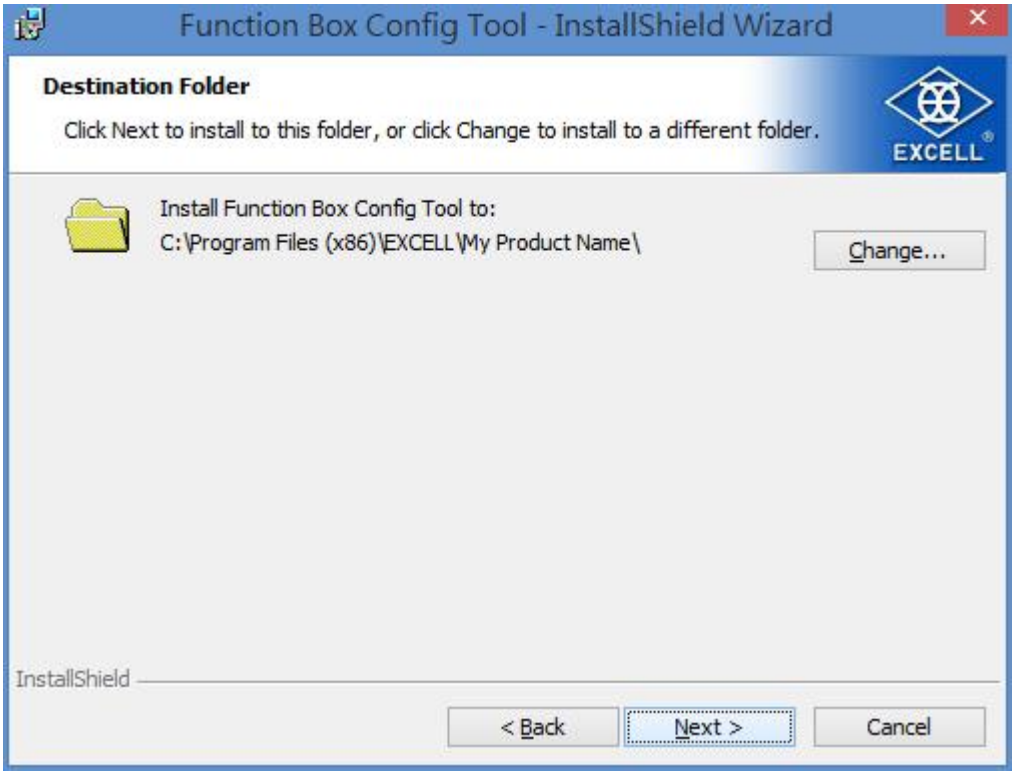
3. Select “I accept the terms in the license agreement” and press Next.



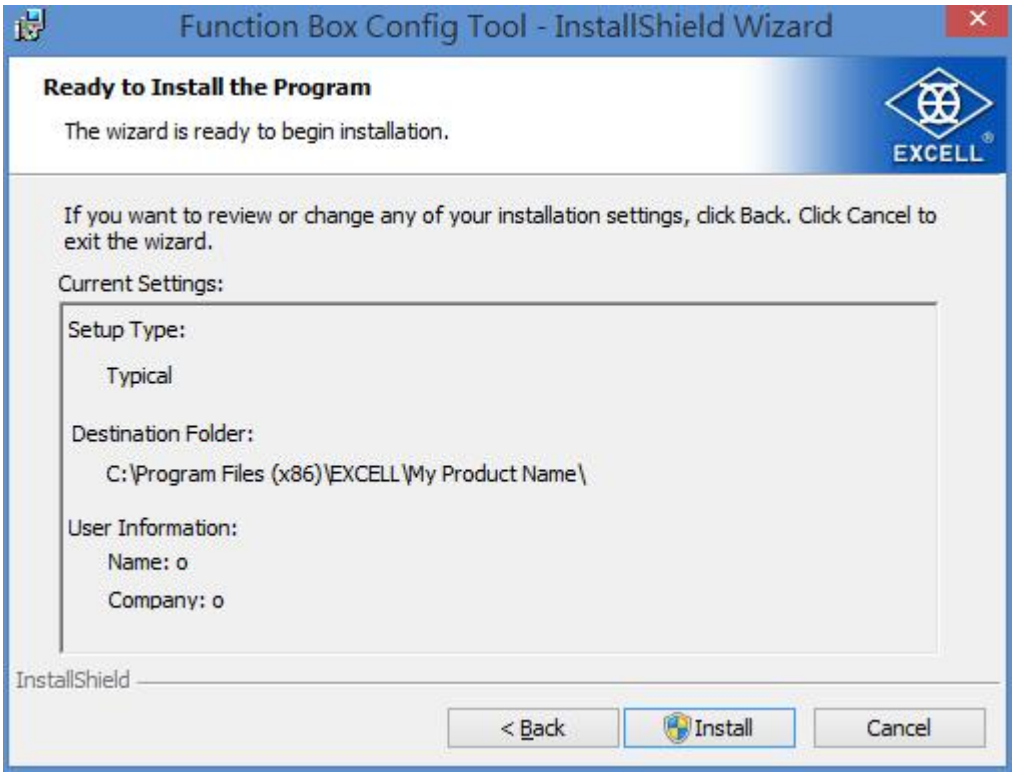
4. Press Next



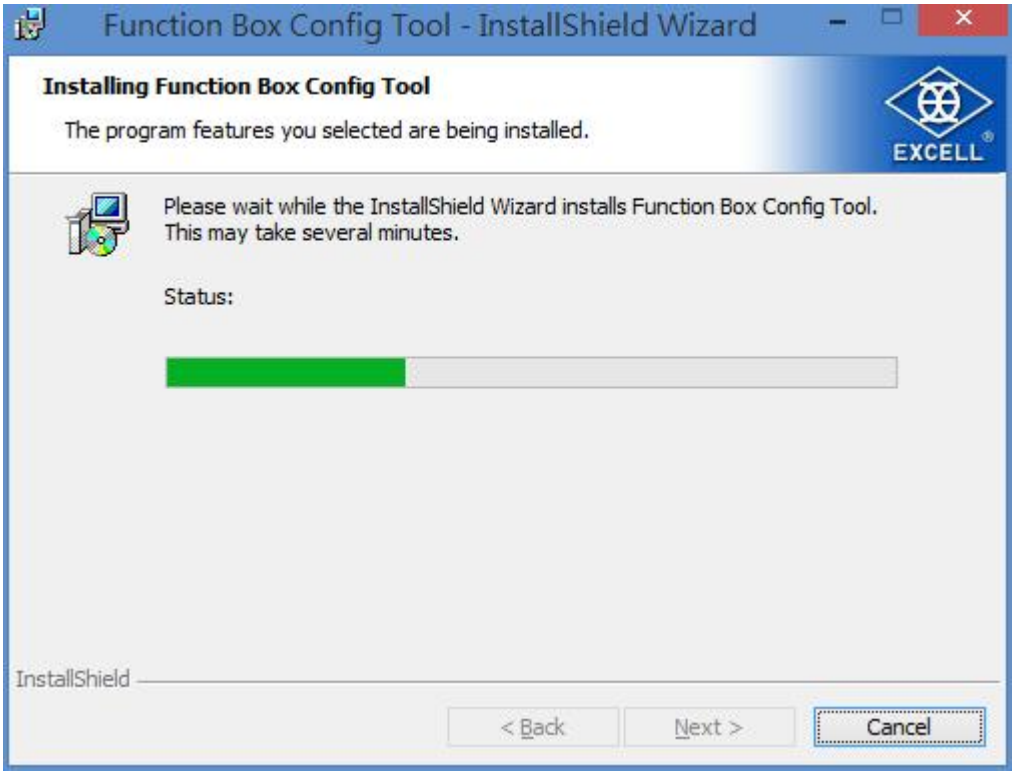
5. Press Next



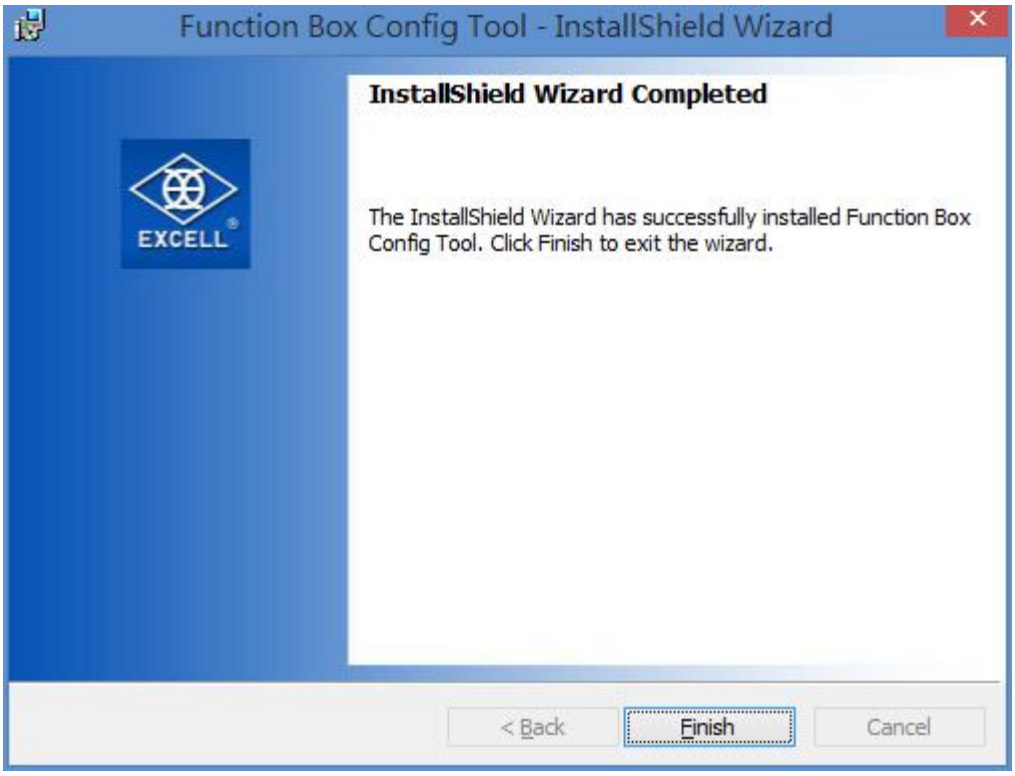
6. Press Install



7. Wait for the installation process...

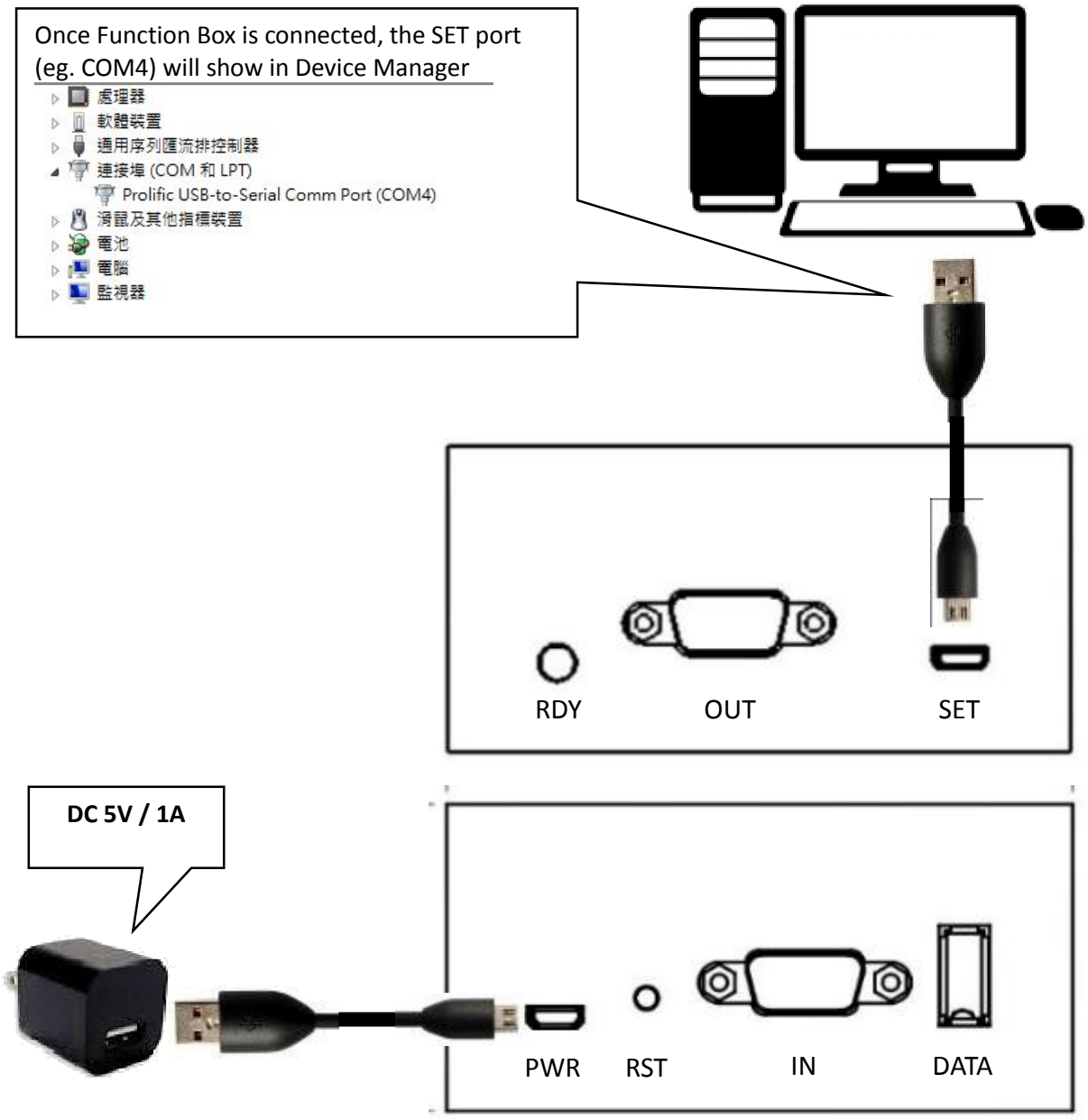


8. Press Finish



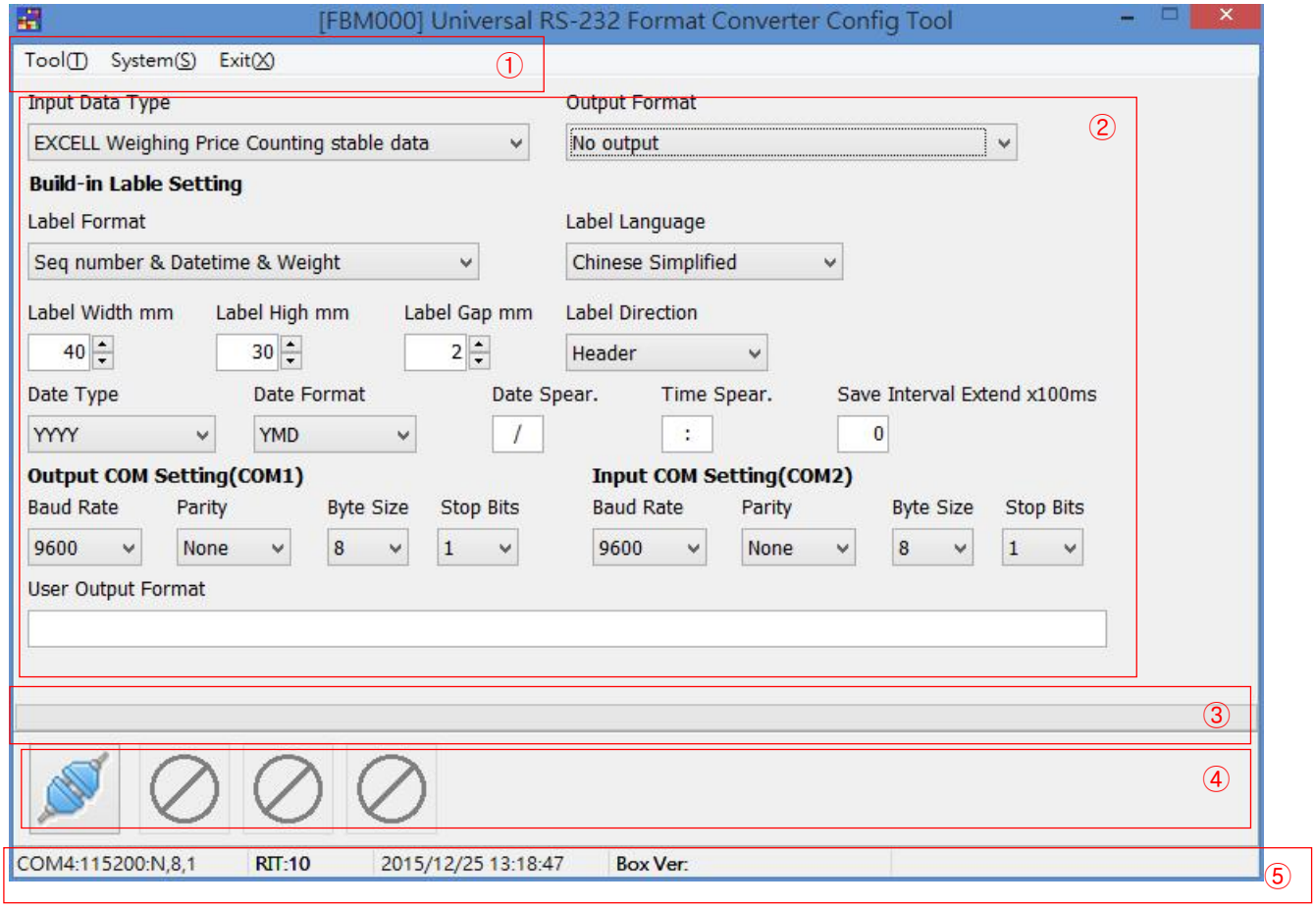
4 Connect Function Box

Use micro USB cable connect PC and Function Box



5 [FBM000] Main Form

English interface when first running.



① System menu

② Configure area

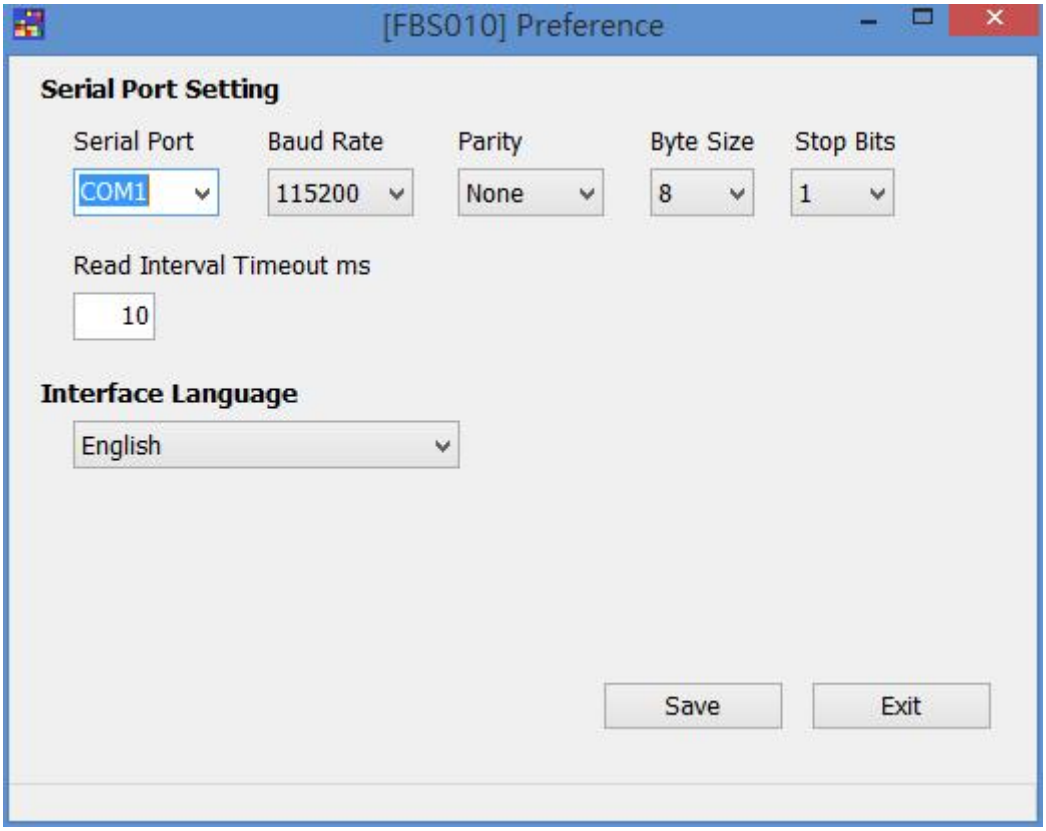
③ Progress bar

④ Process buttons

⑤ Status bar

6 [FBS010]Preference

System→ Preference



Serial Port Setting

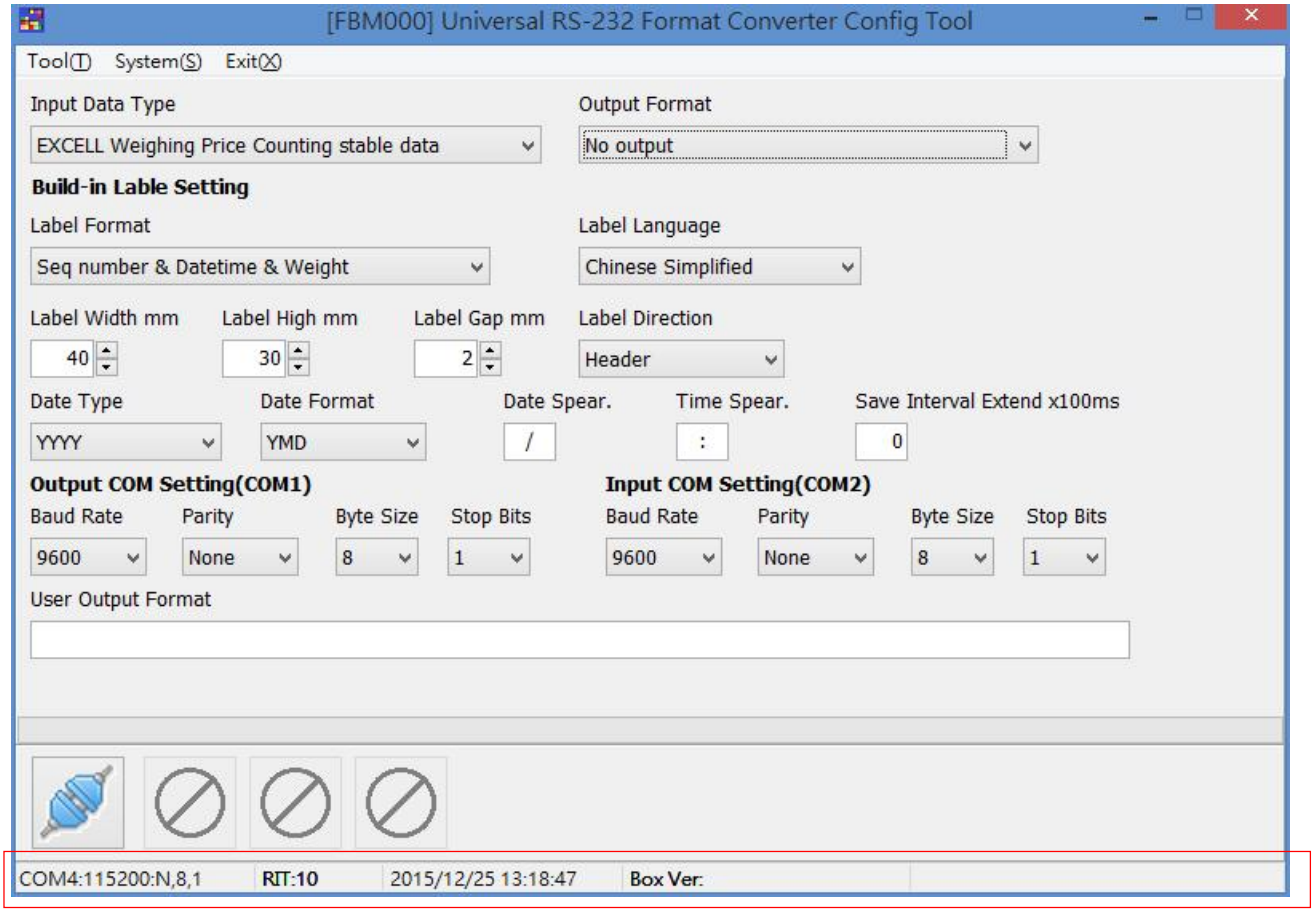
The communication setting of the SET port in the Function Box is fixed at 115200/n/8/1. Thus, FBCT serial port setting must be the same. From the dropdown menu, please select the appropriate port as shown in the Device Manger. If the port is not shown in the menu, please manually key in the port.

Read Interval Timeout (millisecond): Default is 10 ms. If the read time is over Read Interval Timeout and if there is no additional data coming in, FBCT will start to process the received data.

Interface Language

FBCT interface is available in: English, Traditional Chinese and Simplified Chinese

Select the preferred interface and press Save button to save setting, then press Exit button to leave.



Communication settings will show in status bar.

7 Download Function Box setting

Caution: Before using Function Box Configuration Tool (FBCT), please stop sending data though "IN" terminal of the Function Box.

Before connecting to "SET" Port of the Function Box, some process buttons are disabled.

Press  to connect SET port. Some process buttons will be activated after it is connected.

Press  to download Function Box settings.

The settings will be automatically saved while leaving FBCT. When the next time to start FBCT, the settings will automatically be loaded. The User Defined Command 1 and the User Defined Command2, and User Defined Save Format can only be manually downloaded and uploaded.

Caution: Recommend to download the setting of the Function Box before using the FBCT.

Process buttons description:

 Connect Function Box SET port.

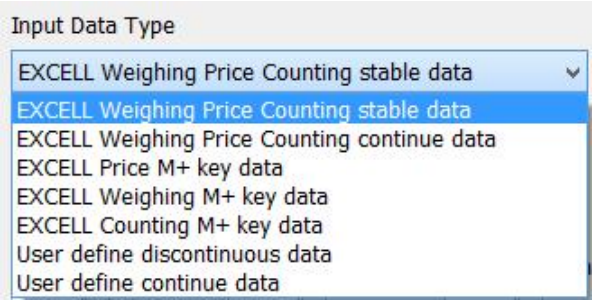
 Disconnect Function Box SET port.

 Download Function Box settings excluding User Defined Commands and Save Format.

 Upload settings to Function Box excluding User Defined Commands and Save Format.

 Synchronize the date and the time of the Function Box with PC.

8 Input Data Type



There are two kinds of input data type, one is built-in (for specific EXCELL model), and the other is user defined. Function Box analyzes input data depend on the selected data type. For the built-in, please select the corresponding EXCELL scale type and transmission type. For the user defined, the input data will be analyzed, segmented and saved to the defined variable based on the definitions of data addresses. Please refer to Appendix 1: Function Box Variables for both built-in and user defined input data.

8.1 Input data type: EXCELL Weighing Price Counting Stable data / EXCELL Weighing Price Counting continue data

Data transmission format for stable or continuous transmission for EXCELL pricing/counting/ weighing scales. Please refer to EXCELL's user guides for details.

Format

SEQ.	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
ASCII	S	T	,	G	S	,	+	0	1	2	3	4	5	6	7			k	g		
HEX	53	54	2C	47	53	2C	2B	30	31	32	33	34	35	36	37	20	20	6B	67	0D	0A

Description

0~1: Weight status. ST: stable, US: unstable, OL: over maximum loading.

2: Fixed: ",".

3~4: Weight type. GS: gross weight NT: net weight TR: tare weight

6: Weight+ - symbol.

7~14: Weight value. Length is not fixed.

15~18: Weight unit. Length between 2 bytes and 4 bytes.

19~20: Ending bytes. Fixed 0x0D 0x0A.

8.2 Input data type: EXCELL Price[M+] key data

Use pricing scale firmware version: 01008XXX series.

[M+] Weigh totalisation/accumulation format for pricing scale

SEQ.	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
ASCII	N	O	.											0	0	1		
HEX	4E	4F	2C	20	20	20	20	20	20	20	20	20	20	30	30	31	0D	0A
SEQ.	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
ASCII	N									0	.	5	6	5	k	g		
HEX	4E	20	20	20	20	20	20	20	20	30	2C	35	36	35	6B	67	0D	0A
SEQ.	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53
ASCII	T									0	.	0	0	0	k	g		
HEX	54	20	20	20	20	20	20	20	20	30	2C	30	30	30	6B	67	0D	0A
SEQ.	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71
ASCII	U	/	P									2	5	/	k	g		
HEX	55	2F	50	20	20	20	20	20	20	30	2C	32	35	2F	6B	67	0D	0A
SEQ.	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89
ASCII	T	/	P												1	4		
HEX	55	2F	50	20	20	20	20	20	20	20	20	20	20	20	31	34	0D	0A
SEQ.	90	91																
ASCII																		
HEX	0D	0A																
SEQ.	92	93																
ASCII																		
HEX	0D	0A																
SEQ.	94	95																
ASCII																		
HEX	0D	0A																

18 bytes for each row (include ending bytes <CR><LF>); <CR>=0x0D <LF>=0x0A

Total: 96 bytes

[+] Quantity totalisation/accumulation format for pricing scale

SEQ.	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
ASCII	N	O	.											0	0	2		
HEX	4E	4F	2C	20	20	20	20	20	20	20	20	20	20	30	30	32	0D	0A
SEQ.	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
ASCII	Q	T	Y										3	p	c	s		
HEX	51	54	59	20	20	20	20	20	20	30	2C	35	33	70	63	73	0D	0A
SEQ.	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53
ASCII	U	/	P								2	5	/	p	c	s		
HEX	55	2F	50	20	20	20	20	20	20	30	32	35	2F	70	63	73	0D	0A
SEQ.	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71
ASCII	T	/	P									2	5	/	k	g		
HEX	54	2F	50	20	20	20	20	20	20	20	20	32	35	2F	6B	67	0D	0A
SEQ.	72	73																
ASCII																		
HEX	0D	0A																
SEQ.	74	75																
ASCII																		
HEX	0D	0A																
SEQ.	76	77																
ASCII																		
HEX	0D	0A																

18 bytes for each row (include ending bytes <CR><LF>).

Total: 78bytes

[MC] Memory Clear Format

SEQ.	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
ASCII						-									6	0		
HEX	20	20	20	20	20	20	20	20	20	20	20	20	20	20	36	30	0D	0A
SEQ.	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
ASCII	T	O	T	A	L		N	U	M	B	E	R		0	0	3		
HEX	54	4F	54	41	4C	20	4E	55	4D	42	45	52	20	30	30	33	0D	0A
SEQ.	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53
ASCII	A	M	O	U	N	T								2	0	0		
HEX	41	4D	4F	55	4E	54	20	20	20	20	20	20	20	32	30	30	0D	0A
SEQ.	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71
ASCII	P	A	Y											5	0	0		
HEX	50	41	59	20	20	20	20	20	20	20	20	20	20	35	30	30	0D	0A
SEQ.	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89
ASCII	C	H	A	N	G	E								3	0	0		
HEX	43	48	41	4E	47	45	20	20	20	20	20	20	20	33	30	30	0D	0A
SEQ.	90	91																
ASCII																		
HEX	0D	0A																
SEQ.	92	93																
ASCII																		
HEX	0D	0A																
SEQ.	94	95																
ASCII																		
HEX	0D	0A																

18 bytes for each row (include ending bytes <CR><LF>). Total: 96 bytes

Memory clear data content depend on cancel item, pay, change has other formats:

With cancel, without change: Row 1,2,3 total 60 bytes.

Without cancel, with change: Row 2,3,4,5 total 78 bytes.

Without cancel, without change: Row 2,3 total 42 bytes.

8.3 Input data type: EXCELL Weighing [M+] key data (full mode)

Use AWH3 15 or 12 key series. Weighing scale firmware version: 02018XXX series.

[M+] Complete format

SEQ.	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
ASCII	T	I	C	K	E	T		N	O	.	0	0	0	2			
HEX	54	49	43	4B	45	54	20	4E	4F	2E	30	30	30	32	0D	0A	
SEQ.	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
ASCII	G								0	.	0	5	0	k	g		
HEX	47	20	20	20	20	20	20	20	30	2E	30	35	30	6B	67	0D	0A
SEQ.	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49
ASCII	T								0	.	0	0	0	k	g		
HEX	54	20	20	20	20	20	20	20	30	2E	30	30	30	6B	67	0D	0A
SEQ.	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66
ASCII	P	T							0	.	0	0	0	k	g		
HEX	50	54	20	20	20	20	20	20	30	2E	30	30	30	6B	67	0D	0A
SEQ.	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83
ASCII	N								0	.	0	5	0	k	g		
HEX	4E	20	20	20	20	20	20	20	30	2E	30	35	30	6B	67	0D	0A
SEQ.	84	85															
ASCII																	
HEX	0D	0A															
SEQ.	86	87															
ASCII																	
HEX	0D	0A															
SEQ.	88	89															
ASCII																	
HEX	0D	0A															

Row.1 16 bytes (include ending bytes <CR><LF>).

Row.2~5 17 bytes (include ending bytes <CR><LF>). Total: 90 bytes

[M+] twice Memory Clear Format

SEQ.	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14				
ASCII	T	O	T	A	L			N	U	M	B	E	R						
HEX	54	4F	54	41	4C	20	20	4E	55	4D	42	45	52	0D	0A				
SEQ.	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	
ASCII	O	F		T	I	C	K	E	T	S			0	0	3				
HEX	4F	46	20	54	49	43	48	45	54	53	20	20	30	30	30	33	0D	0A	
SEQ.	33	34	35	36	37	38	39												
ASCII	T	O	T	A	L														
HEX	41	4D	4F	55	4E	0D	0A												
SEQ.	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58
ASCII	N	E	T								3	.	0	0	0	k	G		
HEX	4E	45	4F	20	20	20	20	20	20	20	33	2E	30	30	30	6B	67	0D	0A
SEQ.	59	60																	
ASCII																			
HEX	0D	0A																	
SEQ.	61	62																	
ASCII																			
HEX	0D	0A																	
SEQ.	63	64																	
ASCII																			
HEX	0D	0A																	

Total: 65bytes

8.4 Input data type: EXCELL Counting [M+] key data (Fixed format 2)

Use ALH3 and press [M+] to transmit fixed format 2.

Counting scale firmware version: 03004XXX series.

[M+] Format

SEQ.	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		
ASCII	I	D	:	0	0	0	0												
HEX	49	44	3A	30	30	30	30	20	20	20	20	20	20	20	20	0D	0A		
SEQ.	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
ASCII	I	T	E	M	:	N	T	U	S		5	M	M						
HEX	49	54	45	4D	3A	4E	54	55	53	20	35	4D	4D	20	20	20	20	0D	0A
SEQ.	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	
ASCII	N	O	.									2							
HEX	4E	4F	2E	20	20	20	20	20	20	20	20	32	20	20	20	20	0D	0A	
SEQ.	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	
ASCII	G			+				5	0	0	.	0				g			
HEX	47	20	20	2B	20	20	20	35	30	30	2E	30	20	20	20	67	0D	0A	
SEQ.	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	
ASCII	N			+				5	0	0	.	0				g			
HEX	4E	20	20	2B	20	20	20	35	30	30	2E	30	20	20	20	67	0D	0A	
SEQ.	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	
ASCII	T			+						0	.	0				g			
HEX	54	20	20	2B	20	20	20	20	20	30	2E	30	20	20	20	67	0D	0A	
SEQ.	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	
ASCII	P	T		+						0	.	0				g			
HEX	50	54	20	2B	20	20	20	20	20	30	2E	30	20	20	20	67	0D	0A	
SEQ.	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	
ASCII	U	/	W			9	.	1	1	2	3	7				g			
HEX	55	2F	57	20	20	39	2E	31	31	32	33	37	20	20	20	67	0D	0A	
SEQ.	144	145	146	147	148	149	159	151	152	153	154	155	156	157	158	159	160	161	
ASCII	Q									5	4	9		p	c	s			
HEX	51	20	20	20	20	20	20	20	20	35	34	39	20	70	63	73	0D	0A	
SEQ.	162	163																	
ASCII																			
HEX	0D	0A																	
SEQ.	164	165																	
ASCII																			
HEX	0D	0A																	

Row.1 17 bytes (include ending bytes <CR><LF>).

Row.2 19 bytes (include ending bytes <CR><LF>).

Row.3~9 18 bytes (include ending bytes <CR><LF>).

Total: 166 bytes

[MC] Memory Clear Format

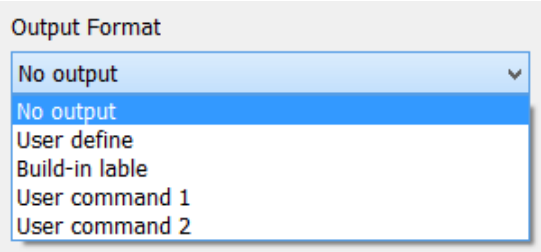
SEQ.	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
ASCII	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=		
HEX	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	3D	0D	0A
SEQ.	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
ASCII	T	/	N									2						
HEX	54	2F	4E	20	20	20	20	20	20	20	20	32	20	20	20	20	0D	0A
SEQ.	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53
ASCII	T	/	W				1	0	0	0	.	0				g		
HEX	54	2F	57	20	20	20	31	30	30	30	2E	30	20	20	20	67	0D	0A
SEQ.	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71
ASCII	T	/	Q							5	4	9		p	c	s		
HEX	54	2F	51	20	20	20	20	20	20	35	34	39	20	70	63	73	0D	0A
SEQ.	72	73																
ASCII																		
HEX	0D	0A																
SEQ.	74	75																
ASCII																		
HEX	0D	0A																

Total: 76 bytes

8.5 User defined input data

Function box is very useful to receive any fixed format data. User can define rules to analyze for variables to get useful values.

9 Output Format

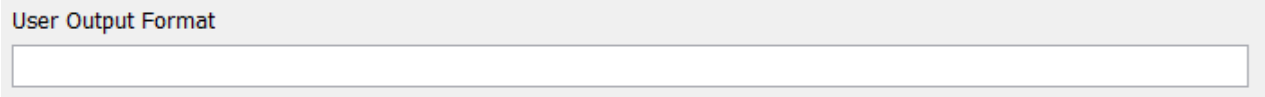


This is for Function Box OUT port.

9.1 No output

No output from OUT port.

9.2 User defined output



- Format definition length: 64 bytes
- End char: 0x00

Function Box provides an easy OUT format function. This function can key in maximum 64 bytes for format definition (excluding <CR><LF>). Function Box add <CR><LF> at last for each output data.

Example: Format definition:

>>@1,@2,@3,@4,@5,@C,@6,@7 OK

Input Data Type selects <EXCELL Weighing Price Counting stable data>

If IN port receive data: ST,GS,+ 1.234 kg

Then OUT port output:

>> 15,15/10/27,15:17:00,ST,GS,+,1.234,kg OK<CR><LF>

Note:

@1: System sequence number

@2: System date

@3: System time

@4: Weight status

@5: Weight type

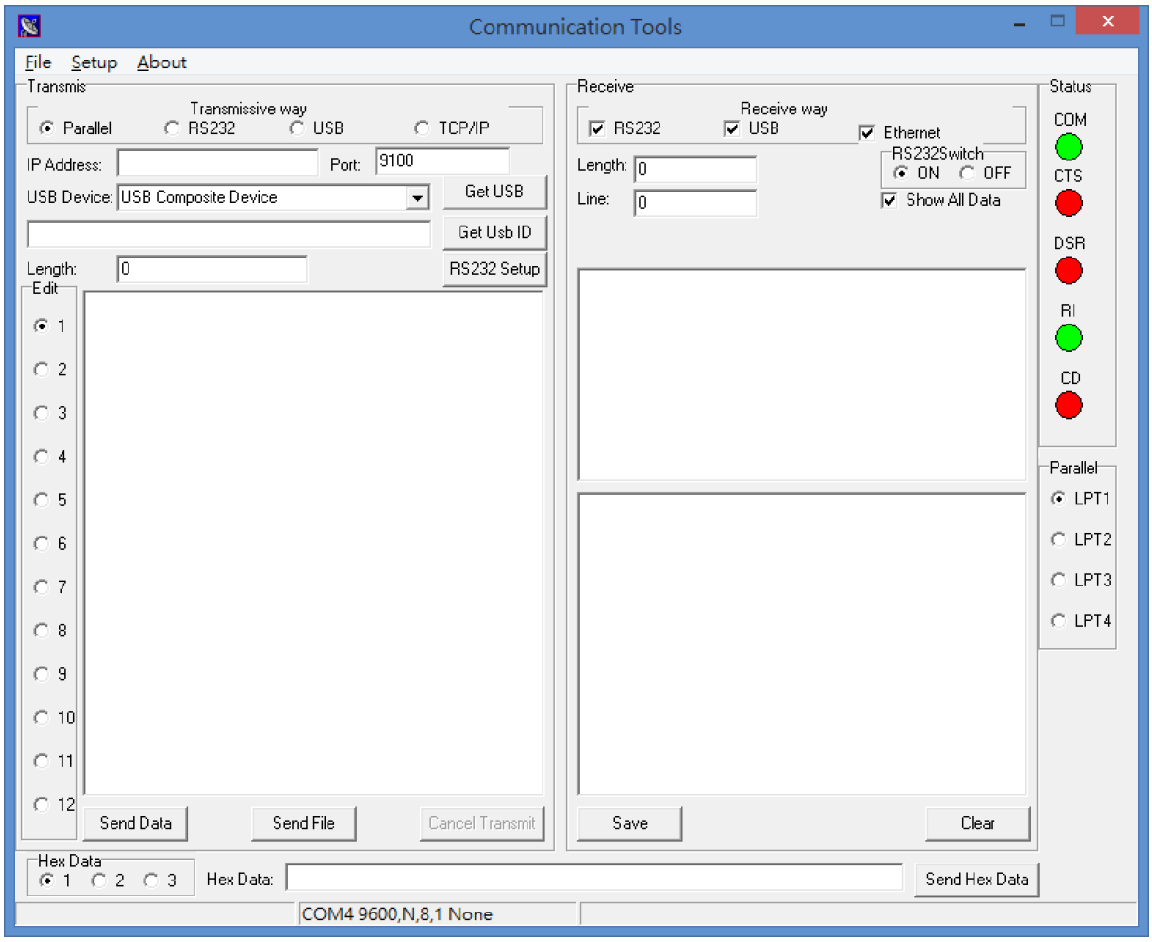
@C: Weight + - symbol

@6: Weight

@7: Weight unit

About variables please refer Appendix 1.

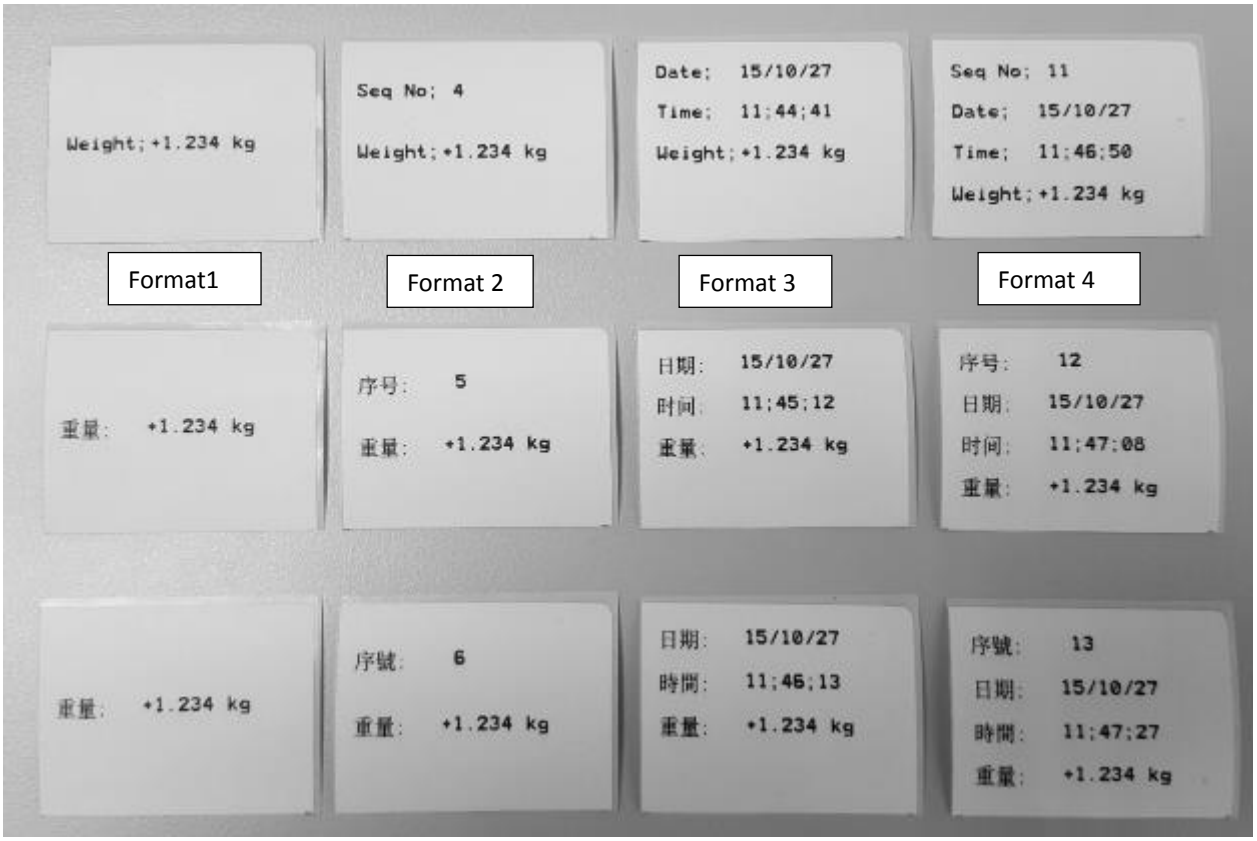
There are many free communication tools to view the output from the RS232 such as CommTool.


Communication Tools
File Setup About
Transmis
Transmissive way
Parallel RS232 USB TCP/IP
IP Address:
Port: 9100
USB Device: USB Composite Device
Get USB
Get Usb ID
Length: 0
RS232 Setup
Edit
1 2 3 4 5 6 7 8 9 10 11 12
Send Data
Send File
Cancel Transmit
Receive
Receive way
RS232 USB Ethernet
Length: 0
Line: 0
RS232Switch
ON OFF
Show All Data
Save
Clear
Status
COM
CTS
DSR
RI
CD
Parallel
LPT1 LPT2 LPT3 LPT4
Hex Data
1 2 3
Hex Data:
Send Hex Data
COM4 9600,N,8,1 None

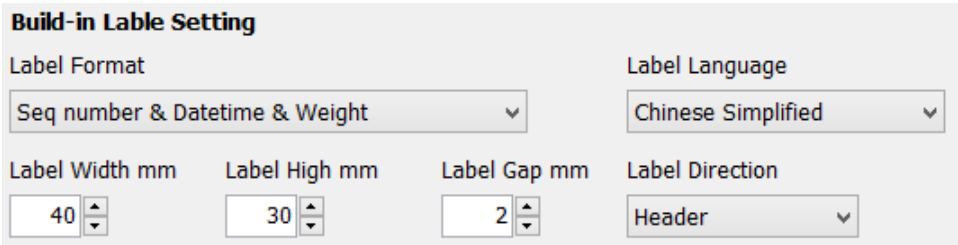
9.3 Built-in label

9.3.1 Use JINGJIE label printer

9.3.2 There are 4 kind of weighing scale label format built-in and available in English, Traditional Chinese, Simplified Chinese. Label width 40mm, high 30mm.



Some settings for built-in label:



9.4 [FBP010] User Command Define 1,2

Function Box provides 2 user defined command output formats. Each format can have maximum of 4096 bytes including <CR><LF> in command definition.

For example, it can key in label printer commands with Function Box variables. And OUT port connect to label printer. Than it can print label. Therefore, it can support any brand label printer depend on what printer commands.

Example: Use TSC TTP225 to print English format 4. User commands content:

```
CLS
ERASE 0,0,456,320
SIZE 58 mm, 47 mm
GAP 3 mm, 0 mm
DIRECTION 0
REFERENCE 0,0
DENSITY 6
TEXT 20,30,"2",0,1,1,"Seq:"
TEXT 20,80,"2",0,1,1,"Date:"
TEXT 20,130,"2",0,1,1,"Time:"
TEXT 20,180,"2",0,1,1,"Weight:"
TEXT 120,30,"2",0,1,1,"@1"
TEXT 120,80,"2",0,1,1,"@2"
TEXT 120,130,"2",0,1,1,"@3"
TEXT 120,180,"2",0,1,1,"@6@7"
PRINT 1,1
EOP
```

Note:

@1: System sequence number

@2: System date

@3: System time

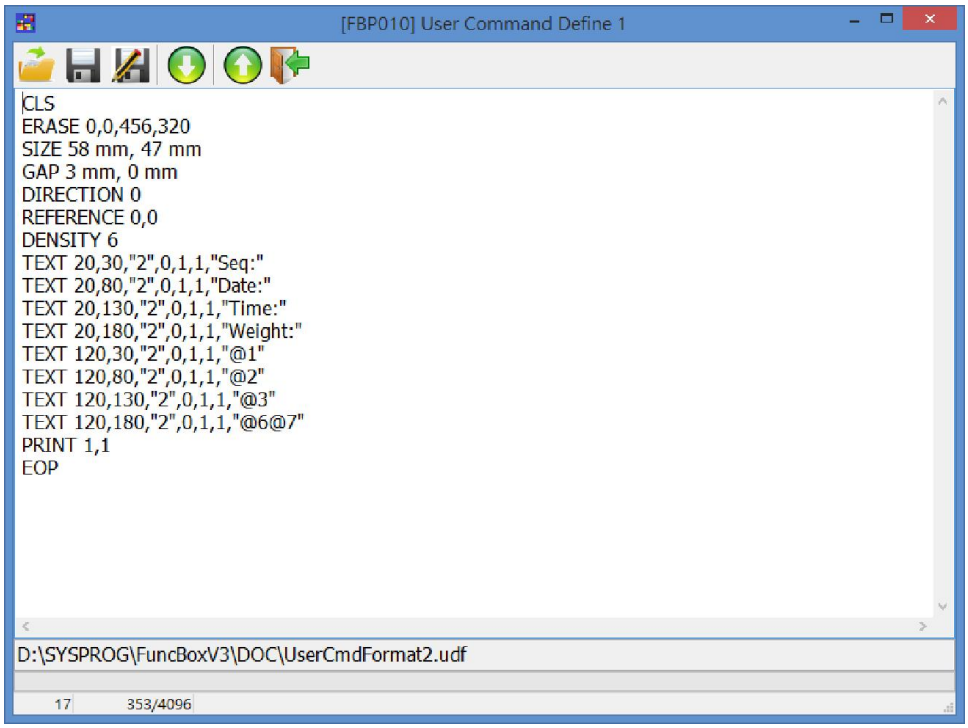
@6: Weight

@7: Weight unit

User command 1,2 can via[FBP010] to define.

Tool→Command define 1 or 2

Caution: Connect to SET port before this operation.



 Load existing command file. File name and path will display on bottom area.

 Save. If no command file name and path, that means new file. Save dialog will be showing. Default extension file name is .udf

 Save as

 Download user command from Function Box.

 Upload user command to Function Box.

 Exit

9.5 Additional for user command key in

9.5.1 Variables syntax

Syntax: @x

x: varied from 1~9 and a ~ z. Please refer Appendix 1.

To output @ please key in @@

9.5.2 Key in HEX characters

Syntax:|XX

|: HEX 7C

XX: 2 digits hex code. Caps sensitive.

For example, output hex code 1B, please key in |1B

If XX not legal hex code, then no output.

9.5.3 Automatic switching user command

There are two user command content for user select. If select EXCELL scale [M+] data type for input and user command 1 for output, when Function Box received [M+] data that use user command 1 to output. When received [MC] data, it will automatically switch to use user command 2 to output.

9.6 Built-in save data to USB flash drive.

Provide save data to USB flash drive function when select <Built-in label> of Output Format.

9.6.1 Built-in save data to USB flash drive format:

	A	B	C	D	E	F
1	Date	Time	Weight	Unit		
2	2015/12/25	15:12:06	1.234	kg	4	
3	2015/12/25	15:12:14	1.234	kg	5	
4	2015/12/25	15:12:16	1.234	kg	6	
5	2015/12/25	15:12:17	1.234	kg	7	
6	2015/12/25	15:12:18	1.234	kg	8	
7	2015/12/25	15:12:20	1.234	kg	9	
8	2015/12/25	15:12:21	1.234	kg	10	
9	2015/12/25	15:12:22	1.234	kg	11	
10	2015/12/25	15:12:23	1.234	kg	12	
11	2015/12/25	15:12:25	1.234	kg	13	
12	2015/12/25	15:12:26	1.234	kg	14	
13	2015/12/25	15:12:27	1.234	kg	15	
14	2015/12/25	15:12:28	1.234	kg	16	
15	2015/12/25	15:12:30	1.234	kg	17	
16	2015/12/25	15:12:31	1.234	kg	18	
17	2015/12/25	15:12:32	1.234	kg	19	
18	2015/12/25	15:12:34	1.234	kg	20	
19	2015/12/25	15:12:35	1.234	kg	21	
20	2015/12/25	15:12:36	1.234	kg	22	
21						

WT2015-12-25

就緒 100%

Column E is System sequence number.

9.6.2 File name format

File name: WTYYYY-DD-MM.CSV (fixed length 16bytes)

WT: Fixed.

YYYY-MM-DD: File created date. 4 digits year of A.D. 2 digits month and 2 digits day. Date format depend on Date Format Setting.

9.6.3 File save

Save in WDATA folder under root. A file per day.

9.7 User Defined Save Format

User can define a save format to meet various needs. The definition length is 4096(bytes).

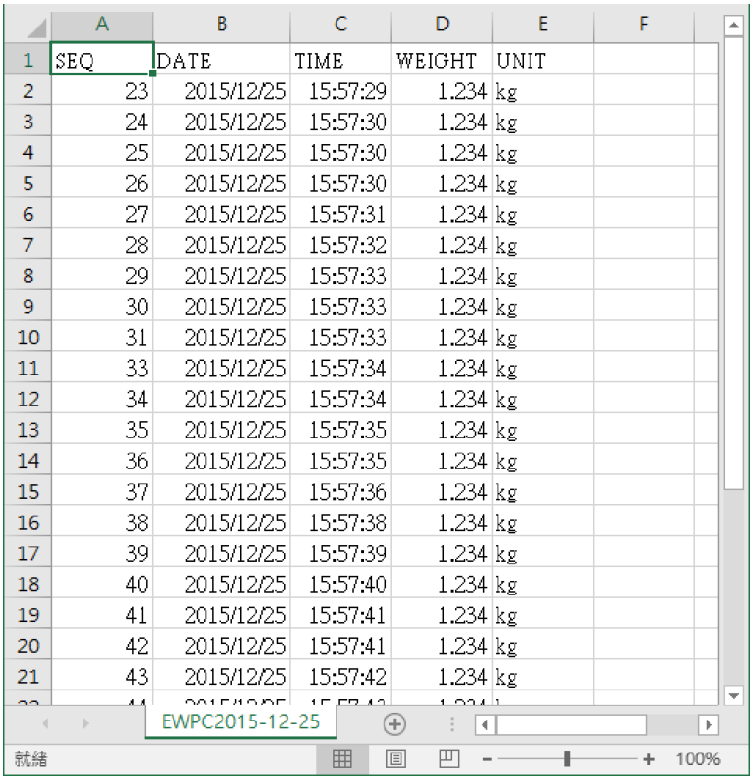
Format:

Row.1: File extension name. Etc. TXT, CSV...., maximum length 10 characters.

Row.2: Title. Write in first row of file.

Row.3~last: Content.

Example, save content:



	A	B	C	D	E	F
1	SEQ	DATE	TIME	WEIGHT	UNIT	
2	23	2015/12/25	15:57:29	1.234	kg	
3	24	2015/12/25	15:57:30	1.234	kg	
4	25	2015/12/25	15:57:30	1.234	kg	
5	26	2015/12/25	15:57:30	1.234	kg	
6	27	2015/12/25	15:57:31	1.234	kg	
7	28	2015/12/25	15:57:32	1.234	kg	
8	29	2015/12/25	15:57:33	1.234	kg	
9	30	2015/12/25	15:57:33	1.234	kg	
10	31	2015/12/25	15:57:33	1.234	kg	
11	33	2015/12/25	15:57:34	1.234	kg	
12	34	2015/12/25	15:57:34	1.234	kg	
13	35	2015/12/25	15:57:35	1.234	kg	
14	36	2015/12/25	15:57:35	1.234	kg	
15	37	2015/12/25	15:57:36	1.234	kg	
16	38	2015/12/25	15:57:38	1.234	kg	
17	39	2015/12/25	15:57:39	1.234	kg	
18	40	2015/12/25	15:57:40	1.234	kg	
19	41	2015/12/25	15:57:41	1.234	kg	
20	42	2015/12/25	15:57:41	1.234	kg	
21	43	2015/12/25	15:57:42	1.234	kg	

EWPC2015-12-25

就緒 100%

Save format definition:

[Row.1]CSV

[Row.2]SEQ,DATE,TIME,WEIGHT,UNIT

[Row.3]@1,@2,@3,@6,@7

[Row.4] empty

Note:

@1: System sequence number

@2: System date

@3: System time

@6: Weight

@7: Weight unit

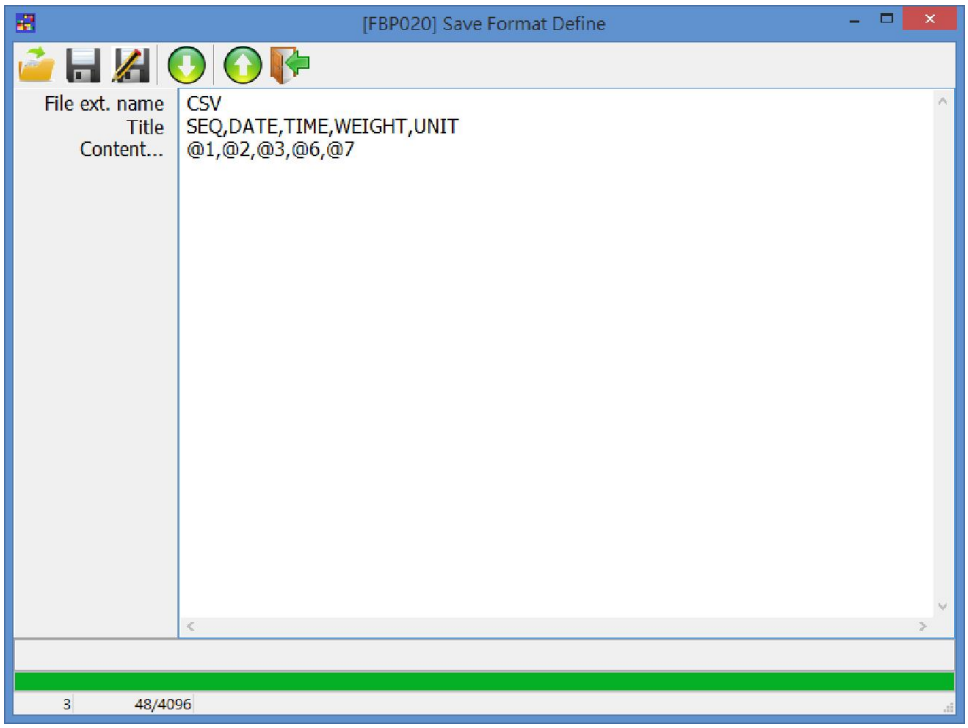
File name format is similar as built-in with the following differences:

- File name does not start with WT. It starts with 4 characters depending on the selected Input Data Type ad Output Format. Please refer Appendix 2.
- File extension name is defined in Row.1

Via [FBP020] to define User Defined Save Format

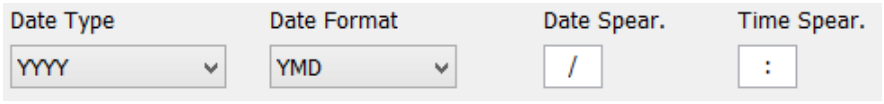
Tool→Save Format Define

Caution: Connect to SET port before this operation.



Follow the same steps as User Command Define.

10 Date Type and Format



RTC built-in, settings:

10.1 Date Type

- YY: A.D. year 2 digits.
- YYYY: A.D. year 4 digits.
- ROC YYY: Taiwan year 3 digits.
- Muslim YYYY: Muslim year 4 digits.

10.2 Date Format

- YMD
- MDY
- DMY

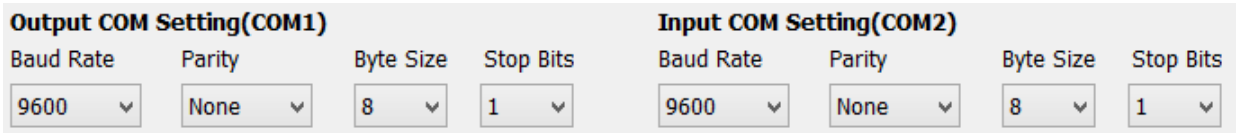
10.3 Date Separator

One character, default /.

10.4 Time Separator

One character, default : .

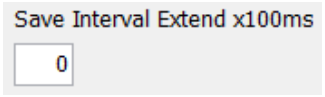
11 Output and Input port setting



Function Box is simplex RS232 interface both IN and OUT. Communication settings:

- Baud Rate: 4800, 9600, 14400, 19200, 115200
- Parity: None, Odd, Even
- Byte Size: 8, 9
- Stop Bits: 1, 1.5, 2

12 Save Interval Extend x100ms



Millisecond delay between each save (from the ending time of previous save to starting time of next save). Please see grey background:

Action	Save data		Idle	OUT data		Save data		Idle	OUT data		Save data	
Time	Start	End		Start	End	Start	End		Start	End	Start	End

Due to USB flash drive performance, recommend extend to 1 second for stable operation. Enter 5 for this setting. Function Box system default is 500 ms. Therefore, enter 5 means 5 x 100 ms + 500 ms (default) = 1000 ms (1 second).

Example, set 2 seconds save interval:

Enter 15

500ms (system default) + 15 x 100ms = 500ms + 1500ms = 2000ms = 2 seconds.

13 Function Box Variables

Function Box provides variables to use for output data. About variable syntax, please refer Variables syntax.

Total 35 variables to use, @1~@9, @A~@Z(Caps sensitive).

There are 2 kind of variable type. One is system variable, the other is user defined.

When to use please refer Appendix 1.

13.1 System Variables(built-in)

@1~@3 are fixed for system sequence number, system date and system time.

The rest of a total of 16 variables, @4~@9, @A~@J(Caps sensitive). Depend on the selected Input Data Type to analyze.

For example, the selected Input Data Type is <EXCELL Weighing Price Counting stable data>, and input data match the selection. The variables can get correct value:

@4 Weight status

@5 Weight type

@6 Weight(gross)/ pcs

@7 Weight unit or “PCS”

@C Weight + - symbol

13.2 [FBP030] User Defined Variable

Select user defined Input Data Type. Total of 32 user defined variables, @4~@9, @A~@Z (Caps sensitive).

How to define user defined variable:

1. Set catch start SEQ. number.

   SEQ. number starting from 0 in receive data.

2. Set catch length.

   For example, received data:

SEQ.	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
ASCII	N	O	.						A	B		C	D					
HEX	4E	4F	2C	20	20	20	20	20	41	42	20	43	44	20	20	20	0D	0A

   Catch starting form6.

   Length is9.

   Then catchresult:

SEQ.	0	1	2	3	4	5	6	7	9
ASCII			A	B		C	D		
HEX	20	20	41	42	20	43	44	20	20

3. Reverse

   Reverse catch result.

   Follow previous,reverse result:

SEQ.	0	1	2	3	4	5	6	7	9
ASCII			D	C		B	A		
HEX	20	20	44	43	20	42	41	20	20

4. Align

Remove continuous space (HEX 20) and shift which direction select. And replace space (HEX 20) in another direction.There are 3 kinds of align settings, left, right and none.

Follow previous, left align result:

SEQ.	0	1	2	3	4	5	6	7	9
ASCII	D	C		B	A				
HEX	44	43	20	42	41	20	20	20	20

If right align result:

SEQ.	0	1	2	3	4	5	6	7	9
ASCII					D	C		B	A
HEX	20	20	20	20	44	43	20	42	41

5. Space replace

Enter any one ASCII printable char to replace left and right continuousspace (HEX 20). Default HEX 20.

Follow previous reverse result:

位址	0	1	2	3	4	5	6	7	9
ASCII			D	C		B	A		
HEX	20	20	44	43	20	42	41	20	20

If set character # to replace:

位址	0	1	2	3	4	5	6	7	9
ASCII	#	#	D	C		B	A	#	#
HEX	23	23	44	43	20	42	41	23	23

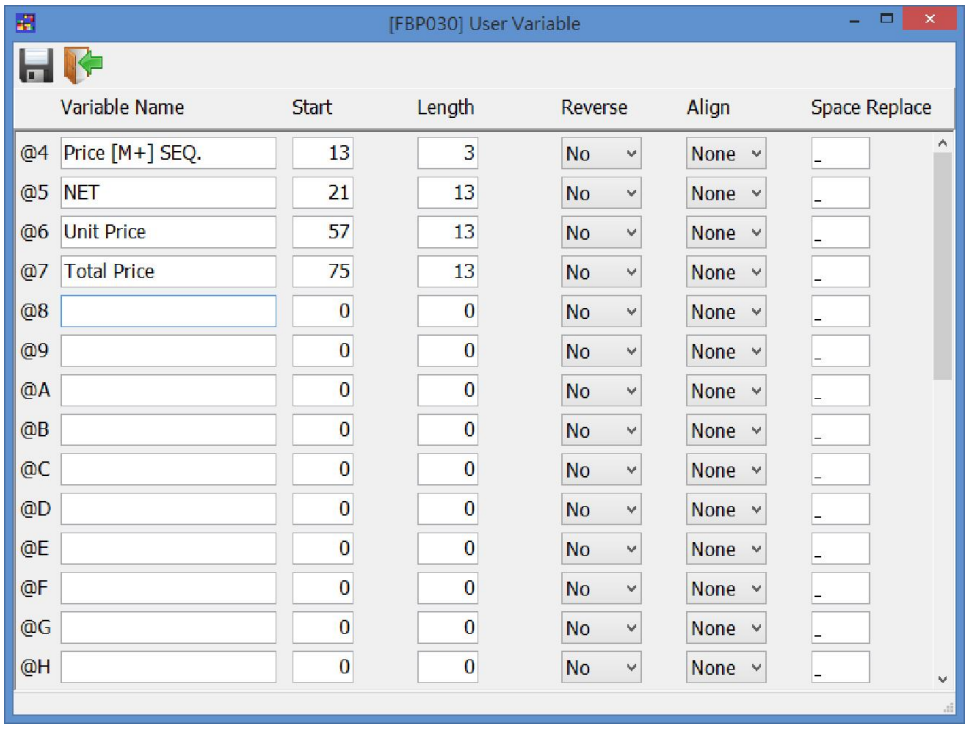
Catch data style processing priorities: Reverse → Align → Space replace.

Please enter note and description into the Variable Name field.

Caution: These notes and descriptions only saved in FBCT.

User defined variables are defined through [FBP030]

Tool→ User variable



	Variable Name	Start	Length	Reverse	Align	Space Replace
@4	Price [M+] SEQ.	13	3	No	None	_
@5	NET	21	13	No	None	_
@6	Unit Price	57	13	No	None	_
@7	Total Price	75	13	No	None	_
@8		0	0	No	None	_
@9		0	0	No	None	_
@A		0	0	No	None	_
@B		0	0	No	None	_
@C		0	0	No	None	_
@D		0	0	No	None	_
@E		0	0	No	None	_
@F		0	0	No	None	_
@G		0	0	No	None	_
@H		0	0	No	None	_

Space Replace field show underline for clearing to display space.

 Save.

 Exit.

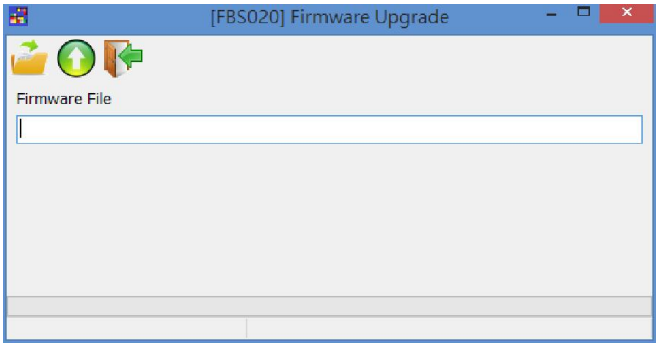
Please refer <u>Appendix 1</u>.

14 [FBS020] Firmware upgrade

Hold press RST button and switching on the power, status lights display orange, indicates it is in firmware upgrade mode.

System→Firmware upgrade.

Caution: Connect to SET port before this operation.



 Load firmware file

 Upload firmware

 Exit

15 Upload Settings

To make any change in [FBM000] main form or [FBP030] user defined variables, please upload those setting changes to make them effective.

Press  to upload settings (not include User Command Define1,2 and User Defined Save Format).

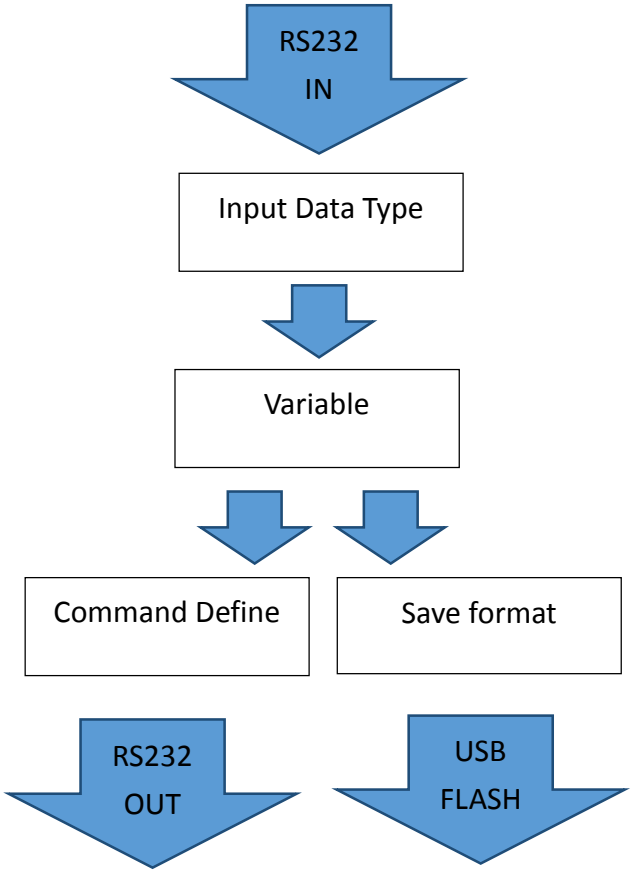
16 Function Box Specification

Power	
Input	5V 1A
Connecter	Micro USB
Communication Port	
Data Input	RS232 DB9Male * 1
Data Output	RS232 DB9 Male * 1
Communication settings	Baud Rate: 4800/9600/14400/19200/115200 Parity: None/Odd/Even Byte Size: 8/9 Stop Bits: 1/1.5/2 Communication Mode: Simplex
Configure Port	Micro USB * 1
Communication settings	Baud Rate: 115200 Parity: None Byte Size: 8 Stop Bits: 1 Communication Mode: Half-Duplex
USB Flash drive	USB TYPE-A * 1
Display	
Status LED * 1	Red/Green/Orange
USB Flash File System	FAT/FAT32, maximum size 8GB Data save frequency (highest): 1/sec. 452bytes per once.
Work Temperature	0℃ ~ 40℃
Dimension (mm)	W: 91.30/H: 44.80 / D: 110.00
Additional	
IN/OUT performance	"Continuous transmission" means the receiving data interval time is less than one second; otherwise, it is “Discontinuous transmission”. The continuous transmission rate depends on the length of the content. The longer the length is, the more time is needed. If enable USB flash drive save function, system limited saving interval times for 500 milliseconds.

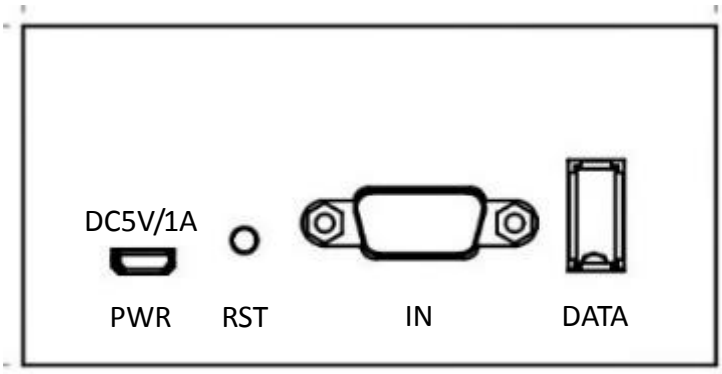
CAUTION

- USB flash drive
  - USB flash drive is not under EXCELL warranty coverage.
  - Don’t unplug USB flash drive during save process.
  - EXCELL assume no responsibility for damage to or loss of data for whatever reason even within the warranty period.

17 Function Box Diagram



18 Function Box Interface



PWR: Power in

Micro USB interface. DC 5V 1.0A

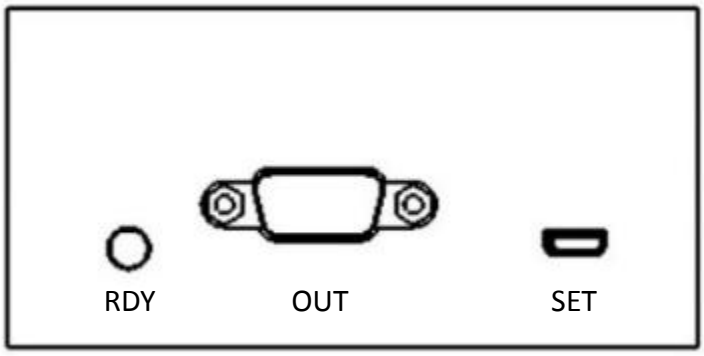
It can use smart mobile phone power adapter which output DC 5V/1A.

RST: Reset to factory default settings.

IN: Data input

DB9 Male

DATA: USB flash drive



RDY: Status LED

Please refer Status LED.

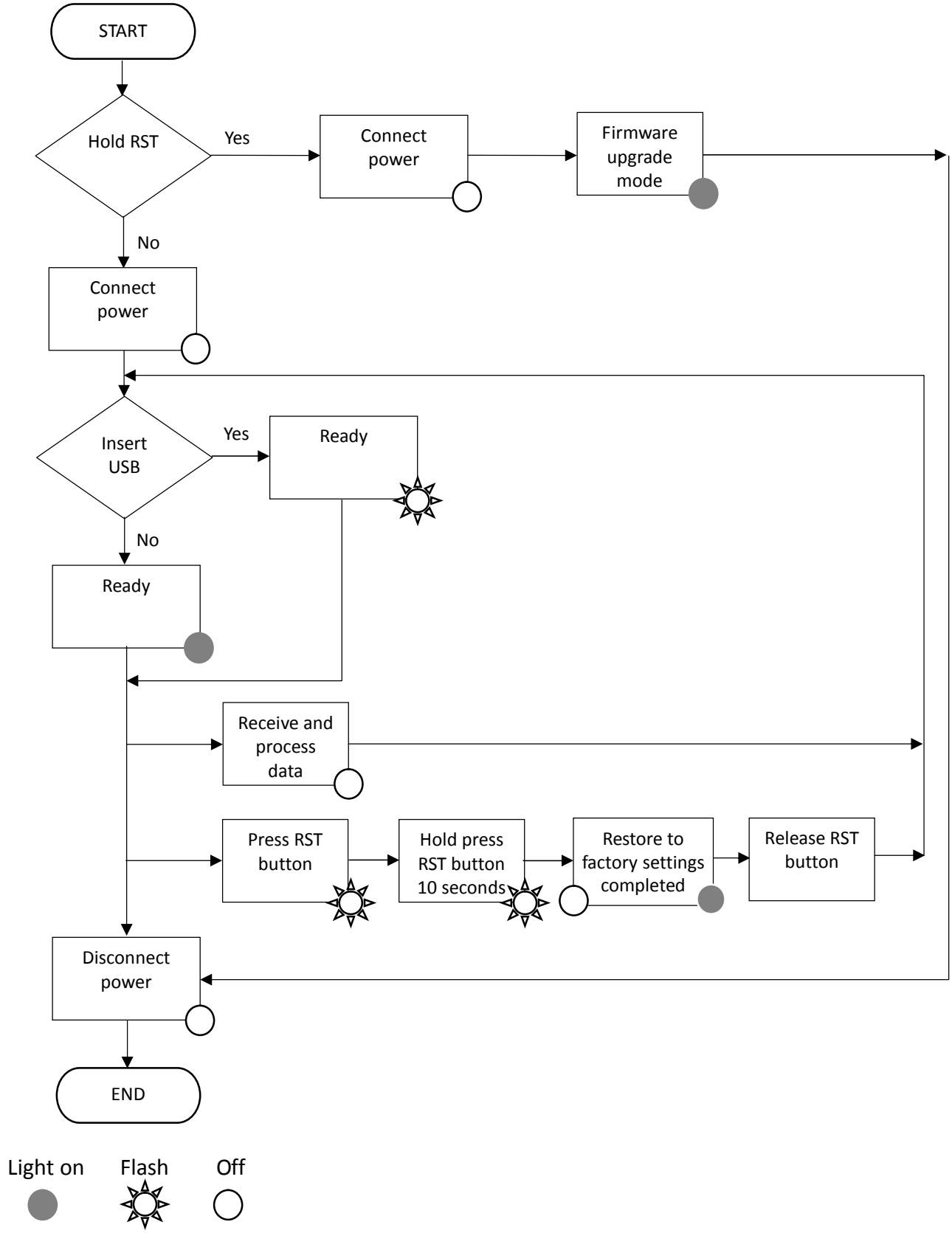
OUT: Data output

DB9 Male

SET: Configure port

Micro USB interface. Need to install PL2303 driver on PC. Configure Function Box with FBCT via this port.

19 Status LED



20 Function Box Reset toFactory Default settings

Hold press RST button 10 seconds, Function Box will reset all settings to factory default.

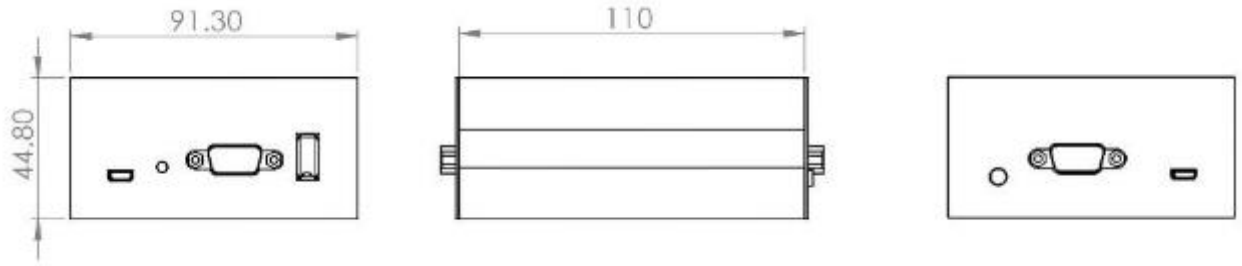
Factory default settings:

Input Data Type	EXCELL Weighing Price Counting stable data
Output Format	Built-in label
Built-in Label Setting	Sequence number & Date time &Weight
Built-in Label Language	Chinese Simplified
Built-in Label Width mm	40
Built-in Label High mm	30
Built-in Label Gap mm	2
Built-in Label Direction	Header
Date Type	YYYY
Date Format	YMD
Date Separator	/
Time Separator	:
Output COM1 Setting InputCOM2 setting	9600/None/8/1
User Output Format	Empty
User Command Define 1,2	Empty
User Defined Save Format	Empty
User Defined Variable	Empty

21 Function Box Appearance

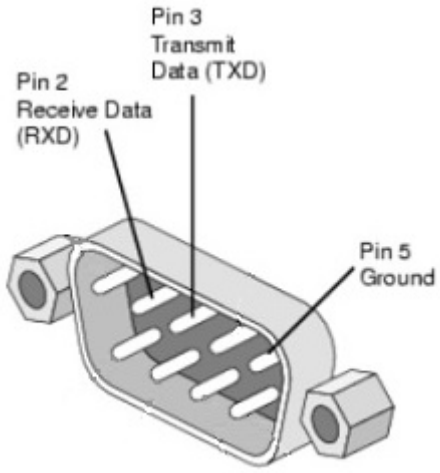
Aluminum case, black color.

21.1 Dimension



(mm)

21.2 RS232 PIN



21.3 Appearance

Output side

Input side

Appendix 1. Function Box Variables

Variable: First character fixed with @. Second character is variable code. Type @@ to output @.

1.1 System Variables

		EXCELL Weighing			EXCELL Counting			EXCELL Price			Variable length		
Code	Name	ST *1	CU *2	M+ *3	ST	CU	M+	ST	CU	M+	Max Len	Fix Len	Note
@1	System SEQ	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	6	6	
@2	System Date	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	11	8~10	YY/MM/DD~YYYY/MM/DD
@3	System Time	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	9	8	
@4	Weight Status	Yes	Yes		Yes	Yes		Yes	Yes		2	2	
@5	Weight Type	Yes	Yes		Yes	Yes		Yes	Yes		2	2	
@6	Weight(Gross)	Yes	Yes	Gross	Yes	Yes	Gross	Yes	Yes		8	None	
@7	Weight Unit Maybe'PCS'	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	4	None	
@8	Net or Pcs			Net			Net			Yes	8	None	
@9	Unit price									Yes	8	None	
@A	Calculate price unit Maybe 'PCS'									Yes	8	None	
@B	Total price									Yes	8	None	
@C	Weight + or -	Yes	Yes		Yes	Yes		Yes	Yes		1	1	+ or -
@D	M+ SEQ			Yes			Yes			Yes	6	None	
@E	QTY						Yes				6	None	
@F	Tare			Yes			Yes			Yes	8	None	
@G	Pretare			Yes			Yes				8	None	
@H	Item No.						Yes				12	12	
@I	Item name						Yes				12	12	
@J	Unit weight						Yes				8	None	
@K	Sum SEQ			Yes			Yes			Yes	6	None	[M+]
@L	Sum NET			Yes			Yes				8	None	[M+]
@M	Sum QTY						Yes				6	None	[M+]
@N	Cancel price									Yes	8	None	[M+]
@O	Sum price									Yes	8	None	[M+]
@P	Pay									Yes	8	None	[M+]
@Q	Change									Yes	8	None	[M+]

*1 ST: Stable output

*2 CU: Continue output

*3 M+: Accumulated key

1.2 User Variables

Code	Name	Max Len	Fix Len	Note
@1	System SEQ	6	6	
@2	System Date	11	8~10	YY/MM/DD~YYYY/MM/DD
@3	System Time	9	8	
@4~@9 @A~@Z	User define	256	None	

Appendix 2. Function Relation

2.1 Input Data Type & Output Format

	Output Format				
Input Data Type	0: No output	1: User define	2: Built-in label	3: User command 1	4: User command 2
0:EXCELL Weighing Price Counting stable data	Available	Available	Available	Available	Available
1:EXCELL Weighing Price Counting continue data	Available	Available		Available	Available
2:EXCELL Price M+ key data	Available	Available		Available	Available
3:EXCELL Weighing M+ key data	Available	Available		Available	Available
4:EXCELL Counting M+ key data	Available	Available		Available	Available
5: User define discontinuous data	Available	Available		Available	Available
6:User define continue data	Available	Available		Available	Available

2.2 Built-in label

	Output Format				
Input Data Type	0: No output	1: User define	2: Built-in label	3: User command 1	4: User command 2
0:EXCELL Weighing Price Counting stable data			Available		
1:EXCELL Weighing Price Counting continue data					
2:EXCELL Price M+ key data					
3:EXCELL Weighing M+ key data					
4:EXCELL Counting M+ key data					
5: User define discontinuous data					
6:User define continue data					

2.3 Built-in save data format to USB flash drive

	Output Format				
Input Data Type	0: No output	1: User define	2: Built-in label	3: User command 1	4: User command 2
0:EXCELL Weighing Price Counting stable data			Available File name head: WT		
1:EXCELL Weighing Price Counting continue data					
2:EXCELL Price M+ key data					
3:EXCELL Weighing M+ key data					
4:EXCELL Counting M+ key data					
5: User define discontinuous data					
6:User define continue data					

2.4 User defined save format

	Output Format				
Input Data Type	0: No output	1: User define	2: Built-in label	3: User command 1	4: User command 2
0:EXCELL Weighing Price Counting stable data				Available File name head:EWPC	Available File name head:EWPC
1:EXCELL Weighing Price Counting continue data				Available File name head:EWPC	Available File name head:EWPC
2:EXCELL Price M+ key data				Available File name head:EPKP	Available File name head:EPKP
3:EXCELL Weighing M+ key data				Available File name head:EPKW	Available File name head:EPKW
4:EXCELL Counting M+ key data				Available File name head:EPKC	Available File name head:EPKC
5: User define discontinuous data				Available File name head:UDFN	Available File name head:UDFN
6:User define continue data				Available File name head:UDFN	Available File name head:UDFN