E1005&E1006

Serial Port Command Instruction

Version：1

1.1 Preset Parameter

Barcode	Decode	Verification	Verification Transmission	Prefix/suffix Transmission	Mini/Max Length	ID
(EAN13 & UPC E)	√	√	√	X	13	A
EAN8	√	√	√	X	8	B
UPC A	√	√	√	X	12	C
CODABAR（NW-7）	√	-	√	-	4~70	E
CODE 39	√	-	√	-	3~50	F
CODE 93	√	√	√	X	1~80	G
INTERLEAVED	√	-	√	X	4~80	H
CODE 128	√	√	-	X	1~80	K

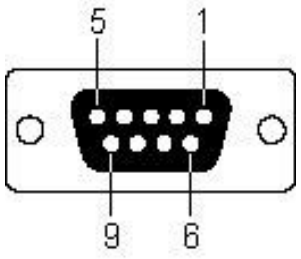
Notice：
1、 “√”: Data Enable by Default， “-”: Data Disable by Default;
“×”: Data do not exist of the barcode.

1.3.1 Interface of scanner engine CMOS

Nos	Name	Type	Description
1	NC	Null	Standby
2	VCC	DC	DC3.3V or DC5V±5%
3	GND	GND	GND
4	Rx	Rx	Serial Input Port TTL
5	Tx	Tx	Serial Output Port TTL
6	USB_D-	Input/Output	USB_D-Signal
7	USB_D+	Input/Output	USB_D+Signal
8	NC	Null	Standby
9	BPR	Output	Buzzer output signal
10	LED	Output	LED lighting; Output 150ms when decode successfully
11	NC	Null	Standby
12	TRIG	Input	Trigger to scan

1.3.2 Standard RS232 Interface (DB9)

Cable	Function
1	Trigger(Connect)
2	Rx
3	Tx
5	GND
9	DC 5V(Connect)

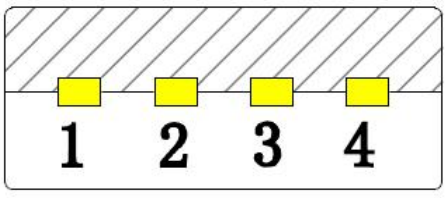


Pinout 1: When this pinout receive the low level 10ms, it will be equivalent to press the trigger to scan.(Chosen Function).

Pinout 6: Only work under the Trigger Mode: Every time it do not decode barcode after triggering, this pinout will output 100ms low level.(Added Service)

1.3.3 USB Interface

No.	Function
1	VCC
2	D-
3	D+
4	GND



Tow ituation: USB hid keyboard and USB - Virtual RS232

USB HID KBW: When you connect the engine with PC by USB cable,you can enable the USB HID-KBW by scanning the barcode below, then the transmission will be simulated as by the USB Keyboard. It is driver-free.

二、Description

2.1

1、Command Barcodes are all printed in Full-ASCII of Code39

2、Content with Star (*) : Factory setting.

(1) Scan: Enter setting mode “YSET”. If do not scan the next command barcode, it will exit automatically.

(2) Scan: Command of Modifying data. In this procedure, it can scan one or more command barcode.

(3) Scan：Exit and Save “YEND”.

2.2 Serial port Command

2.2-1 Data Format

Length	Message Source	Message target	Reserve	Reserve	Command	beeper	Check Sum

2.2-2

Field	Format	Sub-Field	Description
Length	1 Byte	Length	Length，not include Check Sum，Maximum: 0xFF
Message Source	1 Byte	0x04 = Host（PC or Master Machine）； 0x31 = Decoder	Source
Message target	1 Byte	0x04 = Host（PC or Master Machine）; 0x31 = Decoder	Target Address
Reserve	1Byte	Reserve（0x00）	
Reserve	1Byte	Reserve（0x00）	
Command	Variable number of bytes		
Beeper	1 Byte	0x31 = Enable 0xFF = Disable	Buzzer
Check Sum	2 Byte		Check sum of message formatted as High byte low byte

Notice：

1、Check Sum：Complement of the summation of Instruction， High Byte ahead; Low Byte behind

2、Verification: summation of all bytes(not include 2 bits verification);The verification code is the negation of summation adding 1.

Example：Exit and Save（0A 04 31 00 24 25 45 4E 44 FF, the summation is：02 5E，

Turn binary（0000 0010 0101 1110），Negation：1111 1101 1010 0001，adding 1, then the verification code is（FD A2）。

2.3 Command sheet

2.3-1

Name	Description	Barcode Command [1]	Serial Port Command [2]	Serial Port Answer [3]
YSET	Enter setting	√	X	X
YEND	Exit and Save[6]	√	√	√
TRIGGER_SCAN		X	√	√ +Barcode [4]
STOP_SCAN		√	√	√
FACTORY_DEFAULTS		√	√	√
CUSTOM_DEFAULTS		√	√	√
WR_CUSTOM_DEFAULTS		√	√	√
READ_REVISION		√	√	√ +Version [5]
PARAM_MODIFY		√	√	√
OPEN_BEEPER		X	√	X
ACK		X	√	X

2.4 Fast Command (HEX)

Fast Command must work under the situation:

Message Source = 0x04 (PC or Master

Machine);

Message target= 0x31 (Decoder 0x31);

Beeper = 0xFF (Disable)。

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2.4-1 Host To Decoder

Function	Command（HEX）
Routine Command	
Exit and Save（YEND）	0A 04 31 00 00 59 45 4e 44 FF FD 92
Trigger_Scan（YLTK）	0A 04 31 00 00 59 4c 54 4b FF FD 7E
Stop_ Scan（YLSK）	0A 04 31 00 00 59 4c 53 4b FF FD 7F
Factory Setting（YDFK）	0A 04 31 00 00 59 44 46 4b FF FD 94
User Setting （YDCK）	0A 04 31 00 00 59 44 43 4b FF FD 97
Record User Setting（YWCK）	0A 04 31 00 00 59 57 43 4b FF FD 84
Version （YRVK）	0A 04 31 00 00 59 52 56 4b FF FD 76
Data-modifying Command:	
Trigger Single Scan（F0000）	0B 04 31 00 00 46 30 30 30 30 FF FD BB
Trigger Consecutive Scan with light always on（F0001）	0B 04 31 00 00 46 30 30 30 31 FF FD BA
Disable Repeated Decode（F0100）	0B 04 31 00 00 46 30 31 30 30 FF FD BA
Enable Repeated Decode（F0101）	0B 04 31 00 00 46 30 31 30 31 FF FD B9
Exit Enter Enable Repeated Deocde（F0102）	0B 04 31 00 00 46 30 31 30 32 FF FD B8
TTL/RS232 Output（A0000）	0B 04 31 00 00 41 30 30 30 30 FF FD C0
USB HID Keyboard Output（A0001）	0B 04 31 00 00 41 30 30 30 31 FF FD BF
No need answer（E0000）	0B 04 31 00 00 45 30 30 30 30 FF FD BC
Need answer（E0001）	0B 04 31 00 00 45 30 30 30 31 FF FD BB

Disable Read All barcode（I1000）	0B 04 31 00 00 49 31 30 30 30 FF FD B7
Enable Read All barcodes（I1001）	0B 04 31 00 00 49 31 30 30 31 FF FD B6

Fast Command of Decoder to PC or Master Machine

2.4-2 Decoder To Host

Function	**Command （HEX ）**
Set up successfully Answer	07 31 04 01
Set up unsuccessfully Answer	07 31 04 01 01 15 FF FE

Three :Data sheet of Routine Command

3.1 SET&END

Length	Message Source	Message target	Reserve	Reserve	Command	beeper	Check Sum
0x0A	0x04	0x31	0x00	0x00			

Command：

Enter Setting	YSET	
Exit and Save	YEND	

3.2 DEFAULTS PARAMETER

Length	Message Source	Message target	Reserve	Reserve	Command	beeper	Check Sum
0x0A	0x04	0x31	0x00	0x00			

	Reserve	YSET	
Factory Setting	0x28	YDFK	
User Setting	0x29	YDCK	
Record User Setting [1]	0x2A	YWCK	
		YEND	

Notice：
1、Record User Setting: This procedure includes YEND.

3.3 TRIGGER_SCAN & STOP_SCAN

Length	Message Source	Message target	Reserve	Reserve	Command	beeper	Check Sum
0x0A	0x04	0x31	0x00	0x00			

	Reserve	YSET	
Trigger_Scan	0x26	YLTK	
Stop_ Scan	0x27	YLSK	
		YEND	

3.4 READ_REVISION

Length	Message Source	Message target	Reserve	Reserve	Command	beeper	Check Sum
0x0A	0x04	0x31	0x00	0x00			

	YSET	
Read Version	YRVK	
Read BootLoad Version	YRBK	
	YEND	

Four. Command of Modifying Data

4.1 Output way of Transmission

Length	Message Source	Message target	Reserve	Reserve	Command	beeper	Check Sum
0x0B	0x04	0x31	0x00	0x00			

	YSET	
TTL/RS232	**A0000**	
***USB HID Keyboard**	**A0001**	
	YEND	

4.2 Buzzer & LED

Length	Message Source	Message target	Reserve	Reserve	Command	beeper	Check Sum
0x0B	0x04	0x31	0x00	0x00			

	YSET	
Disable Boot Sound	B0000	
***Enable Boot Sound**	**B0001**	
Disable Decode Volume	B0100	
***Enable Decode Volume**	**B0101**	
Buzzer : Low	B0200	
***Buzzer：Medium**	**B0201**	
Buzzer: high	B0202	
Disable Setting Volume	B0300	
***Enable Setting Volume**	**B0301**	
	YEND	

4.3 Rs232 Setting

Length	Message	Message target	Reserve	Reserve	Command	beeper	Check Sum
0x0B	0x04	0x31	0x00	0x00			

Baud Rate should be same between decoder and PC.

	YSET	
2400 baud	C0000	
4800 baud	C0001	
***9600 baud**	**C0002**	
19200 baud	C0003	
38400 baud	C0004	
57600 baud	C0005	
115200 baud	C0006	
	YEND	

4.4 Response to Rs232 Command

Length	Message Source	Message target	Reserve	Reserve	Command	beeper	Check Sum
0x0B	0x04	0x31	0x00	0x00			

	YSET	
***No Response**	**E0000**	
Response	E0001	
	YEND	

Example:

Set up successfully：07 31 04 01 01 06 FF FE BE

Set up unsuccessfully：07 31 04 01 01 15 FF FE AF

Notice: Only under RS232/TTL232.

4.5 Trigger&Decode Way

Length	Message Source	Message target	Reserve	Reserve	Command	beeper	Check Sum
0x0B	0x04	0x31	0x00	0x00			

	YSET	
***Trigger Single Scan**	**F0000**	
Trigger Consecutive Scan	F0001	
Disable Repeated Scan	F0100	
***Enable Repeated Scan**	**F0101**	
Exit Enter Enable Repeated Scan	F0102	
	YEND	

4.6 Interval time for scanning same barcode

Length	Message Source	Message target	Reserve	Reserve	Command	beeper	Check Sum
0x0B	0x04	0x31	0x00	0x00			

	YSET	
***0ms**	**F0200**	
100ms	F02**01**	
200ms	F02**02**	
500ms	F02**05**	
900ms	F02**09**	
1000ms	F02**10**	
1500ms	F02**15**	
2000ms	F02**20**	
9900ms	F02**99**	
	YEND	

4.7 Overtime of Trigger

Length	Message Source	Message target	Reserve	Reserve	Command	beeper	Check Sum
0x0B	0x04	0x31	0x00	0x00			

	YSET	
***0ms**	**F0300**	
100ms	F03**01**	
200ms	F03**02**	
500ms	F03**05**	
900ms	F03**09**	
1000ms	F03**10**	
1500ms	F03**15**	
2000ms	F03**20**	
4000ms	F03**40**	
6000ms	F03**60**	
9900ms	F03**99**	
	YEND	

4.8 串口指令/自感应触发扫描超时时间

数据格式：

Length	Message Source	Message target	Reserve	Reserve	Command	beeper	Check Sum
0x0B	0x04	0x31	0x00	0x00			

指令：

	YSET	
100ms	F04**01**	
200ms	F04**02**	
500ms	F04**05**	
900ms	F04**09**	
1000ms	F04**10**	
1500ms	F04**15**	
2000ms	F04**20**	
***4000ms**	**F0440**	
6000ms	F04**60**	
9900ms	F04**99**	
	YEND	

4.9 Capital and small letter

Length	Message Source	Message target	Reserve	Reserve	Command	beeper	Check Sum
0x0B	0x04	0x31	0x00	0x00			

	YSET	
***No Transformation**	**I1200**	
Small Letter to Capital Letter	I1201	
Capital Letter to Small Letter	I1202	
	YEND	

4.10 Auto Sense

Length	Message Source	Message target	Reserve	Reserve	Command	beeper	Check Sum
0x0B	0x04	0x31	0x00	0x00			

	YSET	
***Disable**	**H0000**	
Enable	H0001	
***High Sensitivity**	**TU001**	
Low Sensitivity	TU002	
	YEND	

4.11 USB Parameter Setting

Length	Message Source	Message target	Reserve	Reserve	Command	beeper	Check Sum
0x0B	0x04	0x31	0x00	0x00			

	YSET	
***Slow Update Speed**	U0001	
Middle Update Speed	U0002	
Fast Update Speed	U0003	
	YEND	

4.12 Barcode Control

Length	Message Source	Message target	Reserve	Reserve	Command	beeper	Check Sum
0x0B	0x04	0x31	0x00	0x00			

	YSET	
Disable Read（EAN）	IB000	
***Enable Read**（EAN）	IB001	
Disable Read(Codabar)	IE000	
***Enable Read(Codabar)**	IE001	
Disable Read(Code 93)	IG000	
***Enable Read(Code 93)**	**IG001**	
Disable Read (Code128)	IK000	
***Enable Read (Code128)**	**IK001**	
Disable Read(Code 25)	IH000	
***Enable Read**(Code 25)	**IH001**	
	YEND	

4. 13 All types of barcode Setting

Length	Message Source	Message target	Reserve	Reserve	Command	beeper	Check Sum
0x0B	0x04	0x31	0x00	0x00			

	YSET	
Disable Read All Barcodes	I1000	
***Enable Read All Barcodes**	I1001	
	YEND	

4. 14 Start Mark

Length	Message Source	Message target	Reserve	Reserve	Command	beeper	Check Sum
0x0B	0x04	0x31	0x00	0x00			

	YSET	
***No Start Mark**	**J1000**	
Blank	J1001	
ID+Barcode	J1003	
ID+User-Defined +Barcode	J1006	
User Defined+ID+Barcode	J1007	
User-Defined+Barcode	J1008	
	YEND	
Notice: procedures of Adding user-defined start mark 1、Setting start mark mode 2、Enter user-defined start mark mode 3、Setting user-defined start mark		

Example：Setting barcode “1234567”start mark as “#Ab9”;

then it output barcode content as“#Ab91234567”。

1、setting start mark mode as “user-defined start symbol + barcode”；

2、Enter User-defined start mark mode，then scan the setting barcode correspond with“#”、“A”、“b”、“9”

4. 15 End Mark

Length	Message Source	Message target	Reserve	Reserve	Command	beeper	Check Sum
0x0B	0x04	0x31	0x00	0x00			

	YSET	
***No End Mark**	**J2000**	
End Mark as 0x0D	J2001	
End Mark as 0x0A	J2002	
End Mark as 0x0D 0x0A	J2003	
Tab(0x09)	J2004	
Tab(0x09) 0x0D	J2005	
Barcode +User-defined	J2006	
Barcode+User-defined+0x0D	J2007	
Barcode+User-defined+0x0A	J2008	
Barcode+User-defined+0x0D 0x0A	J2009	
Barcode+User-defined+Tab（0x09）	J200A	
	YEND	

4.16 **User-defined Start/End Mark**

	YSET	
Enter User-defined start mark mode	JA100	
Enter User-defined ending mark mode	JA200	
Control Character	**Hex**	
^@（NULL）	YS00	
^A（SOH）	YS01	
^B（STX）	YS02	
^C（ETX）	YS03	
^D（EOT）	YS04	
^E（ENQ）	YS05	
^F（ACK）	YS06	
^G（BEL）	YS07	
^H（BS）	YS08	
^I（HTab）	YS09	
^J（LF）	YS0A	
^K（VTab）	YS0B	
^L（FF）	YS0C	
^M（CR）	YS0D	

^N（SO）	YS0E	
^O（SI）	YS0F	
^P（DLE）	YS10	
^Q（DC1）	YS11	
^R（DC2）	YS12	
^S（DC3）	YS13	
^T（DC4）	YS14	
^U（NAK）	YS15	
^V（SYN）	YS16	
^W（ETB）	YS17	
^X（CAN）	YS18	
^Y（EM）	YS19	
^Z（SUB）	YS1A	
^[（ESC）	YS1B	
^\（FS）	YS1C	
^]（GS）	YS1D	
^^（RS）	YS1E	
^_（US）	YS1F	
SPC	YS20	

Character	Hex	
!	YS21	
"	YS22	
#	YS23	
$	YS24	
%	YS25	
&	YS26	
'	YS27	
(	YS28	
)	YS29	
*	YS2A	
+	YS2B	
,	YS2C	
-	YS2D	
.	YS2E	
/	YS2F	
0	YS30	
1	YS31	
2	YS32	
3	YS33	

4	YS34	
5	YS35	
6	YS36	
7	YS37	
8	YS38	
9	YS39	
:	YS3A	
;	YS3B	
<	YS3C	
=	YS3D	
>	YS3E	
?	YS3F	
@	YS40	
A	YS41	
B	YS42	
C	YS43	
D	YS44	
E	YS45	
F	YS46	
G	YS47	

H	YS48	
I	YS49	
J	YS4A	
K	YS4B	
L	YS4C	
M	YS4D	
N	YS4E	
O	YS4F	
P	YS50	
Q	YS51	
R	YS52	
S	YS53	
T	YS54	
U	YS55	
V	YS56	
W	YS57	
X	YS58	
Y	YS59	
Z	YS5A	
[	YS5B	

\	YS5C	
]	YS5D	
^	YS5E	
_	YS5F	
`	YS60	
a	YS61	
b	YS62	
c	YS63	
d	YS64	
e	YS65	
f	YS66	
g	YS67	
h	YS68	
i	YS69	
j	YS6A	
k	YS6B	
l	YS6C	
m	YS6D	
n	YS6E	
o	YS6F	

p	YS70	
q	YS71	
r	YS72	
s	YS73	
t	YS74	
u	YS75	
v	YS76	
w	YS77	
x	YS78	
y	YS79	
z	YS7A	
{	YS7B	
|	YS7C	
}	YS7D	
~	YS7E	
DEL	YS7F	
Function Key	**Hex**	
F1	YS80	
F2	YS81	

F3	YS82	
F4	YS83	
F5	YS84	
F6	YS85	
F7	YS86	
F8	YS87	
F9	YS88	
F10	YS89	
F11	YS8A	
F12	YS8B	
Backspace	YS8C	
Tab	YS8D	
Return（ENTER）	YS8E	
Enter（Numeric Keypad）	YS8F	
Esc	YS90	
Arrow Down	YS91	
Arrow up	YS92	
Arrow right	YS93	
Arrow left	YS94	
Insert	YS95	

Home	YS96	
End	YS97	
Page up	YS98	
Page down	YS99	
Left Shift	YS9A	
Left Ctrl	YS9B	
Left Alt	YS9C	
Left GUI	YS9D	
Right Shift	YS9E	
Right Ctrl	YS9F	
Right Alt	YSA0	
Right GUI	YSA1	
Caps Lock	YSA2	
	YEND	

Notice: User-defined start/ending symbol

Procedure：

1 Scan"%SET";

2 Scan"Enter User-defined start symbol mode' or "Enter User-defined ending symbol mode";

3 Scan the start symbol or ending symbol;

4、Scan "%END", Exit and Save.

Adjunct

Sheet 1：ASCII Code

Decimal	Octonary	decidmhexadecimal	Character	Description
0	0	00	NUL	
1	1	01	SOH	start of header
2	2	02	STX	start of text
3	3	03	ETX	end of text
4	4	04	EOT	end of transmission
5	5	05	ENQ	enquiry
6	6	06	ACK	acknowledge
7	7	07	BEL	bell
8	10	08	BS	backspace
9	11	09	HT	horizontal tab
10	12	0A	LF	line feed
11	13	0B	VT	vertical tab
12	14	0C	FF	form feed
13	15	0D	CR	carriage return
14	16	0E	SO	shift out
15	17	0F	SI	shift in
16	20	10	DLE	data link escape
17	21	11	DC1	no assignment，
18	22	12	DC2	
19	23	13	DC3	no assignment，
20	24	14	DC4	
21	25	15	NAK	negative
22	26	16	SYN	synchronous idle
23	27	17	ETB	end of transmission
24	30	18	CAN	cancel
25	31	19	EM	end of medium
26	32	1A	SUB	substitute
27	33	1B	ESC	escape
28	34	1C	FS	file separator
29	35	1D	GS	group separator
30	36	1E	RS	record separator
31	37	1F	US	unit separator
32	40	20	SPC	space
33	41	21	!	
34	42	22	"	

35	43	23	#	

36	44	24	$	
37	45	25	%	
38	46	26	&	
39	47	27	'	
40	50	28	(	
41	51	29	)	
42	52	2A	*	
43	53	2B	+	
44	54	2C	,	
45	55	2D	-	
46	56	2E	.	
47	57	2F	/	
48	60	30	0	
49	61	31	1	
50	62	32	2	
51	63	33	3	
52	64	34	4	
53	65	35	5	
54	66	36	6	
55	67	37	7	
56	70	38	8	
57	71	39	9	
58	72	3A	:	
59	73	3B	;	
60	74	3C	<	
61	75	3D	=	
62	76	3E	>	
63	77	3F	?	
64	100	40	@	
65	101	41	A	
66	102	42	B	
67	103	43	C	
68	104	44	D	
69	105	45	E	
70	106	46	F	
71	107	47	G	
72	110	48	H	
73	111	49	I	

74	112	4A	J	
75	113	4B	K	
76	114	4C	L	
77	115	4D	M	
78	116	4E	N	
79	117	4F	O	
80	120	50	P	
81	121	51	Q	
82	122	52	R	
83	123	53	S	
84	124	54	T	
85	125	55	U	
86	126	56	V	
87	127	57	W	
88	130	58	X	
89	131	59	Y	
90	132	5A	Z	
91	133	5B	[	
92	134	5C	\	
93	135	5D	]	
94	136	5E	^	
95	137	5F	_	
96	140	60	`	
97	141	61	a	
98	142	62	b	
99	143	63	c	
100	144	64	d	
101	145	65	e	
102	146	66	f	
103	147	67	g	
104	150	68	h	
105	151	69	i	
106	152	6A	j	
107	153	6B	k	
108	154	6C	l	
109	155	6D	m	
110	156	6E	n	
111	157	6F	o	

112	160	70	p	
113	161	71	q	
114	162	72	r	
115	163	73	s	
116	164	74	t	
117	165	75	u	
118	166	76	v	
119	167	77	w	
120	170	78	x	
121	171	79	y	
122	172	7A	z	
123	173	7B	{	
124	174	7C	|	
125	175	7D	}	
126	176	7E	~	
127	177	7F	DEL	delete
128	200	80	F1	
129	201	81	F2	
130	202	82	F3	
131	203	83	F4	
132	204	84	F5	
133	205	85	F6	
134	206	86	F7	
135	207	87	F8	
136	210	88	F9	
137	211	89	F10	
138	212	8A	F11	
139	213	8B	F12	
140	214	8C	Backspace	
141	215	8D	Tab	
142	216	8E	Return	
143	217	8F	Enter	
144	220	90	Esc	
145	221	91	Arrow Down	
146	222	92	Arrow up	
147	223	93	Arrow right	
148	224	94	Arrow left	
149	225	95	Insert	

150	226	96	Home	
151	227	97	End	
152	230	98	Page up	
153	231	99	Page down	
154	232	9A	Left Shift	
155	233	9B	Left Ctrl	
156	234	9C	Left Alt	
157	235	9D	Left GUI	
158	236	9E	Right Shift	
159	237	9F	Right Ctrl	
160	240	A0	Right Alt	
161	241	A1	Right GUI	
162	242	A2	Caps Lock	

Adjunct 2：

EAN13

UPC-A

EAN8

UPC-E

Default data: 1234565

Codabar

Code 93

Encoded data: c01235d

Code 39(Regular)

Code 39(Full ASCII)

Encoded data: *Code 39*