



SD822 *Manual Insertion Card Reader (Keyboard Interface)*

Feature

- Manual insertion magnetic card reader
- Manual bi-directional movement (insertion or removal) to read the magnetic card
- ISO 7810, ISO 7811, JIS X 6301, JIS X 6302 conformance.
- IBM PC keyboard simulated reader
- Fit in with the PC keyboard
- Operation responded by two LEDs
- Power supplied by PC keyboard
- CE and FCC Certificate

Specification

Item	Content			
Magnetic Card standard	ISO 7810, ISO 7811, JIS X 6301, JIS X 6302.			
ISO 7811	Track	Track 1	Track 2	Track 3
	Recording density	210 BPI	75 BPI	210 BPI
	Capacity	79 characters (7 bit code)	40 characters (5 bit code)	107 characters (5 bit code)
	Start / End Code	% / ?	; / ?	; / ? Note 1
JISX6302 Type 1	Track	Track 1	Track 2	Track 3
	Recording density	210 BPI	75 BPI	210 BPI
	Capacity	79 characters (7 bit code)	40 characters (5 bit code)	107 characters (5 bit code)
	Start / End Code	% / ?	; / ?	; / ? Note 1
JISX6302 Type 2	Recording density	210 BPI		
	Capacity	72 characters (8 bit code)		
	Start / End Code	0x7F / 0x7F		
Power	Power supplied by the computer (DC5V± 5%)			
Connector	Keyboard PS/2			
Card operation speed	10 ~ 120 cm/sec for ISO 7811 cards			
Decoding method	F/2F			
Operation temperature	-10 ~ 50°C			
Life time of head	Approx. 300,000 passes			
Cable length	120 cm			
Keyboard Languages	English (or Customized)			

Pin assignment

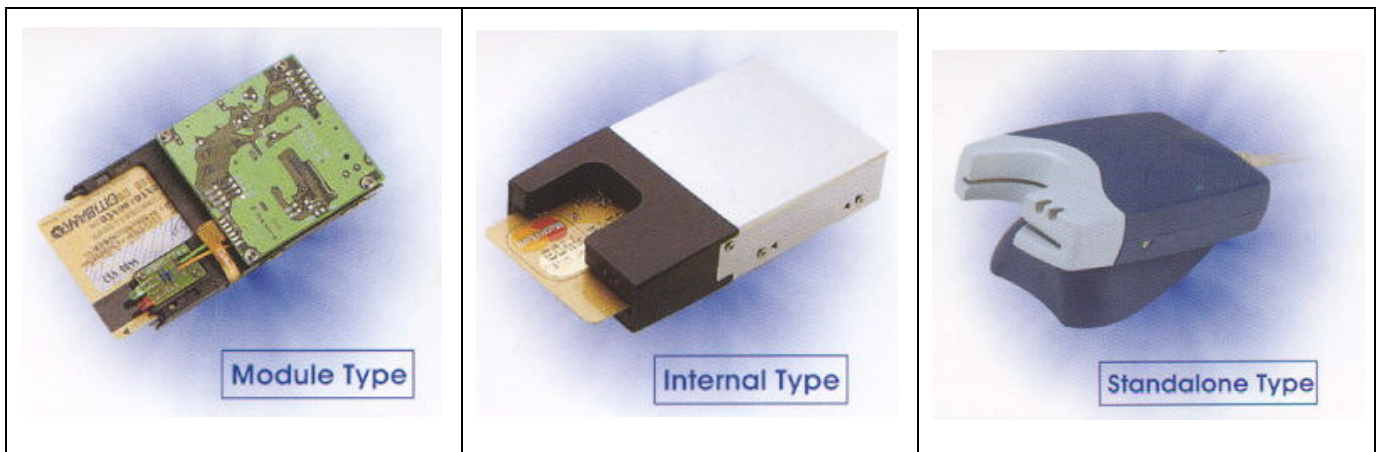
PS/2 KB

NO.	Signal	NO.	Signal
1	Data	4	Vcc
2	—	5	Clock
3	GND	6	—

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Model description

Types	Mode No.	Magnetic Card		
		Track1	Track2	Track3
Module	SD822M-33	●	●	●
Internal	SD822I-33	●	●	●
Standalone	SD822S-33	●	●	●



Protocol

1. Data output format :

Case 1: JIS X 6302 Type 2 format

SS	D0...Dx	ES	Enter
Track Data			End

- ① If card data format is not following JIS X 6302 Type 2 standard, it maybe is Case2 format.
- ② SS / ES : Start/End sentinel of JIS X 6302 Type 2 format is '0x7F'.

Case 2: ISO 7811 or JIS X 6302 Type 1 format

SS	D0...Di	ES	SS	D0...Dn	ES	SS	D0...Dm	ES	Enter
Track 1			Track 2			Track 3			End

- ① SS : Start Sentinel of ISO format T1="%", T2 = ":", T3="+".
- ② ES : End Sentinel of ISO format T1/T2/T3="?".
- ③ If card data format is not following ISO-7811 standard, operation error, or card data is fail, reader will not send out error Track data.

2. LEDs indication

- ① Reader standby: Green LED flashes.
- ② Reading Card: Green LED lights until user stops card moving.
- ③ Sending Data: Red LED lights until the reader finishes sending.
- ④ Error read: Red LED lights until next correct reading.



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3. Scan code and card data table

Hex	ASCII Code	Scan Code key press	Scan Code key release	ISO 7811 or JIS X 6302 Type 1 output			JIS X 6302 Type 2 output
				Track1	Track2	Track3	
00H	NUL	00					NUL
01H	SOH	01					SOH
02H	STX	02					STX
03H	ETX	03					ETX
04H	EOT	04					EOT
05H	ENQ	05					ENQ
06H	ACK	06					ACK
07H	BEL	07					BEL
08H	BS	08					BS
09H	HT	09					HT
0AH	LF	0A					LF
0BH	VT	0B					VT
0CH	FF	0C					FF
0DH	CR	0D					CR
0EH	SO	0E					SO
0FH	SI	0F					SI
10H	DLE	10					DLE
11H	DC1	11					DC1
12H	DC2	12					DC2
13H	DC3	13					DC3
14H	DC4	14					DC4
15H	NAK	15					NAK
16H	SYN	16					SYN
17H	ETB	17					ETB
18H	CAN	18					CAN
19H	EM	19					EM
1AH	SUB	1A					SUB
1BH	ESC	1B					ESC
1CH	FS	1C					FS
1DH	GS	1D					GS
1EH	RS	1E					RS
1FH	US	1F					US
20H	(Space)	29	F0_29	(Space)			(Space)
21H	!	59, 16	F0_16, F0_59	!			!



Hex	ASCII Code	Scan Code key press	Scan Code key release	ISO 7811 or JIS X 6302 Type 1 output			JIS X 6302 Type 2 output
				Track1	Track2	Track3	
22H	“	12, 52	F0_52, F0_12	“			“
23H	#	59, 26	F0_26, F0_59	#			#
24H	\$	59, 25	F0_25, F0_59	\$			\$
25H	%	59, 2E	F0_2E, F0_59	% (SS)			%
26H	&	12, 3D	F0_3D, F0_12	&			&
27H	‘	52	F0_52	‘			‘
28H	(12, 46	F0_46, F0_12	((
29H)	12, 45	F0_45, F0_12))
2AH	*	12, 3E	F0_3E, F0_12	*			*
2BH	+	12, 55	F0_55, F0_12	+			+
2CH	,	41	F0_41	,			,
2DH	-	4E	F0_4E	-			-
2EH	.	49	F0_49	.			.
2FH	/	4A	F0_4A	/			/
20H	0	45	F0_45	0	0	0	0
31H	1	16	F0_16	1	1	1	1
32H	2	1E	F0_1E	2	2	2	2
33H	3	26	F0_26	3	3	3	3
34H	4	25	F0_25	4	4	4	4
35H	5	2E	F0_2E	5	5	5	5
36H	6	36	F0_36	6	6	6	6
37H	7	3D	F0_3D	7	7	7	7
38H	8	3E	F0_3	8	8	8	8
39H	9	46	F0_46	9	9	9	9
3AH	:	12, 4C	F0_4C, F0_12	:	:	:	:
3BH	;	4C	F0_4C	;	; (SS)	+ (SS)	;
3CH	<	12, 41	F0_41, F0_12	<	<(ES in China)	<(ES in China)	<
3DH	=	55	F0_55	=	=	=	=
3EH	>	12, 49	F0_49, F0_12	>	>	>	>
3FH	?	12, 4A	F0_4A, F0_12	? (ES)	? (ES)	? (ES)	?
40H	@	59, 1E	F0_1E, F0_59	@			@
41H	A	59, 1C	F0_1C, F0_59	A			A
42H	B	59, 32	F0_32, F0_59	B			B
43H	C	59, 21	F0_21, F0_59	C			C
44H	D	59, 23	F0_23, F0_59	D			D
45H	E	59, 24	F0_24, F0_59	E			E
46H	F	59, 2B	F0_2B, F0_59	F			F
47H	G	59, 34	F0_34, F0_59	G			G



Hex	ASCII Code	Scan Code key press	Scan Code key release	ISO 7811 or JIS X 6302 Type 1 output			JIS X 6302 Type 2 output
				Track1	Track2	Track3	
48H	H	12, 33	F0_33, F0_12	H			H
49H	I	12, 43	F0_43, F0_12	I			I
4AH	J	12, 3B	F0_3B, F0_12	J			J
4BH	K	12, 42	F0_42, F0_12	K			K
4CH	L	12, 4B	F0_4B, F0_12	L			L
4DH	M	12, 3A	F0_3A, F0_12	M			M
4EH	N	12, 31	F0_31, F0_12	N			N
4FH	O	12, 44	F0_44, F0_12	O			O
50H	P	12, 4D	F0_4D, F0_12	P			P
51H	Q	59, 15	F0_15, F0_59	Q			Q
52H	R	59,2D	F0_2D, F0_59	R			R
53H	S	59, 1B	F0_1B, F0_59	S			S
54H	T	59, 2C	F0_2C, F0_59	T			T
55H	U	12, 3C	F0_3C, F0_12	U			U
56H	V	59, 2A	F0_2A, F0_59	V			V
57H	W	59, 1D	F0_1D, F0_59	W			W
58H	X	59, 22	F0_22, F0_59	X			X
59H	Y	12, 35	F0_35, F0_12	Y			Y
5AH	Z	59, 1A	F0_1A, F0_59	Z			Z
5BH	[54	F0_54	[[
5CH	\	5D	F0_5D	\			\
5DH]	5B	F0_5B]]
5EH	^	59, 36	F0_36, F0_59	^			^
5FH	_	12, 4E	F0_4E, F0_12	_			_
60H	`	OE	F0_OE				`
61H	a	1C	F0_1C				a
62H	b	32	F0_32				b
63H	c	21	F0_21				c
64H	d	23	F0_23				d
65H	e	24	F0_24				e
66H	f	2B	F0_2B				f
67H	g	34	F0_34				g
68H	h	33	F0_33				h
69H	i	43	F0_43				i
6AH	j	3B	F0_3B				j
6BH	k	42	F0_42				k
6CH	l	4B	F0_4B				l
6DH	m	3A	F0_3A				m



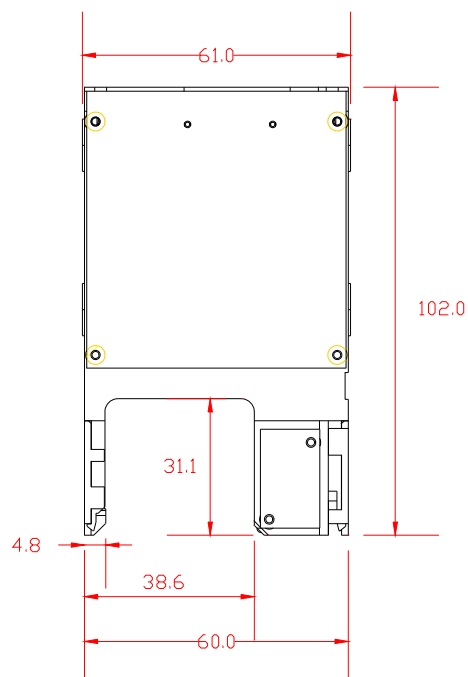
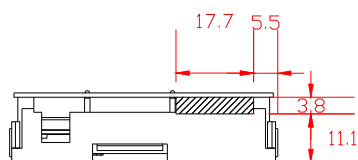
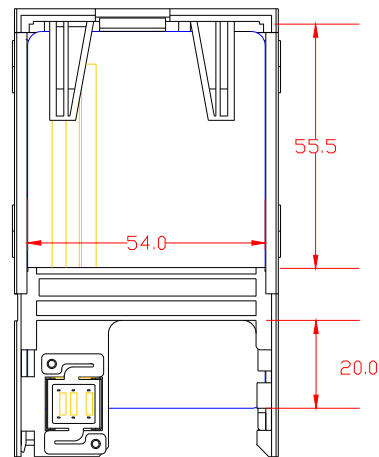
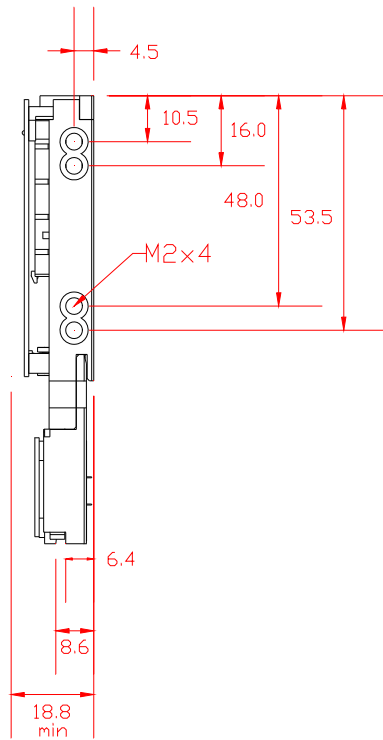
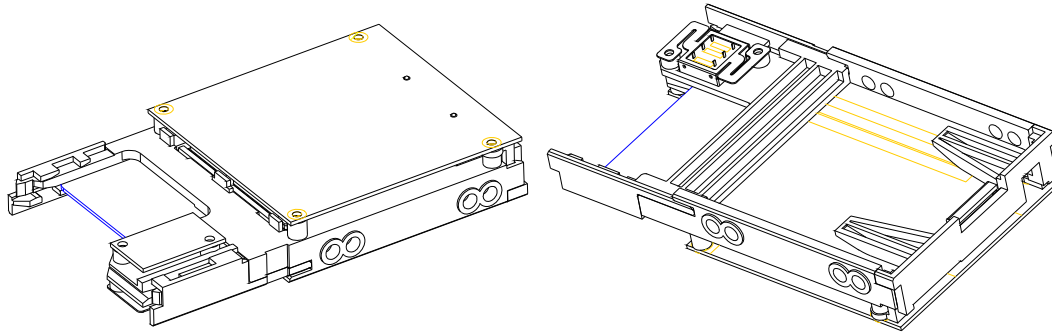
Hex	ASCII Code	Scan Code key press	Scan Code key release	ISO 7811 or JIS X 6302 Type 1 output			JIS X 6302 Type 2 output
				Track1	Track2	Track3	
6EH	n	31	F0_31				n
6FH	o	44	F0_44				o
70H	p	4D	F0_4D				p
71H	q	15	F0_15				q
72H	r	2D	F0_2D				r
73H	s	1B	F0_1B				s
74H	t	2C	F0_2C				t
75H	u	3C	F0_3C				u
76H	v	2A	F0_2A				v
77H	w	1D	F0_1D				w
78H	x	22	F0_22				x
79H	y	35	F0_35				y
7AH	z	1A	F0_1A				z
7BH	{	12, 54	F0_54, F0_12				{
7CH		12, 5D	F0_5D, F0_12				
7DH	}	12, 5B	F0_5B, F0_12				}
7EH	~	59, 0E	F0_0E, F0_59				~
7FH		7F					SS/ES



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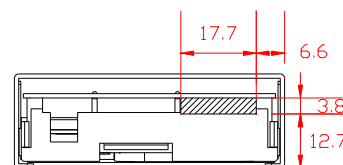
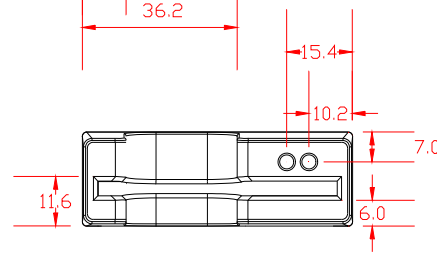
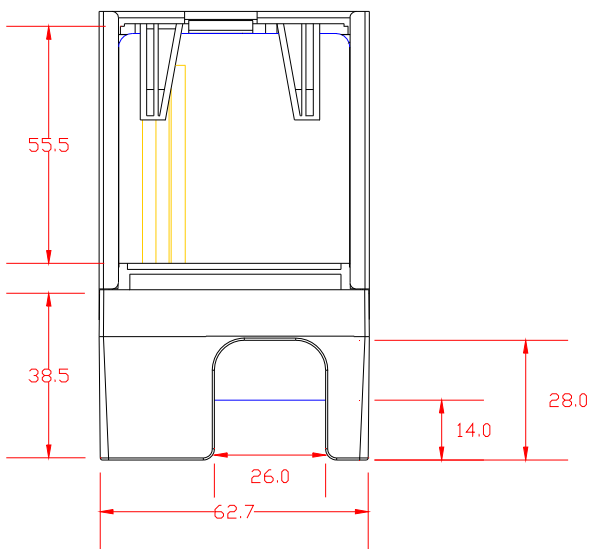
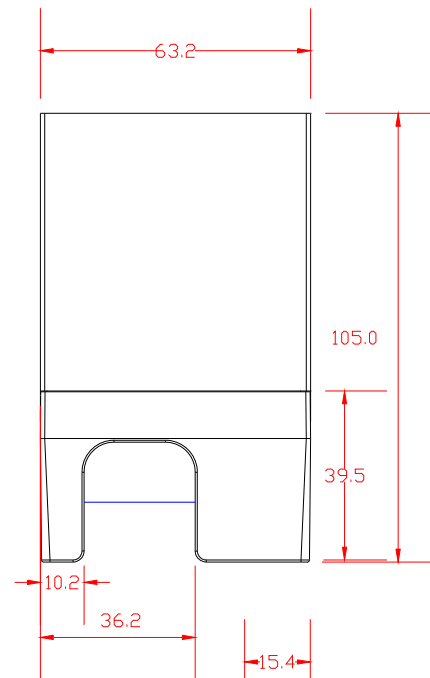
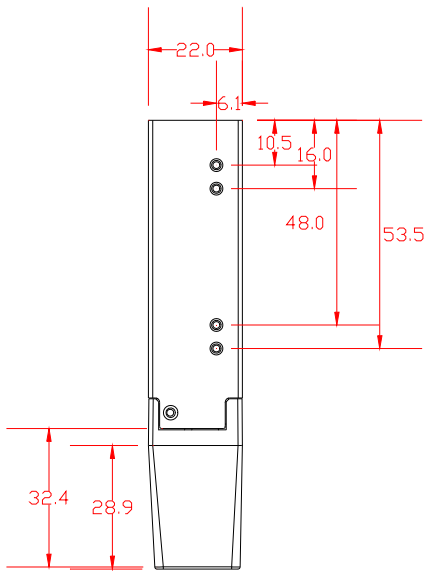
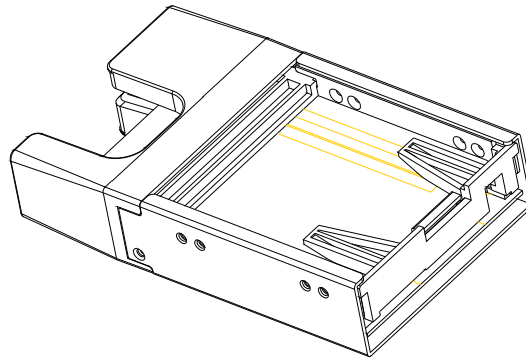
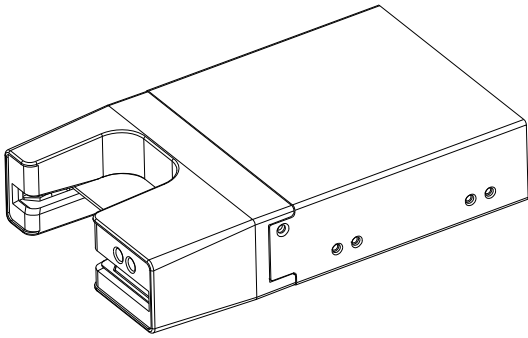
Dimension 1 (Module type)

Unit: mm



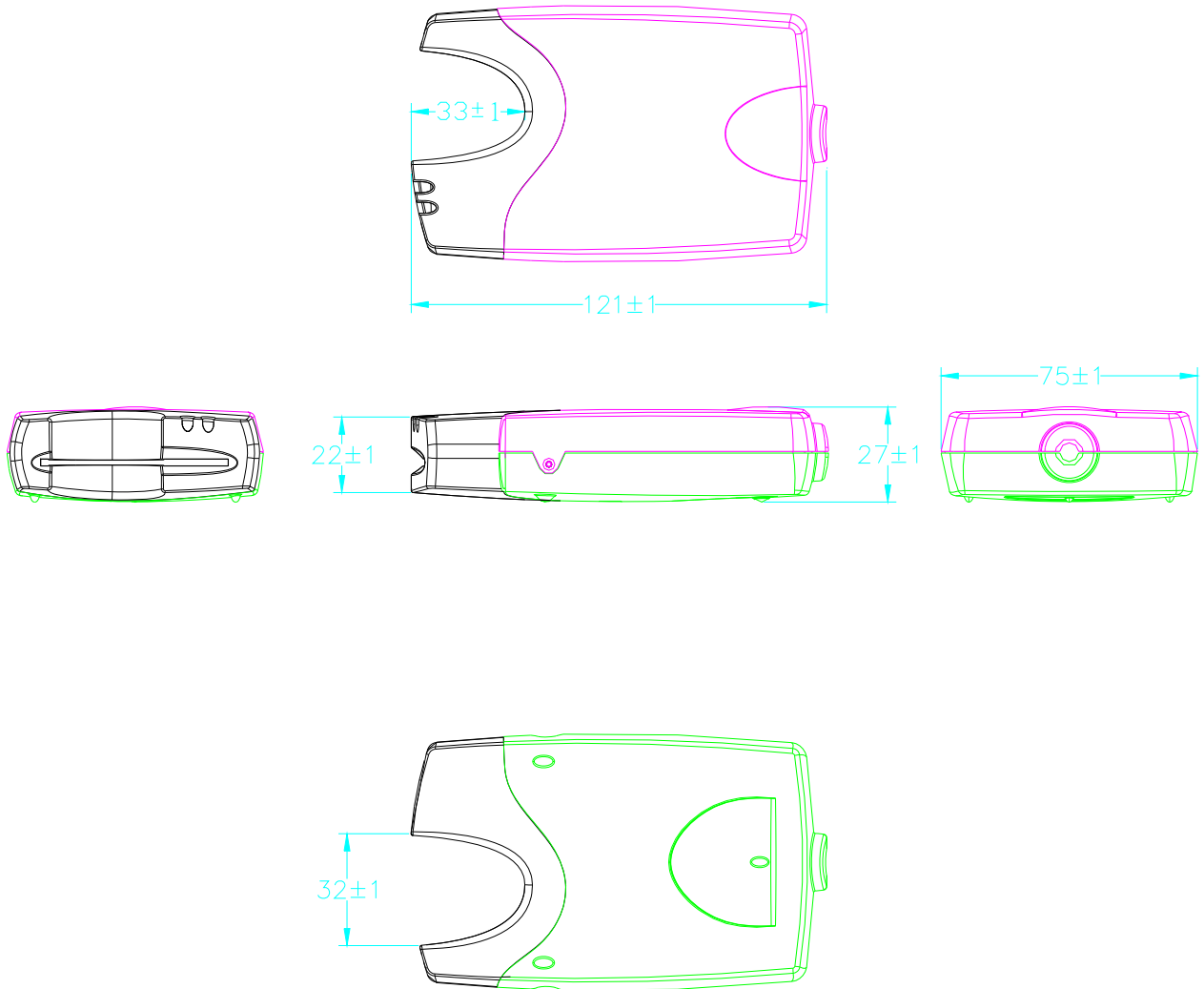


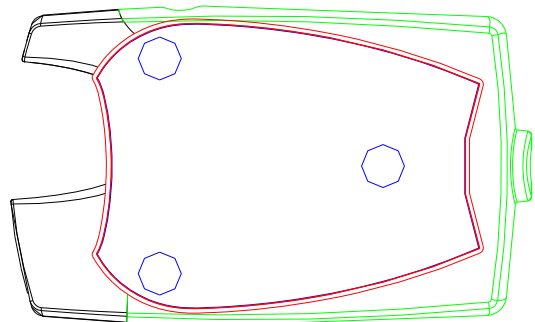
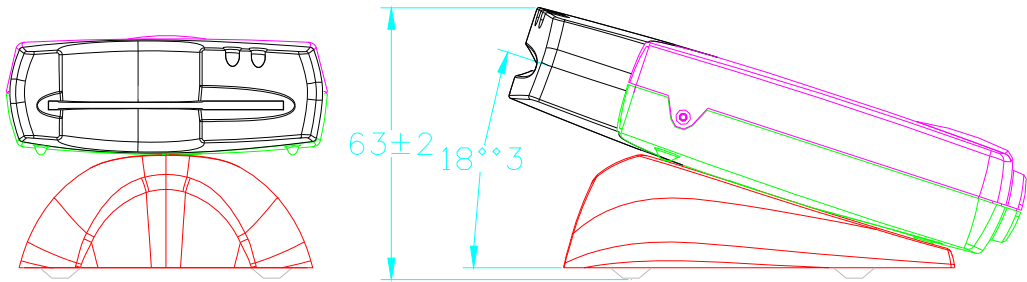
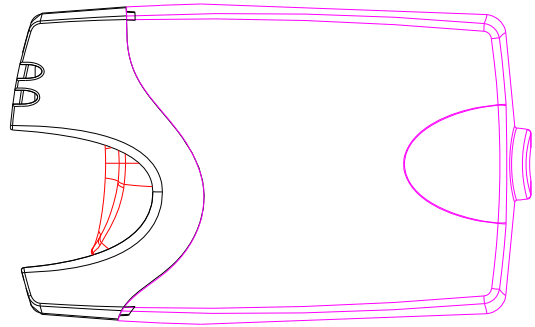
Dimension 2 (Internal type)





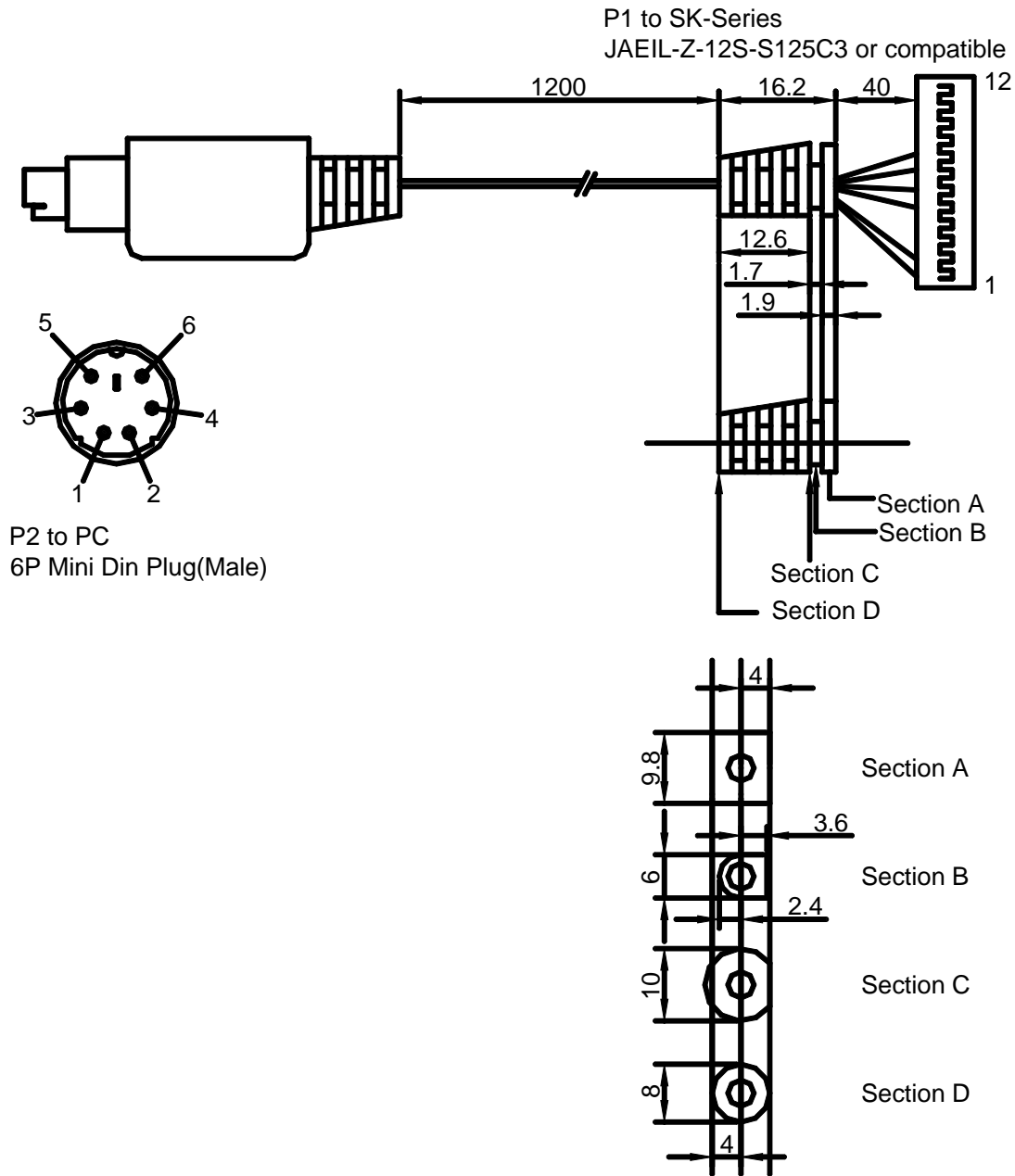
Dimension 3 (Standalone type)





SD822 *Manual Insertion Card Reader (Keyboard Interface)*

Cable Specification



Unit : mm

L1 + L2 : 150mm

Cable : 6c28awg

OD : 3.8±0.1mm

UL Authenticated

Write Connection

Cable must be shield.

Color	P1	P2	Function
Brown	5	3	GND
Red	1	4	Vcc
Black	10	1	PCDAT
Orange	9	5	PCCLK