

SPECIFICATION

Customer : _____

Customer's Model No. : _____

Model No. : MR300 Series _____

Date : _____

Sample Serial No. : _____

Spec. Version & Revision Date: V03 2009.09.23

Received/Approved by



Web : <http://www.champtek.com>

E-mail : sales@champtek.com

Champtek Incorporated

5/F, No. 2, Alley 2, Shih-Wei Lane, Chung Cheng Rd.,
Hsin Tien City, Taipei, Taiwan, R.O.C.

Tel : 886-2-22192385

Fax : 886-2-22192387

Revision History

Version	Date	Context
00	2004.04.22	Golden release
01	2004.12.01	JIS II Tracks Information
02	2006.03.06	Update Firmware version
03	2009.09.23	Update Cable drawing

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A. General Description

This magnetic stripe reader is well designed and constructed with high quality components. It conforms to ISO 7810-7813 standards and is designed for use in access control, retail and time attendance applications, etc. The TTL output allows the reader to be universally accepted by most decoders. The built-in decoder is an advanced and versatile decoding facility which works with variety of computer interfaces.



B. Physical Characteristics

Weight

Body Weight	240 g (8.47 oz)
Cover Weight	16 g (0.56 oz)
Cable Weight	Approx. 70 g (2.5 oz)

Material

PC&ABS

Cable Length

150 mm (5.91 inch)

Decoder Board Weight

11 g (0.39 oz)

Dimension

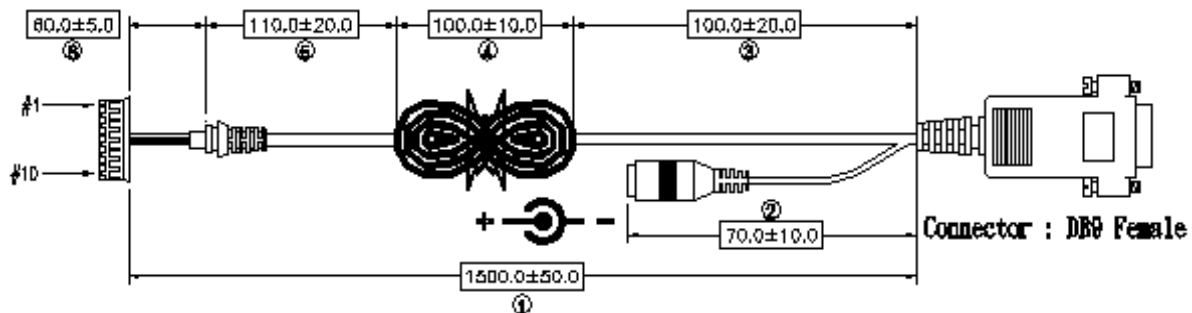
90.00 mm X29.00 mm X 38.00 mm

Cable Drawing

Unit : mm

RS232 Interface :

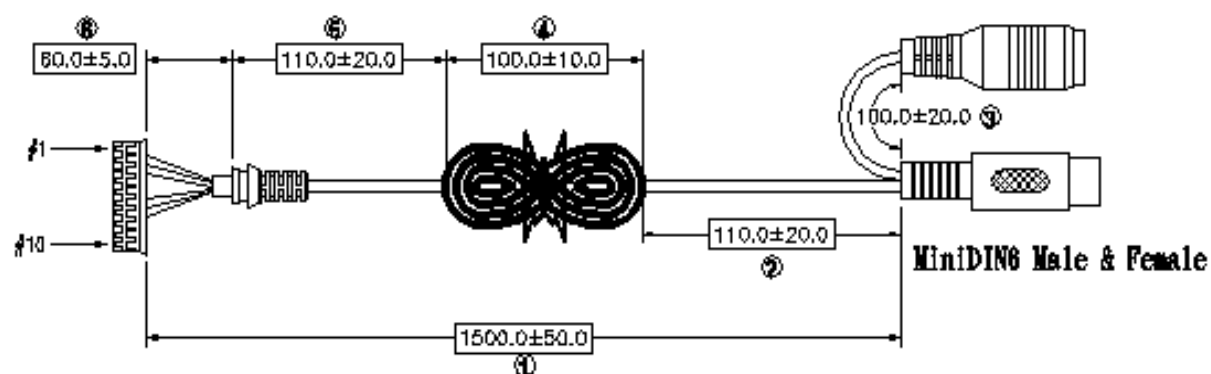
Unit : mm



JAE 2.0	DB9F	DC-JACK	COLOR	Function
1	9	CORE	RED	VCC,+5V
4	3		YELLOW	RXD
5	2		Orange	TXD
8	5	SHELL	Brown	GND
9	8		Green	RTS
10	7		Blue	CTS
		SHELL	BLACK (SHIELDING)	

Keyboard Interface :

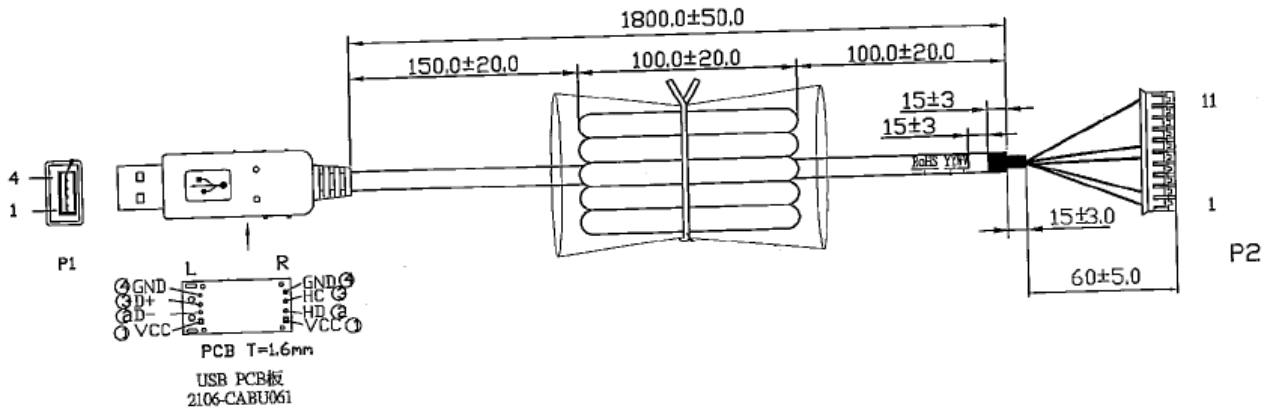
Unit : mm



JAE 2.0	Mini DIN6M	Mini DIN6F	Color	Funtion
1	4	4	Red	VCC
2		5	Orange	KB CLK
3	5		Blue	HOST CLK
6		1	Yellow	KB DATA
7	1		Green	HOST DATA
8	3	3	Brown	GND

USB Interface :

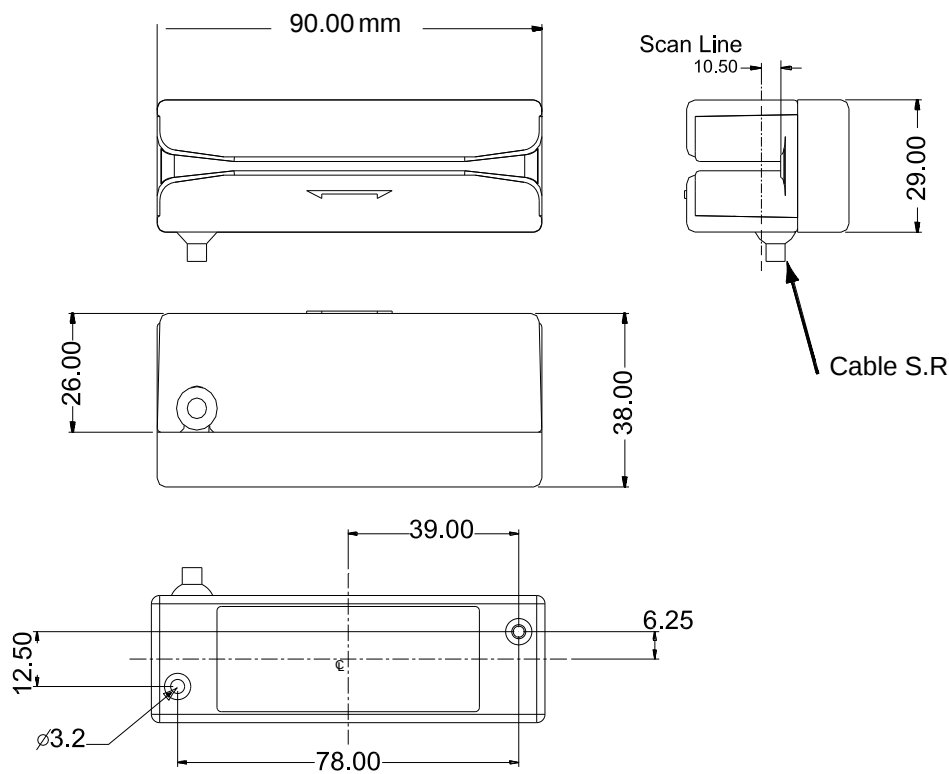
Unit : mm



Wire table				Function	
P1 & L	R	color	P2	P1	P2
1	1	red	2	VCC	VCC
2	3	orange	6	D-	Host Clk
3	2	yellow	5	D+	Host Data
4	4	brown	1	GND	GND
Iron case	4	shielding	11	shielding	shielding

Mechanical drawing

Unit : mm



C. Electrical Characteristics

a. Single Track

Interface	RS232	KB	RS232 TTL	USB
Supply Voltage	DC +5V $\pm 5\%$			
Output Voltage (Typ.)	$\pm 9V$	+5V $\pm 5\%$	+5V $\pm 5\%$	+5V $\pm 5\%$
Output low Voltage (Max.)	-	0.4V	0.4V	0.4V
Current Draw	$\pm 10\%$			
Power On (Typ.)	60 mA	55 mA	55 mA	58 mA
Stand by (Typ.)	30 mA	29 mA	27 mA	31 mA
Operation (Typ.)	55 mA	52 mA	51 mA	54 mA

b. 2 Tracks

Interface	RS232	KB	RS232 TTL	USB
Supply Voltage	DC +5V $\pm 5\%$			
Output Voltage (Typ.)	$\pm 9V$	+5V $\pm 5\%$	+5V $\pm 5\%$	+5V $\pm 5\%$
Output low Voltage (Max.)	-	0.4V	0.4V	0.4V
Current Draw	$\pm 10\%$			
Power On (Typ.)	75 mA	70 mA	70 mA	73 mA
Stand by (Typ.)	49 mA	44 mA	42 mA	46 mA
Operation (Typ.)	71 mA	68 mA	67 mA	60 mA

c. 3 Tracks

Interface	RS232	KB	RS232 TTL	USB
Supply Voltage	DC +5V $\pm 5\%$			
Output Voltage (Typ.)	$\pm 9V$	+5V $\pm 5\%$	+5V $\pm 5\%$	+5V $\pm 5\%$
Output low Voltage (Max.)	-	0.4V	0.4V	0.4V
Current Draw	$\pm 10\%$			
Power On (Typ.)	70 mA	70 mA	70 mA	70 mA
Stand by (Typ.)	52 mA	48 mA	48 mA	50 mA
Operation (Typ.)	76 mA	72 mA	72 mA	75 mA

D. Tracks Information

Track	1	2	3	JIS II
Standard	IATA	ABA	THRIFT/MINTS	THRIFT/MINTS
Recording Method	F2F(FM)	F2F(FM)	F2F(FM)	F2F(FM)
Recording Density	210 BPI	75 BPI	210 BPI	
Capacity	79 Characters	40 Characters	107 Characters	79 Characters
	7	5	5	7
	Bits/Characters	Bits/Characters	Bits/Characters	Bits/Characters

E. Performance

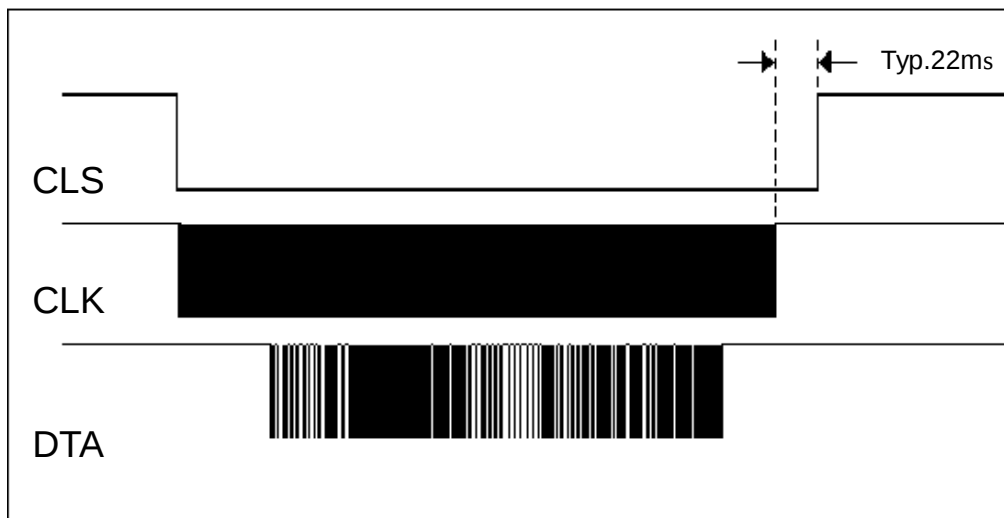
Read/Write	Read
Scan Speed	100 - 1000 mm / sec (3.9 - 39 inch / sec)
Direction	Bi-direction
Life Cycle	1,000,000passes

F. Environmental

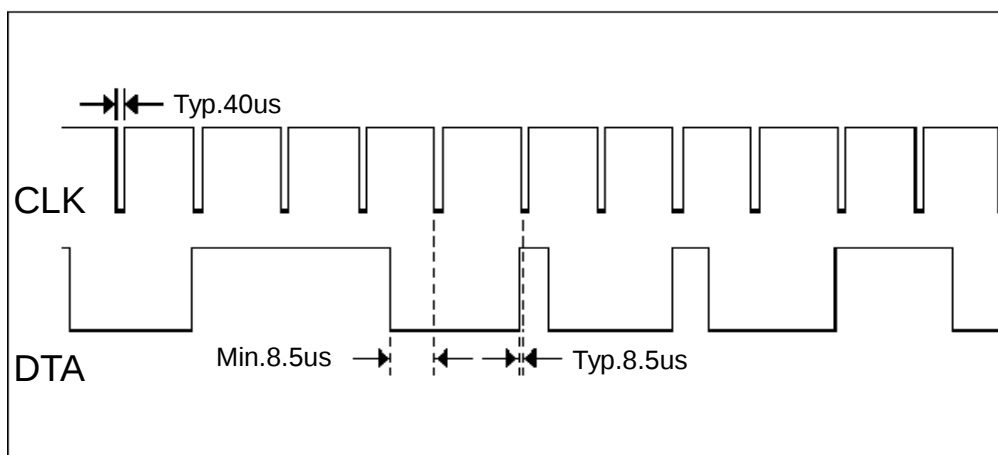
Operating Temperature	0 °C to 50 °C (32 °F to 122 °F)
Storage Temperature	-20 °C to 70 °C (-4 °F to 158 °F)
Relative Humidity	20% to 95% (Non-condensing)

G. TTL-Timing Chart

1. Relationship between CLS, CLK and DTA



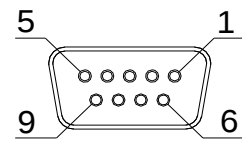
2. Detail relationship between CLK and DTA



H. Pin Assignment

(a) TTL Interface(DB 9 Female)

Pin No.	Function
1	S.O.S.
2	DATA
3	N.C.
4	N.C.
5	TRIGGER
6	P. E.
7	GND
8	N.C.
9	+5V

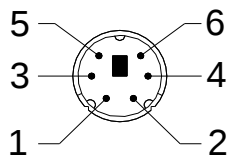


DB 9 Female

(b) PC Keyboard Interface

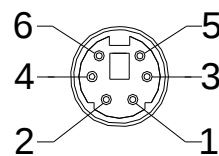
MiniDIN 6 MALE

Pin No.	Function
1	HOST DATA
3	GND
4	Vcc(+5V)
5	HOST CLK



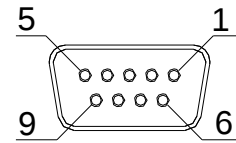
MiniDIN 6 FEMALE

Pin No.	Function
1	KB DATA
3	GND
4	Vcc(+5V)
5	KB CLK

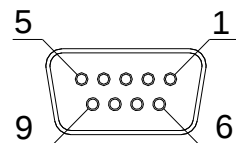


(c)RS-232 Keyboard Interface**DB9 Female with Power Lead**

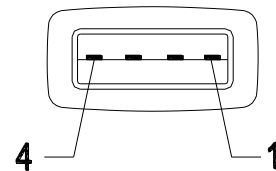
Pin No.	Function
2	TXD
3	RXD
5	GND
7	CTS
8	RTS
Power Lead	Vcc (+5V)

**DB 9 Female****DB9 Female without Power Lead**

Pin No.	Function
2	TXD
3	RXD
5	GND
7	CTS
8	RTS
9	Vcc (+5V)

**DB 9 Female****(d)USB Interface****USB A TypeMale**

Pin No.	Function
1	Vcc
2	D-
3	D+
4	GND



I. Reliability

Life Time

MTBF(Calculated)	24,000 hours
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Thermal Shock

High Temp.	60 °C (140 °F)
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Low Temp.	-20 °C (-4 °F)
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Cycle time	20 minutes for high temp. , 20 minutes for low temp.
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Cycles	5 cycles
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Cable Bending Test	25,000 times minimum (30 times/min @ 500g/90 °)
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Drop	40 inch (100 cm) Drop on Concrete Surface
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