

EM-10 EM Reader Module

Operational and Physical Characteristics :

Parameters	EM-10
Read Range	> 6 cm
Dimensions	26mm*25mm*7mm
Frequency	125kHz
Card Format	EM 4001 or compatible
Encoding	Manchester 64-bit, modulus 64
Power Requirement	5 VDC @ 60mA nominal
Voltage Supply Range	+4.6V through +5.4V

Pin Description & Output Data Formats :

Pin No.	Description	ASCII	Wiegand26
Pin 1	Zero Volts and Tuning Capacitor Ground	GND 0V	GND 0V
Pin 2	NA	NA	NA
Pin 3	To External Antenna and tuning Capacitor	Antenna	Antenna
Pin 4	To External Antenna	Antenna	Antenna
Pin 5	Format Select (+/-)	Strap to GND	Strap to +5V
Pin 6	Data 1	CMOS	One Output
Pin 7	Data 0	TTL Data(inverted)	Zero Output
Pin 8	2.7kHz logic	Beeper/LED	Beeper/LED
Pin 9	DC Voltage Supply	+5V	+5V

Data Format :

Output Format - ASCII

02	10 Bytes CSN in ASCII format	2 bytes Checksum in ASCII format	CR	LF	03
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eg. EM Card serial no. (CSN) is in 40 bits. Four bits as a Hex code, total 10 Hex codes. If the EM CSN is (Hex) 12 34 56 78 9A, then check sum equal to 12 XOR 34 XOR 56 XOR 78 XOR 9A = (Hex) [92](#)

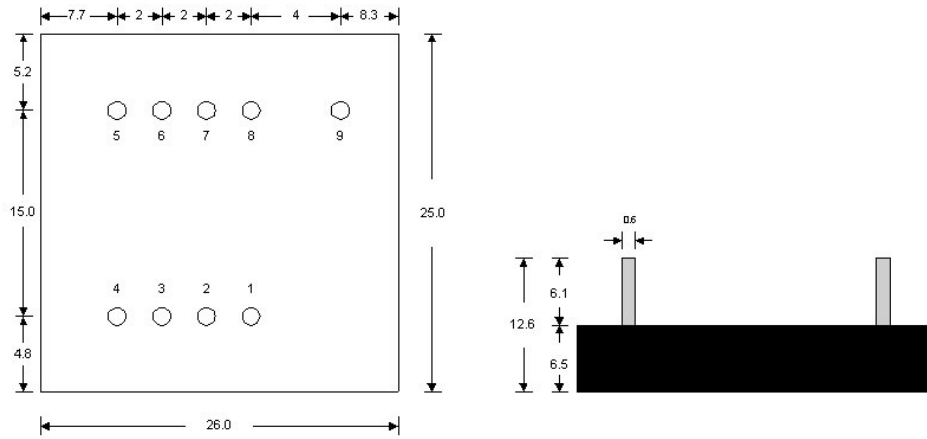
Then output data shall be 02 [31 32 33 34 35 36 37 38 39 41](#) [39 32 0D 0A](#) 03, total 16 bytes data.

Output format – 26 bits wiegand, P=Parity Start Bit and Stop Bit

1	2	3	4	5	6	7	8	9	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2		
									0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6
P	E	E	E	E	E	E	E	E	E	E	E	E	O	O	O	O	O	O	O	O	O	O	O	P	
EVEN Parity (E)													ODD Parity (O)												

Pulse width : 60us (+/- 20us) , pulse interval : 2ms (+/- 0.2ms)

Dimensions :



ID-10B EM Module Dimensions (mm)

Remark : Not in Scale, +/- 0.5 mm

