



# Proximity card reading module

## PIEM- CWAS

Ver.12.1

### ● FEATURES

1. AM 125KHz contactless proximity reading module specially for EM cards,
2. Either Wiegand 26, ABA or ASCII format output selected by external pins.
3. Read only for EM cards, and the data are sent by Data 0 and Data 1.
4. Lower cost with effective performance
5. Compact size

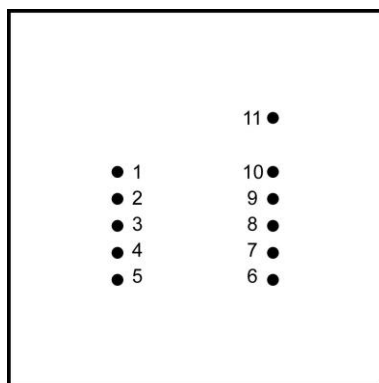
### ● SPECIFICATION

Dimensions	40(L) x 40 (W) x 10 (H) mm
Transmitting Frequency	AM 125 KHz
Card type supported	EM 4102 or compatible
Reading Range	Proximity card (T)0.8mm: 8 cm
	Proximity card (T)1.8mm: 9 cm
	Special card: 16 cm
Voltage Supply Range	+4.6V through +5.4V
Power Consumption	5VDC @ 30mA nominal
Encoding	Manchester 64-bit
Operating Temperature	-10℃ ~ 75℃
Storage Temperature	-10℃ ~ 85℃
Storage Humidity	5 ~ 95% RH
Net Weight	21.6g±5%

### ● PIN ASSIGNMENTS

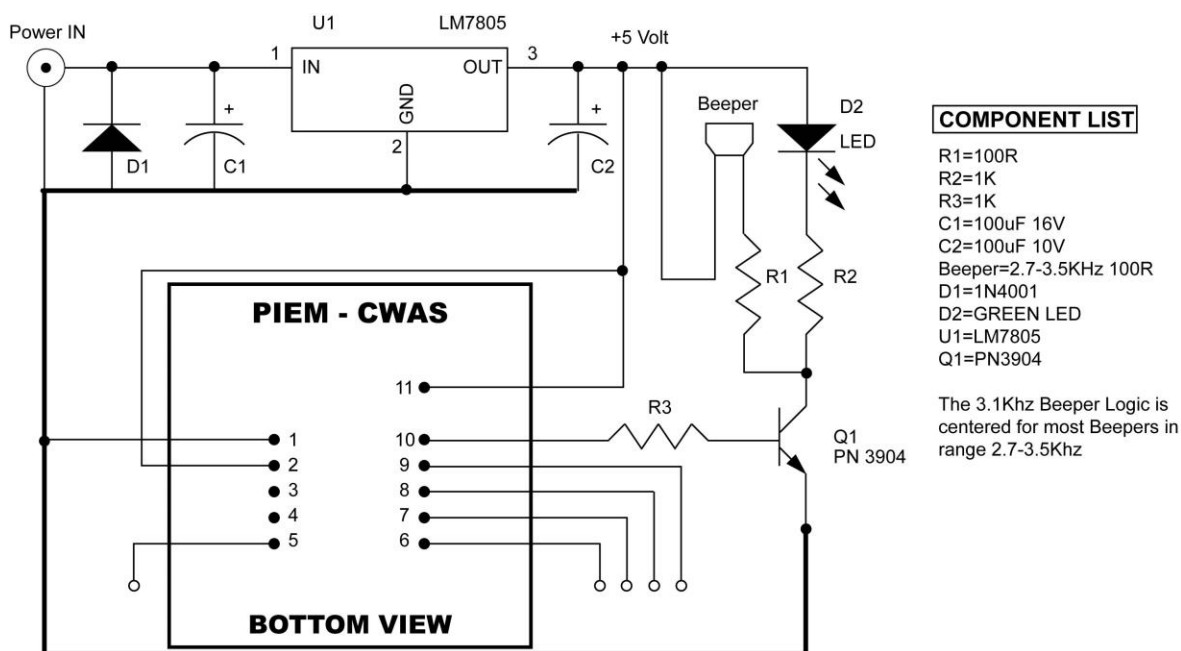
Pin No.	Description	Wiegand26	ABA	ASCII
Pin 1	Zero Volts and Tuning Capacitor Ground	GND 0V	GND 0V	GND 0V
Pin 2	Strap to +5V	Reset Bar	Reset Bar	Reset Bar
Pin 3	To External Antenna and Tuning Capacitor	Antenna	Antenna	Antenna
Pin 4	To External Antenna	Antenna	Antenna	Antenna
Pin 5	Card Present output	No function	Card Present output	No function
Pin 6	Future	Future	Future	Future
Pin 7	Format Selector(+/-)	Strap to +5V	Strap to Pin 10	Strap to GND
Pin 8	Data 1	One Output*	Magstripe clock	CMOS
Pin 9	Data 0	Zero Output*	Data*	TTL(to IC UART)
Pin 10	3.1 kHz Logic	Beeper/LED	Beeper/LED	Beeper/LED
Pin 11	DC Voltage Supply	+5V	+5V	+5V

## ● BOTTOM VIEW



1. GND
2. RES(Reset Bar)
3. ANT(Antenna)
4. ANT(Antenna)
5. Card present
6. NC
7. +/- (Format Selector)
8. D1 (Data Pin1)
9. D0(Data Pin0)
- 10.LED(LED/Beeper)
- 11.+5V

## ● CIRCUIT EXAMPLE



## ● DATA FORMATS

### UART output format

0x02	DATA(10 bytes)	CHECK SUM(2 bytes)	0x0D	0x0A	0x03
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The 1 byte (2 ASCII characters) check sum is the "Exclusive OR" of the 5 hex bytes(10 ASCII)Data characters.

### Wiegand 26 bit output format

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
P	E	E	E	E	E	E	E	E	E	E	E	E	O	O	O	O	O	O	O	O	O	O	O	O	P
Summed for even parity(E)													Summed for Odd parity(O)												

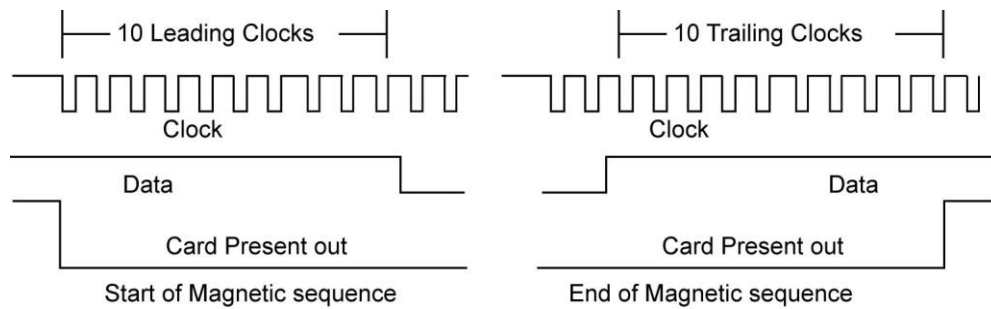
P=Parity start bit and stop bolt

### ABA Track2 output format

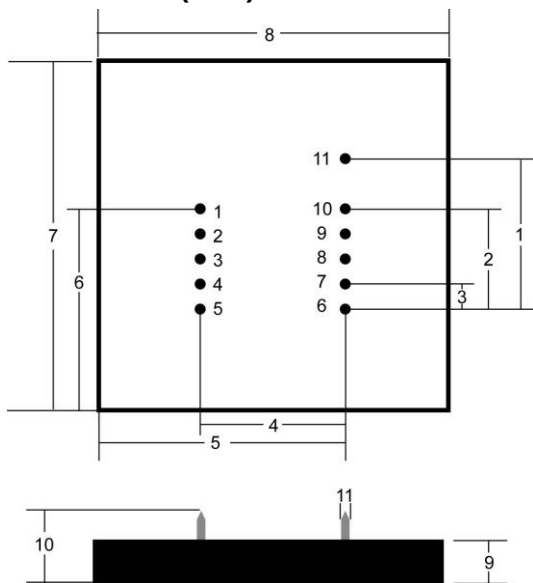
10 Leading Zeros	SS	Data(14 digits)	ES	LRC	10 Ending Zeros
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SS is the starting character of "11010", ES is the ending character of "11111", LRC is the longitudinal redundancy check.

Start and end sequences for magnetic timing

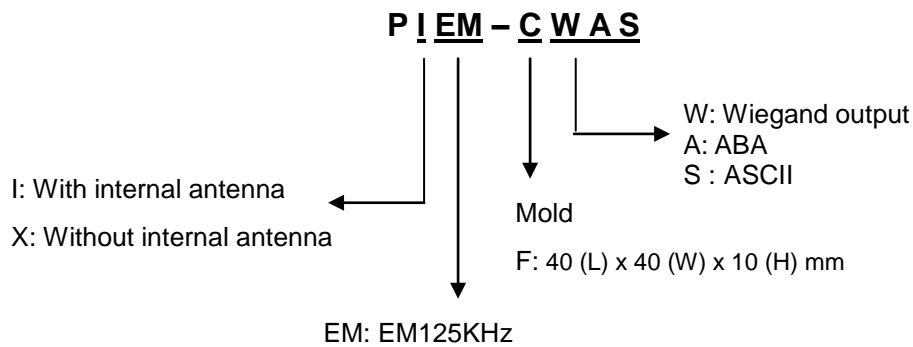


DIMENSIONS(mm)



	Nom.	Min	Max.
1	12.0	11.6	12.4
2	8.0	7.6	8.4
3	2.0	1.8	2.2
4	15.0	14.6	15.4
5	28.5	28	29
6	22.4	21.9	22.9
7	40.2	39.7	40.7
8	40.2	39.7	40.7
9	10.1	9.6	10.6
10	16.6	16.1	17.1
11	0.66	0.62	0.67

HOW TO ORDER



Specifications subject to change without notice for further modification.