



# RFID 125KHz EM read module PIEM- FS-SEA1

Ver.12.1

## ● Features

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

## ● Specification

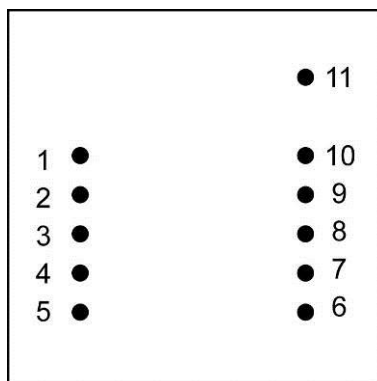
Dimensions	26 (L) x 25 (W) x 7 (H) mm
Transmitting Frequency	AM 125 KHz
Card Format	EM 4102 or compatible, Temic 5557
Read Range	Proximity card (T)0.8mm: 6cm
	Proximity card (T)1.8mm: 7cm
	Specific card: 11.5cm
Voltage Supply Range	+4.6V through +5.4V
Power Consumption	5VDC @ 35mA nominal
Standard Encoding	Manchester 64-bit, Encrypted Manchester 109-bit
Operating Temperature	-10°C ~ 70°C
Storage Temperature	-10°C ~ 85°C
Storage Humidity	5 ~ 95% RH
Net Weight	7g±5%



## ● Pin assignments

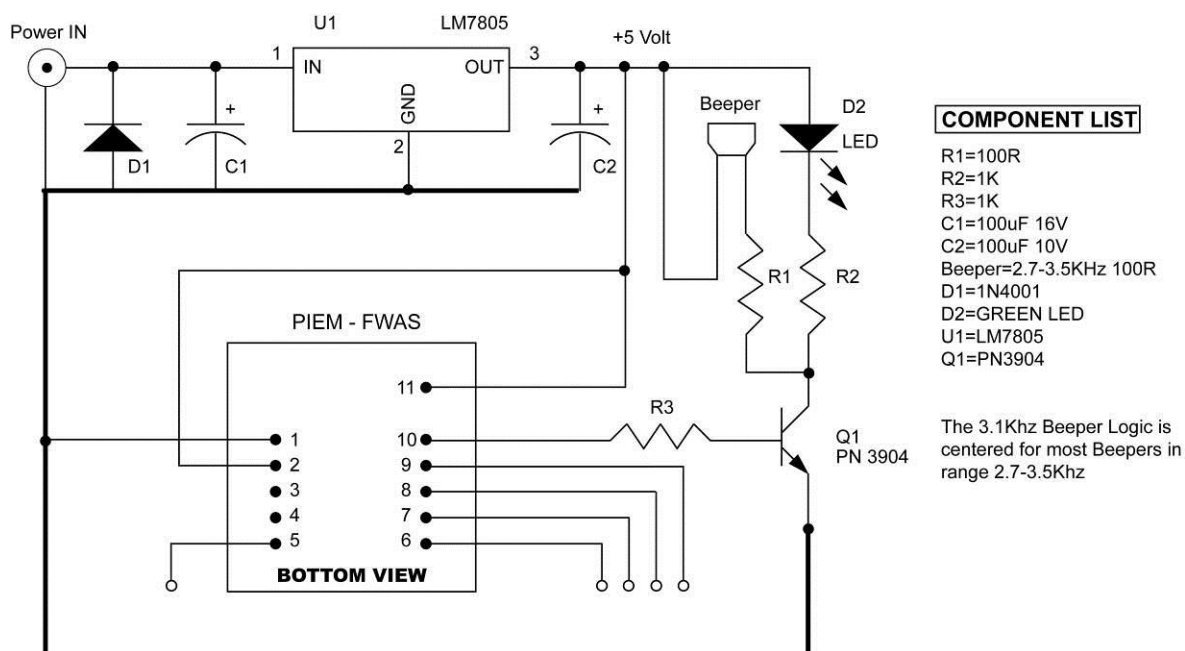
Pin No.	Description	ASCII	
		40 bit	80 bit
Pin 1	Zero Volts and Tuning Capacitor Ground	GND 0V	GND 0V
Pin 2	Strap to +5V	Reset Bar	Reset Bar
Pin 3	Embedded Antenna and Tuning Capacitor	Antenna	Antenna
Pin 4	Embedded Antenna	Antenna	Antenna
Pin 5	Card Present output	No function	No function
Pin 6	Future	NC	NC
Pin 7	Format Selector(+/-)	<b>Strap to GND</b>	<b>Strap to +5V</b>
Pin 8	Data 1	CMOS	CMOS
Pin 9	Data 0	TTL(to IC UART)	TTL(to IC UART)
Pin 10	3.1 kHz Logic	Beeper/LED	Beeper/LED
Pin 11	DC Voltage Supply	+5V	+5V

## ● Bottom view



1. GND
2. NC
3. ANT(Antenna)
4. ANT(Antenna)
5. Card present
6. NC
7. Strap to GND / Strap to +5V
8. Data 1
9. Data 0
10. LED(LED/Beeper)
11. +5V

## ● Circuit diagram

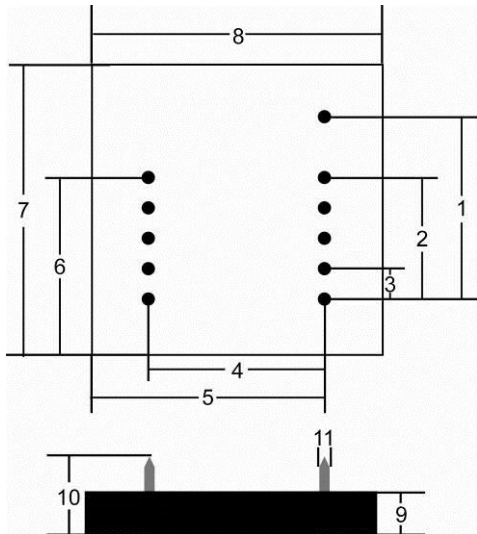


## ● Data formats

### Output data structure-ASCII

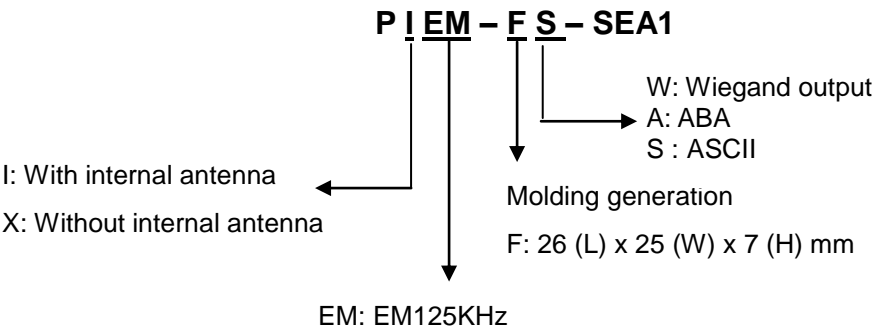
STX(02Hex)	DATA 40 bit (5 hexadecimal)	CHECK SUM (1 hexadecimal)	CR (0D Hex)
STX(02Hex)	DATA 80 bit (10 hexadecimal)	CHECK SUM (1 hexadecimal)	CR (0D Hex)

● **Dimensions (Unit: 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	20.3	19.8	20.9
6	16.3	15.8	16.9
7	26.4	26.1	27.1
8	25.3	24.9	25.9
9	6.0	5.8	6.6
10	9.9	9.40	10.5
11	0.66	0.62	0.67

● **Ordering guide**



Specifications subject to change without notice for further modification.