



# PIEM-FW34AS-LW1

## Proximity Module

### User manual

Ver.19.3(ID12\_U62B0\_E5D42)

#### ● Introduction

125KHz RFID reading module series are compact size and helps to shorten and simplify RFID products development schedule. Low power consumption and epoxy potted design suitable for integration with either portable or stationary product. The OEM/ODM is welcomed.



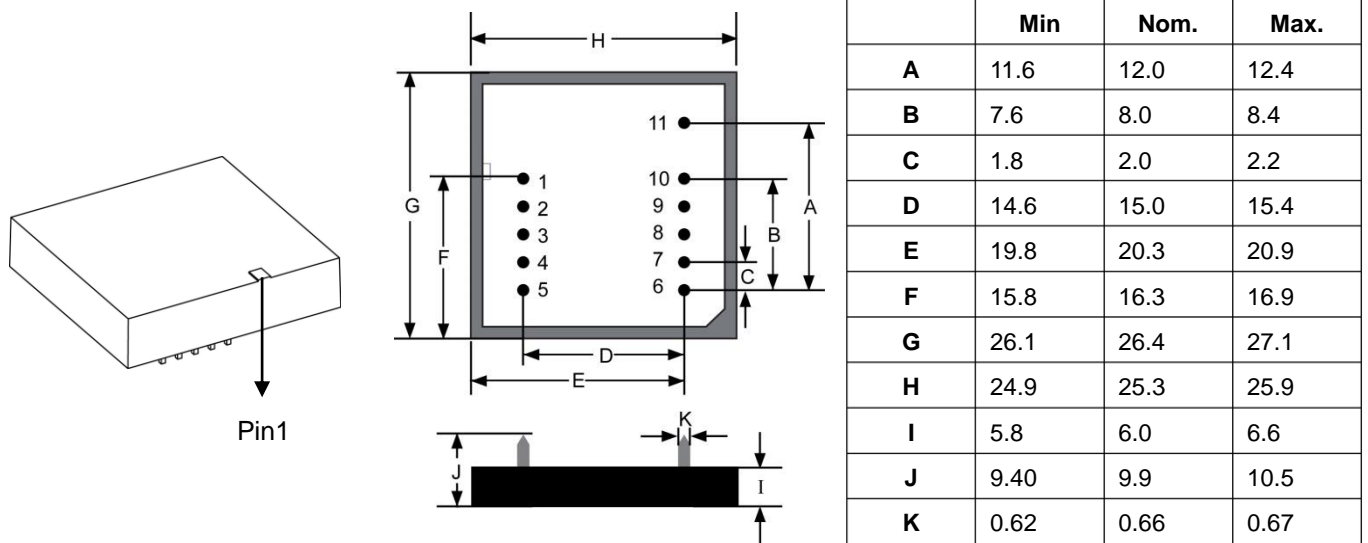
#### ● Features

1. AM 125KHz contactless proximity reading module specially for EM cards.
2. Either Wiegand 34, ABA or ASCII format output selected by pin connection.
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.

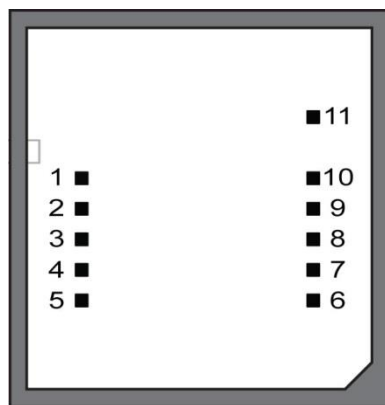
#### ● Specification

RFID frequency	125KHz ASK	
Applicable cards	EM4001, EM4100, EM 4102, TEMIC 5557(ISO1785) or compatible	
Reading range	Proximity card (T)0.8mm:	Max.6cm
	Proximity card (T)1.8mm:	Max.9cm
Output format	Wiegand 34bits, ABA, ASCII	
Power input	DC 5V	
Power Consumption	5VDC @ 30mA nominal	
Encoding	Manchester 64-bit, modulus 64	
Transmission spec.	9,600 bps N, 8, 1	
Standby / Working current	7mA±10% @5V DC / 30mA±10% @ 5V DC	
Material	ABS	
Dimensions(L) x(W) x(H) mm/inch	26 x 25 x 7 / 1 x 1 x 0.3	
Operating temperature	-10℃~75℃	
Storage temperature	-20℃~85℃	

● **Dimension: Unit: mm[inch]**



● **Bottom view**

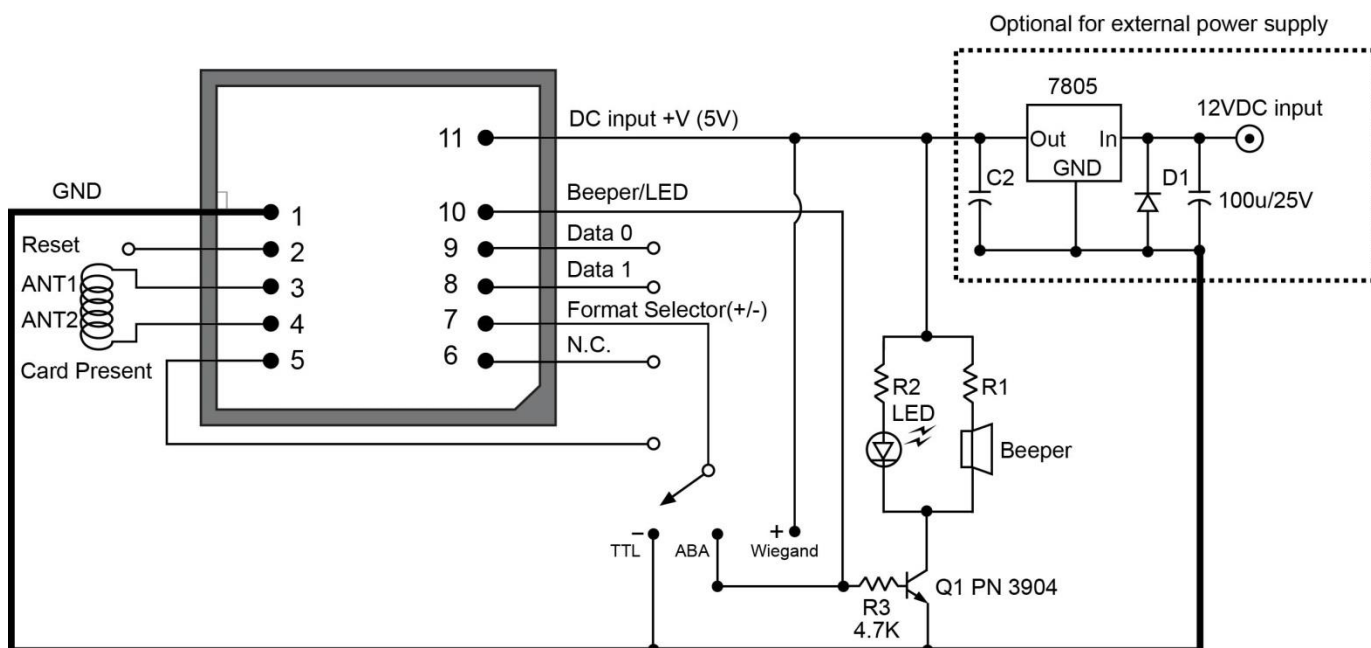


1. Ground
2. Reset
3. Antenna
4. Antenna
5. Card Present Output
6. N.C.
7. Format Selector(+/-)
8. Data 1
9. Data 0
10. Beeper/LED
11. +5V

● **Pin assignments**

Pin No.	Description	Wiegand34	ABA	ASCII
Pin 1	Ground	GND 0V	GND 0V	GND 0V
Pin 2	Reset	Strap to GND	Strap to GND	Strap to GND
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	N.C.	N.C.	N.C.
Pin 7	Format Selector(+/-)	Connect to +5V	Connect to Pin 10	Connect to GND
Pin 8	Data 1	D1	Magstripe clock	CMOS
Pin 9	Data 0	D0	Data*	TTL(to IC UART)
Pin 10	High level pulse 80ms	Beeper/LED	Beeper/LED	Beeper/LED
Pin 11	DC Voltage Supply	+5V	+5V	+5V

## ● Wiring example



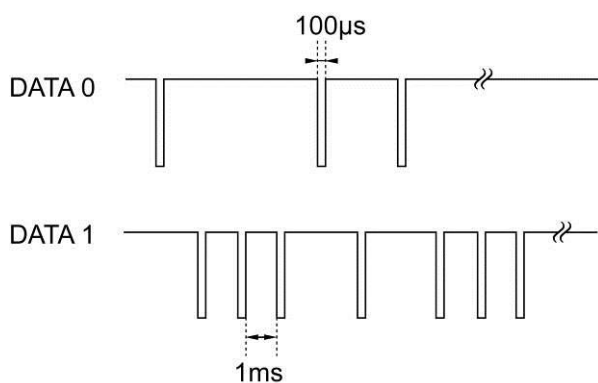
## ● Data formats

### Wiegand 34 bits

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	27	28	29	30	31	32	33	34
P	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	P
P	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E																	
																	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	P
Summed for even parity(E)																	Summed for Odd parity(O)																

P=Starts Even parity bit and stop Odd parity bit.

Even parity "E" is generated by summing from bit2 to bit17; Odd parity "O" is generated by summing from bit18 to bit33.



Ex.: Card UID(Card No. Hexadecimal) : 00 22 B5 8A

	Hexadecimal		Decimal (10 digits) Wiegand 34bits
Card No.	0022B58A	→	0002274698

## UART output format

STX(02Hex)	CARD ID(14ASCII)	CR	LF
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If the card no. is **00528283252106**, you will get the following Hex value.

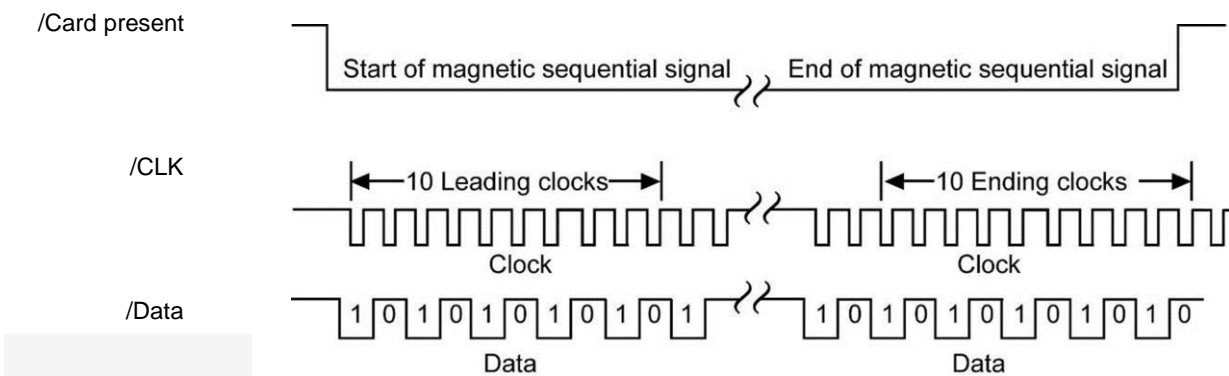
STX CR LF  
Hex value : 02H, 30H, 30H, 35H, 32H, 38H, 32H, 38H, 33H, 32H, 35H, 32H, 31H, 30H, 36H, 0DH, 0AH

## Magnetic stripe ABA Track2 output format

10 Leading Zeros	SS	CARD ID(14D)	ES	LRC	10 Ending Zeros
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SS is the start sentinel character of 11010, ES is the end character of 11111, LRC is the longitudinal redundancy check.

## ABA Track2 timing graph:



## ● Application

POS system



Time attendance



Access control



Logistics



Production control

