



# RFID 125KHz EM read module

## PXEM-BWS-PST

Ver.21.1

### ● Features

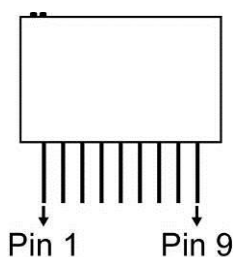
1. AM 125KHz contactless proximity reading module specially for EM cards.
2. The card continued to present every 2 seconds.
3. Either Wiegand 26 or ASCII(TTL) output determined by pin assignment.
4. Read only for EM cards, and the data are sent by Data 0 and Data 1.
5. Read for TEMIC cards, and the data are sent by Data 0 and Data 1.
6. Lower cost with effective performance.
7. Compact size.



### ● Specification

Dimensions(L) x(W) x(H) mm/inch	26.5 x 7 x 16.5 / 1 x 0.3 x 0.7
Transmitting frequency	ASK 125 KHz
Operating voltage	DC 5V±5%
Reading range	Depending on tag size, tag type and antenna size
Applicable cards	EM 4001, EM 4102 or compatible / TEMIC 5557
Standby current	23mA±10% @5V DC
Operating current	21mA±10% @5V DC
Operating temperature	-10℃ ~ 75℃
Storage temperature	-20℃ ~ 85℃
Storage humidity	5 ~ 95% RH
Net weight	6 g

### ● Pin assignments



PIN No.	Description	ASCII	Wiegand26
PIN 1	To external antenna and tuning capacitor	Antenna IN	Antenna IN
PIN 2	To external antenna	Antenna OUT	Antenna OUT
PIN 3	Format selector(+/-)	Strap to +5V	Strap to GND
PIN 4	Beep / LED	Buzzer/LED	Buzzer/LED
PIN 5	Data 1	TTL (to IC UART)	Data 1
PIN 6	Data 0	N.C.	Data 0
PIN 7	---	NC	NC
PIN 8	Zero volts and tuning capacitor ground	GND 0V	GND 0V
PIN 9	DC voltage supply	VCC +5V	VCC +5V

## ● Data formats

### RS232C(ASCII) Output

#### 1. Data output format

- 9600bps, N, 8, 1
- PIN3:TX non-reverse output
- PIN4:TXreverse output
- CHECKSUM: Using card 10 bytes DATA for XOR calculation

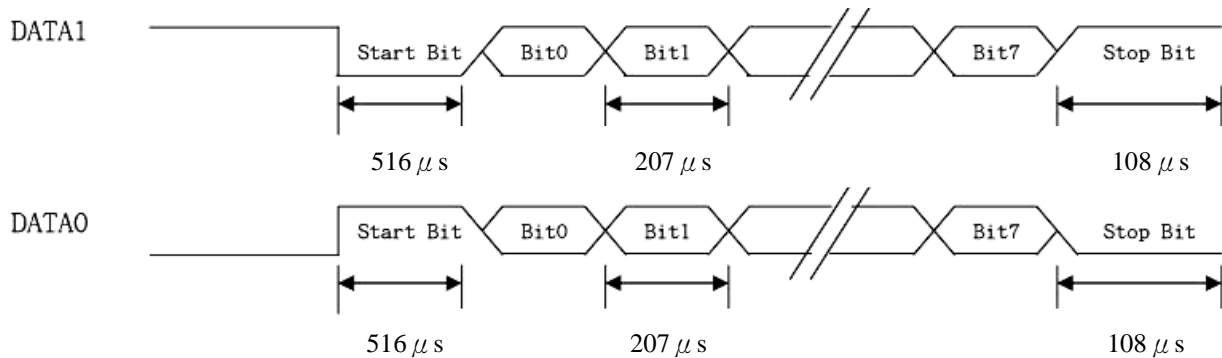
STX(02Hex)	CARD ID(10 ASCII)	CHECK SUM(2 ASCII)	ETX(03H)
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For example: card number : 62E3086CED

**ASCII with check sum** :36H, 32H, 45H, 33H, 30H, 38H, 36H, 43H, 45H, 44H

**Check sum algorism** :62(H) XOR (E3H) XOR (08H) XOR (6CH) XOR (EDH)=08H

#### 2. Time period flow chart



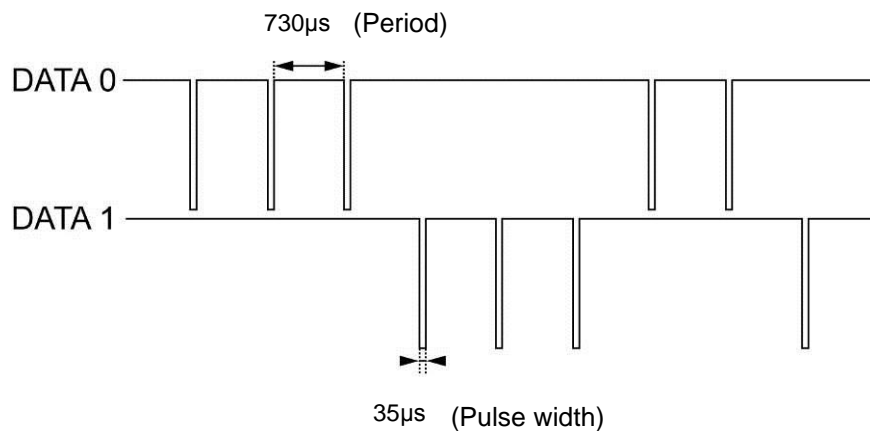
#### Wiegand 26 bits

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
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	P
EP	E	E	E	E	E	E	E	E	E	E	E	E													
													O	O	O	O	O	O	O	O	O	O	O	O	OP
Summed for even parity(E)													Summed for Odd parity(O)												

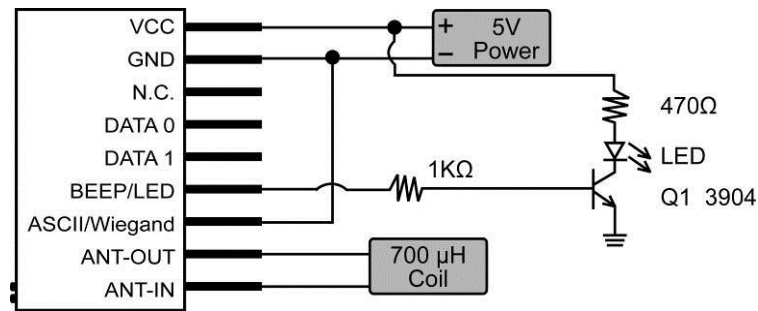
P=Start Even parity bit and stop Odd parity bit.

Even parity "EP" is generated by summing from bit2 to bit13 (Indicated by "E")

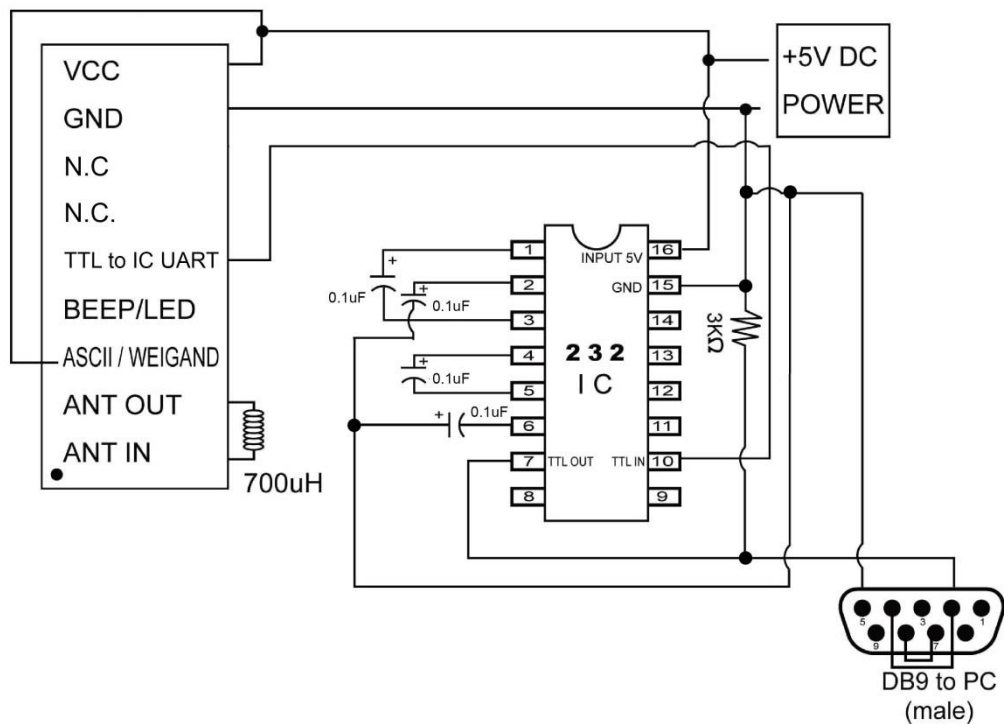
Odd parity "OP" is generated by summing from bit14 to bit25 (Indicated by "O")



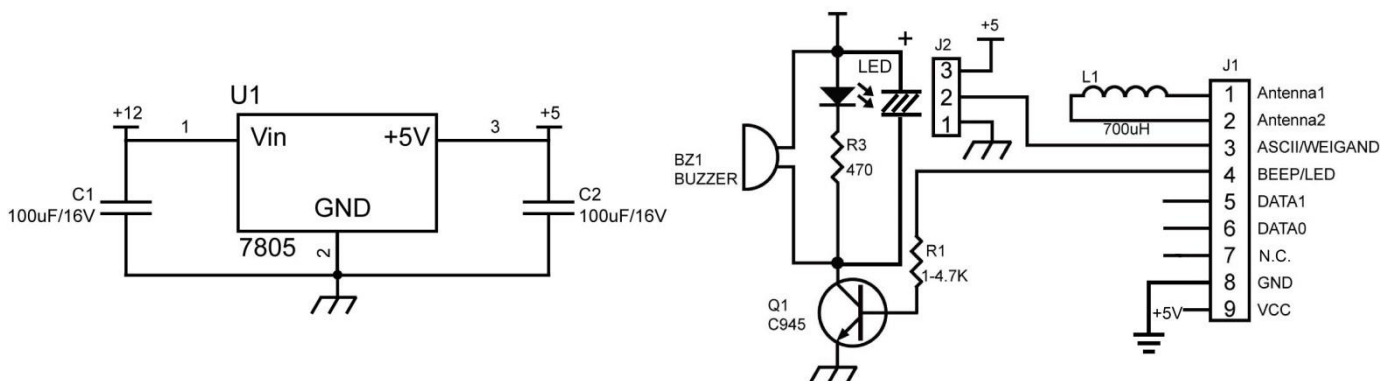
- **Circuit diagram: Wiegand output.**  
**PXEM-BWS-01C1: (700μH)**



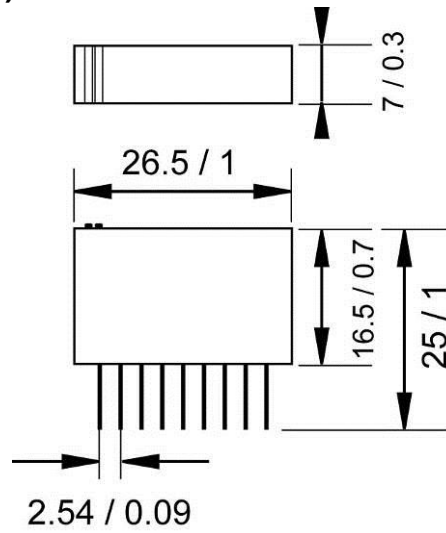
- **Circuit diagram: RS-232 output.**



- **Application Wiring**



- Dimensions: Unit (mm/inch)



Specifications subject to change without notice for further modification.