

## ● Introduction

The H.I.D. proximity module contains the 125KHz/FSK decoding circuits to read the H.I.D. contactless cards or tags.

We support various modules antenna with Wiegand / ABA / ASCII interfaces easy to apply various utilization.



## ● Specification

RFID frequency			125KHz FSK
Applicable cards			H.I.D. or compatible
With internal antenna			YES
Reading range	Card	1.8mm	7 ±1 cm
		0.8mm	6 ±1 cm
Output format			Wiegand 26 / 34bits, ABA, UART
Transmission rate			9,600 bps, 8, N, 1
Power input			DC 5V
Standby / Working current			40mA±10% @ DC 5V / 40mA±10% @ DC 5V
Material			ABS
Dimensions(L) x(W) x(H) mm/inch			40x40x10 / 1.6x1.6x0.4
Operating temperature			-10℃~70℃
Storage temperature			-20℃~85℃

## ● Pin configuration

Pin	Function	Signal	Signal	Signal
Pin 1	Zero Volts and Tuning Capacitor Ground	GND 0V	GND 0V	GND 0V
Pin 2	Strap to +5V	Reset Bar ( N.C. )	Reset Bar ( N.C. )	Reset Bar ( NC )
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	CLS	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

## ● Data formats

### Wiegand 26 bit output

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=Starts Even parity bit and stop Odd parity bit.

Even parity "E" is generated by summing from bit2 to bit13; Odd parity "O" is generated by summing from bit14 to bit25.

### Wiegand 34 bits 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	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.

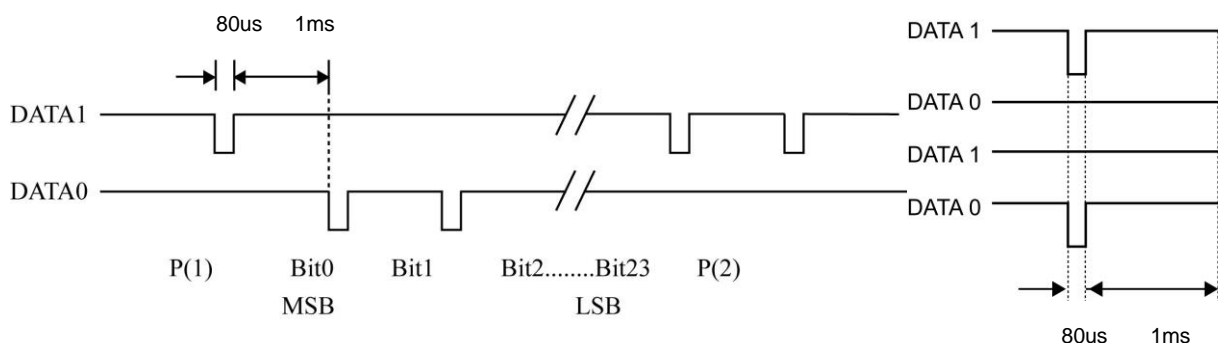
Even parity "E" is generated by summing from bit2 to bit17; Odd parity "O" is generated by summing from bit18 to bit33.

### Wiegand Output

(a) The output data is the last three bytes of card number (62E3086CED) 08H 6CH EDH

(b) Bit=1 D0=1 D1=0 Bit =0 D0=0 D1=1

(c) Output waveform



### ASCII output format

02	10ASCII Data characters	Checksum	03
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The checksum is the result of the "exclusive or" of the 5 Binary data bytes the 10 ASCII data characters.

### ASCII(TTL) Output

(a) 9600 bps, N, 8, 1

(b) PIN5: TX Non-invert output.

(c) PIN6: Tx invert output.

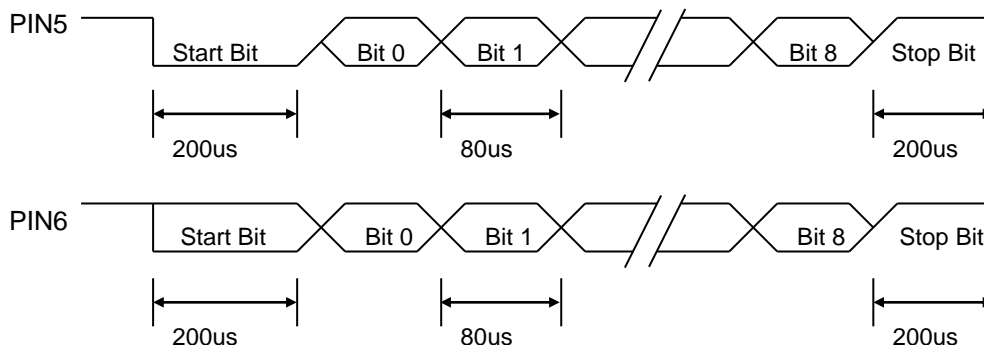
(d) Example: Card number 62E3086CED, output format as following :

10ASCII DATA, 36H,32H 45H,33H 30H,38H 36H,43H 45H,44H

(62H E3H 08H 6CH EDH)

CHECKSUM: (62H) XOR (E3H) XOR (08H) XOR (6CH) XOR (EDH)=08H

(e) Each Byte output waveform



## Magnetic stripe ABA Track2 output format

10 Leading zeros	SS	Data	ES	LRC	10 Ending zeros
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Leading zeros: 10 bits

SS: Start character of 11010

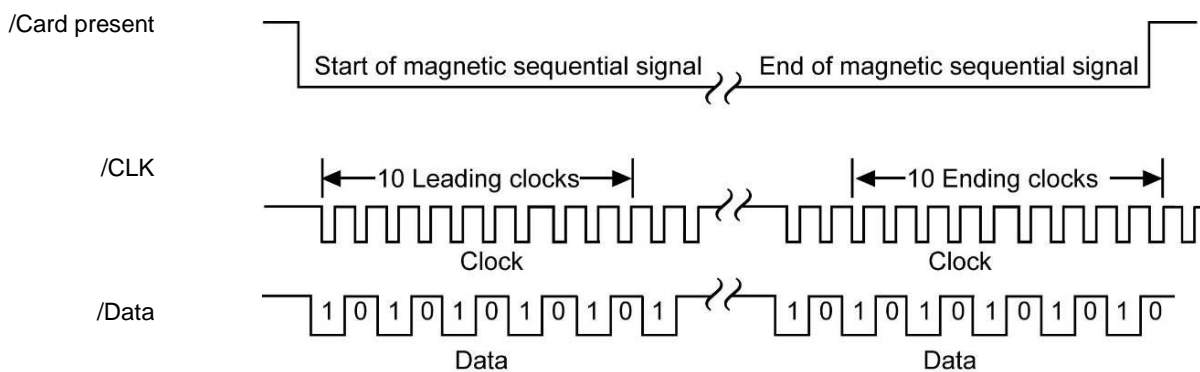
Data: Altogether 10 character, decimal system expression.

ES: End character of **11111**

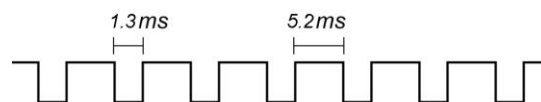
LRC: Longitudinal redundancy checks 5 bits.

Ending zeros: 10 bits

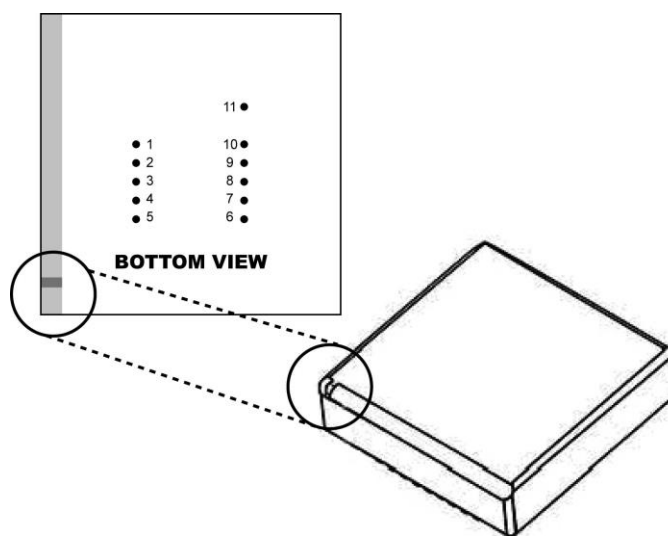
## ABA Track2 timing graph:



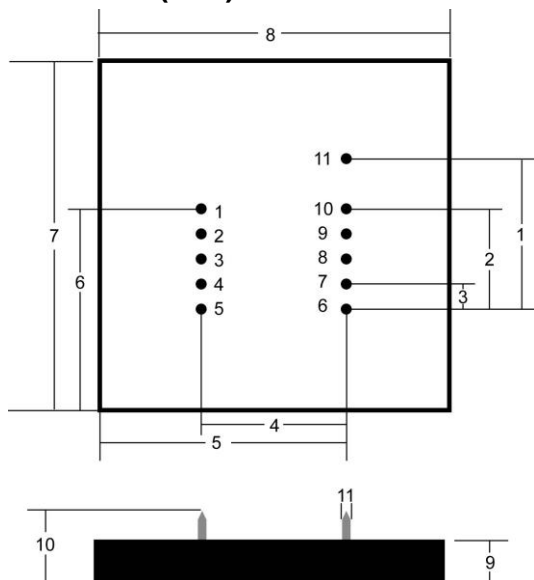
## Data timings for magnetic emulation



## ● Out looking

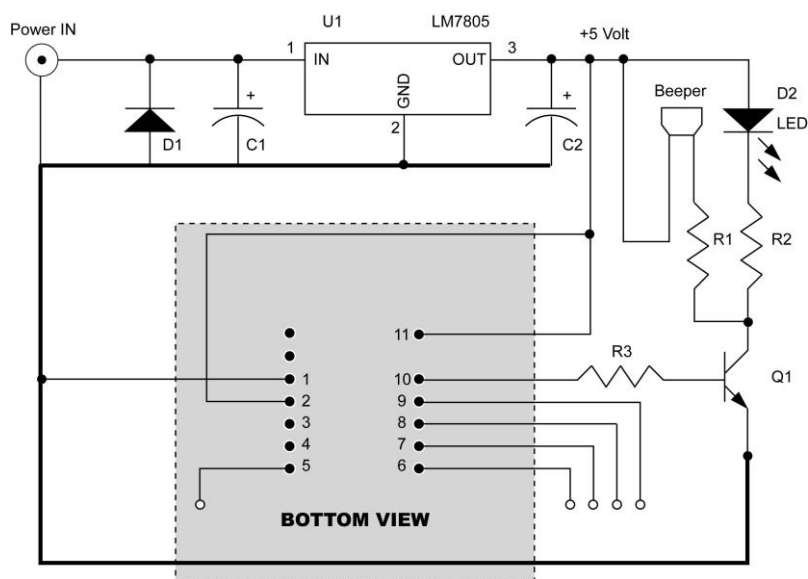


## ● Dimensions(mm)



	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

## ● Circuit diagram



## ● Ordering information

- ※ **PIHD-CWAS** : 125KHz FSK H.I.D. module, Wiegand 26 bit, ABA, ASCII, With internal antenna
- PIHD-CWAR2** : 125KHz FSK H.I.D. module, Wiegand 26 bit, ABA, RS-232, With internal antenna
- PIHD-CWA** : 125KHz FSK H.I.D. module, Wiegand 26 bit, ABA, With internal antenna
- PXHD-CWAS** : 125KHz FSK H.I.D. module, Wiegand 26 bit, ABA, ASCII, Without internal antenna
- PXHD-CWAR2** : 125KHz FSK H.I.D. module, Wiegand 26 bit, ABA, RS-232, Without internal antenna
- PXHD-CWA** : 125KHz FSK H.I.D. module, Wiegand 26 bit, ABA, Without internal antenna

※ The shipped model number.

Other customer request specifications are welcomed.

Specifications subject to change without notice for further modification.

**W-04-PIHD-CWAS/E**