



LF 125KHz & HF 13.56MHz module

Model No. PIDF-20WT

Ver. 25.1

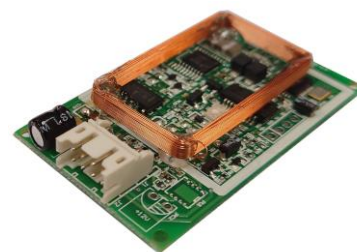
● Introduction

PIDF-20WT is a LF 125KHz & HF 13.56MHz module can read **EM ASK 125KHz, H.I.D. FSK 125KHz, 13.56 MHz for Mifare, Mifare Ultralight, Mifare DESFire, NFC** contactless card/keytag etc. then send out some standard data format.

The users may select the suitable models for connecting to dedicate controller or PC for various applications. The LED will turn to red when power is applied, and when user presents the proximity card the LED will turn to green.

● Features

1. Support 125KHz EM, H.I.D. & 13.56MHz Mifare ISO 14443A(UID), Mifare Ultralight, Mifare DESFire, NFC Tag
2. Support UART(ASCII Code Format), Wiegand 26~58 bits
3. Support firmware modification accords to request of special function
4. With LED indicator



● Applications

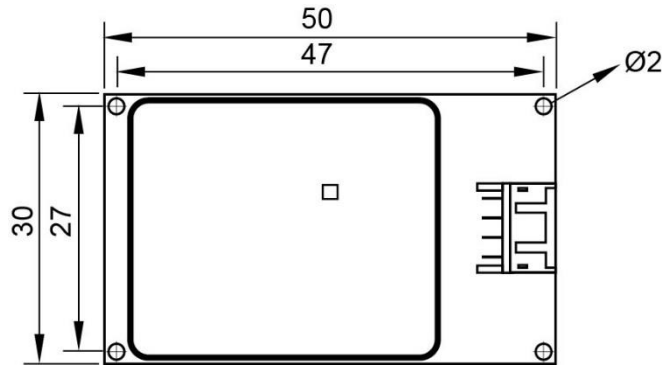
- Smart home
- Membership system

● Specification

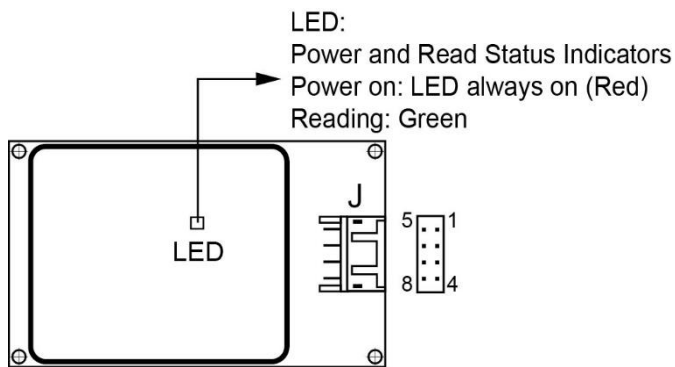
RFID frequency	125KHz & 13.56MHz					
Applicable cards	EM4100, EM4102, EM4200, TK4100, EM4305, ATA5577, T5567, TEMIC 5557, H.I.D., Mifare(4 Byte), Mifare Ultralight(7 Byte), Mifare DESFire(7 Byte), NFC Tag(7 Byte)					
Output format	UART(TTL), Wiegand (H.I.D. 26/34 bits, EM 34 bits, Mifare 4Byte 34 Bits, Mifare 7Byte 58 Bits)					
Power input	DC 4.5~5.3V					
Standby current Working current	88mA±10% @ 5V DC / 80mA±10% @ 4.5V DC / 95.6mA±10% @ 5.3V DC 88mA±10% @ 5V DC / 80mA±10% @ 4.5V DC / 95.6mA±10% @ 5.3V DC					
Reading range Card(T:0.8mm)	EM	H.I.D	Mifare	Mifare Ultralight	Mifare DESFire	NFC Tag
	Max.5.0cm	Max.3.0cm	Max.3.0cm	Max.2.3cm	Max.2.3cm	Max.4.5cm
Operating temperature	-10℃~75℃					
Storage temperature	-10℃~85℃					

- **Dimension:**

Unit: mm



- **Wire configuration**



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Wire No.	Color	Function
1	Red	+4.5V~5.3V
2	White	Data 0
3	Green	Data 1
4	Black	Ground
5	Red	+4.5V~5.3V
6	Orange	TX
7	Yellow	NC
8	Black	Ground

- **Data formats**

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")

- **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.

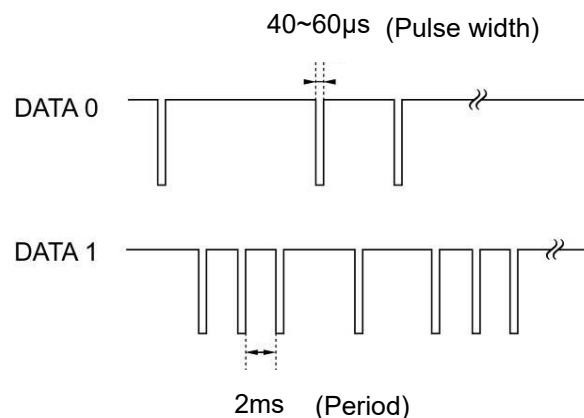
- Wiegand 58 bits**

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
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
P	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Summed for even parity(E)																												

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30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58
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
O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	P
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 bit29 (Indicated by "E")
- Odd parity "OP" is generated by summing from bit30 to bit57 (Indicated by "O")



- UART output format**

STX(02HEX)	CARD NO. (10 ASCII)	CHECH SUM (2 ASCII)	CR(0DH)	LF(0AH)	ETX(03HEX)
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EM

If the card no. is **7B0022B58A**, you will get the following Hex value.

Hex value :

STX	7	B	0	0	2	2	B	5	8	A	6	6	CR	LF	ETX
02H,	37H,	42H,	30H,	30H,	32H,	32H,	42H,	35H,	38H,	41H,	36H,	36H,	0DH,	0AH,	03H
												CHECK SUM			

H.I.D.

If the card no. is **1370CDB**, you will get the following Hex value.

Hex value :

STX	0	0	0	1	3	7	0	C	D	B	E	1	CR	LF	ETX
02H,	30H,	30H,	30H,	31H,	33H,	37H,	30H,	43H,	44H,	42H,	45H,	31H	0DH,	0AH,	03H
												CHECK SUM			

STX(02HEX)	CARD NO. (8 ASCII / 14 ASCII)	CR(0DH)	LF(0AH)	ETX(03HEX)
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Mifare (4 Byte)

If the card no. is **6F7A1CF0**, you will get the following Hex value.

Hex value :

STX	6	F	7	A	1	C	F	0	CR	LF	ETX
02H,	36H,	46H,	37H,	41H,	31H,	43H,	46H,	30H,	0DH,	0AH,	03H

Mifare Ultralight, Mifare DESFire, NFC (7 Byte)

If the card no. is **8022CD326F8504**, you will get the following Hex value.

Hex value :

STX	8	0	2	2	C	D	3	2	6	F	8	5	0	4	CR	LF	ETX
02H,	38H,	30H,	32H,	32H,	43H,	44H,	33H,	32H,	36H,	46H,	38H,	35H,	30H,	34H,	0DH,	0AH,	03H,

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Mifare DESFire is a registered trademark of NXP B.V.

Mifare Ultralight is a registered trademark of NXP B.V.

Specifications subject to change without notice for further modification.

PIDF-20WT/E