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# User Manual

**Proximity RF Card Reader  
ZIGI 500**



<b>CPU</b>	8Bit RISC Micro Processor
<b>Operating Voltage Range</b>	12V DC ( $\pm 10\%$ )
<b>Supplies Electriccurrent</b>	Max 100mW (At 12V DC)
<b>Communication (Option)</b>	Wiegand 34Bits (RS 232C)
<b>Data Signal Time</b>	Wiegand -50ms / 5us
<b>Used Card</b>	ISO/IEC 14443A(Mifare, Single)
<b>Frequency</b>	13.56MHz $\pm 7\text{KHz}$
<b>Data getting</b>	Proximity card data getting
<b>Oscillation type</b>	Crystal
<b>Modulation type</b>	Amplitude Shift Keying Modulation (ASK)
<b>Operating Temperature</b>	-10°C ~ 50°C
<b>Operating Humidity</b>	0 ~ 90%
<b>Dimension(W X H X L)</b>	77mm x 118mm x 17mm
<b>Weight</b>	0.35 kg
<b>Antenna type / Length</b>	On PCB Loop Antenna / 600mm
<b>Reading Range</b>	Within 100m
<b>Air Interface</b>	200 mW
<b>EM Field Strength</b>	500 uV/m (3 m) 01.01
<b>MIC Authentication Number</b>	R-LPD2-03-0135
<b>EPC Code</b>	



## ZIGI 500 Output Configuration

		Data Format	LED	Buzzer	Part No.
Wiegand 34bit	Even Parity	UID 0 + UID 1 + UID 2 + UID 3	Odd Parity External Control (Active Low)	External Control	ZiGi 500_34A
				x	ZiGi 500_34B
Wiegand 26bit	Even Parity	UID 0 + UID 1_H,UID 1_L + UID 2 + UID 3	Odd Parity External Control (Active Low)	External Control	ZiGi 500_26A
				x	ZiGi 500_26B
Wiegand 37bit	Even Parity	bit 0 + bit 0 +bit 0 + UID 3 + UID 2 + UID 1 + UID 0	Odd Parity External Control (Active Low)	External Control	ZiGi 500_37A
				x	ZiGi 500_37B
Wiegand 42bit	Even Parity	UID + Checksum	Odd Parity External Control (Active Low)	External Control	ZiGi 500_42A
				x	ZiGi 500_42B
RS 232C	STX	UID 0 + UID 1 + UID 2 + UID 3	ETX		ZiGi 500_RHA
		Data HEX Format			
RS 232C	STX	UID 0_H + UID 1_L + ..... + UID 3_H + UID 3_L	ETX		ZiGi 500_RAA
		Data ASCII Format			

## Card Reader Operation

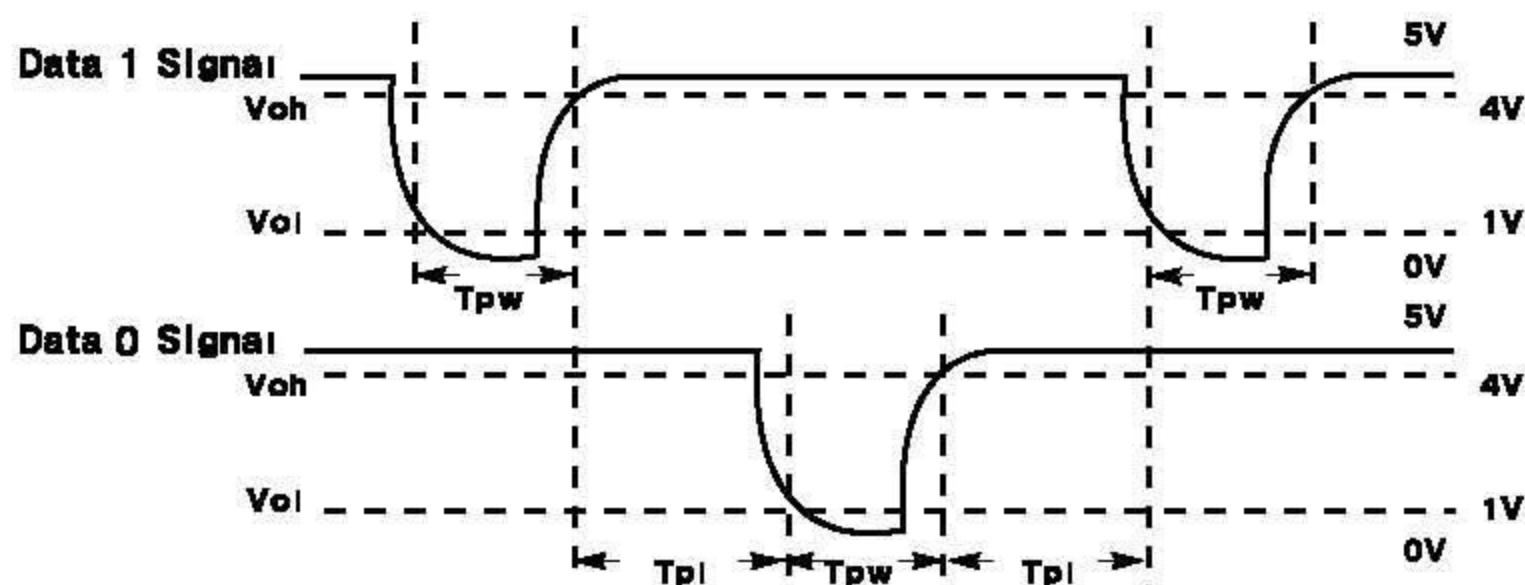
① Buzzer	■ Buzz once when to detect card
② LED	■ Registered Card: OK conform of higher system ■ Unregistered Card: Error conform of higher system
③ Card Approach	■ Reading of Card
④ LED display	■ Green LED: LED ON when to read card ■ Red LED: LED ON when power ON

## Pin Connection Map

No	Pin Name	Color	Description
1	VDD	Red	+12Vdc Input
2	GND	Black	Ground
3	W0	Blue	Wiegand 0 Line
4	W1	Violet	Wiegand 1 Line
5	NC	Gray	Not Used
6	NC	Green	Not Used
7	Host-TXD (RS 232C)	White	Transmit Data
8	Host-RXD (RS 232C)	Orange	Receive Data
9	Buzzer	Brown	Option
10	LED	Yellow	Active Low

## Wiegand Communication

### Data Bits Timing Pattern



Tpw (Pulse Width Time) : 50 μs

Tpi (Pulse Interval Time) : 5 ms

### 34Bits Data Format

Bits Number	Purpose
Bit 1	Even Parity over bits 2 to 17
Bit 2 to 17	UID 0 and UID 1
Bit 18 to 33	UID2 and UID 3
Bit 34	Odd Parity over bits 18 to 33

### 26Bits Data Format

Bits Number	Purpose
Bit 1	Even Parity over bits 2 to 13
Bit 2 to 13	UID 0 and Upper Nibble of UID 1
Bit 14 to 25	Lower Nibble of UID 1 and UID 2
Bit 26	Odd Parity over bits 14 to 25

### 37Bits Data Format

Bits Number	Purpose
Bit 1	Even Parity over bits 2 to 12
Bit 2 to 19	Bit 0 and Bit 0 and Bit 0 and UID 0 and UID 1
Bit 20 to 36	UID 2 and UID 3
Bit 37	Odd Parity over bits 13 to 36

### 42Bits Data Format

Bits Number	Purpose
Bit 1	Even Parity over bits 2 to 20
Bit 2 to 20	UID 0 and UID 1 Upper Nibble of UID 2
Bit 21 to 41	Lower Nibble of UID 2 and UID 3 and Checksum
Bit 42	Odd Parity over bits 21 to 41

## RS 232C Communiton

### UART Protocol

Baud Rate : 9600 bps

Non Parity Bit

1 Start Bit

1 Stop Bit

8 Data Bit



▶ Data Format

HEX

Byte	1	2	3	4	5	6
Data	STX	UID 4 Byte			ETX	
Ex	0x02	0x6F	0x46	0xED	0x26	0x03

ASCII

Byte	1	2	3	4	5	6	7	8	9	10
Data	STX	UID 8 Byte							ETX	
Ex	0x02	6	F	4	6	E	D	2	6	0x03



**Declaration of conformity**

"Hereby, URND Co., Ltd., declares that ZIGI500 is in compliance with the essential requirements and other relevant provisions of Directive 1995/5/EC"

**FCC Approved**

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses instructions, may cause harmful interference to radio communications. However there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures.

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help

"CAUTION: Any changes or modifications in construction of this device which are not expressly approved by the party responsible for compliance could void the user's authority to the equipment."