User Guide

125 kHz Proximity Reader Module

(DCM-10)

EM Read Only, 125KHz +5V
26 x 26 x 7(mm)
WEG26 / RS232 / TTL (w/ Internal Antenna)

Document version: 1.3

About Taiwan Batag RFID technology co., ltd.:

Taiwan Batag RFID technology co.,ltd. is a specialized manufacturer and supplier of RFID devices and transponders with over 10 years of professional RFID experience. We are unlike our competitors in that we are comprised of Barcode and Telecom companies that have been established for over 15 years.

Currently our major products include LF (125 kHz, 134.2 kHz), HF (13.56 MHz) and UHF (868 MHz, 915 MHz) RFID devices that are manufactured in popular RFID technologies including TI, TK4100, EM4100, EM4102, T5557, Hitag 2, Mifare 1K (S50), Mifare 4K (S70), Mifare UltraLight, Mifare DESFire, I.CODE SLI, SLE 66R35, Legic MIM256 and MIM1024, etc.

We not only provide and integrate our hardware but we also tailor the needs of our customers.

"Based in Taiwan, Advancing our horizons, and Expanding RFID products all over the world; we are Taiwan Batag RFID technology co., ltd."

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Power Requirement:	5v@13mA nominal
Frequency:	125KHz
Card Format:	EM 4001 or compatible
Encoding:	Manchester 64 bit, modulus 64
I/O Output Current:	20 mA sink/source
Drive Current:	300 mA
Antenna Volt:	100 Volt PKPK
Baudrate	9600.N.8.1
Dimension	26*26*7

Output Format-ASCII

02	10 ASCII Data Characters	Checksum	CR	LF	03

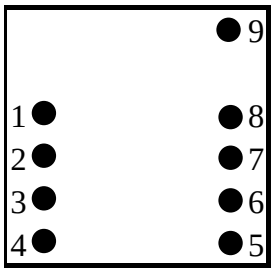
The checksum is the result of the 'exclusive or ' of the 5 Binary Data bytes (the 10 ASCII data characters)

Data Structure Wiegand26 Bit

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
EVEN PARITY(E)													ODD PARITY(O)												

P=Parity Start Bit and Stop Bit

Bottom View



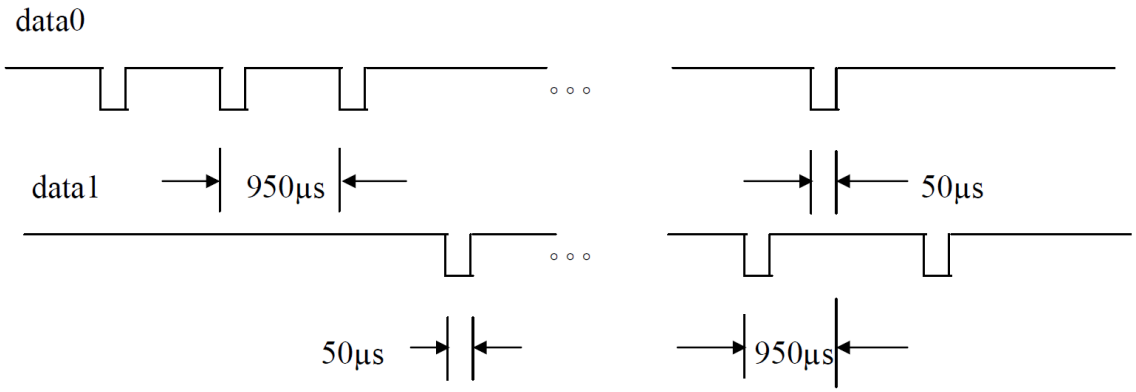
ASCII

Pin1	Ground 0v	Zero volts and Tuning Capacitor Ground
Pin2	Reset Bar	Strap to +5v
Pin3	Antenna	To External Antenna and Tuning Capacitor
Pin4	Antenna	To External Antenna
Pin5	Strap to Ground	
Pin6	CMOS	Serial ASCII
Pin7	TTL Data	Serial ASCII inverted
Pin8	Beeper1/Led	2.7 KHz Logic.
Pin9	+4.6 through +5.5V	Supply DC volts

Wiegand26

Pin1	Ground 0v	Zero volts and Tuning Capacitor Ground
Pin2	Reset Bar	Strap to +5v
Pin3	Antenna	To External Antenna and Tuning Capacitor
Pin4	Antenna	To External Antenna
Pin5	Strap to Pin+5v	
Pin6	One Output	
Pin7	Zero Output	
Pin8	Beeper1/Led	2.7KHz Logic
Pin9	+4.6 through +5.5V	Supply DC volts

● DCM-10 Wiegand 26 data output waveform



● EM Transmission Format

Output Format – ASCII **(COM port setting: 9600, N, 8, 1)**

STX	Data	Data Checksum	CR	LF	ETX
02H	10 ASCII	2 ASCII	0DH	0AH	03H

The checksum is the result of the 'exclusive OR' of the 5 binary data bytes (the 10 ASCII data characters)

The Calculation of the Checksum

For example:

When EM tag (UID: 0F01EAF022) comes near the reader, if the COM port tool can only display visible ASCII character, you will see 0F01EAF02236, 0F01EAF022 is UID, and 36 is checksum.

Here is how checksum calculated:

```
      0000   1111  (0F)     0F01EAF022
XOR)  0000   0001  (01)     0F01EAF022
- - - - - - - - - - - - - - - - - - - - - - - - - - -
      0000   1110  (0E)     (XOR result)
XOR)  1110   1010  (EA)     0F01EAF022
- - - - - - - - - - - - - - - - - - - - - - - - - - -
      1110   0100  (E4)     (XOR result)
XOR)  1111   0000  (F0)     0F01EAF022
- - - - - - - - - - - - - - - - - - - - - - - - - - -
      0001   0100  (14)     (XOR result)
XOR)  0010   0010  (22)     0F01EAF022
- - - - - - - - - - - - - - - - - - - - - - - - - - -
      0011   0110  (36)     Checksum
```

If your COM port tool can display HEX code, you will see:

02 30 46 30 31 45 41 46 30 32 32 33 36 0D 0A 03

02	30	46	30	31	45	41	46	30	32	32	33	36	0D	0A	03
STX	0	F	0	1	E	A	F	0	2	2	3	6	CR	LF	ETX