

# EM9939 MIFARE HANDHELD READER

## SPECIFICATION

- Card / Tag : Philips one S50 chips. ISO14443A standard
- Read range : >= 5cm for standard ISO card
- Size (mm) :
- Weight (gm) :
- Operating temperature : -10°C to 70°C
- Operating Humidity : 0% to 90%
- Operating Ampere : 80mA
- Operating Voltage : 9VDC rechargeable battery or 7.5VDC to 12VDC power adaptor
- Low power consumption design : If no card / tag presents within 15 seconds, reader power off automatically. Fully charge battery can read XX piece cards / tags.

- Memory : Maximum 3000 records, each record has 8 bytes data.
- Clock : Dallas clock IC.
- Safety : Data retention for 20 years
- Data communication : RS232 interface.  
Parameters : Baud rate : 9600,  
Data : 8, Stop bit : 1, Check bit : N
- English Text Panel : 16 x 2 Text. Display time & Card CSN or 8 bytes card / tag data.
- Audio / Visual : LED and Buzzer
- Battery Low indication : Battery low, beep sound indication

## DATA FORMAT

① Philips Mifare card CSN (4 bytes)+4 bytes "0"  
"00000000"+ Byte3 + Byte2 + Byte1 + Byte0

② Philips Mifare card block data ( 8 bytes)

Absolute Block 1 to Block 63 excludes sector trailer. Byte 0 first, 8 bytes data

The 1024 x 8 bit EEPROM memory is organized in 16 sectors with 4 blocks of 16 bytes each.

In the erased state the EEPROM cells are read as a logical "0".  
in the written state as a logical "1".

Byte Number within a Block																		
Sector	Block	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Description
15	3	Key A						Access Bits			Key B						Sector Trailer 15	
	2	Data																
	1	Data																
	0	Data																
14	3	Key A						Access Bits			Key B						Sector Trailer 14	
	2	Data																
	1	Data																
	0	Data																
:	:																	
:	:																	
:	:																	
1	3	Key A						Access Bits			Key B						Sector Trailer 1	
	2	Data																
	1	Data																
	0	Data																
0	3	Key A						Access Bits			Key B						Sector Trailer 0	
	2	Data																
	1	Data																
	0	Manufacturer Block																