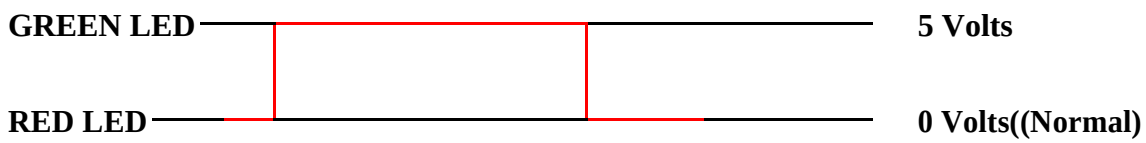
864-52 OEM Dual Technology Reader

The 864-52 is a very powerful proximity reader with dual-frequency technology and small dimensions. The device is operated with a voltage of 5 to 18 VDC. The 864-52 reads the ID/UID codes of Mifare, Felica (ISO 14443A / ISO 18092) and compatible EM, Atmel transponders.

Power Requirements	5~18 Volts regulated DC at 200 mA typical with a 12V supply. A linear regulator is recommended .
Interface	Wiegand, Magstripe, 9.6K Baud Serial ASCII (RS232) or special to customer specifications.
Typical Maximum Read in ideal conditions	Range 2~5 cm at 5~18 V with ISO 14443A / ISO 18092 / Compatible EM
Frequency	13.56MHz /125KHz standard
Transponder	Read Only
Audio/Visual Indication	Internal LED and Buzzer
Dimensions	7.8 x 4.3 x 1.6 cm
Temperature Range	-10 to 60 Deg C.
Interface Cable	90cm.

Output Assignment

Red	Power	5-18 Volt
Black	Power	0 Volt
White	Clock Output (Magstripe , Wiegand1) 2K pull down.	
Green	Data Output (Magstripe & Wiegand0) 4K7 pull up	
Blue	RS232 RXD	
Orange	Card Present Output 4K7 pull up	
Yellow	RS232 TXD & Program Input 4K7 pull up	
Brown	LED (External source Connect to GND 0 Volts).	



External Source will decide the pulse.
The externally LED must be operation in the wiegand or the magstripe interface. Disable the externally controlled LED operation in the RS232 interface.

2. Output Format

The output format can be customer programmed. The available formats are Wiegand, Magnetic Emulation, Clock Data and Serial ASCII (RS232)

Wiegand

Red	Power 5~18 V
Black	Ground 0V
White	Data1
Green	Data0
Blue	Floating

Magstripe (ABA Track 2)

Red	Power 5~18V
Black	Ground 0V
Green	Data
White	Clock (Strobe)
Orange	Card Present
Blue	Connect to Red
Brown	Connect to Black

Serial ASCII (RS232)

Red	Power 5~18V
Black	Ground 0V
Blue	RS232 RXD
Blue	Connect to Black (When No Connect to RS232 RXD)
Yellow	RS232 TXD

3. Data Structure

3-1-1. Serial ASCII(RS232)

STX(02 HEX)	DATA (8 or 10”hex”ASCII chars)	CR	LF	ETX(03 HEX)

The start character is factory defined as an 'STX' (02 HEX). This is followed by 8 or10 Hex characters of data. The CR\LF characters serve to bring the received screen text back to the left hand side and on the line below after the data bytes have been sent. The 'ETX ' (03 HEX) character denotes the end of the current transmission. See Data format

3-1-2 . COMMAND LIST :

Serial port settings are 9600, N, 8, 1. Commands and replies have the following format:

STX(02h)	Command or reply code	CR(0Dh)

Currently supported commands are shown below

Switch the green LED on (Green LED enable)	STX(02h)	‘J1’	CR(0Dh)
Switch the green LED off (Green LED disable)	“	‘J2’	“
Switch the red LED on (Red LED enable)	“	‘J3’	“
Switch the red LED off (Red LED disable)	“	‘J4’	“
Buzzer beep 1 time	“	‘J5’	“
Buzzer beep 3 times	“	‘J6’	“
Get firmware version	“	‘VA9‘	“

The 864-52 can issue the following replies:

Command acknowledged	STX(02h)	‘ABE’	CR(0Dh)
Invalid command	“	‘CBC’	“
Command, firmware version data returned	“	‘Vnnnnxx’	“

3-2. Wiegand Format-26 Bit：See Data format

0	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
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
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 (E)**												

Note:

P Parity (Even or Odd) Start Bit and Stop Bit

S Site Bits from Card or Reader

C Card Data

SYRDSSW1-W26 Site bits from Card (24 bits Card Data)

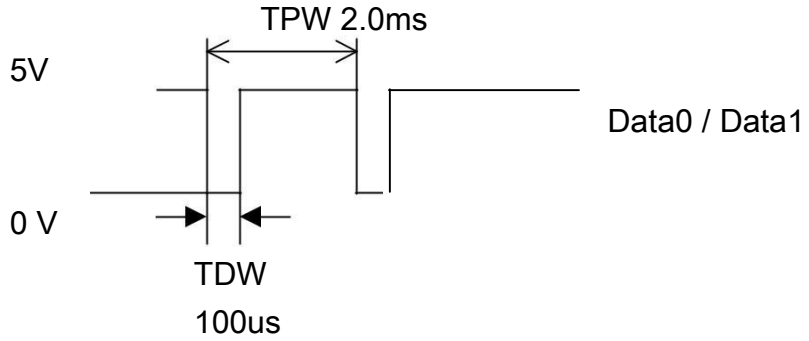
MSB Normal 01

LSB Normal 24

Wiegand Data Timing Specification

Pulse Interval (TPW) = 2.0mS +/- 3%

Pulse Width (TDW) = 100uS +/- 3%



3-3. Magstripe Emulation, ABA Track 2 ：

Speed: Simulated to 40 IPS (Inch per Second)

10 LEADING ZEROS	SS	DATA (Only 10 DIGITS)	ES	LRC	10 TRAILING ZEROS

The 10 leading zeros prepare the receiving unit to accept the data. The data is 10 digits long (for FeliCa standard). SS is the Start Sentinel consisting of 11010. ES is the End Sentinel consisting of 11111. LRC is the Longitudinal Redundancy Check character. Lastly there are 10 trailing zeros.

S