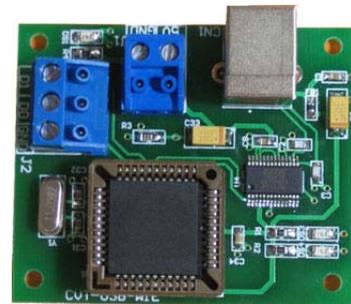# Wiegand to USB Converter

MA1805 is a Wiegand to USB Bi-directional converter. The USB interface is implemented as a Virtual COM Port (VCP). When Wiegand data is received, the MA1805 will automatically convert the Wiegand data from 3-bit up to 42-bit to a formatted ASCII string and output on the USB port. In a reverse process, when the formatted ASCII string is used as input to the USB port of the converter, the converter can convert the formatted ASCII string to Wiegand data format and output on the Wiegand data line port.
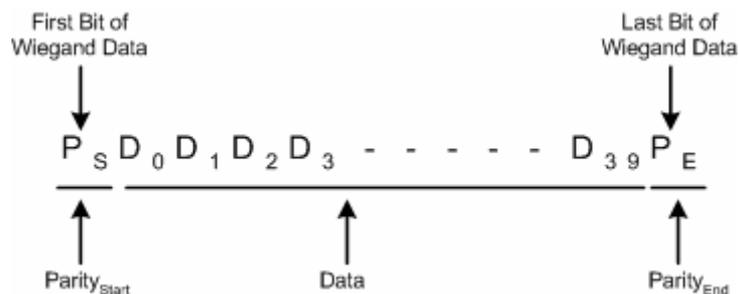
1. Specification

1.1 Communications:

USB Type B interface. 9600 BPS ASYNC, 8 bits, 1 Stop, No Parity.

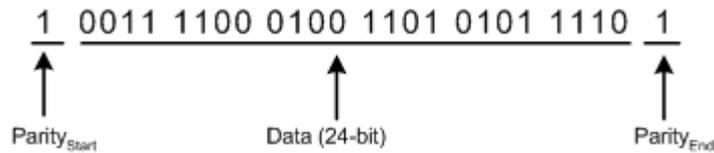# 2. Conversion Format

2.1 Wiegand Data Format

The format of the Wiegand data is shown as follows:

2.2 USB Interface Data Format

The format of the USB interface data is in the form of 16-byte ASCII string (In Hex Format) as follow.

The Parity Character P is defined as follow.

USB Side	Wiegand Side	
P	P_S	P_E
0	0	0
1	0	1
2	1	0
3	1	1

3.   Conversion Example

3.1   Wiegand to USB

Input: Wiegand (26-bit)

1 0011 1100 0100 1101 0101 1110 1

Parity$_{Start}$ Data (24-bit)   Parity$_{End}$

Output: 16-byte ASCII string on USB port

* 2 6 # 0 0 0 0 3 C 4 D 5 E 3 C r

26-BIT Wiegand   Data (10-byte)   Parity   Carriage Return Hex(0D)

3.2   USB to Wiegand

Input: 16-byte ASCII string on USB port

* 2 6 # 0 0 0 0 3 C 4 D 5 E 3 C r

26-BIT Wiegand   Data (10-byte)   Parity   Carriage Return Hex(0D)

Output: Wiegand (26-bit)

1 0011 1100 0100 1101 0101 1110 1

Parity$_{Start}$ Data (24-bit)   Parity$_{End}$
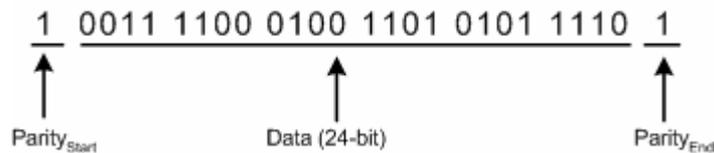
4. Connectors:

There are total 3 pluggable connectors and one USB Type B connector located on the MA1805 board serving different functions as described below.
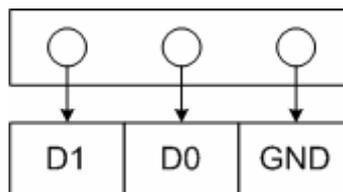
Connector Symbol	Description
CN1	USB Type B connector
J1	5V Output **(Output only, DO NOT connect external power)**
J2	Wiegand Output

4.1 Connector J1

Connector J1 Port Assignment	
Designator	**Description**
5V	5V Output
GND	Ground
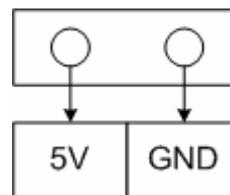
4.2 Connector J2

Connector J2 Port Assignment	
Designator	**Description**
D1	Data 1
D0	Data 0
GND	GND