# Wiegand-to-RS232 Converter (MA1405)

**MaCaPS MA1405** is a Wiegand-to-RS232 Bidirectional converter. The converter can automatically convert Wiegand input from 3-bit up to 42-bit to a formatted ASCII string. When the formatted ASCII string is used as input to the RS232 port of another MA1405 unit, the formatted ASCII string is reconverted to Wiegand format output.

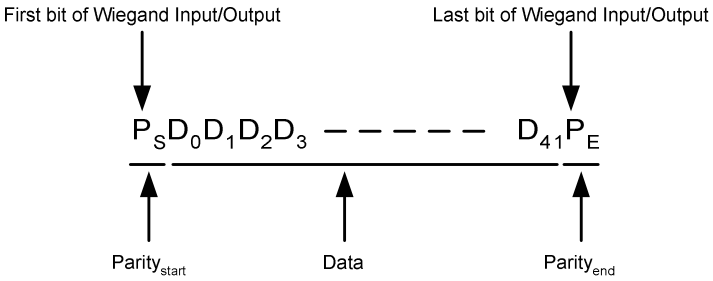
## 1 Specification:

### 1.1 Communications:

9600 BPS ASYNC, 8 bits, 1 Stop, No Parity.

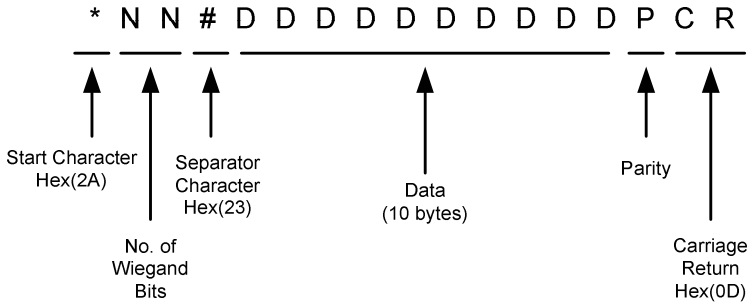
### 1.2 Wiegand Input/Output Format

The format of the Wiegand bit stream is shown as follows:



## 1.3 RS232 Input/Output Format

The format of the RS232 is in the form of 16-byte ASCII string (In Hex format) as follow:




The **Parity Character P** is decoded as follows:

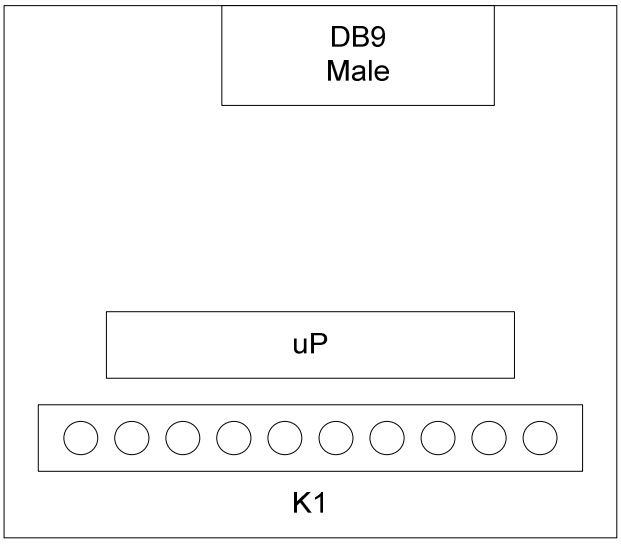
| RS232 Side | Wiegand Side | |
|---|---|---|
| **P** | **$P_S$** | **$P_E$** |
| 0 | 0 | 0 |
| 1 | 0 | 1 |
| 2 | 1 | 0 |
| 3 | 1 | 1 |

## 1.4 Command Data:

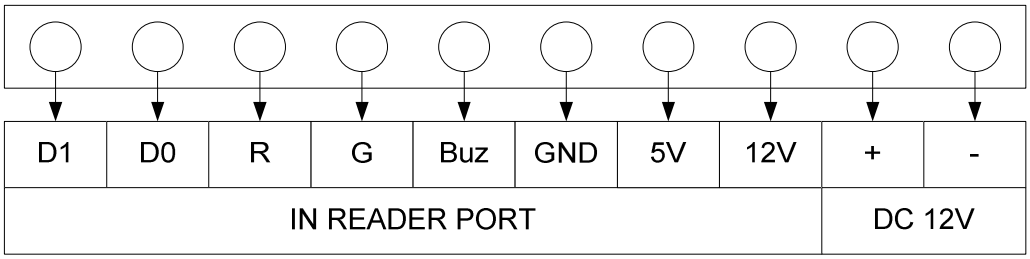
| 4 Bytes Hex Value | Description |
|---|---|
| $02_H31_H30_H03_H$ | Turn on Reader Green LED |
| $02_H31_H31_H03_H$ | Turn off Reader Green LED |
| $02_H31_H32_H03_H$ | Toggle LED (Bi-Color LED Turns Orange) |
| $02_H32_H30_H03_H$ | Turn on Reader Buzzer |
| $02_H32_H31_H03_H$ | Turn off Reader Buzzer |
| $02_H33_H30_H03_H$ | Turn on Converter LED |
| $02_H33_H31_H03_H$ | Turn off Converter LED |
| $02_H34_H30_H03_H$ | Turn on Converter Relay |
| $02_H34_H31_H03_H$ | Turn off Converter Relay |
| $02_H35_H30_H03_H$ | Turn on Converter Buzzer |
| $02_H35_H31_H03_H$ | Turn off Converter Buzzer |
| $02_H36_H30_H03_H$ | Turn on Reader Red LED |
| $02_H36_H31_H03_H$ | Turn off Reader Red LED |

## 2 Pin Connectors:

The schematic of the MA1405 is shown in the following figure.




### 2.1 Connector K1




| | |
|---|---|
| D1: | Wiegand Data 1 |
| D0: | Wiegand Data 0 |
| R: | To Reader Red LED |
| G: | To Reader Green LED |
| Buz: | To Reader Buzzer |
| GND: | Ground |
| 5V: | 5V DC output |
| 12V: | 12V DC output |
| +: | Power Supply +12V In |
| -: | Power Supply Ground |

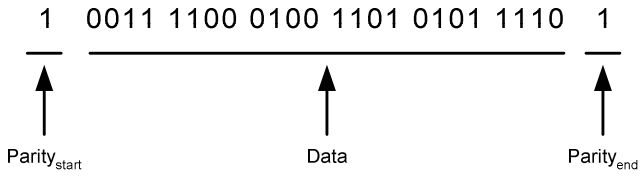
### 2.2 DB 9 Male

1. DCD Unused
2. TX data from converter
3. RX data from terminal
4. DTR Unused
5. Ground
6. DSR Unused
7. RTS Unused
8. CTS Unused

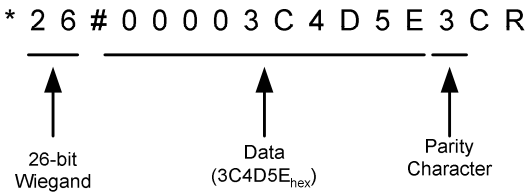
## 3 Example

### 3.1 Wiegand-to-RS232

Input: Wiegand (26-bit)



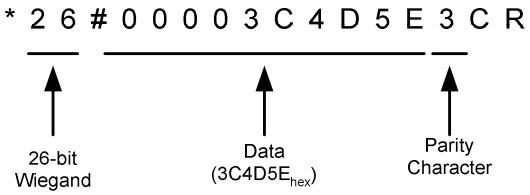

Output: 16-byte ASCII string from RS232 port




### 3.2 RS232-to-Wiegand

This is a reversed process of Wiegand-to-RS232

Input: 16-byte ASCII string to RS232 port




Output: Wiegand (26-bit)