

USB Interface for Coin Validators

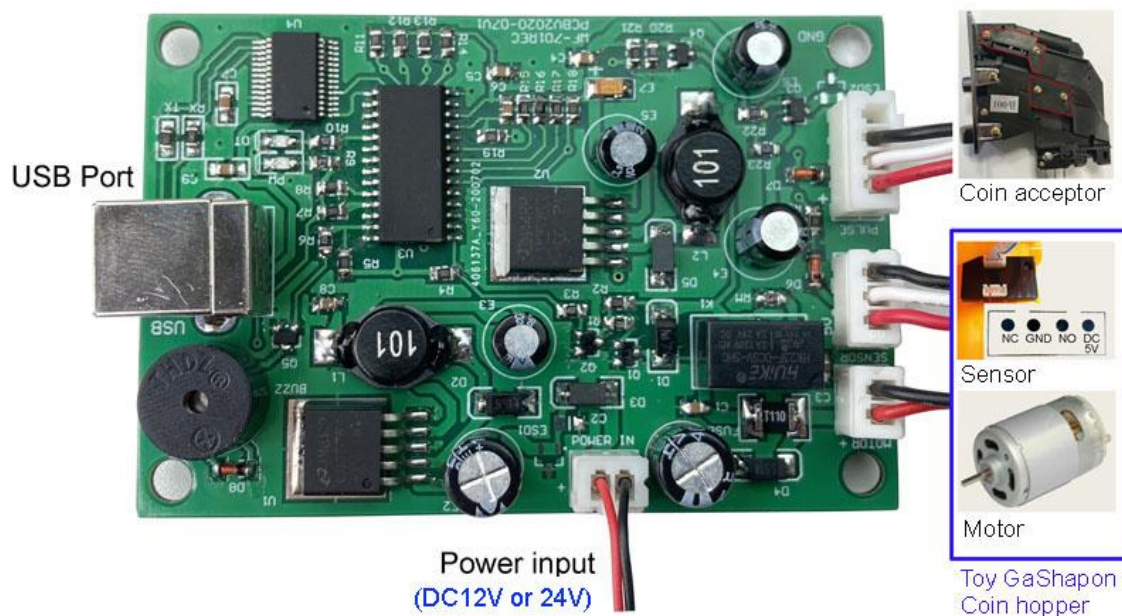
WF-701REC User Manual

Version 1.1-2020-07-09

1.0 Introduction

The WF-701REC is the slave device that responds only to the polls (or requests) from the Master. In this polled system, the Master requests information from the WF-701REC at a periodic rate. This rate can be as fast as every 300 milliseconds.

WF-701REC has the “Lockout” Timer feature that it will disable the acceptor if the specified poll rate is not met. In another words, if the host system is too busy to keep up with the desired minimum poll rate, WF-701REC will put the acceptor into the disabled mode and actively stop collecting money . The acceptor will be enabled again once the communication resumes.



(To coin acceptor)

The coin acceptor that can be used needs to be a single pulse type. That is, every time a coin is received, then a pulse is output. WF-701REC can inhibit the coin acceptor by powering down the coin acceptor. Coin acceptor should use the NO output type.

(To infrared sensor)

The infrared sensor is used to detect the number of coins output, that is, every time a coin is output, the infrared sensor will output a pulse to the WF-701REC. After receiving the specified number of pulses, WF-701REC will immediately stop the voltage output for the coin hopper.

(To motor)

By supplying power to the motor in the HOPPER, the motor continuously outputs coins after the motor rotates. By turning off the power of the HOPPER, the output can be stopped.

Pictures of the Gashapon machine and coin hopper



(On the picture, has the motor and sensor)

2.0 Specification

Power input:	DC12V or DC24V (Select the right power voltage according to the motor voltage)
Motor:	DC12V or DC24V motor
SIN(Sensor):	NO type input
Baud Rate:	9600
Duplex:	Half Duplex
Character Format:	1 start and 1 stop bit,,8 data bits (Bits 0 = sent first (LSB))

For WF-701REC, that has a USB to RS232 chip on board to convert the RS232 to USB and build a virtual RS232 port in the PC. And user firstly need to install a driver in the PC for USB / RS232 chip. And the USB chip FT232RL driver download address:

<http://www.ftdichip.com/Products/ICs/FT232R.htm>

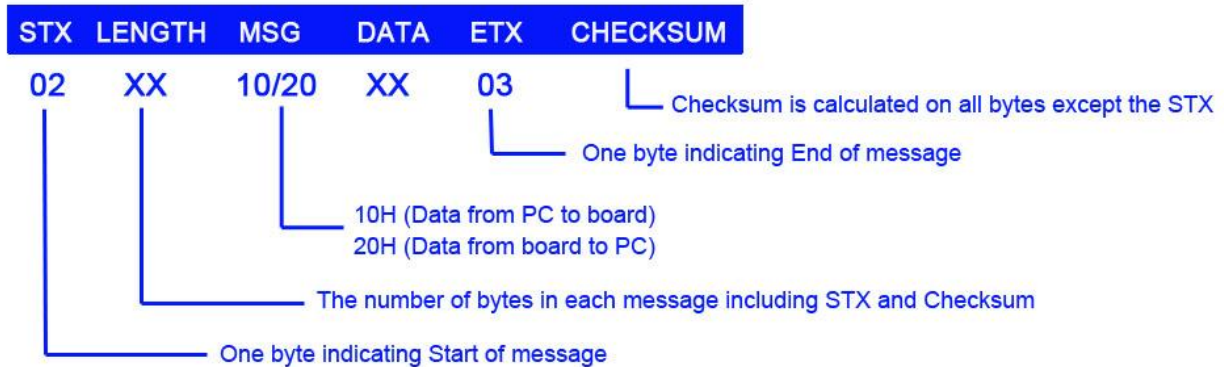
Lockout Timer

If the WF-700 does not receive a poll after an elapse time specified by the hardware jumper, it will:

- Suspend (Disable) the acceptor (Inhibit the +12V output for coin acceptor)

3.0 MESSAGE FORMAT, UPLINK COMMUNICATION

Format: STX, Length, MSG Type, Data Fields....., ETX, Checksum



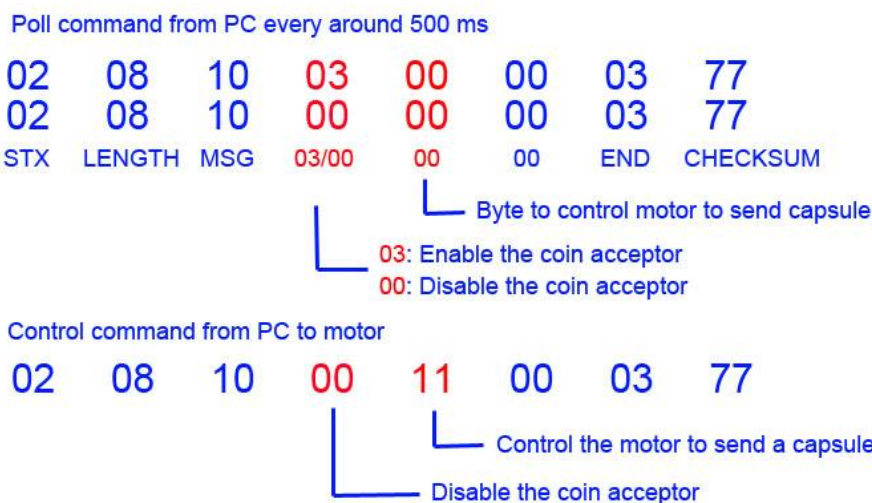
- STX - 02h One byte indicating Start of message
- LENGTH - One byte representation of the number of bytes in each message
- MSG TYPE - 10H for message from Master to WF-701REC
20H for message from WF-701REC to Master
- DATA - The data portion of the message consists of the multiple data fields. We will discuss it in the section of DATA FIELDS.
- ETX - 03h One byte indicating End of message.
- CHECKSUM - One byte checksum. The checksum is calculated on all bytes except the STX, ETX, and checksum byte itself. The calculation is done by XORing the bytes.

(Data from PC to WF-700 ,checksum no need to be exactly calculated)

For example data: 02 0B 20 01 10 01 00 00 01 03 3A
 Checksum 3A= 0B⊕20⊕01⊕10⊕01⊕00⊕00⊕01

1. POLL Command from PC to WF-701REC board:

(Always send the poll command around every 500 milli-seconds)

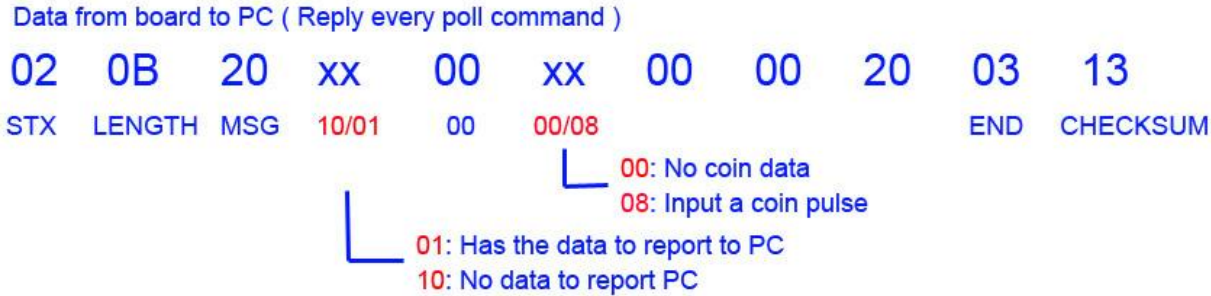


(When send the command to send a capsule, Disable the coin acceptor at the same time)

The control command is sent only once when you need to control.
 If you want to output more coins or capsules, then change the 11 data to the number you need

For example: 02081000**15**000377,
 After sent this command, WF-701REC will driver the hopper to output 5 coins

2. Data from WF-701REC board to PC:



For example, pc will receive the following data:

02 0B 20 01 00 00 00 00 10 03 3A	No data report
02 0B 20 10 00 08 00 00 10 03 23	Coin acceptor data report

4.0 Important for software development

✧ About the data received

When pc received the data bytes, sometimes maybe have some interference bytes in front of the correct data, For example , the correct data you should receive is

“ 02 0B 20 10 10 00 00 01 01 03 3A “,

but in fact you maybe receive the following bytes in your com port:

FF 02 0B 20 10 10 00 00 01 01 03 3A
FE 02 0B 20 10 10 00 00 01 01 03 3A
FF FE 02 0B 20 10 10 00 00 01 01 03 3A

So must received the 02h and also followed with 0Bh, then will be determined as the correct data byte followed.

✧ Why can't input the coins after powered on the WF-700 adapter board?

- (1) Check the power supply is DC12V and properly connected to the WF-701REC board
- (2) Even after powered on, if no PC polling data received, WF-701REC Board will inhibit the acceptor.
- (3) Don't put the coin acceptor on the desk, because for all the coin acceptors if the previous coin is blocked in the exit, then the acceptor will be inhibited and can't insert more coins. so you must keep the exit smooth when you start to insert the coin.

✧ Why do PC receive a coin data every time coin acceptor just power up?

Because the coin-operated device is the NO output type, during the power-on process of the coin acceptor, the output port of coin acceptor is equivalent to outputting a pulse signal, which is actually similar to a coin pulse data. Therefore, our program can identify and filter out the received coin data every time the coin control device is just powered ON or OFF. And because the data is received quickly just after power on. It is impossible for real users to realize coin insertion in a very short time.