tres®

transponder and reader engineered systems

Security Products MAGAZINE 2011 NEW PRODUCT OF THE YEAR

tres433

Installation Guide

Shipping Box Contains

Everything that is included in the box being shipped to should contain the following items:

- Receiver Assembly
- Documentation on CD ROM
- Tags, if placed in the same order
- Circular Polarized Antenna, if placed in the same order
- Cable and mounting hardware, if placed in the same order
- Printed Documentation (Quick Start Guide and Checklist)

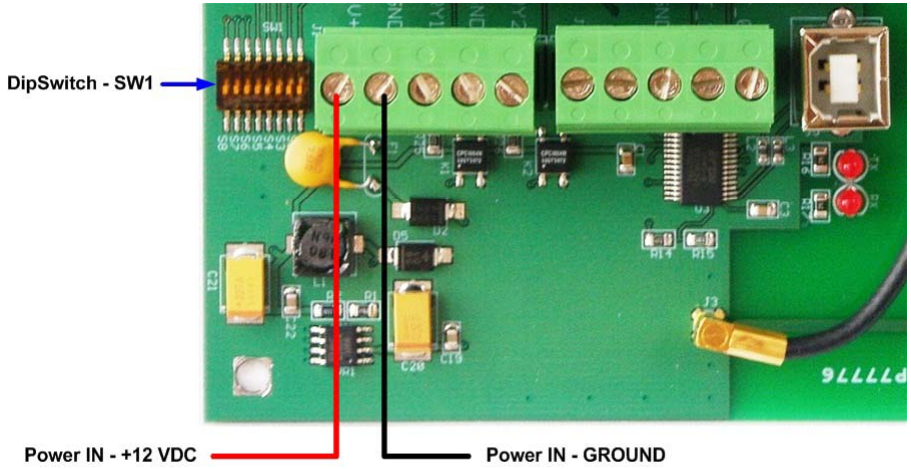
Everything will be securely inserted inside the box so items do not shift during shipping and handling.

tres433 CD

- \CoolTerm
  - Coolterm.exe: freeware terminal program (like HyperTerminal)
- \Documents
  - Quick Start Guides, Installation Guide, Operations Manual, Reader Specification, etc.
- \Drawings
  - Useful drawings to help with installation
- \Drivers
  - USB Driver
  - Xport Ethernet Driver: Ethernet installation driver
- \Fliers
  - Sales brochures for the product

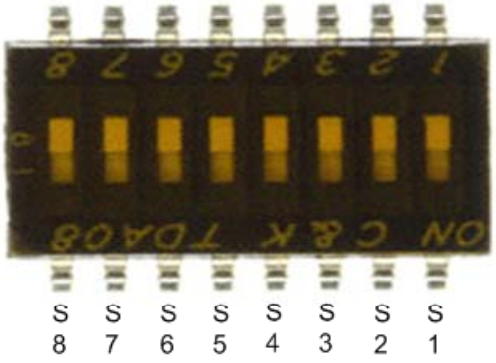
Power Requirements

The Receiver can be powered from regulated, linear, or switching power sources having the following characteristics: 8 to 24 volts DC. TRES, Inc. can provide a power supply and installed plug-in jack as an option if needed. The Receiver should be operated from a grounded supply that has the same ground reference as the host device. The positive power and the ground connections are applied to the Receiver at the PCB terminal block .

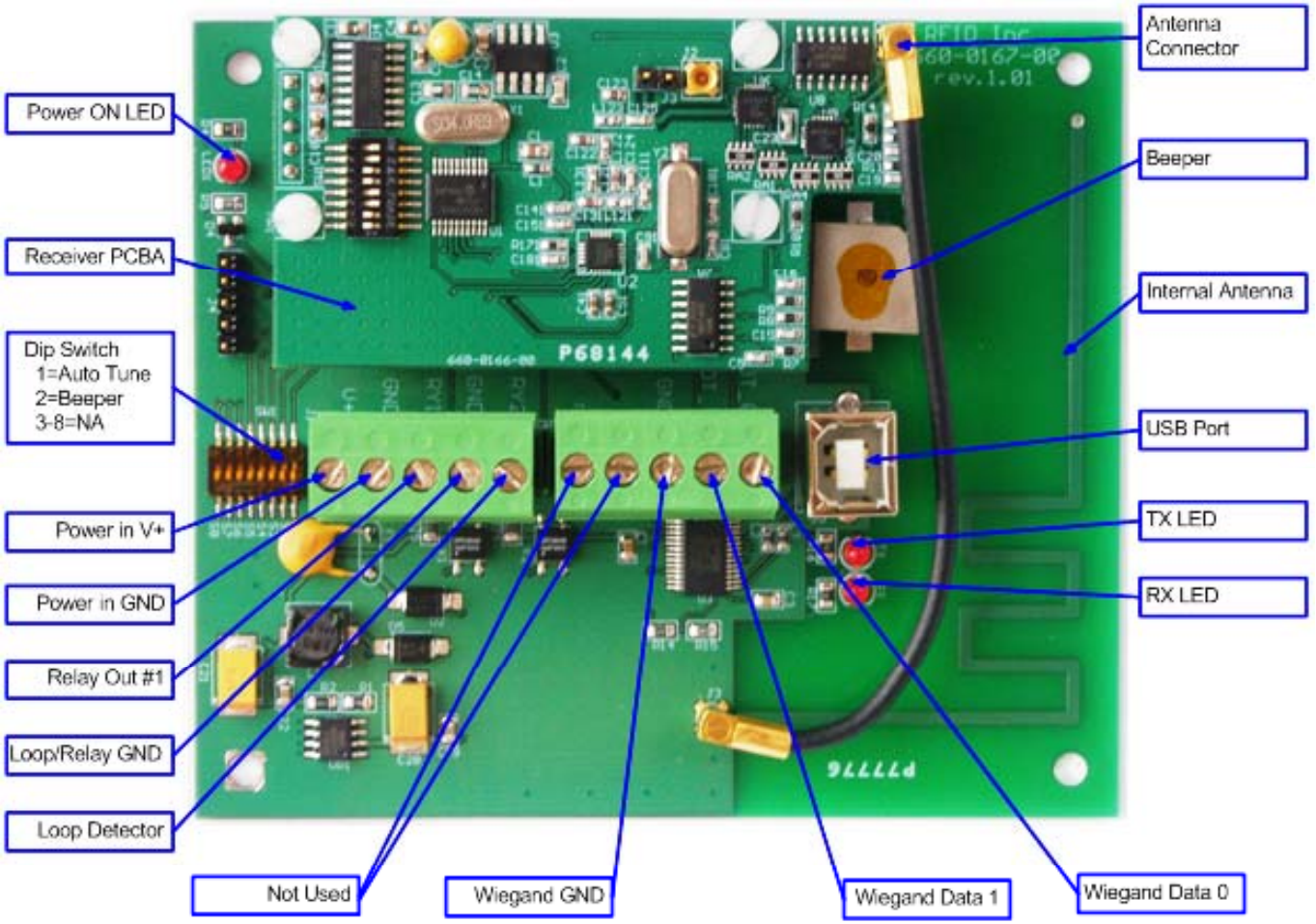


IO PCBA Dipswitch Settings

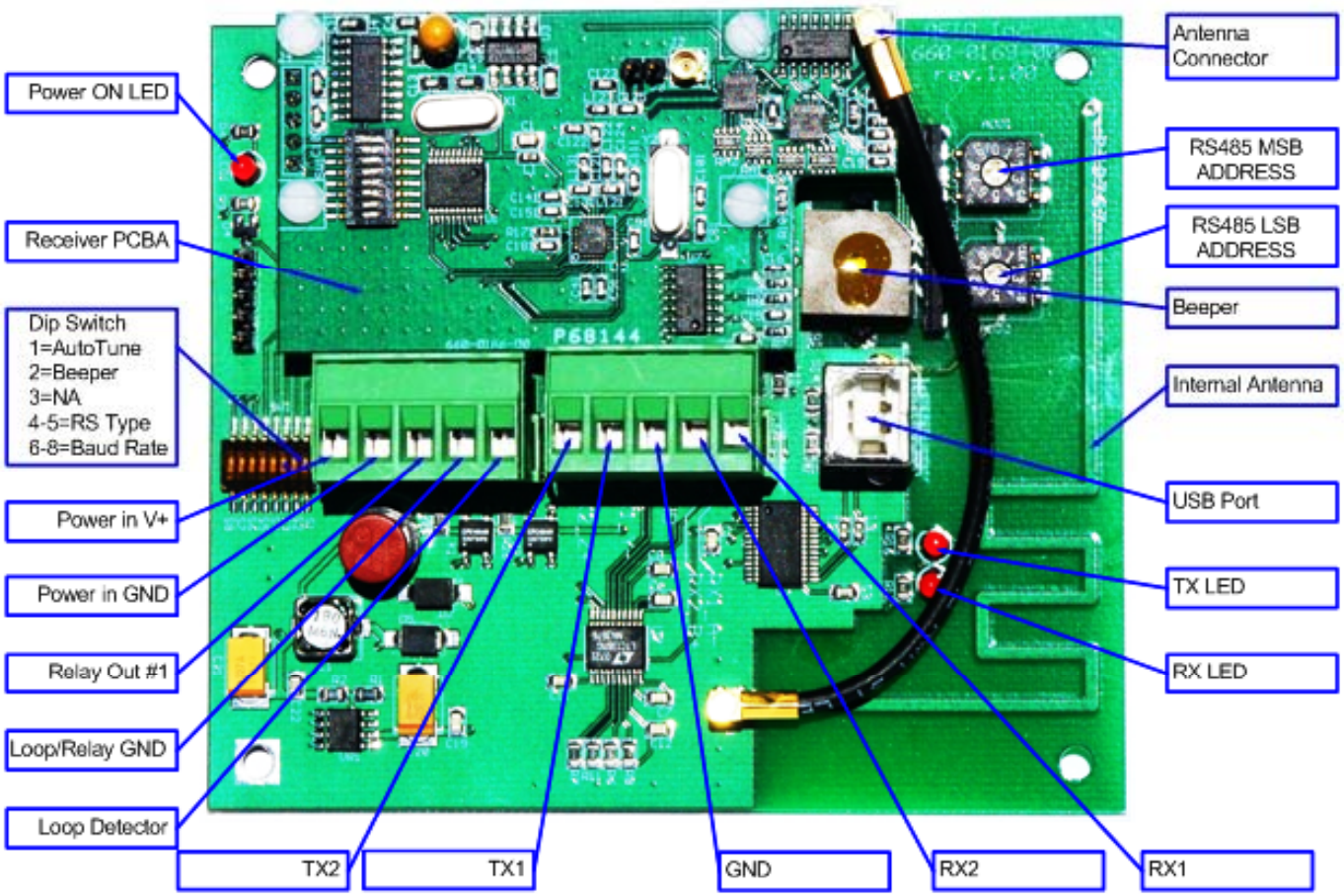
- S1 - (position #1) is used for auto-tuning. The receiver will automatically tune to the desired read range. Activate the auto-tune feature by moving S1 to the DOWN position then back to the UP position, this is detailed later in this presentation.
- S2 - (position #2) is used for turning the Beeper either ON or OFF. Switch position UP = ON / DOWN = OFF beeper audio.



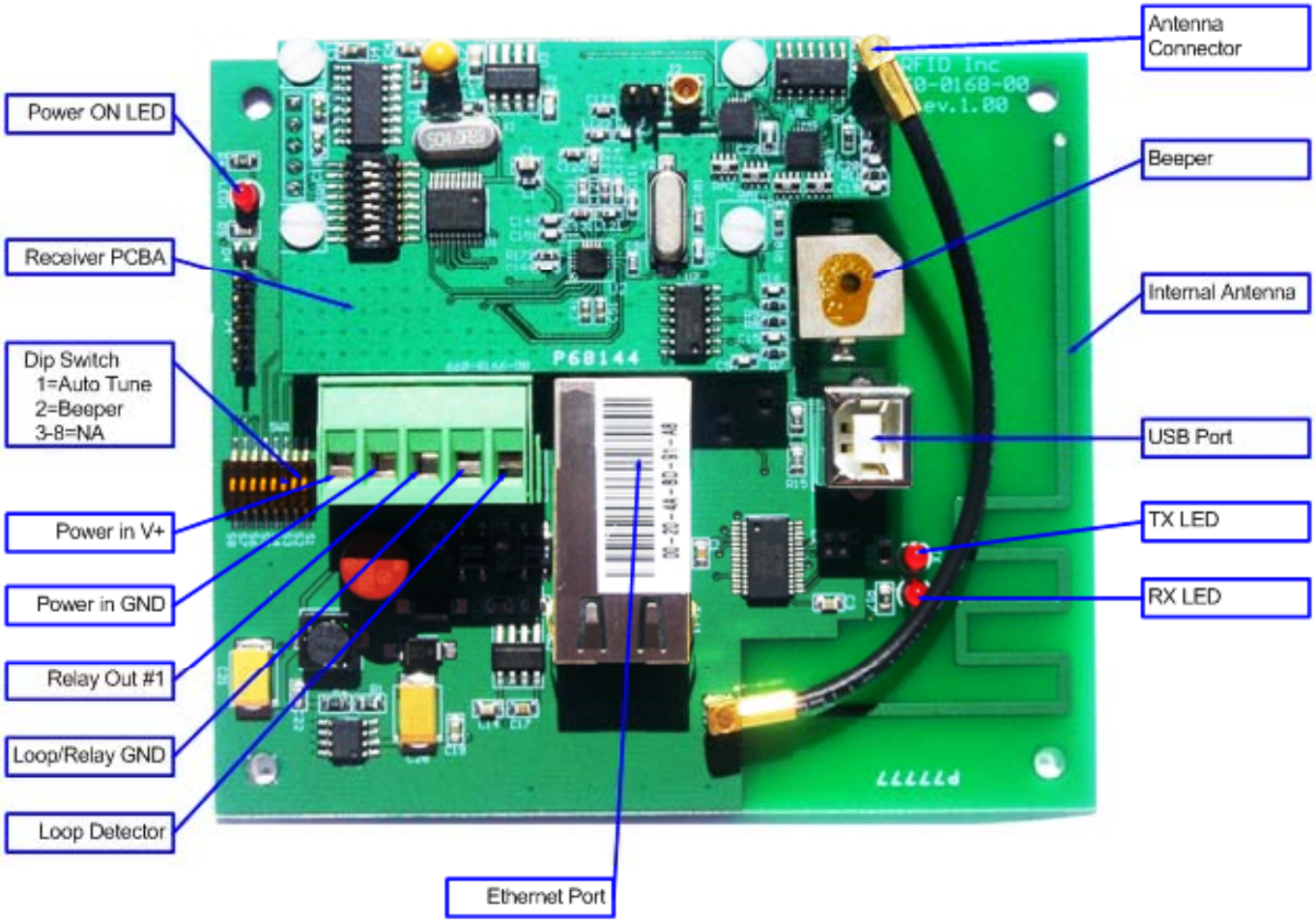
Wiegand Output



Serial Output (RS485/RS232/RS422)

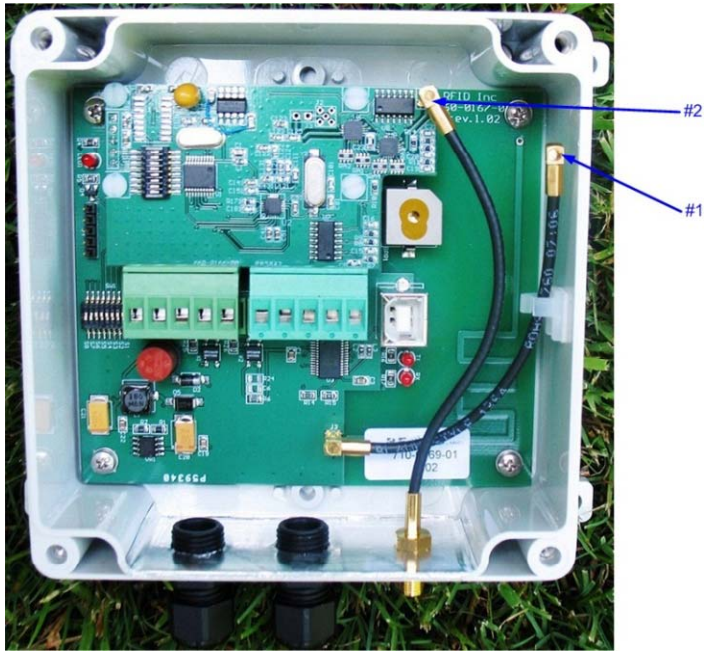


Ethernet Output



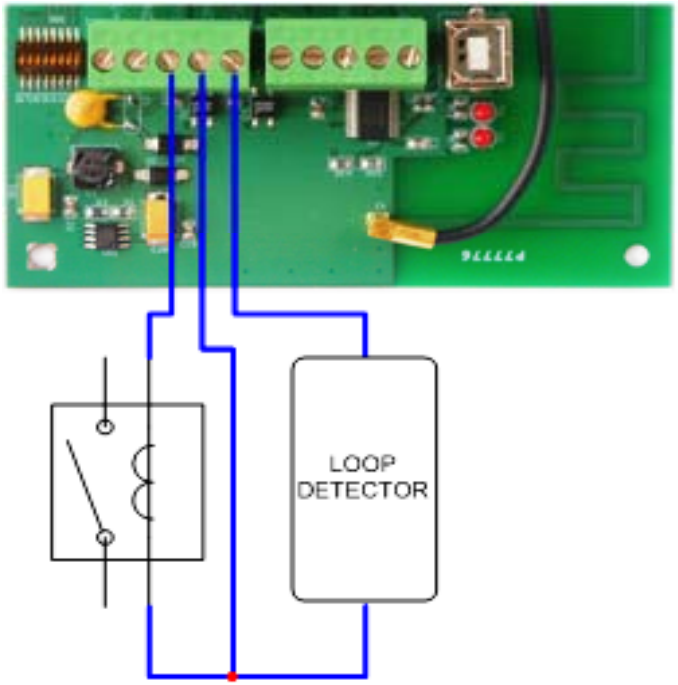
External Antenna

An external Antenna needs to be purchased separately, a cable assembly and mounting bracket is included. To connect, simply connect the antenna cable to the external jack at the bottom of the housing, then disconnect the small 4” internal Antenna cable (#1) from the mini reader PCB and connect the other internal antenna cable (#2) to the mini PCB.



Loop Detector

Although termed a Loop Detector input for use in parking applications, this input can be used by any peripheral. Wire a peripheral output to this input, the peripheral must be able to take GND from our Receiver's GND connection directly to the left of this input and apply it to the loop detector input to enable reading.



Relay Driver

There is a NO (normally open) sinking silicon relay available which is connected to ground, hence wire our relay driver to your device's negative connection. Your device can have a maximum of 100VDC @ 500mA. The relay can be enabled or disabled independently with the [**7**] and [**8**] commands (**by default the relay is enabled**). An enabled relay will close (activate) whenever a Tag is read and will remain active until its timer expires then open (deactivate). T**he default timer setting is 5 seconds**. The timer can be set (see [**J**] command) from 00 to 99 seconds. The relay can also be triggered to close manually with the [**9**] command. Do not confuse this with enabling the relay. The [**9**] command simply triggers the relay for one timer cycle whether the relay has been enabled or not.

Mounting the Receiver

The Receiver contains 4 mounting holes accessible by removing the lid. Note that these mounting holes are located just to the inside of the 4 lid screws yet outside the lid gasket trace such that the integrity of the IP67 housing for watertight purposes. The diameter of the mounting screw holes is 0.165”. For best range performance, the Receiver should be oriented in a standing position, such that the PCB is perpendicular to the ground. The cable glands should be oriented down in order to prevent ingression of water from rain or snow.

It should be noted that this is an IP67 rated box, however once the cable glands were added for cabling entry, the box is no longer watertight or IP67 rated.

Active Tags Types

tres CS or CS-ACL
Clamshell
Dimensions: 3.375 x 2.125 x .25 in.
Weight: 2 oz./57 grams
Color: Putty White
Housing: Sealed ABS, IP65
REPLACEABLE BATTERY

tres MM or MM-ACL
Metal Mount
Dimensions: 3.0 x 2.0 x 1.0 in.
Weight: 4 oz./113 grams
Color: Black
Housing: ABS, Metal Spacing
REPLACEABLE BATTERY

tres AT or AT-ACL
Asset
Dimensions: 4.0 x 2.12 x .54 in.
Weight: 4 oz/113 grams
Color: Black
Housing: Rynite, Potted, IP67
NO REPLACEABLE BATTERY

ACL = The Accelerometer Option which monitors Motion - The Accelerometer Measures Proper Acceleration and Movement of the Tag Results in Flag Bit Transmission to Receiver

tres433 CS Windshield Mounting

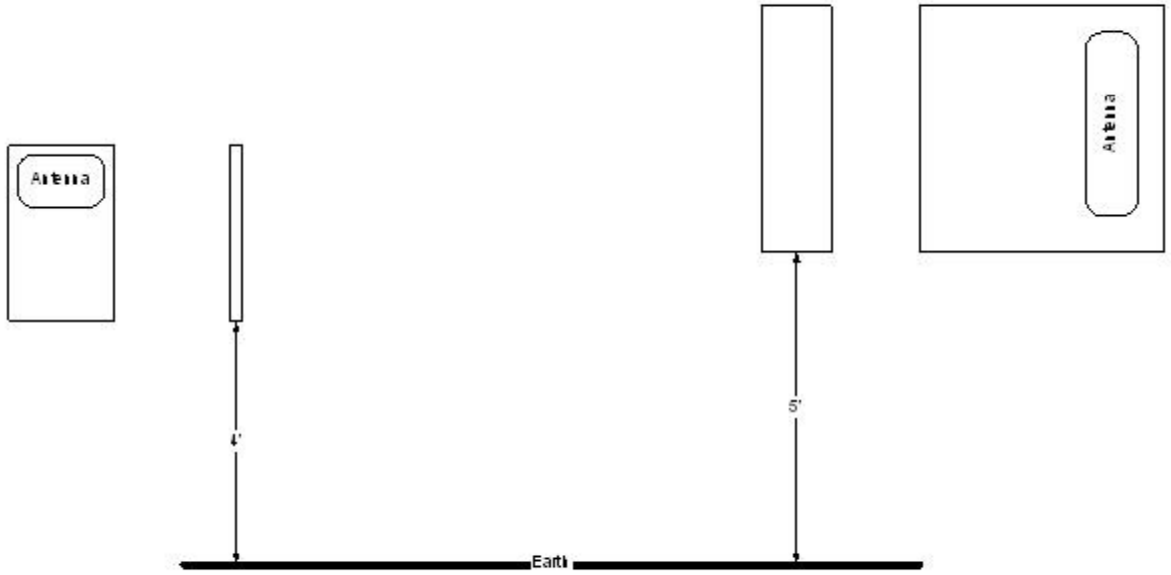
Recommended using the TRES-ISO/CS Holder, the transponder is inserted into the holder and the holder is then attached to the windshield using double sided tape available from any hardware store. The two backside tabs that come on the holder must first be removed so that a flat mounting surface is presented to a clean window mounting location. Locate the transponder on the vehicle's windshield for optimum RF transmission.

Do not use Velcro, scotch tape or duct tape. Only double sided mounting tape is designed for such an application, leaves no residue if removed and the adhesive is more tolerate of hot or cold temperatures.

Auto-Tuning

After Receiver and Antenna are mounted and power is on, position the auto-tune tag (purchased separately), a fixed distance to where you want to read (NOTE: no other tags can be present or this will not work), position Dipswitch #1 Down then back Up. The receiver will automatically tune to the desired read range (approx. 2 to 3 minutes) then start reading tags again when completed. When auto-tune is completed, receiver will resume audible beep.

Note: If you auto-tuned to a close range and want to re-tune to a further range, you must reset the tres433 receiver to factory default using a laptop. See Operations Manual for further assistance on the [I55] command.



Reader Programming

Connect your Receivers USB port to a PC USB port. Commands are entered using a Terminal Program (Host). These commands allow you to control and access certain Receiver functionalities. The Receiver will echo back the command.

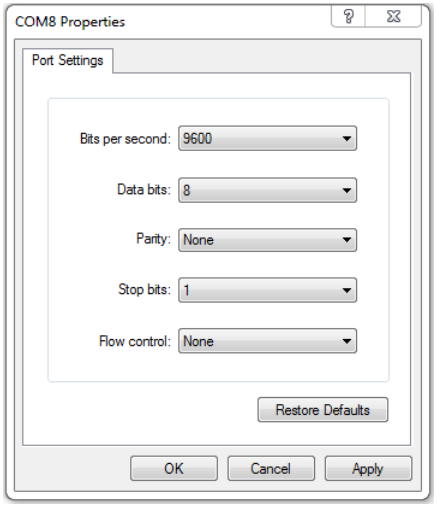
Take notice that all commands are issued in ASCII CAPITAL letters and numbers. Each command must be entered as:

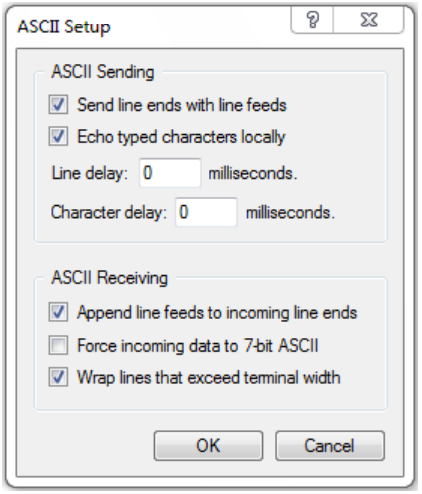
[+ command sequence +]

Note: Do not use a CR or LF after each command sent to the receiver, only use the square brackets between each command you want to send.

Terminal Program Setting

The default communication settings are 9600, 8, N, 1. Execute this file so HyperTerminal can open in a window on your PC. Upon powering the Reader you should see a start up message displayed to your screen, this indicates the Reader has performed a self test and is ready to be operated. You are now ready to read Tags and have them reported to your PC.





Troubleshooting Guide

Q: To confirm that the unit is operating properly

- Confirm the Red LED is illuminated. If it is not, remove power. Verify the voltage supplied to the receiver is between 7 and 14 VDC

Q: Receiver does not recognize a tag (no beep, no LED flash)

- If no beep, check SW2, maybe in the OFF position. Check to see if another tag works, maybe damaged tag. Verify Receiver operations by connecting to a computer through the USB port and running HyperTerminal

Q: Why is there an extra micro connect cable inside of the tres receiver?

- There are 2 potential antenna connection configurations, each using a different cable – one cable connects the receiver PCB to the internal etched antenna, while the other connects to the external antenna jack at the bottom of the housing. The external jack is for the tres ANT-CP12/25.

Troubleshooting Guide

Q: How can I verify that the tres Receiver I have is Wiegand or serial or TCP/IP?

- Looking at the RFID, Inc serial number tag on the side, check the Assembly Number – 800-0230 = Wiegand; 800-0231 = serial; 800-0232 = TCP/IP

Q: Tag data to panel is scrambled

- One or more of the receiver's wiring connections are incorrect. Power down the receiver/panel and verify the wiring connections are correct. Check that data 1 and data 0 are consistent from tres to the host panel. The receiver/panel is not properly grounded.

Q: Receiver beeping/flashing and host not responding

- Check to insure the tres tag number and site code are properly programmed and downloaded to the host panel. Check the Wiegand timing that your host is looking for and insure their timing scheme is within the SIA standard parameters.

LIMITED WARRANTY

Receiver

tres433 receivers (tres RW, tres RS, tres RE) are warranted against defects in materials and workmanship for one (1) year from date of shipment. TRES, Inc shall, at its option, either repair or replace products that prove to be defective and are returned with freight prepaid to TRES, Inc.'s plant within the warranty period. To facilitate the return of any products under this warranty, the customer shall contact TRES, Inc for a RMA (return material authorization) number which must be displayed on the outside of the return packaging and on the packing slip. The foregoing warranty shall not apply to defects resulting from abuse, misuse, accident, alteration, neglect or unauthorized repair or installation. TRES, Inc. shall have the right of final determination as to the existence and cause of the defect.

Tags

TRES, Inc tags (tres CS, tres MM, tres AT) are warranted against defects in materials and workmanship for one (1) year from date of shipment. The battery installed by TRES, Inc in these same tags is warranted for a period of three (3) years from date of shipment. Provided that the battery and label for the tres CS (clamshell) and/or MM (metal mount) tags are purchased from TRES, Inc and installed by an Authorized Reseller or TRES, Inc., the replacement battery shall be warranted for a period of three years.

LIMITED WARRANTY

Tags

Peeling the label, even partially, off the back of the tres433 CS and/or MM tags shall immediately void any and all warranties, including that of the tag and battery. Removal of the battery from the tag shall immediately void any and all warranties on tags and batteries. Compromising the integrity of the tags' outer shell in any way shall void the warranty on the tags, whether intentional or accidental. Upon the occurrence of label removal (including partial removal) and/or battery removal, TRES, Inc shall, at its' discretion, physically inspect the tag and decide whether or not to renew any warranties. Appropriate charges, to be determined solely by TRES, Inc, shall be assessed for tag inspection and/or warranty renewal.

THE WARRANTY SET FORTH ABOVE IS EXCLUSIVE AND NO OTHER WARRANTY, WHETHER WRITTEN OR ORAL, IS EXPRESSED OR IMPLIED. RFID, Inc. SPECIFICALLY DISCLAIMS THE IMPLIED WARRANTIES OR MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

The remedies provided herein are Buyer's sole and exclusive remedies. In no event shall TRES, Inc. be liable for direct, indirect, special, incidental or consequential damages, (including loss of profits) whether based on contract, tort, or any other legal theory.