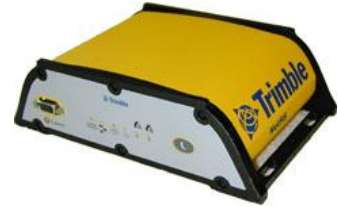


Positioning Solutions Easy Setup Guide for the Trimble NetRS GPS Receiver



This guide from Positioning Solutions will take you through the process of setting up a Trimble NetRS GPS Receiver as an RTK receiver transmitting CMR+ corrections through the internet. This guide includes setup instructions for:

- **RTK base station transmitting CMR+ correction through the internet**

You will need:

- Trimble NetRS with Firmware 1.20 or newer.
- GPS antenna (with clear view of sky) and cable with Ntype connector for NetRS
- Power supply
- 26 pin adapter with power and Ethernet (NetRS)
- Computer with serial connection (or adapter) with Hyperterminal installed - *download here if needed: <http://www.hilgraeve.com/hyperterminal/>*

- Internet router (or use direct connect with crossover cable)
- Serial cable
- CAT5 Ethernet cable with the NetRS plugged into an internet router
Alternatively use a Crossover Ethernet Cable for direct communication to PC

Note: The NetRS uses Hyperterminal software to establish its IP address type only. Once the IP type and address is known, the rest of the setup will be through your internet browser. If you already know the IP address of your NetRS, please skip to the next section: **Part 2**.


For Additional help – we have included images of Hyperterminal and the NetRS browser screens – at the


end of this guide. When you see this camera icon




there will be a correlating screen shot found at the end of the guide.

Part 1 – Hyperterminal Configuration

You will need an available serial port on your PC. Create a new connection in Hyperterminal software with these settings: 115200, 8, none, 1, no flow control 

- Connect Serial cable from computer to NetRS Service Port (1)
- Hyperterminal and press Call 
- Supply power to NetRS


*NetRS will go through boot up process – you should see information in Hyperterminal – after a minute or so – the NetRS will reboot. – All LED’s will flash - **When NetRS reboots** – you may need to press disconnect, then Call  in Hyperterminal to restore the connection. The boot up process will pause for 1 minute, and then say **“Defaulting to Half Duplex Mode”**. Wait 2 minutes and the message below will appear:*

“Do you want to change Ethernet configuration (yes,no)?”

- Type in **yes** – press Enter
- Type **dhcp** (this is a dynamic address, only for setting up) plug in Ethernet cable to router BEFORE pressing enter - press Enter
- Wait 1 minute, the receiver will auto detect a DHCP address and show on screen in Hyperterminal– use this IP address to configure the NetRS in **Part 2**.
Example IP: 192.168.1.100

Part 2 - Set up a Trimble NetRS for RTK, CMR+ over TCP/IP (internet broadcast)

Establish a position:

- With the NetRS powered and Plugged into your router, Open a web browser and type in the IP address of the NetRS (include *http://* before the IP address)
A web page for the NetRS will open. This is where the remaining setup process is performed.
- Select “Receiver Configuration” from the side menu  *Image 1*
- Select “Antenna” from the side menu
- Select the proper GPS antenna Type and Height
- Press OK
- Select “I/O Congifuration” from the side menu
- Select “Reference Station” from the side menu
- Enter the appropriate information for the base station position. A “Here” option is also available. For CMR+ corrections – a CMR Station ID and name is needed.
- Press OK – the position is saved

Set Ports for streaming CMR+ over the internet (TCP/IP)

- Select “I/O Configuration” from the side menu.
All ports that are available/configured on the receiver will be listed. A NetRS with factory defaults will have serial ports 1-4 listed, but not enabled. You will need to create and configure a new TCP Port for CMR+
- Select “Create New TCP Port”
- Assign a port number – this can be any number of your choosing. Examples: 5050 or 7500. Be sure to avoid choosing standard ports such as 80 or 8080.
- Under Service –select “CMR”
- Under Parameters for this CMR stream – select “CMR-Plus”
The Station ID should already be set from the previous menu and your Lat, Long and height should appear.
- Press OK
- Back in the I/O Summary Page, the new TCP port will be listed. Make sure the “Enable” box is checked next to the port and that CMR is listed as the service.

SAVE CONFIGURATION FILE

From the NetRS main browser menu:  *Image 4*

- Select “Receiver Configuration” from the side menu
- Select “Configuration Files from the side menu
- Select “Create New Configuration File”
- Give the Config File
- Select “Save Everything”
- Press Save

To verify your new port is streaming CMR corrections – do the following:

Open another browser window

In the address bar enter the IP address of your NetRS – adding a colon and the port number you assigned

Example: `http://192.168-114:5050`

If the receiver is streaming properly, the output will appear on your terminal as random characters.

-Keep the new browser window open

-Go back to the web page of the NetRS and on the side menu, select “Receiver Status.”

-Select the “Activity” submenu.

-Under “Input/Output,” you should see “Streaming RTCM to xxx.xxx.xxx.x over Tcp Port xxxx”

-Once you close the second browser window, the connection will close and the streaming message will disappear

Your NetRS is properly setup for your local network only. To transmit the corrections to the World Wide Web – so you can use the corrections in the field – you will need to “Port Forward” you router and find your external IP address. Additionally – assigning a “Static IP address” for the NetRS is highly advisable.

In our next user guide – we will show you how to accomplish this and set up Survey Controller to dial in to your NetRS.

Alternatively you can find Port Forwarding instructions for your specific router on [YouTube](#) and Find your external IP address by typing in “What is my external IP address” into Google.

Image Section



Part 1 – Hyperterminal Configuration

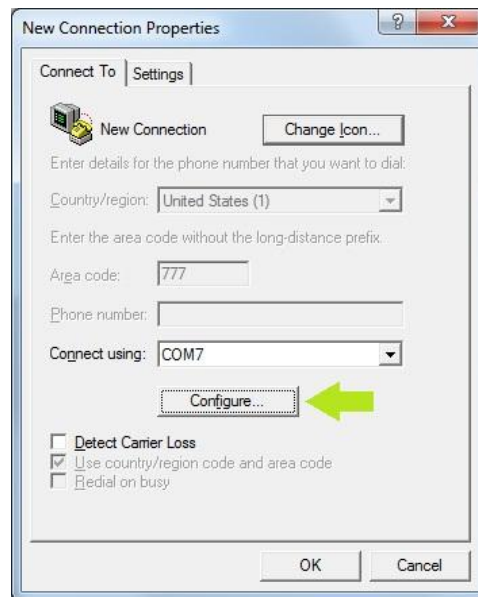
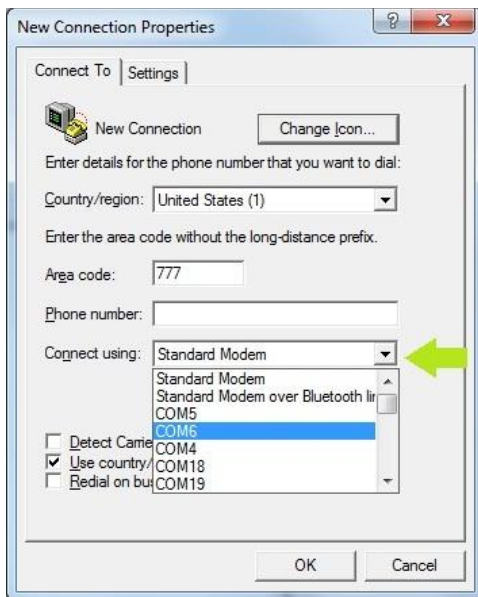


Image Section

Part 1 – Hyperterminal Configuration

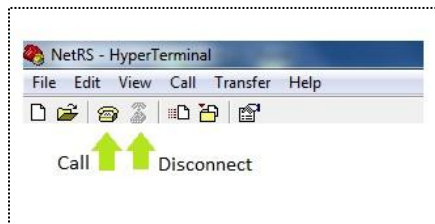
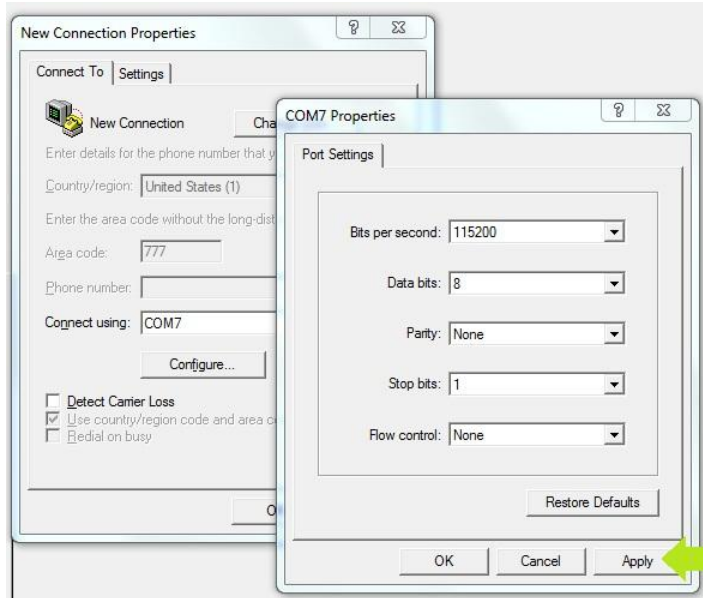


Image Section



Part 2 - Set up a Trimble NetRS for RTK, CMR+

Image 1

The screenshot shows a web browser window with the URL `http://192.168... Trimble NetRS PS_BASE2`. The page title is "Trimble NetRS PS_BASE2 SN4614207158". The left sidebar contains a navigation menu with the following items: Receiver Status, Satellites, Data Logging, Receiver Configuration (selected), Summary, Antenna, Clock Steering, Multipath, L2 Tracking, Masks, One Pulse Per Second, Reference Frequency, Configuration Files, Shutdown Voltage, System Reset, Internet, I/O Configuration (selected), Security, Firmware, Programmatic Interface, In Browser, and Standalone Window.

Receiver Configuration

Identity PS_BASE2
SN4614207158

Firmware 1.2-0 26 Apr 2007

Antenna Type: 86 = Zephyr Geodetic
SN0, ""
Height: 0.000 meters
Height Method: Bottom of antenna mount

Clock Steering Enabled

Multipath Reduction Enabled

L2 Tracking Off

Elevation Mask 0°

PDOP Mask 7

Pulse Per Second Output Disabled

Reference Frequency Using Internal Source
External source NOT detected

GPS Satellites Disabled: None
IgnoreHealth: None

WAAS Disabled
Enabled Satellites: ESTB-AOR-E, prn121, WAAS-AOR-W, prn123, EGNOS-ARTEMIS, prn125, EGNOS-IND-W, GAGAN-127, GAGAN-128, MSAS-1, prn130, EGNOS-IOR, prn132, prn133, WAAS-POR, WAAS-GALAXY-XV, prn136, MSAS-2, WAAS-ANIK-F1R

Reference Station RTCM Station ID: 25
Binex Station ID:
CMR Station ID: 25
CMR Station Name: PSBASE2
Description:
Position:
Lat: 33°.xxxxxxx " N X:-199°xxx .143 m
Lon:111°.xxx.xxxxxx " W Y:-494.xxxx.522 m
Height: 374.669 meters Z: 348555.913 m

Data Logging Enabled Sessions:
None
Power Saving Mode: Disabled