

NTRIP RTK DELIVERED VIA CORS / NETWORK RTK

NTRIP ACTIVATION FOR RX610 RECEIVERS

This document describes the setup and usage of the NTRIP feature on TeeJet RX610 systems.

Description

- NTRIP allows the RX610 receiver/smart antenna to receive RTK corrections from local CORS networks, where available.
- The cellular modem built into the RX610 is used to access the Internet, from which the RTK correction data is sourced.

Benefits

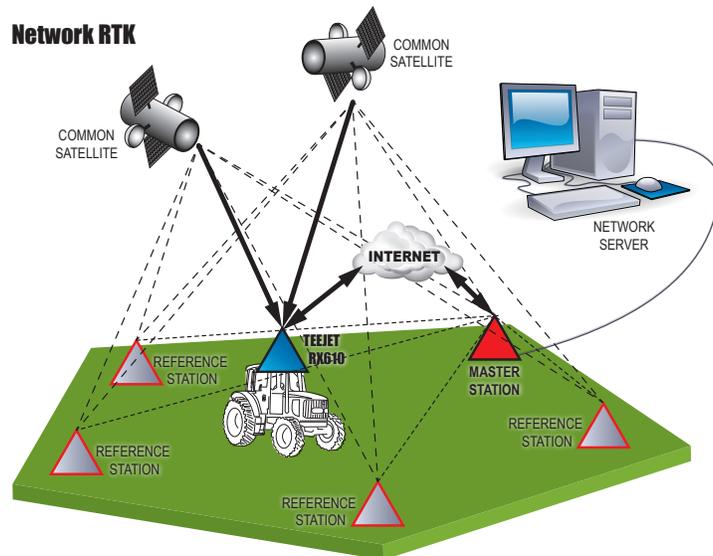
Using NTRIP allows the RX610 to generate RTK precision GPS coordinates without using a local base station.

Limitations

NTRIP can only be used when a good connection to the Internet is present. Internet connections supported through the internal modem built into the RX610 are CDMA (Verizon) or GPRS/HSDPA/GSM (AT&T, T-Mobile). A Data Plan through a local cellular carrier must be purchased for the RX610 in order for the system to operate on CORS networks.

Required Items

- In order to use NTRIP, it is necessary to be within the bounds of the network being used. Only NTRIP streams providing CMR, CMR+, or RTCM 3 format corrections are supported. GLONASS is only supported with RTCM 3 format when available through RTK provider.
- Data Plan obtained from cellular provider for integrated modem in RX610. 5GB per month rate plans are recommended for network RTK.



DEFINITIONS

CORS (Continuously Operating Reference Station)/Network RTK

A series of base stations spread across a given geographic region (such as an entire state/county) that are networked via a centralized computer and which broadcast RTK correction data over the Internet. CORS networks may be publicly or privately owned/operated and may offer a free signal or require an annual subscription fee. By accessing a CORS network via a cellular connection, the end-user eliminates the need to own a base station.

NTRIP (Networked Transportation of RTCM via Internet Protocol)

An internet based application that makes the RTCM Correction data from the CORS stations available to anyone with an internet connection and the appropriate log on credentials to the NTRIP server. Typically uses a cellular link to get to the internet and the NTRIP server.

Configuration

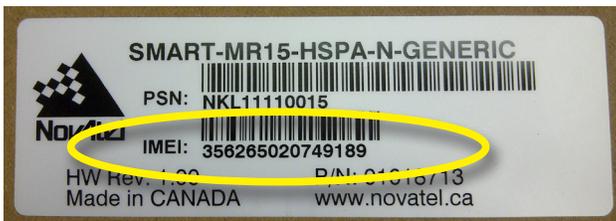
TeeJet Technologies will provide the RX610 pre-configured with only the cellular data plan to be purchased by the end-user. In order to pre-configure the RX610, the following items are required before contacting TeeJet Technologies to place your order:

- Determine best cellular coverage in operational area to determine the needed version of RX610. Pick one to purchase:
 - 90-02791 Kit, GPS Receiver, RX610, RTK, CDMA, North America
 - 90-02792 Kit, GPS Receiver, RX610, RTK, GPRS/HSDPA/GSM, North America
 - 90-02793 Kit, GPS Receiver, RX610, RTK, GPRS/HSDPA/GSM, Europe
- Obtain cellular providers name (example: Verizon, AT&T): _____
- Contact NTRIP provider and obtain (CORS subscription may be required):
 - Host/Server IP Address: _____
 - Host/Server Port: _____
 - Mount Point: _____
 - User ID and Password: _____
 - Correction Type: _____
- Contact TeeJet Technologies with all of the above information ready.
- Upon receipt of the RX610, obtain the Electronic Serial Number (ESN) from the sticker on the RX610 box. _____

Figure 1: CDMA Units – MEID ESN Example



Figure 2: HSPA/GSM Units – IMEI ESN Example



- Contact cellular provider to obtain data plan for a mobile device with a “built in modem”. The cellular provider will ask for ESN, and may ask for a model number (model number = NovAtel MR15)

NOTE: GPRS/HSDPA/GSM units require SIM card purchase from cellular provider.

SIM Card Installation for GPRS/HSDPA/GSM Units Only

- Remove the SIM cover by loosening the two screws that secure the cover.

NOTE: When you are replacing the SIM cover, make sure it is installed straight or you may inadvertently cause the SIM card to eject.



- Install the SIM following the orientation shown on the SIM cover (notch up and in, as shown).



The SIM connector is a push-in/push-out type. If the SIM is correctly installed, its outside edge will be essentially flush with the surrounding enclosure metal surface.

NOTE: To remove the SIM push it in slightly and it should then be partially ejected by the SIM holder.

The modem will not work if the SIM is in the partially ejected “ready for removal” position. Ensure the SIM door is properly aligned, then secure it in place.

WARNING: Secure the SIM cover to the base using a flat-head screwdriver. Screws should be torqued to 4-6 in-lb, to ensure the unit does not leak.



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