

Enabling GNSS features on a NetR9 (GLONASS example)

1. Activate GLONASS

- Select Receiver Status/Receiver Options and enter the option code provided by Trimble.
- GLONASS will be displayed as “Installed”.

Receiver Status - Options

Option	Installed	Option	Installed	Option	Installed
Dual Frequency Tracking (L2)	X	L2C	X	Triple Frequency Tracking (L5)	X
GLONASS	X	Galileo		QZSS	
QZSS L1C Tracking		E6 Tracking		Everest	X
Maximum Observable Rate	20Hz	VRS	X	HTTPS	X
OmniSTAR-HP	X	CMR Input		No Static CMR Input	
CMR Output		No Static CMR Output		CMRx Input	
CMRx Output		RTCM Input	X	RTCM Output	X
RTK Baseline Length Limit	1.0km	NMEA		Data Collector	X
Binary Outputs	X	Data Logging	X	Bluetooth	
Advanced RTCM Output		USB Hard Drive	X	Programmatic Interface	X
Enable 1PPS	X	RTK Support	X	Position Monitoring	X

Firmware Warranty Date: 2019-05-01
 RTX™ Subscription: 1980-01-06 -- 1980-12-08

Option Code:

2. Set up GLONASS tracking

- Select Receiver Configuration/Tracking and enable options as shown below, unless stakeholder requires different settings.

Tracking

Elevation Mask °
 Everest™
 Clock Steering

Type	Signal	Enable	Options
GPS	L1 - CA	<input checked="" type="checkbox"/>	
GPS	L2 - Legacy	<input checked="" type="checkbox"/>	L2 - CS and Legacy
GPS	L2 - CS	<input checked="" type="checkbox"/>	CM + CL
GPS	L5	<input checked="" type="checkbox"/>	I + Q
SBAS	L1 - C/A	<input type="checkbox"/>	
SBAS	L5	<input type="checkbox"/>	
GLONASS	L1 - C/A	<input checked="" type="checkbox"/>	
GLONASS	L1 - P	<input checked="" type="checkbox"/>	
GLONASS	L2 - C/A(M)	<input checked="" type="checkbox"/>	L2 - C/A(M) and P
GLONASS	L3	<input checked="" type="checkbox"/>	Data + Pilot

3. Enable GLONASS satellites

- Select Satellites/Enable-Disable, choose GLONASS, and select "Enable All"

Satellite Enable/Disable

GPS **GLONASS** SBAS

SV	Enable	Ignore Health	SV	Enable	Ignore Health	SV	Enable	Ignore Health
1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	9	<input checked="" type="checkbox"/>	<input type="checkbox"/>	17	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	10	<input checked="" type="checkbox"/>	<input type="checkbox"/>	18	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	11	<input checked="" type="checkbox"/>	<input type="checkbox"/>	19	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	12	<input checked="" type="checkbox"/>	<input type="checkbox"/>	20	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5	<input checked="" type="checkbox"/>	<input type="checkbox"/>	13	<input checked="" type="checkbox"/>	<input type="checkbox"/>	21	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6	<input checked="" type="checkbox"/>	<input type="checkbox"/>	14	<input checked="" type="checkbox"/>	<input type="checkbox"/>	22	<input checked="" type="checkbox"/>	<input type="checkbox"/>
7	<input checked="" type="checkbox"/>	<input type="checkbox"/>	15	<input checked="" type="checkbox"/>	<input type="checkbox"/>	23	<input checked="" type="checkbox"/>	<input type="checkbox"/>
8	<input checked="" type="checkbox"/>	<input type="checkbox"/>	16	<input checked="" type="checkbox"/>	<input type="checkbox"/>	24	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Enable All Ignore Health All Disable All

OK Cancel

4. Confirm NetR9 is tracking GLONASS

- Check either Receiver Status or Satellites menu

Receiver Status - Activity

Satellites Tracked: 17

GPS (10): 13, 14, 15, 16, 18, 19, 21, 22, 27, 29

GLONASS (7): 1, 2, 8, 17, 22, 23, 24

Data Logging:

/Internal/201501/A/P171201501290000A.T02

/Internal/201501/B/P171201501291500B.T02

/Internal/201501/C/P171201501291500C.T02

/Internal/201501/M/P171201501291500M.T02

Satellites - General Information

	Tracked # Satellites	Constellation # Satellites	Ignore Health # Satellites
GPS	10 13...16, 18, 19, 21, 22, 27, 29	32 1..7, 9..25, 27...32 Unhealthy: 8, 26	
GLONASS	7 1, 2, 8, 17, 22, 23, 24	24 1...24	
SBAS	0		

2015-01-29T15:58:16Z (UTC)

5. Adjust binex stream

- a. Select I/O Configuration, TCP/IP BINEX, and uncheck box "Use record type 7F03 instead of 7F05"

I/O Configuration

Type	Port	Input	Output
TCP/IP	5017	-	-
TCP/IP	5018	-	-
TCP/IP	28001	-	-
TCP/IP	28002	-	-
TCP/IP	42042	-	BINEX
IBSS/NTRIP Client 1	-	-	-
IBSS/NTRIP Client 2	-	-	-
IBSS/NTRIP Client 3	-	-	-
IBSS/NTRIP Server 1	-	-	-
IBSS/NTRIP Server 2	-	-	-
IBSS/NTRIP Server 3	-	-	-
NTRIP Caster 1	2101	-	-
NTRIP Caster 2	2102	-	-
NTRIP Caster 3	2103	-	-
Serial	Serial 1 (57.6K-8N1)	-	RT27(1Hz)
Serial	Serial 2 (19.2K-8N1)	-	MET-TILT
USB	-	-	-

I/O Configuration

TCP/IP 42042 BINEX

Server: TCP 192.168.1.2: 42042 [Delete]

Connected to remote 69.44.86.2:16769

☐ Client

☒ Output only/Allow multiple connections

☐ UDP Mode

☐ Authenticate, set password:

Input/Output

Output: BINEX

BINEX

Measurements

1 Hz Interval Delay: 0 msec

☐ Smooth Pseudorange ☐ Smooth Phase

☒ With Doppler ☐ With Cycle Slip Counters

☐ With Clock Offsets - Always ☐ With Clock Offsets - On Rollovers

☐ Use record type 7F03 instead of 7F05

MetaData

5 Min. Interval

☒ Marker Name ☒ Marker Number ☒ Station ID

☒ Receiver Type ☒ Serial Number ☒ Firmware Version

☒ Antenna Configuration ☐ Antenna XYZ ☒ Antenna Offset

6. Clone and save the current configuration file. If a new configuration file is uploaded and applied, GLONASS activation will remain, but steps 2 - 5 will need to be repeated.

- For reference: Unavco standard tracking settings for the entire suite of GNSS satellites

Receiver Status

Satellites

Web Services

Data Logging

Receiver Configuration

Summary

Antenna

Reference Station

Tracking

Correction Controls

Position

Position Monitoring

General

Application Files

Reset

Default Language

I/O Configuration

Bluetooth

OmniSTAR

Network Configuration

Security

Firmware

Programmatic Interface

Help

Tracking

Elevation Mask °

Everest™

Clock Steering

Type	Signal	Enable	Options
GPS	L1 - C/A	<input checked="" type="checkbox"/>	
GPS	L2E	<input checked="" type="checkbox"/>	<input type="button" value="L2C and L2E"/>
GPS	L2C	<input checked="" type="checkbox"/>	<input type="button" value="CM + CL"/>
GPS	L5	<input checked="" type="checkbox"/>	<input type="button" value="I + Q"/>
SBAS	L1 - C/A	<input checked="" type="checkbox"/>	
SBAS	L5	<input checked="" type="checkbox"/>	
GLONASS	L1 - C/A	<input checked="" type="checkbox"/>	
GLONASS	L1P	<input checked="" type="checkbox"/>	
GLONASS	L2 - C/A	<input checked="" type="checkbox"/>	<input type="button" value="L2 - C/A(M) and P"/>
GLONASS	L3	<input checked="" type="checkbox"/>	<input type="button" value="Data + Pilot"/>
Galileo	E1	<input checked="" type="checkbox"/>	
Galileo	E5 - A	<input checked="" type="checkbox"/>	
Galileo	E5 - B	<input checked="" type="checkbox"/>	
Galileo	E5 - AltBOC	<input checked="" type="checkbox"/>	
BeiDou	B1	<input checked="" type="checkbox"/>	
BeiDou	B2	<input checked="" type="checkbox"/>	
QZSS	L1 - C/A	<input checked="" type="checkbox"/>	
QZSS	L1 - SAIF	<input checked="" type="checkbox"/>	
QZSS	L1C	<input checked="" type="checkbox"/>	
QZSS	L2C	<input checked="" type="checkbox"/>	
QZSS	L5	<input checked="" type="checkbox"/>	
QZSS	LEX	<input checked="" type="checkbox"/>	Pilot