

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"/>	<input type="text" value="L2 - CS and Legacy"/> ▾
GPS	L2 - CS	<input checked="" type="checkbox"/>	<input type="text" value="CM + CL"/> ▾
GPS	L5	<input checked="" type="checkbox"/>	<input type="text" value="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"/>	<input type="text" value="L2 - C/A(M) and P"/> ▾
GLONASS	L3	<input checked="" type="checkbox"/>	<input type="text" value="Data + Pilot"/> ▾

3. Enable GLONASS satellites

- a. 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

- a. 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”

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	-	-	-

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.

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

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