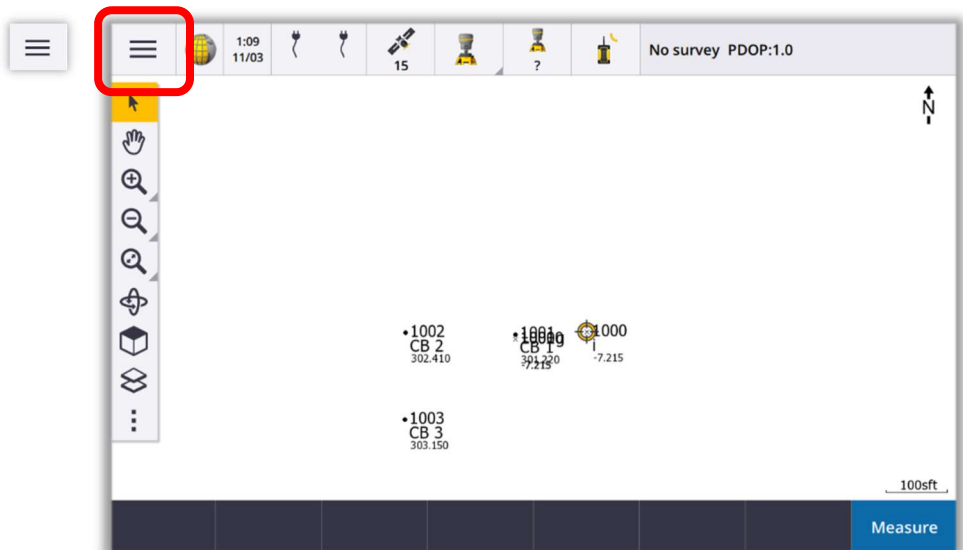


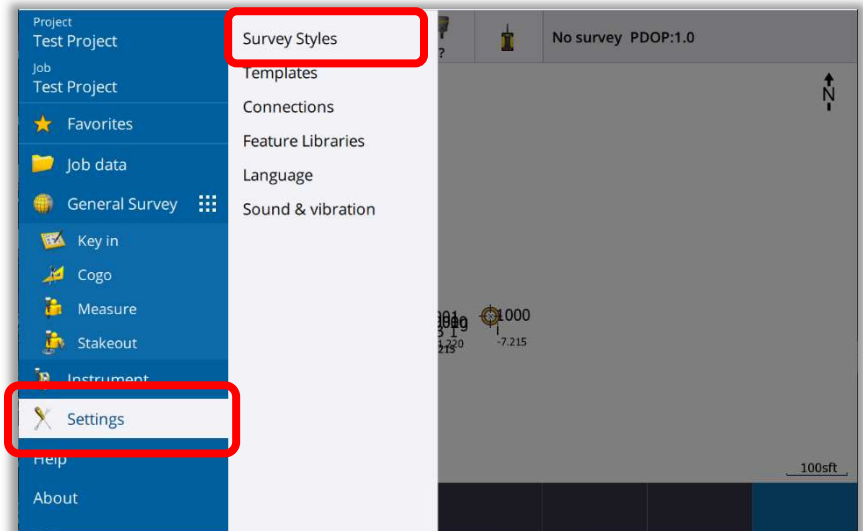
WSRN Trimble Access Setup for R10-2, R12 and R12i

Configuring a R10-2, R12 or R12i to run on the WSRN (Washington State Reference Network). These are the optimal settings to take full advantage of all the satellite constellations being tracked by the WSRN. Before you proceed insure that have established your internet connection and paired your receivers via Bluetooth.

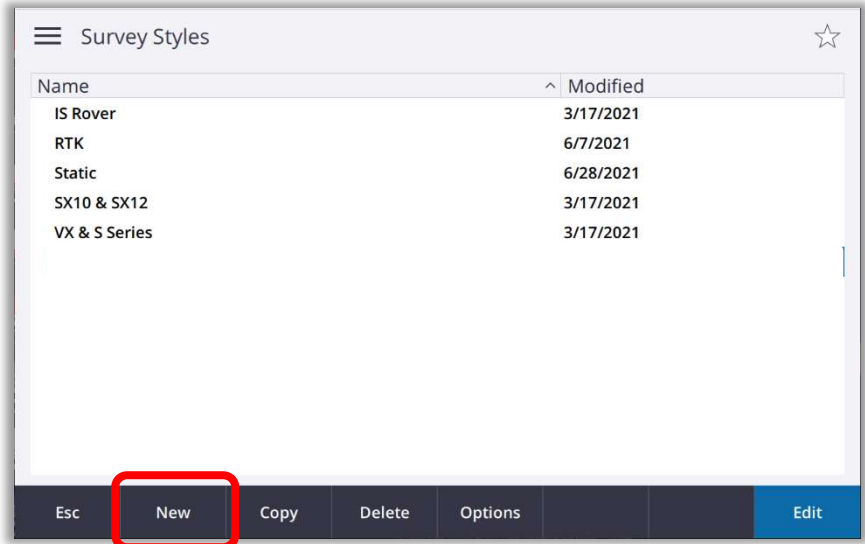
From the Home Screen select the Button in the top left corner.



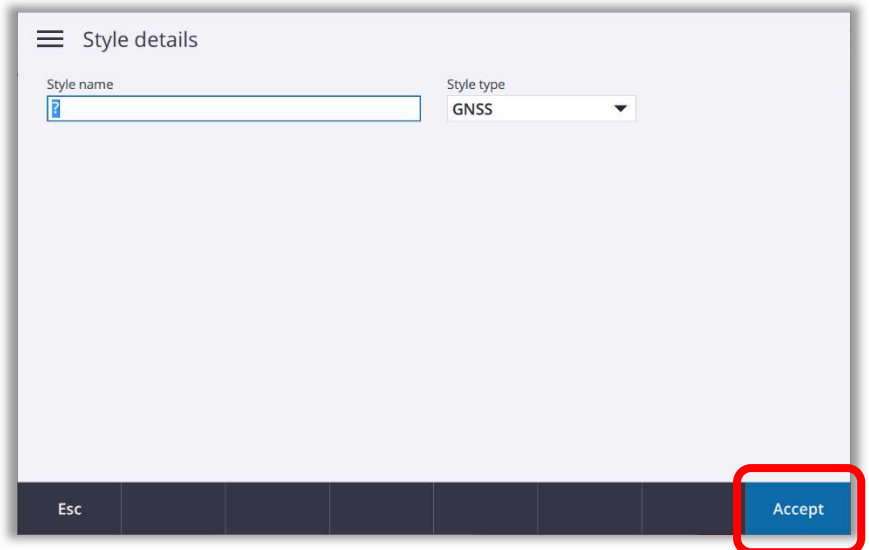
Choose **Settings** and then select **Survey Styles**



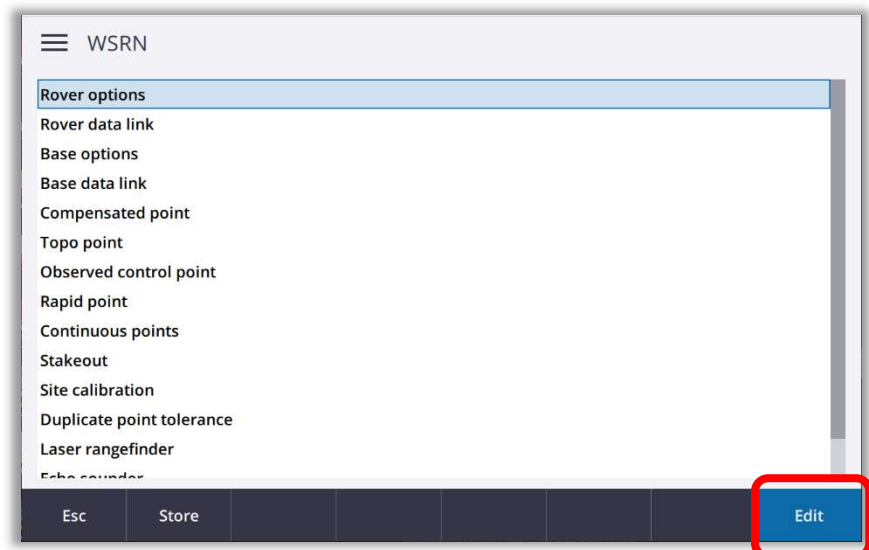
Select **New** at the bottom on the screen to create a new Survey Style.



Name your new Style and Select GNSS in the Survey Style drop down and **Accept**.



Chose **Rover Options** and select **Edit**



Make sure your **Survey type** is set to RTK and your Antenna **Type** is set to match the receiver that you are using (R10-2, R12 or R12i).

For “Broadcast format” drop down select:

RTCM RTK for Single-base
(*recommended*)

VRS (RTCM) for Network Mount Points

The screenshot shows the 'Rover options' menu. The 'Survey type' is set to 'RTK'. The 'Antenna' section shows 'Type' as 'R12 Internal', 'Antenna height' as '?', and 'Serial number' as '?'. The 'Elevation mask' is '10°' and the 'PDOP mask' is '6.0'. The 'GNSS Signal Tracking' section is expanded, showing 'GPS' checked. The 'Broadcast format' dropdown is open, showing options: 'RTCM RTK' (highlighted), 'CMR', 'CMR+', 'CMRx', 'FKP (RTCM)', 'VRS (RTCM)', 'VRS (CMR)', 'Multi station (RTCM)', 'Multi station (CMR)', 'RTCM3Net', 'RTX (Internet)', and 'RTX (SV)'. The 'Accept' button is visible at the bottom right.

Scroll down to **GNSS Signal Tracking** and make sure that all the boxes are checked. Hit **Accept**.

The screenshot shows the 'Rover options' menu with 'GNSS Signal Tracking' expanded. It shows checkboxes for 'GPS', 'GPS L2C', 'GLONASS', and 'QZSS', all of which are checked. To the right, there are checkboxes for 'Use L2e' (checked), 'L5' (checked), 'Galileo' (checked), and 'BeiDou' (checked). Below this, the 'Roving precision' section shows 'Auto tolerance' with a 'Yes' button. At the bottom, 'xFill' and 'Tilt functions' are both checked. The 'Accept' button is at the bottom right.

Next choose **Rover data link** and then **Edit**

The screenshot shows the 'WSRN' menu. The 'Rover data link' option is highlighted in blue. Other options listed include 'Rover options', 'Base options', 'Base data link', 'Compensated point', 'Topo point', 'Observed control point', 'Rapid point', 'Continuous points', 'Stakeout', 'Site calibration', 'Duplicate point tolerance', 'Laser rangefinder', and 'Echo sounder'. At the bottom, there are buttons for 'Esc', 'Store', and 'Edit'. The 'Edit' button is highlighted with a red rectangle.

Set the **Type** to **Internet Connection**. Select the arrow next to the **GNSS Contact** box.

Rover data link

Type: Internet connection

GNSS contact: [Empty field]

Prompt for GNSS contact: ☒

Esc Enter

Select **New** to create new GNSS contact

GNSS contacts

Name	Type
WSRN	Internet rover

Esc New Delete Copy Edit Accept

Enter you desired **Name** for your new GNSS contact (in this case **WSRN**). Select **Operating System – WiFi, Cellular** from the Network Connection drop down. Enter the **NTRIP username** and **NTRIP password** associated with your WSRN User Account.

Enter the one of the WSRN IP server addresses in the **IP Address** Box.
156.74.250.108 or **156.74.250.121** (both will work)

Enter the **IP Port** number **8080**. Select **Enter** and then **Store**.

Edit GNSS contact

Name: WSRN

Route through controller: ☒ Yes

Network connection: Operating System - Wi-Fi, Cellular

NTRIP Configuration

Use RTX (Internet): ☐ No

Use NTRIP v1.0: ☒

Connect directly to Mountpoint: ☐ No

NTRIP password: [Masked]

Use NTRIP: ☒ Yes

Use proxy server: ☐ No

NTRIP username: example01

IP Address: 156.74.250.108

IP Port: 8080

Esc Enter

Hit **Accept** to accept GNSS contact settings

Name	Type
WSRN	Internet rover

Esc New Delete Copy Edit Accept

Hit **Accept**

Type: Internet connection

GNSS contact: WSRN

Prompt for GNSS contact: ☐


Esc Accept

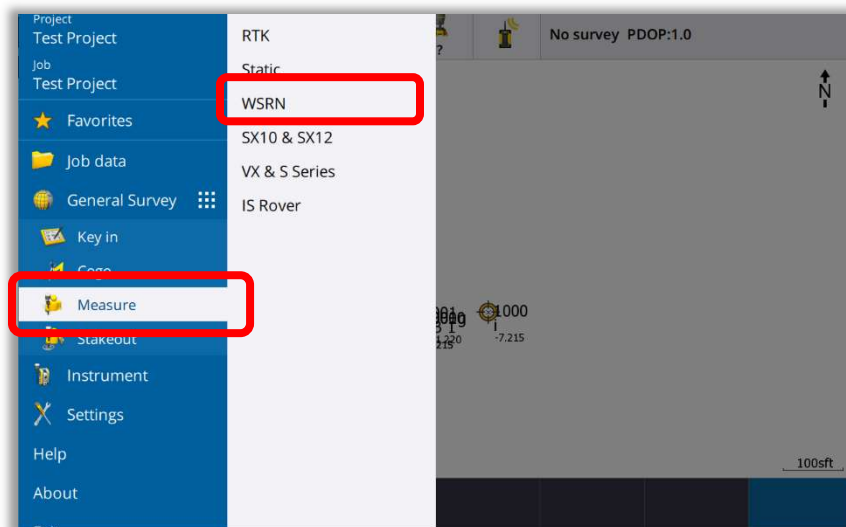
Select **Store** to save and exit your new Survey Style.

WSRN

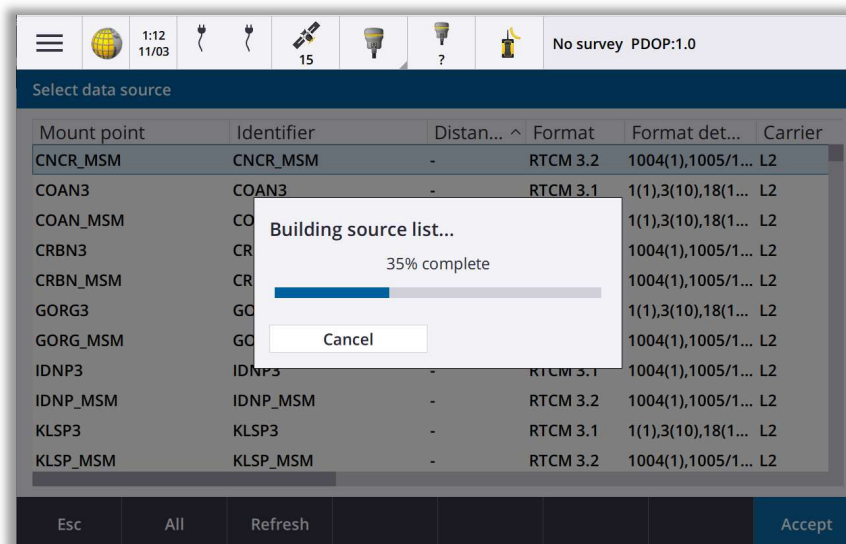
- Rover options
- Rover data link
- Base options
- Base data link
- Compensated point
- Topo point
- Observed control point
- Rapid point
- Continuous points
- Stakeout
- Site calibration
- Duplicate point tolerance
- Laser rangefinder
- Echo sounder

Esc Store Edit

Back on the main screen select  then **Measure** > Your Survey Style (**WSRN**)

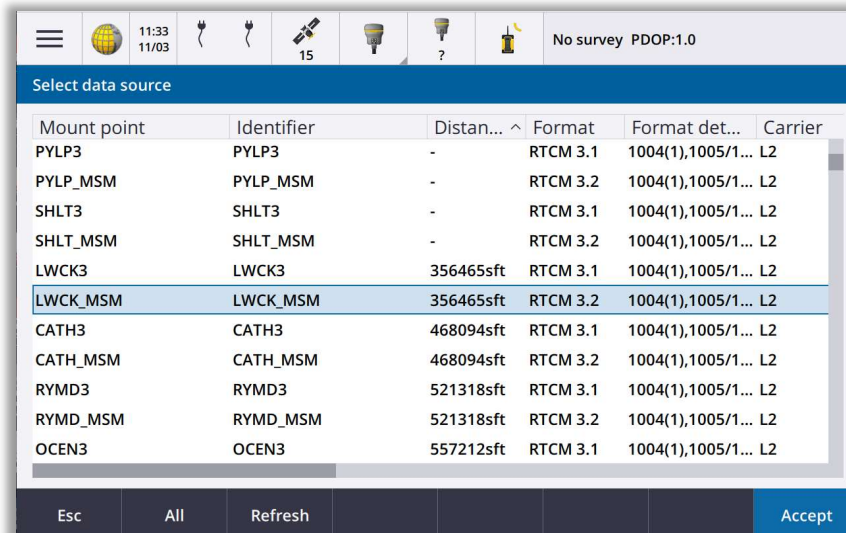


Access will begin to Build your source list



Single base:

If your Survey Style Broadcast Format is set to **RTCM RTK (Single-base Mountpoints)** you will see each individual base listed by Distance. Select the base closest to your project (see map on last page of this document). Select the Mount Points ending in **_MSM** for full multi-constellation tracking. Hit **Accept**



Network base:

If your Survey Style Broadcast Format is set to **VRS (RTCM)** (Network Mountpoints) select the Network for your region (see map on last page of this document). Select the Mount Points ending in **_MSM** for full multi-constellation tracking. Hit **Accept**

Mount point	Identifier	Distan...	Format	Format det...	Carrier
NWWAVRS_MSM	NWWAVRS_MSM	-	RTCM 3.2	1004(1),1005/1...	L2
PACWAVRS_MSM	PACWAVRS_MSM	-	RTCM 3.2	1004(1),1005/1...	L2
PRSNVRS_MSM	PRSNVRS_MSM	-	RTCM 3.2	1004(1),1005/1...	L2
SEWAVRS_MSM	SEWAVRS_MSM	-	RTCM 3.2	1004(1),1005/1...	L2
SWWAVRS_MSM	SWWAVRS_MSM	-	RTCM 3.2	1004(1),1005/1...	L2
x23_PRSNVRSRTCM	x23_PRSNVRSRTCM	-	RTCM 2.3	1(1),3(10),18(1...	L2
SEWAVRSRTCM3	SEWAVRSRTCM3	693282sft	RTCM 3.1	1004(1),1005/1...	L2
SWWAVRSRTCM3	SWWAVRSRTCM3	712647sft	RTCM 3.1	1004(1),1005/1...	L2
PRSNVRSRTCM3	PRSNVRSRTCM3	960002sft	RTCM 3.1	1004(1),1005/1...	L2
NWWAVRSRTCM3	NWWAVRSRTCM3	1286511sft	RTCM 3.1	1004(1),1005/1...	L2
EWAVRS_MSM	EWAVRS_MSM	1789939sft	RTCM 3.1	1004(1),1005/1...	L2

Buttons: Esc, All, Refresh, Accept

You should see the **Starting Survey** box with a status bar.

Starting survey: WSRN

36% complete

Cancel

Buttons: Esc, Accept

You are now ready to measure!

RTK H:0.03sft V:0.05sft ✓

Measure points

Point name: 10000

Code: Ground

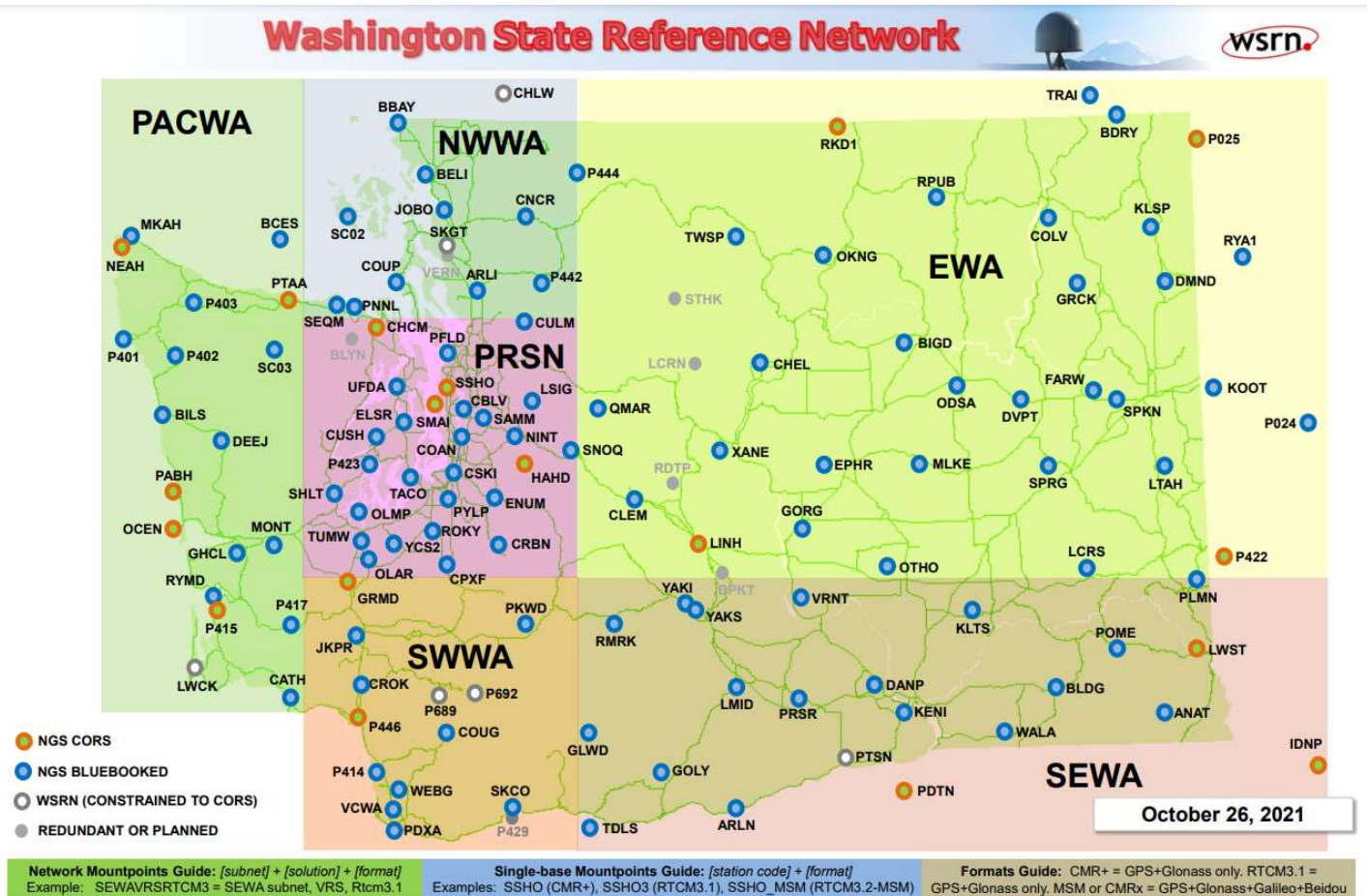
Method: Topo point

Antenna height (Uncorr): 6.562sft

Measured to: Bottom of quick release

Buttons: Esc, eBubble, Options, Measure

WSRN Reference Map



**If you have any questions, please feel free to contact your local Frontier Precision Representative or email our Technical Support Staff at survey_support@Frontierprecision.com*