

For more information, please refer to [APN-061](#) and the [OEM7 Documentation Portal](#).

After ensuring the antenna is positioned outside with a clear view of the sky from horizon to horizon, establish communication to the receiver by connecting to it using [NovAtel Connect](#) or a remote terminal program.

Step 1: LOG VERSION

Use the [VERSION](#) log to verify that the receiver's software model is PPP (Precise Point Positioning) capable. The [MODELFEATURES](#) log states the features available for the current loaded model. In OEM7, the fourth character of the model should be an "R" or "P" for TerraStar-C PRO capability:

```
<VERSION COM1 0 73.0 FINESTEERING 2082 173571.562 02044000 3681 15833
< 9
< GPSCARD "DDNRNNTBN" "BMHR18210047D" "OEM7700-1.01" "OA7CR0603RN0000"
"OM7BR0100RB0000" "2019/Aug/15" "08:21:01"
< OEM7FPGA "" "" "" "OMV070001RN0000" "" "" ""
< APPLICATION "" "" "" "ES7AR0603RN0000" "" "2019/Aug/15" "08:21:14"
< DEFAULT_CONFIG "" "" "" "ES7CR0603RN0000" "" "2019/Aug/15" "08:21:25"
< PACKAGE "" "" "" "ES7PR0603RN0000" "" "2019/Aug/15" "08:21:19"
< DB_WWWISO "WWWISO" "0" "" "WMC010205RN0001" "" "2019/Mar/27" "14:09:05"
< ENCLOSURE "SMART7-W" "NMSR18270010E" "0.0.0.0" "" "" "" ""
< WIFI "RS9113" "" "" "1.7.0" "" "2019/Aug/15" "08:21:30"
< REGULATORY "US" "" "" "" "" "" ""
```

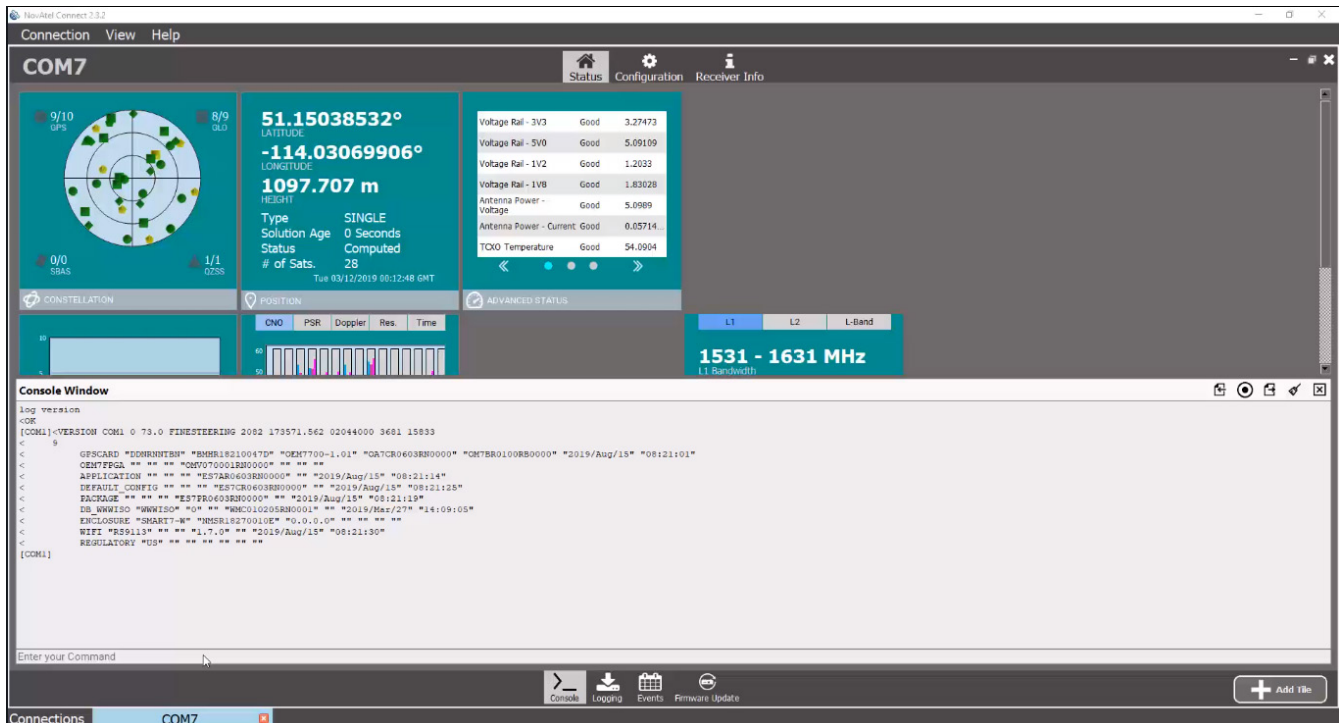


Figure 1: LOG VERSION inside Console Window of Connect 2.3.2

Step 2: Enable L-Band Tracking

By default, the receiver will not automatically track TerraStar satellites. To enable L-Band tracking of a TerraStar geostationary satellite, use the [ASSIGNLBANDBEAM](#) command:

```
ASSIGNLBANDBEAM AUTO
```

Step 3: Verify L-Band Tracking

To confirm that the receiver is now tracking an L-Band signal, use the [LBANDTRACKSTAT](#) log:

```
LOG LBANDTRACKSTAT
```

The output would resemble:

```
<LBANDTRACKSTAT COM1 0 70.0 FINESTEERING 2082 173597.000 02044000 29e3 15833
< 5
< "98W" 1545865000 1200 974c 00c2 0 -210.932 41.166 3.4300 491.006 9344
0 0 1196032 6 0.0000
< "AORW" 1545845000 1200 974c 00c2 0 -217.826 44.577 4.0725 491.669
9344 0 0 1196032 0 0.0000
< "POR" 1545905000 1200 974c 00c2 0 -164.045 35.910 1.8260 493.251 9280
415 137 1187840 52351 0.0448
< "" 0 0 0000 0003 0 0.000 0.000 0.0000 0.000 0 0 0 0 0 0.0000
< "" 0 0 0000 0003 0 0.000 0.000 0.0000 0.000 0 0 0 0 0 0.0000
```

In this example, the receiver is tracking three beams simultaneously (98W, AORW, and POR). A tracking status of "00c2" indicates the receiver is tracking and locked onto the signal.

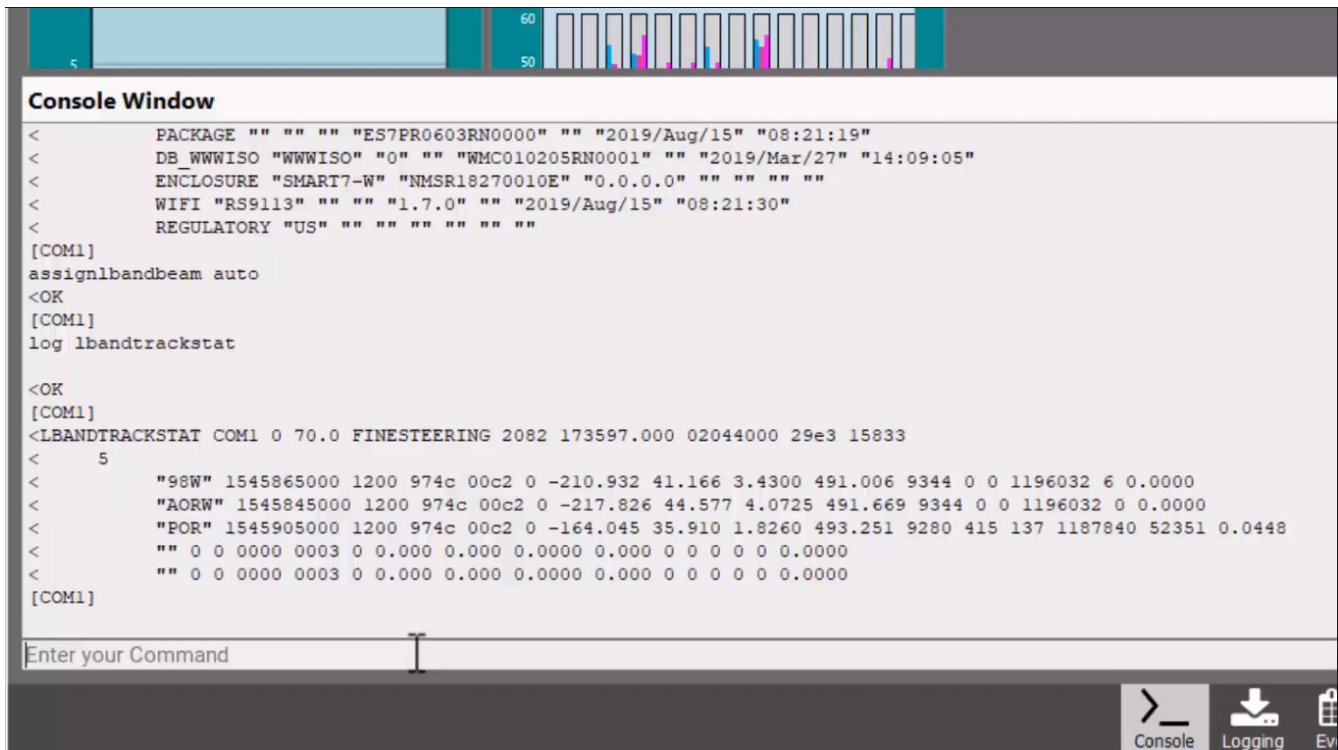


Figure 2: LOG LBANDTRACKSTAT in Console Window

Step 4: Verify the TerraStar Subscription

After the receiver tracks an L-Band signal for 4-6 hours, it will receive the initial TerraStar activation message. To verify the subscription status, use the following logs:

```
LOG TERRASTARSTATUS ONCHANGED
```

```
LOG TERRASTARINFO ONCHANGED
```

The final output would resemble:

```
<TERRASTARSTATUS COM1 0 71.5 FINESTEERING 2082 173625.960 02044000 32bc 15833  
<   ENABLE LOCKED 0 DISABLED ONSHORE
```

```
<TERRASTARINFO COM1 0 70.5 FINESTEERING 2082 173623.946 02044000 91ea 15833  
<   "QY198:9565:5428" TERM 00002700 342 2019 0 NEARSHORE 0.00000 0.00000 0
```

The first field of the [TERRASTARSTATUS](#) log after the header will be ENABLE to indicate the TerraStar subscription is valid. It will be DISABLE when it has not received a valid activation message. The second field will be LOCKED when the receiver is tracking a TerraStar satellite.

The [TERRASTARINFO](#) log gives subscription details, including subscription type. The subscription details mask indicates what type of TerraStar subscription is enabled. In the case of '00002700', this indicates that the receiver has a TerraStar-C PRO subscription.

```
<OK  
[COM1]  
<LBANDTRACKSTAT COM1 0 70.0 FINESTEERING 2082 173597.000 02044000 29e3 15833  
<   5  
<     "98W" 1545865000 1200 974c 00c2 0 -210.932 41.166 3.4300 491.006 9344 0 0 1196032 6 0.0000  
<     "AORW" 1545845000 1200 974c 00c2 0 -217.826 44.577 4.0725 491.669 9344 0 0 1196032 0 0.0000  
<     "POR" 1545905000 1200 974c 00c2 0 -164.045 35.910 1.8260 493.251 9280 415 137 1187840 52351 0.0448  
<     "" 0 0 0000 0003 0 0.000 0.000 0.0000 0.000 0 0 0 0 0 0.0000  
<     "" 0 0 0000 0003 0 0.000 0.000 0.0000 0.000 0 0 0 0 0 0.0000  
[COM1]  
log terrastarstatus onchanged  
<OK  
[COM1]<TERRASTARSTATUS COM1 0 73.0 FINESTEERING 2082 173595.886 02044000 32bc 15833  
<   DISABLE LOCKED 0 DISABLED DISABLED  
[COM1]  
log terrastarinfo onchanged  
<OK  
[COM1]<TERRASTARINFO COM1 0 73.5 UNKNOWN 0 3.136 02044000 91ea 15833  
<   "QY198:9565:5428" UNASSIGNED 00000000 0 0 0 GEOGATED 0.00000 0.00000 0  
[COM1]
```

Figure 3: LOG TERRASTARSTATUS and LOG TERRASTARINFO in Console Window

Step 5: TerraStar Position Convergence

PPP is the engine used to calculate a TerraStar position. To monitor the PPP convergence, use the following log:

```
LOG PPPPOS ONTIME 1
```

Initially the position type will report PPP_CONVERGING (or PPP_BASIC_CONVERGING for TerraStar-L). Once the TerraStar solution has converged, the position type in the [PPPPOS](#) log will change to PPP for TerraStar-C and TerraStar-C PRO, or PPP_BASIC for TerraStar-L.

```
<PPPPOS COM1 0 71.5 FINESTEERING 2082 173923.000 02044000 ec34 15833
< SOL_COMPUTED PPP_CONVERGING 51.15039068456 -114.03070035301 1097.2318
-17.0000 WGS84 0.1512 0.2832 0.3025 "TSTR" 13.000 0.000 35 34 34 28 00 00 35 33

<PPPPOS COM1 0 71.5 FINESTEERING 2082 173924.000 02044000 ec34 15833
< SOL_COMPUTED PPP 51.15039069035 -114.03070040513 1097.2302 -17.0000 WGS84
0.1499 0.2817 0.2999 "TSTR" 14.000 0.000 35 34 34 28 00 00 35 33
```

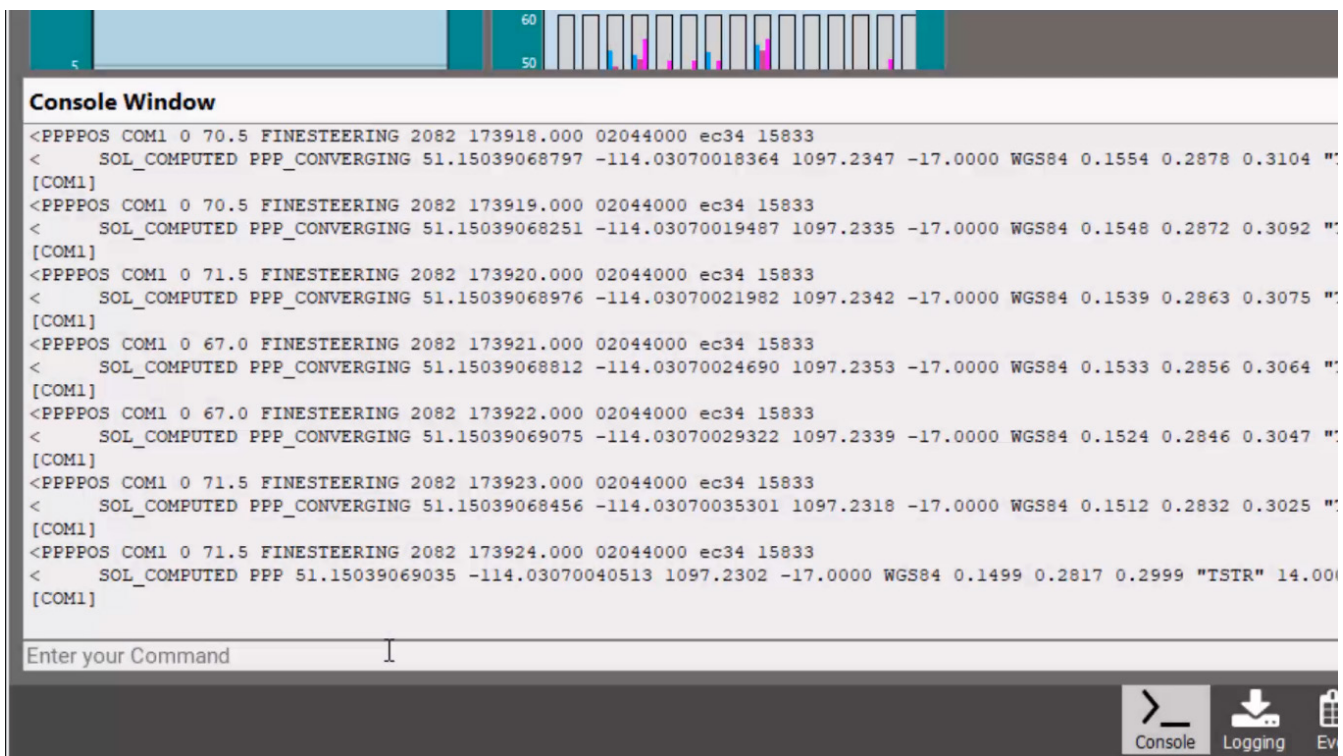


Figure 4: LOG PPPPOS with converging "Position Type" changing from PPP_CONVERGING to PPP