

## POS MV v5 RTK Options (f/m 7.42, POSview 7.41)

POS MV is designed to use the optimal GPS/GNSS source of aiding to ensure the most robust georeferencing in any given conditions. Consequently, there are two main methods of applying RTK observables in the system. Both methods are detailed in that document.

Note that these two methods should not be combined, but should be employed as appropriate to conditions and available inputs.

### COM Port Input (Tightly coupled mode)

This method provides optimal performance in areas of **reduced GPS coverage**. Examples of such scenarios are when operating inshore near bridges, buildings, large vessels and other structures which might impede signal reception.

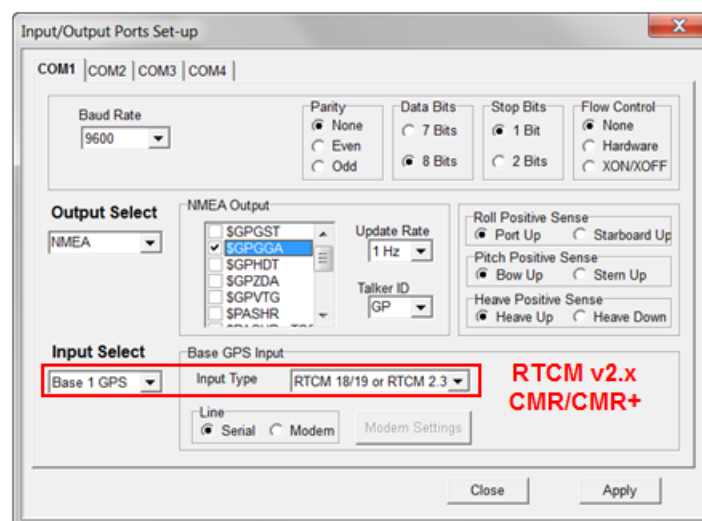
The RTK observables are input on any COM PORT (1-4)

### Format supported

- RTCM v2.x
- CMR/CMR+

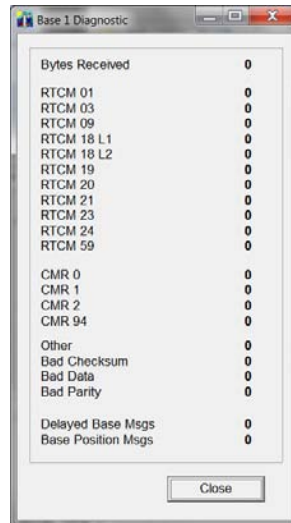
### POS View Configuration

The COM ports configuration is done via *Settings/Input/Output Ports*, where the appropriate communication parameters and Base GPS input type may be set:



\$xxGGA output can also be configured on the same COM port to enable operation with a VRS network. Often such services require the user to send their current position in order that the correct virtual observables can be computed and broadcast.

The number and type of observables received can be monitored under Diagnostics | Base GPS.



NB: During initial setting to work, and before GAMS has been calibrated, the NAV status may remain in Float RTK. “Fixed” mode will appear once the vessel is in dynamic conditions and /or GAMS is calibrated and online.

If POSpac data is logged, this method allows the interpolation of RTK observables to create an “autonomous” IAPPK solution using POSpac MMS v5.4 or higher. In this way, outages and latency issues that may affect RTK can be overcome. Please contact Applanix for further details on this POSpac methodology.

## GNSS1 Port Input (Close Coupled Mode)

Input via the GNSS1 port provides best performance when operating farther from the GPS / GNSS reference station. Typically this would be the most appropriate method of operations when **more than 15-20 km** (atmospheric conditions dependent) from the reference station.

This mode also provides **full GNSS support**, using both GPS and GLONASS signals.

### Format supported

- RTCM v2.x
- RTCM v3.x
- CMR/CMR+
- CMRx

NB: CMRx is supported by POS MV but for systems received before April 2013, the GNSS f/m requires an update and an option needs to be turned on. If that case applies to you please contact the Marine Support ([marinesupport@applanix.com](mailto:marinesupport@applanix.com)) with the screen grabs of the view/statistics window.

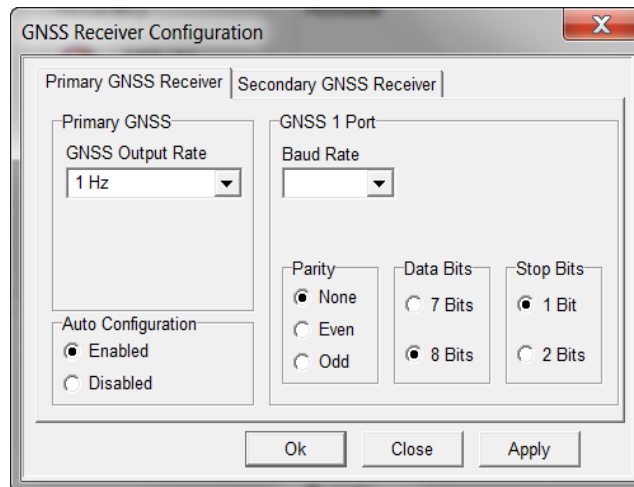
## GNSS1 Port

In POS MV v4, the GNSS1 port is accessed via a dedicated DB9 connector on the PCS.

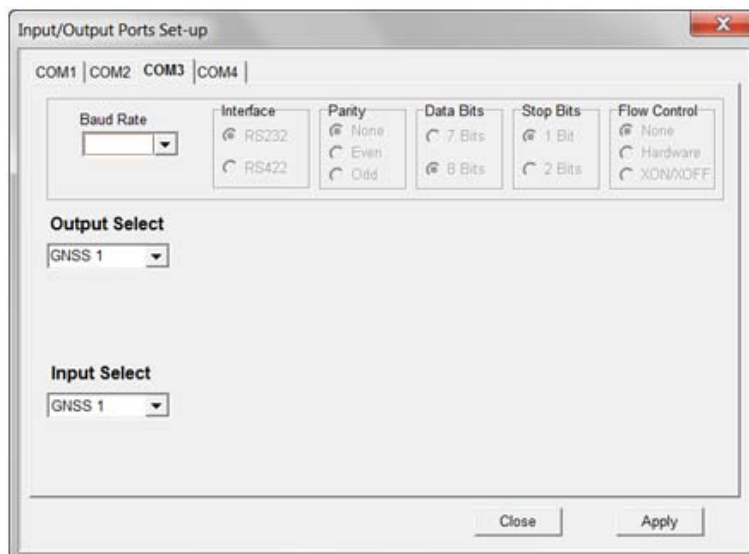
In POS MV v5, the GNSS1 port is accessed by configuring COM3 appropriately (see below for details).

## POS View Configuration

The GNSS port configuration is partly achieved via Settings/Installation/GPS Receiver, where the appropriate communication parameters can be set.

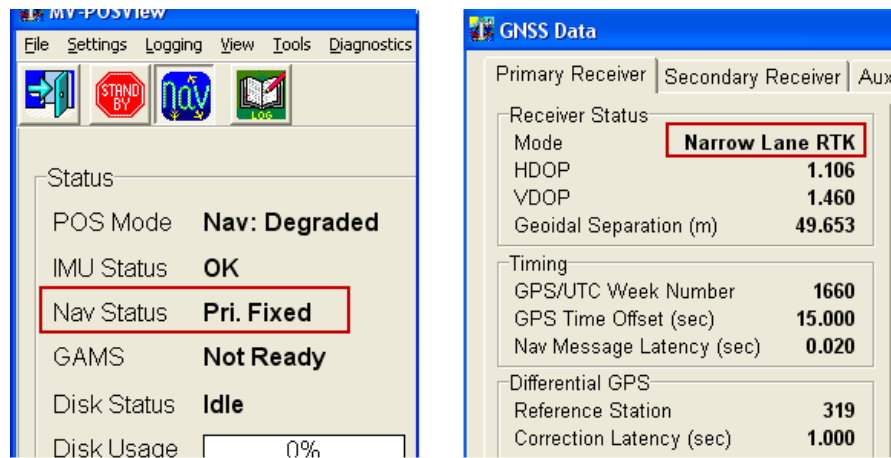


In POS MV v5 systems, the GNSS1 port is mappable through COM3. This should be configured by selecting the GNSS1 option from the Output / Input Select drop down menu in the *Settings/Input/Output Port/COM3* window. The appropriate communication parameters should be set correctly here as well.



The GNSS1 port implements autosensing capabilities and will therefore recognize and apply the RTK or differential data without further user input.

POS MV Nav Status will switch to "Pri Fixed", regardless of vessel dynamics or GAMS status. In clear sky conditions fixed solution status should appear nearly instantaneously.



Under View/GNSS data the Primary receiver status will report Narrow Lane or Wide Lane RTK as appropriate.