



Logging with New POS AP+ Devices in HYPACK

By Ken Aiken

With the new Trimble AP+ Air and Land devices, Applanix are moving away from using their old group codes towards outputting raw Trimble GSOF messages. The advantage to the user here is that they are no longer required to run POS View on their computers during logging. Instead, they can log into a web interface by entering the device IP address into the address bar of a web browser.

SETTING UP THE AP+

Start by logging into the AP+ device's web interface (default is 192.168.53.100). The default username and password for your device are "admin" and the serial number, respectively. On the side bar, select I/O Configuration and then Port Configuration below that. Select an output interface you want to change from the dropdown menu. By default, there should be a UDP (255.255.255.255) broadcast option to send GSOF to port 5602. If not, you can configure an output interface to do this by selecting GSOF as the output. Then, enable it to send messages #16 (Current Time UTC) and #48 (Multiple Page Detail All SV) to output at 1 HZ. This will give you your UTC time syncing and satellite information. Depending on your setup, select your navigation message from the following: #49 (Full Nav Info), #63 (Vessel), #65 (Sensor 1), or #67 (Sensor 2). The navigation message is typically #65 and relates to the old group 102 message. Click [OK] to apply your changes.

I/O Configuration Setup

I/O Configuration

Receiver Status
Satellites
Data Logging
Receiver Configuration
I/O Configuration
 Port Summary
 Port Configuration
MSS Corrections
Network Configuration
Security
Firmware
Help

UDP 255.255.255.255:5602 GSOF

Server: UDP Port: 5602 [Delete]

Connected to remote 255.255.255.255 : 5602

UDP Mode
 UDP Broadcast Transmit

Input/Output

Output: GSOF

GSOF

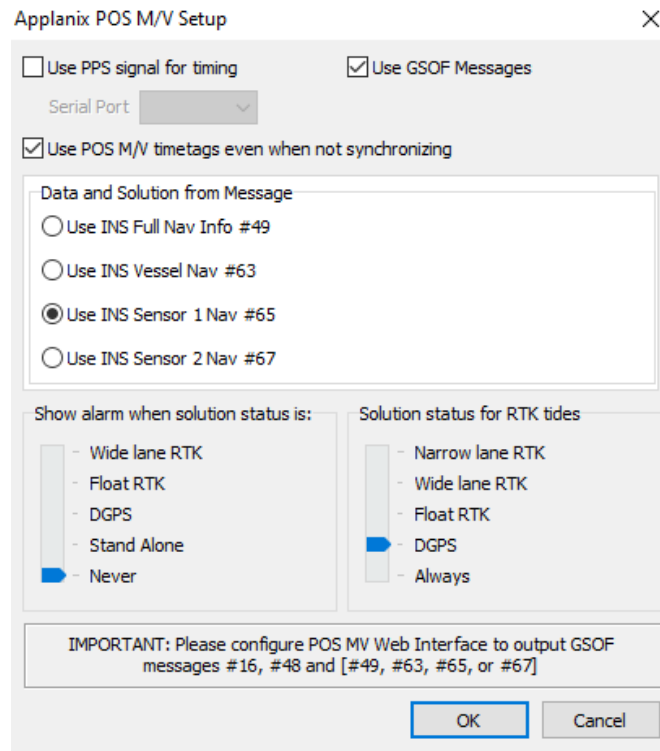
Position Time [#01]: Off	Receiver Serial [#15]: Off	Radio Info [#57]: Off
Lat, Long, Ht [#02]: Off	Current Time UTC [#16]: 1 Hz	INS User Pos and APC [#58]: Off
ECEF Position [#03]: Off	Attitude Info [#27]: Off	Event 1 Navigation Info [#59]: Off
Local LLH [#04]: Off	Brief All SV Info [#33]: Off	Event 2 Navigation Info [#60]: Off
Local ENU [#05]: Off	Detail All SV [#34]: Off	Code Lat, Long, Ht [#62]: Off
Delta ECEF [#06]: Off	Received Base [#35]: Off	INS VNAV Full Nav [#63]: Off
TPlane ENU [#07]: Off	Battery/Memory Info [#37]: Off	INS VNAV RMS [#64]: Off
Velocity [#08]: Off	Position Type Information [#38]: Off	INS S1NAV Full Nav [#65]: 50 Hz
DOP Info [#09]: Off	LBand Status Info [#40]: Off	INS S1NAV RMS [#66]: Off
Clock Info [#10]: Off	Base Position and Quality [#41]: Off	INS S2NAV Full Nav [#67]: Off
Position VCV [#11]: Off	Multiple Page Detail All SV [#48]: 1 Hz	INS S2NAV RMS [#68]: Off
Position Sigma [#12]: Off	INS Full Navigation Info [#49]: Off	Lat, Long, MSLHt [#70]: Off
Brief SV Info [#13]: Off	INS RMS Info [#50]: Off	
Detail SV Info [#14]: Off	Event Markers [#51]: Off	

Sort Alphabetically Set All Off OK Cancel

SETTING UP HARDWARE

In the HYPACK Combined Hardware, add the Applanix POS M/V driver as you normally would for a POS device and then launch the Setup window. This is the same as it always has been, except we've added the "Use GSOFF Messages" checkbox. When enabled, the Solution Status box changes to the Data and Solution from Message box, and shows the GSOFF messages and corresponding code. Select the navigation message you would like to obtain your data and solution from.

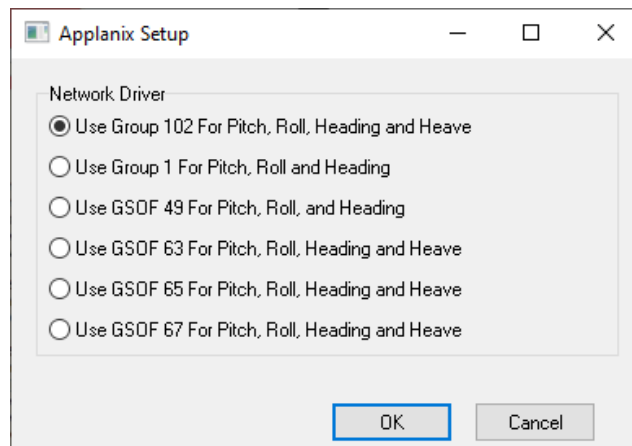
Applanix POS M/V Setup Window - Use GSOFF Messages Enabled



The screenshot shows the 'Applanix POS M/V Setup' dialog box. At the top, there are two checkboxes: 'Use PPS signal for timing' (unchecked) and 'Use GSOFF Messages' (checked). Below these is a 'Serial Port' dropdown menu. A second checkbox, 'Use POS M/V timetags even when not synchronizing', is also checked. The main section is titled 'Data and Solution from Message' and contains four radio button options: 'Use INS Full Nav Info #49', 'Use INS Vessel Nav #63', 'Use INS Sensor 1 Nav #65' (which is selected), and 'Use INS Sensor 2 Nav #67'. To the left of this section is a vertical slider labeled 'Show alarm when solution status is:' with options: 'Wide lane RTK', 'Float RTK', 'DGPS', 'Stand Alone', and 'Never' (selected). To the right is another vertical slider labeled 'Solution status for RTK tides' with options: 'Narrow lane RTK', 'Wide lane RTK', 'Float RTK', 'DGPS' (selected), and 'Always'. At the bottom, there is an important note: 'IMPORTANT: Please configure POS MV Web Interface to output GSOFF messages #16, #48 and [#49, #63, #65, or #67]'. The 'OK' and 'Cancel' buttons are at the bottom right.

If you are doing a multibeam survey, add the Applanix POS/MV Network driver to HYSWEEP Survey. The Applanix Setup window for HYSWEEP Survey is simplified, and consolidates all the group codes and GSOFF codes in one list.

Applanix Setup Window for HYSWEEP Survey



The screenshot shows the 'Applanix Setup' dialog box. It features a section titled 'Network Driver' with five radio button options: 'Use Group 102 For Pitch, Roll, Heading and Heave' (selected), 'Use Group 1 For Pitch, Roll and Heading', 'Use GSOFF 49 For Pitch, Roll, and Heading', 'Use GSOFF 63 For Pitch, Roll, Heading and Heave', 'Use GSOFF 65 For Pitch, Roll, Heading and Heave', and 'Use GSOFF 67 For Pitch, Roll, Heading and Heave'. The 'OK' and 'Cancel' buttons are located at the bottom right.

LOGGING FOR POSPAC CORRECTIONS

If you wish to do post processed corrections in POSPac, you can log directly to the device on its web interface under “Data Logging” on the side bar. This will log in Applanix's proprietary T04 format. You can then download it directly from their web interface on the “Data Files” under “Data Logging”. This can be the easiest way, but you do have to remember to download the files before putting the device away.

Data Logging Setup

File System	Size	Available	Auto Delete	
/Internal	9.5 GB	9.224 GB	97%	<input type="checkbox"/> <input type="button" value="Format"/>
/External				<input type="checkbox"/>

Session	Schedule	Status	Enable
DEFAULT Measurements 0.1 Sec. Positions 0.1 Sec. <input type="button" value="Configure"/>	Manual 1440 Min.	Disabled	<input type="checkbox"/>

Troubleshoot Log

Alternatively, for true heave in a *.000 file, you can still do this. In the I/O Configuration setup, add a POS ICD output with group 111 and 113 code for heave and true heave messages. Sending these by TCP or UDP, they can be then acquired using the Input Echo utility in HYPACK®. This allows you to start recording to a file the needed 3.5 minutes before and continue at least 3.5 minutes after without the opening and closing of Survey affecting your file. You can export this back out to anything that may require it as well.

Sample I/O Configuration

Type	Port	Input	Output
TCP/IP	5017	-	-
TCP/IP	5018	-	-
UDP	255 255 255 255 : 5218	-	NMEA-GGA(10Hz), NMEA-HDT(10Hz)
UDP	255 255 255 255 : 5602	-	GSOF(50Hz)
UDP	255 255 255 255 : 5610	-	GSOF(50Hz)
UDP	255 255 255 255 : 5611	-	POS ICD(50Hz)
UDP	255 255 255 255 : 5614	-	1 PPS TIME TAG
UDP	255 255 255 255 : 5620	-	NMEA-GGA(10Hz)
TCP/IP	28001	-	-
TCP/IP	28002	-	-
NTRIP Client 1	-	-	-
NTRIP Client 2	-	-	-
NTRIP Client 3	-	-	-
NTRIP Server	-	-	-
NTRIP Caster 1	2101	-	-
NTRIP Caster 2	2102	-	-
NTRIP Caster 3	2103	-	-
Serial	COM1 (38.4K-8N1)	-	-
Serial	COM2 (38.4K-8N1)	-	GSOF(20Hz)
USB	-	-	-