

WinFrog Device Group:	GPS
Device Name/Model:	NAVSTAR XR5M
Device Manufacturer:	Symmetricom Navstar Systems Ltd. Mansard Close, Westgate Northampton, UK, NN5 5DL Tel: +44 1604 585588 Fax: +44 1604 585599 E-mail: navstar@symmetricom.com Available via: TDC Interactive Stroudley Road, Basingstoke, Hampshire, RG24 8FN United Kingdom
Device Data String(s) Output to WinFrog:	Pseudorange and Ephemeris Data
WinFrog Data String(s) Output to Device:	Nil
WinFrog .raw Data Record Type(s):	Type: 303

DEVICE DESCRIPTION:

The NAVSTAR XR5 is manufactured by Symmetricom Navstar Systems Limited, which is a supplier of the United States Department of Defense. These systems are designed to meet US Military specifications. The XR5 is equipped with three communication ports and a 486-computer processor. The newer version of this instrument is the Sharpe XR6.



DEVICE CONFIGURATION INSTRUCTIONS:

Baud Rate: Configurable 300-19,200 software selectable

Data Bits: Configurable

Stop Bits: Configurable

Parity: Configurable

The unit can accept RTCM SC-104 differential corrections and output a differentially corrected solution.

WINFROG I/O DEVICES > CONFIG OPTIONS:

The Navstar XR5-M is added to WinFrog from the GPS device category. Adding the Navstar XR5-M device provides Pseudorange and Ephemeris data items. There is no configuration required or available in the I/O Device window.

WINFROG VEHICLE - DEVICES > EDIT OPTIONS:

As mentioned above, there are 2 data items available with the XR5-M device: Pseudorange and Ephemeris. The Ephemeris device requires no configuration to suit the vehicle application. Editing the XR5M Pseudorange data item brings up the Pseudorange Calculation window, as shown below.

Pseudorange Calculation

Calculation
☒ Primary
☐ Secondary
☐ Use Elevation

Accuracy
1.0 Position 0.10 Velocity
0 Remote Unit ID

Antenna Height
Ellipsoid Height 30.0m
☒ Calcd ☐ Auto\Last Hgt
☐ Fixed ☐ Auto\Input Hgt

Offsets
Fore/Aft 0.0m Port/Stbd 0.0m Height 0.0m

Phase Smoothing
☐ Apply Phase Smoothing
25 Filter Length 8 Cycle Slip Tol

DGPS Mode
☐ Auto
☐ On
☒ Off
☒ Generate

Graphics
☒ Off
☐ On

Display
☒ Results ☐ Data
☐ Statistics

☐ Use For Heading Calculations

Alarms
Tests
RefStns

OK Cancel Help

Refer to the NovAtel Console GPS device documentation, Configure Pseudorange Calculation section, for details on the above window.

CONFIGURATION DETAILS:

RTCM	RS-232D, RTCM SC-104, Type 1,2,3,9,20,21,12 way miniature 723/IP67
Antenna	TNC connector to volute or patch antenna
Recorder	RS422A, 1pps, Automatic output of data, NMEA 0183, status message, 12 way miniature 723/Ip67

CDU Interface Signal:

The receiver CDU interface is via a Binder connector. The interface conforms to the EIA standard RS-232D.

<u>PIN</u>	<u>SIGNAL</u>	<u>Description</u>
1	-	Reserved
2	RTS	Request to Send
3	-	Reserved
4	CTS	Clear to Send
5	-	Reserved
6	TXD	Transmit Data
7	-	Reserved
8	RXD	Receive Data
9	-	Reserved
10	RESET	External Reset
11	GND	Signal Ground
12	ETH	Chassis Ground

The CDU interface operates a 9600-8-odd-1.

Recorder Port Signal:

The receiver data signal interface is via a Binder connector. The interface conforms to the EIA standard RS-422A

<u>PIN</u>	<u>SIGNAL</u>	<u>Description</u>
1	-	Not Used
2	-	Not Used
3	-	Not Used
4	-	Not Used
5	-	Not Used
6	TXD(H)	Transmit Data
7	TXD(H)	Transmit Data
8	-	Not Used
9	-	Not Used
10	1-PPS	Timing Pulse
11	GND	Signal Ground
12	ETH	Chassis Ground

RTCM Port Signal:

The receiver data signal interface is via a Binder connector. The interface conforms to the EIA standard RS-232D.

PIN	SIGNAL	Description
1	-	Not Used
2	RC	Radio Modem TX
3	-	Not Used
4	-	Not Used
5	-	Not Used
6	TXD	Transmit Data
7	-	Not Used
8	RXD	Receive Data
9	1-PPS	Timing Pulse
10	RESET	External Reset
11	GND	Signal Ground
12	ETH	Chassis Ground

RAW DATA LOGGING:

External data logging can be accomplished by interfacing a PC to the unit.

SPECIFICATIONS: (Manufactures)

- Receiver: 12 channel C/A code, L1 frequency
- Update rate: Status message output up to 4 times a second
- Power 11-32VDC, 3-way miniature 723/IP67
- Beacon Differential 1-3m CEP (RTCM 20+2/9), velocity 0.03m/s

Performance Characteristics:

Receiver: 12 Channel C/A code, L1 frequency.

Satellites: Up to 12 satellites tracked.

Update rate: Status message output up to 4 times a second.

Velocity: Maximum speed, Mach 2, Maximum acceleration 6 g jerk 4 g/s, 1 pps +/-50 nanoseconds.

Time to first fix: <30 seconds (with current ephemeris).

Enclosure: Pressure die cast aluminum box, size: 175 mm x 80 mm x 57 mm, weight: 1 kg.

Finish: Stove Enamel.

Interfaces: RTCM SC-104, CDU (Control & Display Unit): RS232D, NavStar DM, 1 pps, NMEA 0183, status message.

Baud rate: 300-19,200 software selectable +/-0.1%.

Power: 9-32 Vdc 3-way miniature 723/IP67.

Antenna: TNC connector to volute or patch antenna.

Power: 5 watts average at 12 volts.

Protection: Protected against reverse connection, excessive voltage, transients and over temperature.

Temperature: Operating -20° to +65°C.