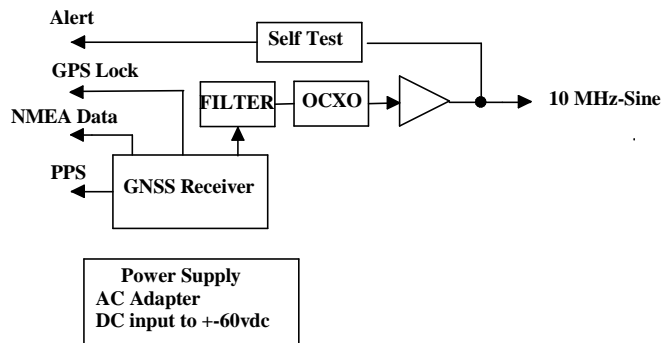# NR3700-O/G

10MHz Frequency Reference, OCXO Holdover/Auto-Cal, GNSS-Locked, Single Channel

KEY FEATURES

The signal source is a GNSS-driven, mixed-signal, phase-lock-loop generating a 10 MHz sine output from an intrinsically low jitter OCXO-controlled crystal oscillator. The output is a 0.4 Vrms sine.

This unit also features auto-calibration. The NR3700 continually monitors temperature and aging so that, when the unit goes into holdover, the output frequency is at the last frequency ±10 ppb.

There is extensive built-in test that drives an LED. The unit can operate from DC power from -60 Vdc to +60 Vdc in three ranges. Power converter provides electrical isolation from the power source to the output (configuration option). Unit is available in a kit that includes the antenna, cable and power adapter.

Optional PPS and NMEA outputs. Low noise OCXO with unlocked aging stability ±50 ppb/year.

Product Highlights

High Sensitivity GNSS Receiver

The 26 channel high-sensitivity, high-accuracy multi-GNSS receiver supports TRAIM, GPS, GLONASS, QZSS, SBAS, active anti-jamming and advanced multipath mitigation functions.

Typical Phase Noise 10 MHz Sine

Offset Frequency (Hz)	Typical (dBc / Hz)
10	-125
100	-150
1K	-155
10K	-155

Auto-Cal

The unit stores the temperature/time performance of the holdover crystal multiple times per day. If GPS is lost, the unit uses the last best-known compensation.

Technical Specifications

10 MHz Sine	5 ±1 dBm, 50 Ohm - BNC
Harmonics	less than -30 dBc
Locked stability	<~E-11 after 100 seconds
First year frequency stability	±50 ppb (long-term unlocked)
Temperature stability	±10 ppb (unlocked)
GNSS Receiver	GPS L1 C/A, GLONASS L1OF, QZSS L1 C/A, SBAS L1 C/A (Ready): Galileo E1B/E1C, QZSS L1S
Channels	26 channels (GPS, GLONASS, QZSS, SBAS)
Sensitivity	
GPS	Tracking: -161 dBm
	Hot Start: -161 dBm
	Warm Start: -147 dBm
	Cold Start: -147 dBm
	Reacquisition: -161 dBm
GLONASS	Tracking: -157 dBm
	Hot Start: -157 dBm
	Warm Start: -143 dBm
	Cold Start: -143 dBm
	Reacquisition: -157 dBm
	With Novus recommended antenna
Antenna with LNA	
Antenna power	3.5 Vdc, < 35 mA (on center conductor) - factory configurable to 5 Vdc
Frequency	1574-1607 MHz
Nominal gain	2 dBic
Amplifier gain	26 dB
Noise figure	< 2.0 dB
Out-of-Band rejection	Fo±50MHz=60 dBc, Fo±60 MHz
DC current	<25 mA@3.5 Vdc
Remote Interface & Control	
Protocol	RS232 NMEA-0183
Connector	DB-9
Location	rear panel
Protocol	bit plus stop
Standard Baud Rates	selectable 4800, 9600, 19200, 38400, 57600 or 115200 bps
PPS	25ns RMS accuracy, 3.3V logic, output impedance CMOS (±20mA)
Power Requirements	Three ranges ± (9 to 18, 18 to 36, 36 to 65) Vdc (AC adapter available) Power converter can be configured to provide > 500 volts isolation

Connectors	BNC -1 10 MHz output	
	SMA PPS 3.3 Vdc CMOS (optional)	
	2 pin terminal block ((Digikey 277-2419-ND (ships with mate Digikey 277-2418)-ND - reverse polarity operational	
NMEA (optional)	NMEA-0183 at full RS232 levels.	

Environmental and Mechanical

Operating temperature	0 to 50°C non-condensing (extended temperature range available)	
Storage temperature	-40 to 70°C	
Width	3.5 inches (with flange)	
Depth	4 inches	
Height	1.2 inches	
Weight	~8 oz	