

DATA SHEET	NR6720-HS
REVISION	F
DATE	050620

NR6720-HS

10 MHz GNSS-Locked Reference, OCXO Based, Secondary Synthesized Channel, Time Stamp, Stabilized PPS and optional LVDS



The NR6720-HS features extremely low frequency jitter despite being GNSS-locked. GNSS-locking brings a long-term stability to an OCXO that is difficult to match. Locking an OCXO to the GNSS presents its own set of problems. The timing information from the GNSS is burdened with all the noise one would expect from a RF link - multi-path, reflections etc. Long-term stability is enhanced frequently at the expense of “close-in” stability. Low frequency components from the RF link are introduced to the OCXO - often degrading the Allan Deviation of the OCXO. The NR6720-HS uses a unique crystal and proprietary control loop to minimize “close-in” degradation while securing long-term stability. Optional LVDS can be configured for PPS or 10 MHz.

Synthesized Secondary Channel

Provides a secondary frequency locked to GNSS.

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.

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.

Time Stamp

1 usec accuracy @ 10 kHz rate

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Technical Specifications

10 MHz sine	13 ±2 dBm ,50 Ohm - BNC
Harmonics	Less than -30 dBc
Locked stability (AD)	<~E-12 after 1000 seconds
First year frequency stability	±50 ppb (long-term unlocked)
Temperature stability	±10 ppb (unlocked)
Yearly aging	±30ppb (unlocked)
Secondary channel	1 Hz to 1 MHz GNSS-locked
Secondary duty cycle	45 to 55%
PPS	
Amplitude for 1PPS	3.3 Vdc CMOS (5 Vdc option)
Pulse width for 1PPS	Programmable 1 to 500ms in 1 ms steps
Rise time for 1PPS	<10 ns (faster edge available)
Connector	BNC
Load Impedance	50 Ohm
Location	rear
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
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

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Amplifier gain	26 dB
Noise Figure	< 2.0 dB
Out of Band rejection	Fo±50MHz=60 dBc, Fo±60 MHz
Secondary Channel	Derived from 200 MHz master oscillator locked to 10 MHz. In the case of 25 MHz we divide 200 MHz by 8. Output impedance is 200 Ohm.
DC current	<25 ma@3.5 Vdc
Connectors	SMA 10 MHz output SMA secondary output SMA PPS 3.3 Vdc CMOS 3 pin LVDS connector, +,-, gnd , mates with ON Shore OSTTJ0311530
NEMA Data	RS232 port- 38.4 kbaud (baud rate selectable)
Power Connector	2-pin power connector - power in. Mates with On Shore Tech OSTTJ0411530
Power	Available -60 to +60 Vdc in three ranges

Environmental and Mechanical

Operating temperature	0 to 50°C non-condensing (extended temperature range available)
Storage temperature	-40 to 70°C
Width	3.5"
Depth	5.0" (exclusive of connectors)
Height	1.13"
Weight	~16 oz

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