



# GPS CLOCK SOURCE

## Accessories



The **GPS Clock Source** is the last GPS synchronisation product by Neetra for targeting the wireless infrastructure. This GPS clock combines an 50-channel GPS receiver, high quality ovenized oscillator and a 4 way distribution for 10MHZ and 1PPS signals. It is available in both single and dual GPS models (to maximize the reliability). Among its uses are synchronising the DVB infrastructure.

The **GPS Clock Source** outputs 4x10MHz reference signals and 4x1PPS signals with an over-determined solution synchronised to GPS or UTC time. The 10MHz reference accommodates applications requiring sub-microsecond timing.

The GPS receiver is driven directly by the 10MHz output signal of the oscillator. This is calibrated against the incoming GPS signal, with the resulting clock and frequency measurements fed into the oscillator frequency control algorithm.

The T-RAIM (Time-Receiver Autonomous Integrity Monitor) algorithm is used to monitor satellites to ensure signal integrity. The clock continues to distribute time and frequency signals even if the GPS input signal is lost. Furthermore, learning from its behaviour in different situations (effect attributed to aging and to temperature

variations) while the GPS reference signal is present, the frequency driver improves on the accuracy of time and frequency distribution when the GPS signal is lost. Housed in a 19" - 1U rack, the equipment has a very compact structure. A display on front panel helps the user to program the working modes and to read the GPS status. LEDs on front panel gives to the operator a quick view of the status. The GPS Clock can be controlled by remote through a wired telemetry connector, via USB on front panel or via RS485 on rear panel.



▲ Rear panel

### Main characteristics

- 50-Channel continuous tracking GPS receiver
- Signal Integrity through a T-RAIM algorithm
- Active GPS Antenna included
- Ovenized quartz oscillator provide clean 10MHz (1PPS) signal
- Perfect choice for DVB SFN network synchronization
- 4 10MHz Sinusoidal Output
- 4 1PPS Output
- Front panel Display and LEDs indication
- Remote Control Telemetry Wired (USB or RS485)
- Universal Power Supply
- +24Vdc Battery Input

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## Technical characteristics

<b>GPS SECTION</b> General PPS Accuracy 10MHz Accuracy 10MHz Ageing 10MHz Thermal Performance Harmonic Level Spurious Phase Noise Holdover Sensitivity	L1 Frequency, CA/code (SPS), 12-channels continuous tracking receiver 30ns when locked $1 \times 10^{-12}$ (one day average) $1 \times 10^{-10}$ $1 \times 10^{-9}$ (-20°C / +65°C) < -45dBc < -70dBc 10Hz - 125dBc/Hz, 100Hz - 140dBc/Hz, 1Hz - 140dBc/Hz, 10Hz - 140dBc/Hz, 100Hz - 140dBc/Hz 10us over 24 hours with a max $\pm 10^\circ\text{C}$ temperature range -144dBm (cold start), -160dBm (fixed position)
<b>ANTENNA INPUT SECTION</b> Connector / Impedance Voltage	N / 50 Ohm +5Vdc
<b>PPS OUTPUT</b> Connector / Impedance Waveform Level	BNC / 50 Ohm 200us-wide pulse LVTTTL
<b>10MHz OUTPUT SECTION</b> Connector / Impedance Waveform Level	BNC / 50 Ohm Sinusoidal 0dBm $\pm 5\text{dB}$
<b>ANTENNA SECTION</b> Temperature Dimensions Weight Connector / Impedance Power Consumption Gain Frequency Polarisation VSWR Noise Azimuth Coverage Elevation Coverage	-40°C to +75°C 81mm (D) x 142.5mm (H) 280gr N / 50 Ohm < 50mA 26dB $\pm 3\text{dB}$ 1575.42MHz $\pm 10\text{MHz}$ Right-and circular position (RHCP) < 2 < 3.3dB (25°C $\pm 5^\circ\text{C}$ ) 360° (Omni-directional) 0° to 90° elevation (Hemispherical)
<b>GENERAL</b> Physical Local Control Port Remote Control Port User Interface on Front Panel Power Supply Voltage DC Power Supply Power Consumption Operating Temperature	Rack 19"-1U, 4kg USB RS485 LCD Display + Keyboard + Status LEDs 90 - 250VAC +24Vdc < 15W 0°C to +60°C

Specifications and characteristics are subject to change without notice



GPS Antenna