ACCESSORIES

GPS Clock Source

MAIN CHARACTERISTICS:

- 8-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 synchronisation
- 4 10MHz sinusoidal output
- 4 1PPS output
- Front panel Display and LEDs indication
- Remote Control wired and serial (RS232 OR RS485)
- Universal Power supply
- 24V battery input

GPS Bullet Antenna

The GPS Clock Source is the last GPS synchronisation product of Elettronika targeting the wireless infrastructure. This GPS clock combines an 8-channel GPS receiver, high quality ovenized oscillator and a 4 way distribution for 10MHZ and 1PPS signals. Among its uses are synchronising the DVB infrastructure.

The GPS Clock Source outputs 4 10 MHz reference signals and 4 1PPS signals with an over-determined solution synchronised to GPS or UTC time. The 10 MHz reference accommodates applications requiring sub-microsecond timing.

The GPS receiver is driven directly by the 10 MHz 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 Source can be controlled by remote by a wired telemetry connector or by serial (RS232 on front panel or RS485 on rear panel).

Rear Panel

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GPS CLOCK SOURCE

Technical characteristics

GPS

General	L1 frequency, CA/code (SPS), 8-channel continuous tracking receiver			
Update Rate	1Hz			
PPS Accuracy	UTC 29ns (one sigma)			
10 MHz Accuracy	$1.16*10^{-12}$ (one day average)			
Harmonic Level	<-40dBc			
Spurious	<-70dBc			
Phase Noise	10Hz	-120dBc/Hz	100Hz	-135dBc/Hz
	1kHz	-135dBc/Hz	10kHz	-145dBc/Hz
	100kHz	-145dBc/Hz		
Holdover	±1µs over 2 hours with a max ±15°C temperature			

ANTENNA INPUT

Connector / Impedance	F / 50Ω
Voltage	5V

PPS OUTPUT

Connector / Impedance	BNC / 50Ω
Waveform	10 µs-wide pulse
Level	TTL

10MHz OUTPUT

Connector / Impedance	BNC / 50Ω
Waveform	Sinusoidal
Level	0dBm ±5dB

ANTENNA

Temperature	-40 to +85°C
Waterproof	Immersion to 1 meter
Dimensions	77.5mm D x 66.2mm H
Weight	170g
Connector / Impedance	F / 50Ω
Power Consumption	< 30mA
Gain	35dB ±3dB
Frequency	1575.42MHz ±1.023MHz
Polarisation	Right-hand circular polarisation (RHCP)
VSWR	< 2
Noise	< 3.3 dB (25°C ±5°C)
Azimuth coverage	360° (Omni-directional)
Elevation coverage	0° to 90° elevation (Hemispherical)

GENERAL

AC Power Supply	90 - 260Vac 50/60Hz
DC Power Supply	24Vdc
Dimension / Weight	Rack 19" - 1U / 4kg
Temperature	0°C to +60°C
Humidity	95% non-condensing
Telemetry	Wired and serial (RS232 on front, RS485 on rear)

These specifications are subject to change without notice

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