GPS Receiver, 10 Output x 1PPS, 10 or 5MHz Outputs - stand-alone unit. Dual Redundant GPS Receiver, 10 Output x 1PPS ,10 or 5MHz OutputsStand-alone unit Seamless

> SCS 120D

> SCS 120S

> GPS receiver rear view
(version with GPS Input on the front-panel)

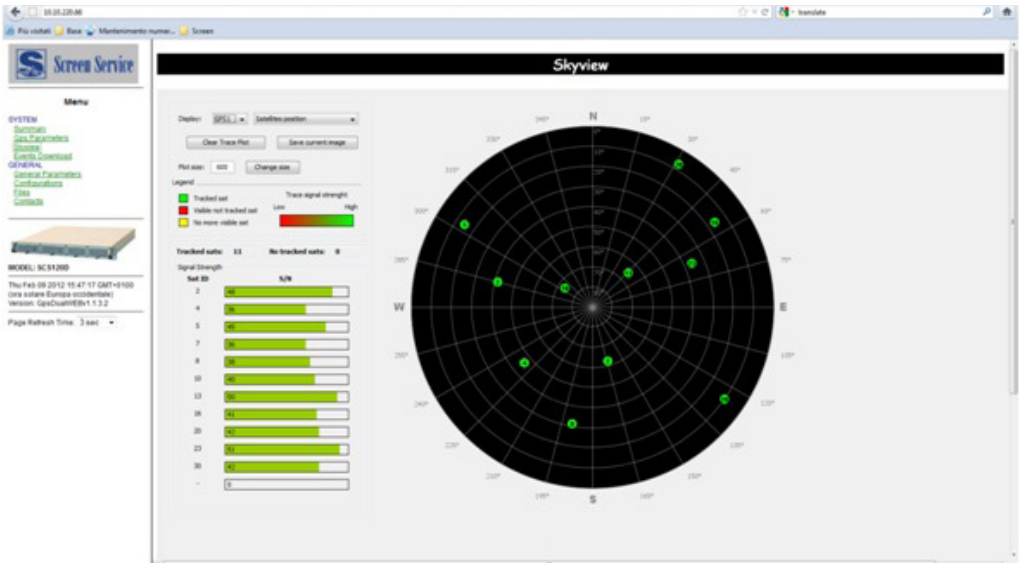
Description

The systems in these series represent the ideal solution to problems of synchronization for distribution networks of broadcasting signals or in every kind of network that required Frequency and Timing reference.
They make possible to obtain a high-precision frequency source wherever there is unavailable GPS signal.
The GPS receivers, designed whit "Carrier Aided Tracking" technology with 12 parallel channels, are available in single or redundant version with automatic seamless switch-over, which provides a commutation without interruption.
Distributors are available, moreover, for frequency reference signals as well as for timing-reference signals.
The discontinuity of the presence of the reference signal does not jeopardize operation of the equipment, thanks to the substantial stability of the oscillator.
The sturdiness of the system in case of reference signal lack was obtained by comparing the local source
frequency with the reference signal frequency and correcting the possible drift of the local frequency of the integrated oscillator.

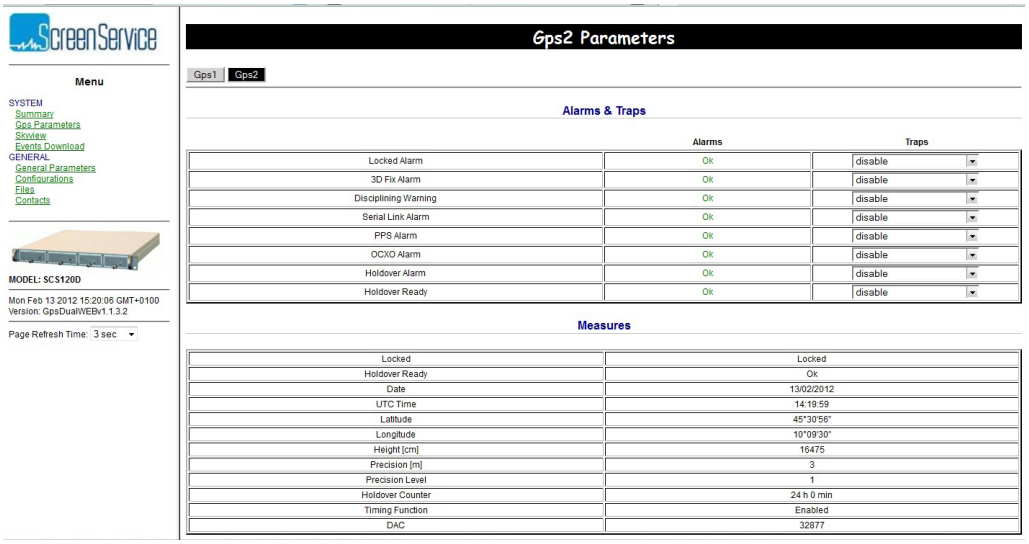
The dual GPS Receiver contains two fully redundant GPS receiver boards, each with their own OCXO, GPS module and GPS antenna input. The redundancy is at power supply level as well. Each receiver has an OCXO (oven controlled crystal oscillator) which runs at 10MHz. The accuracy of this OCXO is better than ±0.3Hz (0.3 ppm). When the GPS signal is present and is detected, the OCXO frequency is controlled to match the accuracy of the GPS time reference. The number of cycles of this signal is counted over a period of one second, as given by the 1PPS signal from the GPS module. This way the frequency error of the OCXO is derived.
If the GPS module tracks only 3 satellites or less, it becomes impossible to extract the GPS time information. If this happens, the microcontroller stops adjusting the OCXO frequency. The OCXO is left running in open loop, with the last tuning voltage known before the GPS module lost track.
When both receivers do not receive the GPS signal, then the frequency accuracy is set by the OCXO accuracy, which is less than 0.3ppm. this function is named Hold Over.

GPS RECEIVER

- 12 parallel channels.
- C/A code 1,023 MHz chip rate.
- Carrier Aided Tracking.
- Precision in position: 25 m (SA absent), 100 m (SA spec. UD DoD)
- Suitable for use with active antennas.
- LAN TCP/IP
- Aux TLS relay contact available on the rear panel.
- RS485,RS232 Communication



Skyview



Control Panel

FREQUENCY REFERENCE	
Number of outputs	10 x BNC, 50 Ω
Output signal	5 or 10 MHz, sine wave, 1 V p.p
Short term stability	Better than 5x10-12 (1sec)
Frequency accuracy	Better than 3x10-12 (24hours continuos powe up and GPS)
Hold over drift	±5x10-10/day
Phase noise @ 100 Hz	Better then -145 dBc/Hz
Phase noise @ 10 kHz	Better then -155 dBc/Hz
Cold startup	Less then 10 min.

TIMING REFERENCE	
Number of outputs	10 x BNC, 50 Ω
Output signal	1 PPS, 5 V TTL, square wave
Timing accuracy	±100 ns peak (24 hours continuous power up and GPS)
Holdover drift	±1 µs (3 hours without GPS) < 8 µs (24 hours without GPS)

GENERAL	
GPS antenna input connector	N female, 50 Ω, lightning protection available as option
Switchover function (redundant models only)	Auto
Operating temperature	-10°C to +45°C
Maximum relative humidity	90%, non condensing
Power supply	90 to 264 V AC, 24/48 V DC
Dimensions	1 RU (19" rack)
Weight	5 kg (approx)

OPTION
Power supply in redundant configuration
Lightning protection
5 MHz output (2MHz on request)
Rear Input GPS antenna
Kit SCS 118/Mobil Antenna GPS