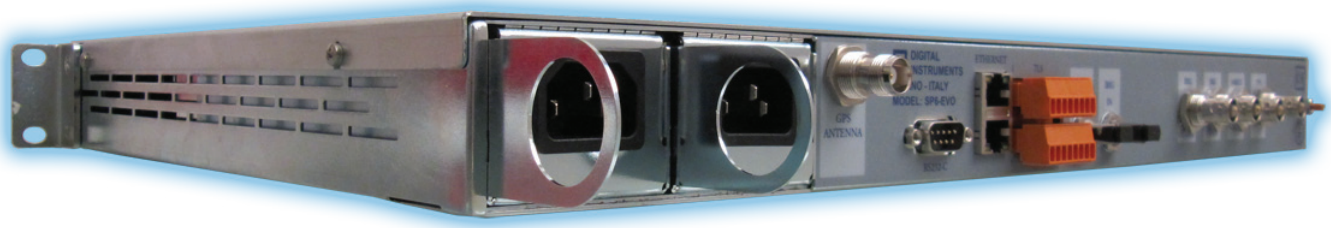
Introduction

ETS-EVO² is a very flexible solution to generate ultra-stable time signals (1PPS, IRIG-X 00x/12x, NTP/PTP Serial Time Telegrams, ...). The unit is a multi-reference input equipment that can accept various input references: GNSS, NTP/PTP, IRIG-X (00x/12x).

ETS-EVO² is a compact unit (19" / 1U mechanical chassis). It has a dual Power Supply that, with the multi input references, makes the equipment ultra reliable. Furthermore the unit can be easily managed remotely via SNMP or by a user-friendly GUI on the web.

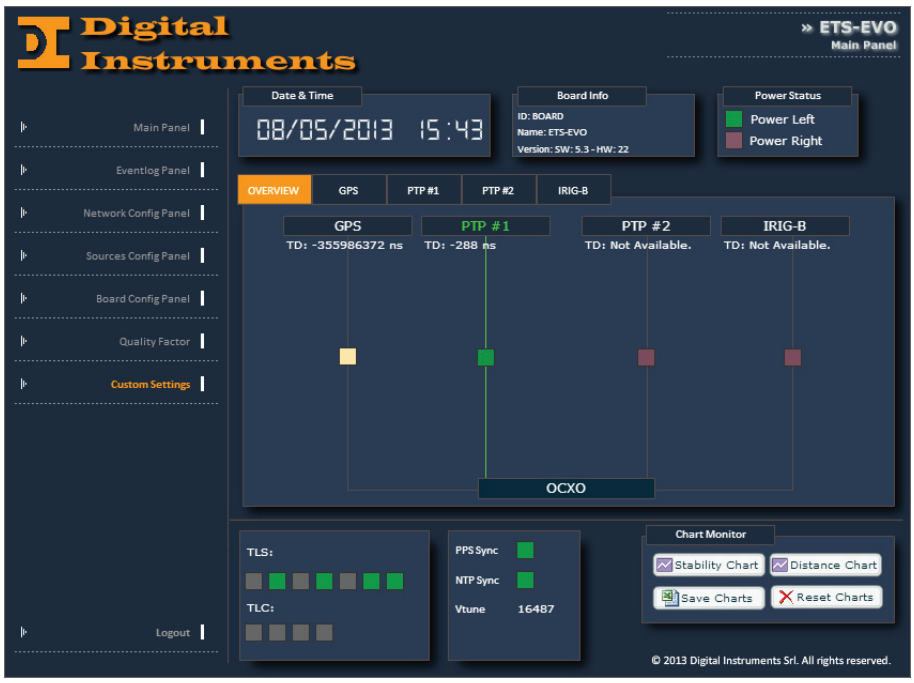
Display and crosspad can be available on front panel as option.

ETS-EVO² Front Panel (with display option)



ETS-EVO² Back Panel

- ARM Cortex A9 @ 667 MHz Dual Core CPU
- 512 MB DDR3
- Linux 2.6 Operative System
- 2x GbE Network Interface via RJ45 connectors
- Support up to 500 clients (PTP-IEEE1588v2)
- Support up to 10,000 NTP requests per second (per Ethernet port)
- Integrated GPS Receiver
- Multi reference inputs
- Internal high stability OCXO
- Rubidium as option
- NTP, IEEE1588v2 and SyncE compliant
- IRIG-X 00x via BNC, 12x via ST (optical fiber)
- 1 PPS
- Dual hot redundant replaceable PSU
- LCD, crosspad and status LED's for local management
- Integrated web server and SNMP for remote management



ETS-EVO² web GUI

GNSS

Receiver:	1,575.42 MHz – 12 Channels
Tracking:	12 satellite correlation
PPS Accuracy:	< 50 nsec
Acquisition time:	4 minutes
Local oscillator:	OCXO (ageing in holdover ±5e-11 / sec) [1]
Stability when locked:	±1e-12 after 24 hours
Antenna connector:	TNC
Optional:	GLONASS

Interfaces

AC Power option, 110-220 VAC (IEC 60320 C14 socket)
DC Power option, 36-72 VDC (terminal block)
SNMP protocol and integrated Web Server
2 GbE - PTP/SyncE I/O combo port
shielded RJ45, 10/100/1000 BaseT Ethernet (also used for management)
each port is configured as either as an input port (client) or an output port (master)
1 Time of Day (ToD) output via RS232
1 PPS output via BNC connector
1 10MHz output via BNC connector
1 IRIG-X output (00x/12x) via BNC and ST (00x only) connector
1 IRIG-X input (00x/12x) via BNC and ST (00x only) connector

NTP

Protocol: NTPv4
Role: Master Clock Stratum 1 (with GPS) – slave clock Stratum 2
Packet rate: 20.000 transactions per second

IEEE 1588 v2 PTP Output

PTP output client capacity: up to 500 clients
Up to 128 messages per second per client
IPV4 / UDP, Layer 2, Multicast, Unicast
2-step
PTP Profiles
- ITU-T G.8265.1 Frequency Profile (IPV4)
- Telecom Profile (ITU-T G.8265.1)
- Power Profile (IEC C37.238)
- Default Profile (IEEE 1588 v2)

VLAN (802.1Q, 802.1p)

Status Info

5 status LEDs, RS232, SNMP, Web interface
Optional: LCD Display and Crosspad for local management

IEEE 1588 v2 PTP Input

Boundary Clock function
Multi-sync function uses both PTP input or frequency input (SyncE or E1/T1)
IPV4 / UDP, Layer 2, Multicast, Unicast
1-step and 2-step
PTP Profiles
- ITU-T G.8265.1 Frequency Profile (IPV4)
- Telecom Profile (ITU-T G.8265.1)
- Power Profile (IEC C37.238)
- Default Profile (IEEE 1588 v2)

VLAN (802.1Q, 802.1p)
Best Master Clock Algorithm (BMCA), with Default Profile

Syncronous Ethernet

SyncE can be used as a frequency input and can be generated as an output (as Master)
Conforms to relevant sections: ITU-T G.8261, G.8262 and G.8264 ESMC

Network Support

DHCP (RFC2131)
DSCP
HTTP
ICMP (RFC 792)
IEEE 802.1Q, 802.1p VLAN
IEEE 1588 v2 PTP
IPV4
NTP
SNMP
SYSLOG
TELNET
TIME

Mechanical

Size:	Height:	44 mm
	Width:	438 mm
	Depth:	295 mm
Rack mount:	19”/1U.	

[1] *Holdover values are aproximated and assume operation at constant temperature, no initial frequency or phase offset, and that the unit has been powered for two weeks and locked to GNNS for three consecutive days.*