Digital Instruments

EASY-CS3

plug-in module equipment for telecom application

Easy-CS3 it is specifically designed for remote managing of the **Microsemi CsIII Model 4310B** on a network IP. All switches and controls transiting from the RS232 serial port on the back of the Microsemi CsIII Model 4310B are converted on the IP network and can be accessed through Web Interface, SNMP and Telnet.

Easy-CS3 allows PTP and Sync-E functionality on a GbE network. Leveraging the stability of the Microsemi CsIII Model 4310B the functionality of Great Master Clock on a PTP network protocol is immediate. A series of SMA connectors allow in fact to use the clock source at 10MHz, supplied by Microsemi CsIII Model 4310B, as frequency reference of the IP network compliant Sync-E.

Besides being fully compatible with a PTP network **Easy-CS3** operates both as a server and as a client for the synchronization signal available on the Microsemi CsIII Model 4310B.

Using three distinct SMA connectors, **Easy-CS3**, is able to generate (or receive) a synchronization signal from the Microsemi CsIII Model 4310B (Sync or 1 PPS) other then the 10 MHz TTL or sinusoidal reference. The user can thus easily use all the features of a Cesium Oscillator directly over an IP network avoiding costly and unnecessary signal converters.

EASY-CS3 mounted on Microsemi CsIII Model 4310B

Easy-CS3 allows to convert any RS232 I/O interface into a double GbE connection using SNMP protocol or its own Web interface. This feature allows to simplify the remote connection with the device without the need for a dedicated PC with a serial link.

Thanks to the presence of the GPS receiver and its own high stability OCXO, **Easy-CS3** allows the Microsemi CsIII Model 4310B to provide sync protocols for New Generation Network like PTP – IEEE 1588v2 and SyncE. Moreover the unit can act as NTP Server due to the fact that **Easy-CS3** is provided with dual redundant GbE interface. Each GbE interface can be completely configurable indipendently with two different IP addresses.

Easy-CS3 can be directly powered by the Microsemi CsIII Model 4310B. However it can also act as AC/DC converter able to convert 110 or 220 VAC into 48 VDC. With this configuration the Cesium Oscillator is able to have a redundant homogeneous power supply.

Easy-CS3 is an extremely compact plug-in module able to be installed on the Microsemi CsIII Model 4310B in order to allows it to provide a wide range of signals, usually not present in the device, like E1/T1 or 2.048 MHz.

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Keys Features

· 1 to 1 replacement for the proprietary management protocol
· Multi reference source (NTP/SNTP Client, PTP/IEEE-1588 client, GPS Receiver)
· 2x 10/100/1000 Ethernet interface for NTP, PTP-IEEE1588v2 and management
· AC to DC Power supply
· Very stable holdover performance due to internal OCXO (1E-10 /day aging)
· GPS receiver as option
· Web based status and configuration, SNMP and TELNET for remote management.

EASY-CS3 mounted on Microsemi CsIII Model 4310B (unboxed view)

GNSS (optional)

Receiver: 1,575.42 MHz – 12 Channels,
Tracking: 12 satellite correlation,
PPS Accuracy: < 50 nsec,
Acquisition time: 4 minutes,
Stability when locked: +/- 1E-12 after 24 hours,
Antenna connector TNC

Interfaces

AC/DC Power option, 110-220 Vac/Vdc
SNMP protocol and integrated Web Server
2 Ethernet shielded RJ45, 10/100/1000 BaseT (also used for management)
1 Time of Day (ToD) output via RS232
1 PPS output via SMA connector (optional)
1 10MHz input via SMA connector (optional)
1 10MHz output via SMA connector (optional)

IEEE 1588 v2 PTP Output

PTP output client capacity: up to 500 clients
Up to 128 messages per second per client
1-step (2-step clock optional)
PTP Profiles
- C37.238-2011 Precision Time Protocol in Power System Applications
- ITU-T G.8265.1 Frequency Profile (IPV4)
- Default Profile (IEEE 1588 v2)

Best Master Clock Algorithm (BMCA), with Default Profile

IEEE 1588 v2 PTP Input

IPV4
1-step (2-step clock optional)
PTP Profiles
- C37.238-2011 Precision Time Protocol in Power System Applications
- ITU-T G.8265.1 Frequency Profile (IPV4)
- Default Profile (IEEE 1588 v2)

NTP

Protocol: NTPv4
Role: Master Clock Stratum 1 (with GPS) – slave clock Stratum 2

Time and Frequency Accuracy

When locked to GNSS:
Time within 100ns of UTC (ITU-T G.8272 sec. 6 for PRTC)
Frequency: compliant to G.811 frequency accuracy.

Holdover Performance

OCXO: 1E-10 / day (optional)
TCXO: 1PPM

Holdover values are approximated 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.

Synchronous 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

IPV4
ICMP (RFC 792)
HTTP
SNMP
IEEE 1588 v2 PTP
NTP
DSCP

Mechanical

Size:	Height:	87	mm
	Width:	222,5	mm
	Depth:	57	mm