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TECHNOLOGY GROUP

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CsIII

Cesium Frequency Standard



Front view of CsIII Cesium Frequency Standard

Key Features

- Third generation cesium technology
- 2U compact rack mount
- AC and DC inputs
- Remote monitoring and control
- 5 and 10MHz outputs
- 1PPS sync input
- 1PPS output
- <30 lbs
- CE compliant

Key Benefits

- Cesium stability and accuracy
- Lightweight, compact, and economical
- Ideal for SATCOM, calibration, metrology and many other test and measurement applications
- Standard 1 year electronics and 8-year tube warranty

The Microsemi® CsIII is a lightweight, compact, economical cesium frequency standard. The technology developed for the CsIII is an evolutionary step forward in the quest for higher stability, lower phase noise and longer life. An ever-increasing base of demanding users in communications, timing, synchronization and other applications take advantage of this performance.

The CsIII is configured with 5 and 10MHZ sinewave outputs, a 10MHz TTL output a 1PPS sync input and a 1PPS timing output. All monitoring and control of the unit is done via the serial interface and Microsemi's proprietary Monitor3 software.

Packaged in a 2U, 19-inch rack mounted chassis, the CsIII weighs less than 30 lbs. An optional portability kit and T1/E1 synthesizer are available for added functionality and versatility.

The CsIII comes with a standard 1-year electronics warranty and an 8-year tube warranty.

The CsIII is ideal for SATCOM, Calibration, Metrology and many other Test & Measurement applications that require cesium stability and accuracy.

CsIII

Specifications

ELECTRICAL SPECIFICATIONS

- Frequency outputs

Frequency:	1 each 5 MHz and 10 MHz
Format:	Sine
Amplitude:	1 Vrms
Harmonic:	<–40dBc
Non harmonic:	<–80dBc
Connector:	BNC
Load impedance:	50 Ω
Location:	rear panel
Frequency:	10 MHz
Format:	TTL
Amplitude:	>2.2V
Load impedance:	50 Ω
Location:	rear panel
Connector:	BNC

- Timing outputs

Format:	1PPS
Amplitude:	>3.0V into 50 Ω (TTL compatible)
Pulse width:	20µs positive pulse
Rise time:	<5ns
Jitter:	<1ns rms
Connector:	BNC
Load impedance:	50 Ω
Location:	rear panel

- Timing inputs

Sync input:	1PPS
Amplitude:	>3.0V into 50 Ω (TTL compatible)
Pulse width:	20µs positive pulse
Rise time:	<5ns
Jitter:	<1ns rms
Connector:	BNC
Load impedance:	50 Ω
Location:	rear panel

REMOTE SYSTEM INTERFACE AND CONTROL

RS-232-C (DTE Configuration)

Complete remote control and interrogation of all instrument functions and parameters

Connector:	9-pin male rectangular D subminiature type
Location:	rear panel

Alarm (Relay):

Connector:	9-pin female rectangular D subminiature type
Location:	rear panel

- Performance parameters

Accuracy:	±1.0E-12
Warm-up time (typical):	30 minutes
Reproducibility:	±2.0E-13
Settability	
Range:	±1.0E-9
Resolution:	1.0E-15
Control:	Via RS-232 port

- Stability

Averaging Time(s)	Allan Deviation
1	<1.2E-11
10	<8.5E-12
100	<2.7E-12
1,000	<8.5E-13
10,000	<2.7E-13
100,000	<8.5E-14
floor	<5.0E-14

- SSB Phase noise

Offset (Hz)	5MHz output
1	<–95dBc
10	<–130dBc
100	<–145dBc
1,000	<–155dBc
10,000	<–155dBc
100,000	<–160dBc

ENVIRONMENTAL & PHYSICAL SPECIFICATIONS

- General Environment

Temperature	
Operating:	0°C to 50°C
Non-operating:	–40°C to 70°C
Humidity:	95% up to 50°C
Magnetic field:	0 to 2 gauss
Altitude (operating):	0 to 50,000 feet

- AC Power requirements

Operating voltage (±10%):	100 to 240 VAC
Frequency:	47 to 63 Hz
Power	
Operating:	65W
Warm-up:	90W

- DC Power requirements

22 to 36 VDC
36 to 75 VDC
30W 1.3A @ 24V (Operating)
65W 2.7A @ 24V (Warm Up)

- Dimensions/Weight

Height:	3.50" (89.9mm)
Width:	
Front panel:	19.00" (483mm)
Instrument	17.31" (440mm)
Depth:	15.0" (381mm)
Weight:	<30lbs (13.5kg)
MTBF:	>130,000 hrs.

ORDERING INFORMATION

	Part No.
• 24VDC	14534-110
• 48VDC	14534-109



Rear view of CsIII Frequency Standard

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Microsemi Corporation (Nasdaq: MSCC) offers a comprehensive portfolio of semiconductor solutions for aerospace, defense and security; enterprise and communications; and industrial and alternative energy markets. Products include high-performance, high-reliability analog and RF devices, mixed signals and RF integrated circuits, customizable SoCs, FPGAs, and complete subsystems. Microsemi is headquartered in Aliso Viejo, Calif. Learn more at **www.microsemi.com**

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