

OSA 3235B Cesium Clock

Metrological Reference Clock Source using the Digital Cesium technology

TIME & FREQUENCY



Highlights

- Allan deviation:
 $\sigma_{(T)} = 2.7 \times 10^{-11} T^{-1/2}$
- Front or Rear access connectors
- Compact 3U high, 400 mm depth
- Accuracy better than $\pm 1 \times 10^{-12}$
- 5 MHz and 10 MHz low noise direct output
- Up to 2x sine wave 100kHz to 50MHz programmable outputs
- Multiple programmable outputs 1PPS and 1/5/10MHz
- Dual PPS Synchronization input
- 10 years warranty on cesium tube
- Redundant AC/DC power supply inputs

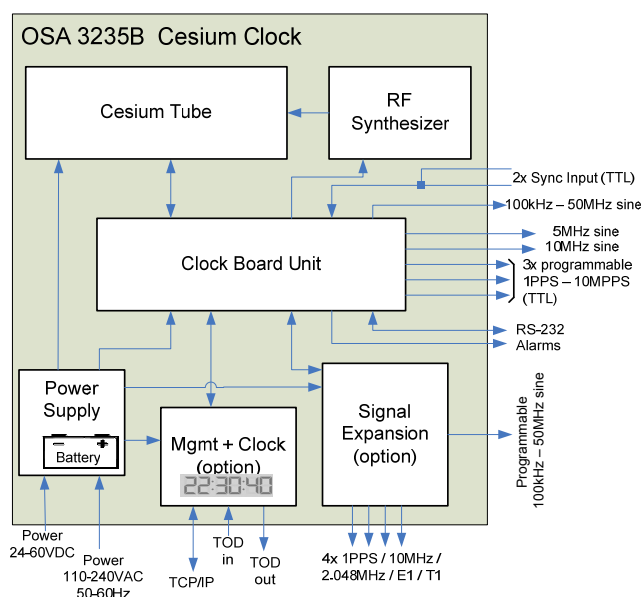
Applications

- Metrology
- Science, deep space research
- Nanometrology, medical devices
- Navigation and localization

For years, cesium beam frequency standards have been constantly improved so as to satisfy the increasingly stringent specification of time and frequency reference equipments. The availability of “easy to operate” instrument of reduced size and weight and of exceptional accuracy and stability provides the user with great flexibility in using cesium standards for meeting the stringent requirements of navigation, communication and timing systems.

The OSA 3235B Cesium Clock is an atomic frequency standard based on a hyperfine transition in the ground state of the cesium 133 atom. The OSA 3235B Cesium Clock is specifically designed and produced with the latest technology in a very compact and reduced size.

Taking into consideration its unique reduced volume, the OSA 3235B offers a set of operation features and performance without comparison on the market. Available with a long life cesium tube, OSA 3235B will meet the requirements where performances are needed over a long period of time.



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Cesium performances characteristics

▪ Frequency accuracy	$\pm 1 \times 10^{-12}$
▪ Reproducibility	$\pm 1 \times 10^{-12}$
▪ Short Term Stability :	ADEV
1s	1.2×10^{-11}
10s	8.5×10^{-12}
100s	2.7×10^{-12}
1'000s	8.5×10^{-13}
10'000s	2.7×10^{-13}
100'000s	8.5×10^{-14}
5 days	5×10^{-14}
30 days	5×10^{-14}
Floor	5×10^{-14}
▪ Settability: Resolution	$< 1 \times 10^{-15}$
Range	$\pm 1 \times 10^{-9}$
▪ Warm-up time	45 minutes @ 25°C

Outputs

Direct outputs:	5MHz	10MHz
Amplitude	$1V_{rms} \pm 0,2 @ 50\Omega$	$1V_{rms} \pm 0,2 @ 50\Omega$
SSB Phase		
1Hz	-106dBc/Hz	-100dBc/Hz
10 Hz	-136dBc/Hz	-130dBc/Hz
100Hz	-145dBc/Hz	-145dBc/Hz
1,000Hz	-150dBc/Hz	-150dBc/Hz
10,000Hz	-150dBc/Hz	-150dBc/Hz
100,000Hz	-155dBc/Hz	-155dBc/Hz
Auxiliary outputs	Analog	Timing Outputs
Number	1	3
Frequency	0.1-50MHz	1PPS/1/5/10MHz
Output level:	Typ. $500mV_{rms} @ 50\Omega \geq 3V @ 50\Omega$ (min. $250mV_{rms}$)	
Output shape	Sine	square or pulse
Connector	BNC	BNC

Synchronization input

Number	2 (1x front + 1x rear side)
Input type and connector	1PPS TTL ($\geq 3V$)-BNC

Signal expansion (optional)

Programmable analog output

Number	1
Programmable Frequency	0.1 - 50 MHz
Output level	Typ. $500mV_{rms} @ 50\Omega$ (min. $250mV_{rms}$)
Connector	BNC
Programmable Telecom outputs	
Number	4
Frequency	Configurable: 2.048 MHz / E1 / T1 / 1PPS / 10MHz
Output level	According to G703
Connector	BNC 75 Ω (T1: DB-9 100 Ω)

Power Supply

Voltage

- 1x230VAC (88V-264VAC 50-60Hz)
- 1x48VDC nominal floating (20V to 60V)
- Power feeds Dual
- Power consumption 60W @25°C (warm-up max. 70W)

Optional battery backup

Optional internal battery for 45 minutes of operation without power source

Management

Communication port

Port: RS-232C on DB-9 (1x front + 1x rear side) for local management and / or remotely using SyncView Plus™

Alarms

Relay contacts: 3 x alarm indication

Front panel LED indication

Monitoring: 6x LED's (3x front + 3x rear) for monitoring Power Supply Status, Operation, Alarms

Management and Clock expansion^(optional)

Communication port

Management Port	Ethernet TCP/IP port on RJ45
TOD (Time Of Day)	1 x TOD input on DB-9 (m) 1x TOD output on DB-9 (f) with programmable shift
Display	5.7" tactile LCD display on front side

Mechanical

19":	3U 132 x 436 x 400 mm (HxWxD) with rear and front access connectors. Adapters for 23" rack standard
Table-top case	Optional table-top case
Weight	<15kg (excluding packing)

Environmental Conditions

Operating conditions	EN 300 019-1-3, class 3.2 (temperature range extended from -5°C to +55°C)
Transportation	EN 300 019-1-2, class 2.2
Storage	EN 300 019-1-1, class 1.1
Humidity	Up to 95%
Altitude (operating)	0 - 15'000m
DC magnetic field	± 2 Gauss maximum
Safety	EN 61010-1
EMC & ESD	EN 50081-1, EN 50082-1 IEC 801 parts 2, 3, 4, 5 and 6 CE compliant

¹ Consult factory for availability

Subject to change without prior notice.