

OSA 323xB Cesium Clock

installation

Rev D



OSA 323xB Cesium Clock

- **323xB Maintenance**

- in case the OSA 323xB is stored for a long period of time it is necessary to power up the unit every month and keep it powered for couple of days in standby mode to ensure that the vacuum inside the tube is correctly maintain
- failing to do so could damage the tube

PROPER STORAGE OF OSA 323xB

OSA 323xB Cesium Clock installation

- front view of 3230B



- 3230B can have 2 versions:
 - 19" and ETSI



OSA 323xB Cesium Clock

installation

- front view of 3235B

- 3235B is in version 19''



OSA 323xB Cesium Clock

installation

- following tools are required for the installation and commissioning of the OSA 323xB
 - PC with the OS Windows 10 (recommended)
 - RS-232C serial port or a USB – RS232 adaptor
 - RS-232C cable to connect the PC to the OSA 323xB.
 - software CMSW installed in the PC
 - multimeter (DC and AC, frequency range up to at least 3 MHz)
 - oscilloscope (bandwidth of at least 30 MHz)

OSA 323xB Cesium Clock

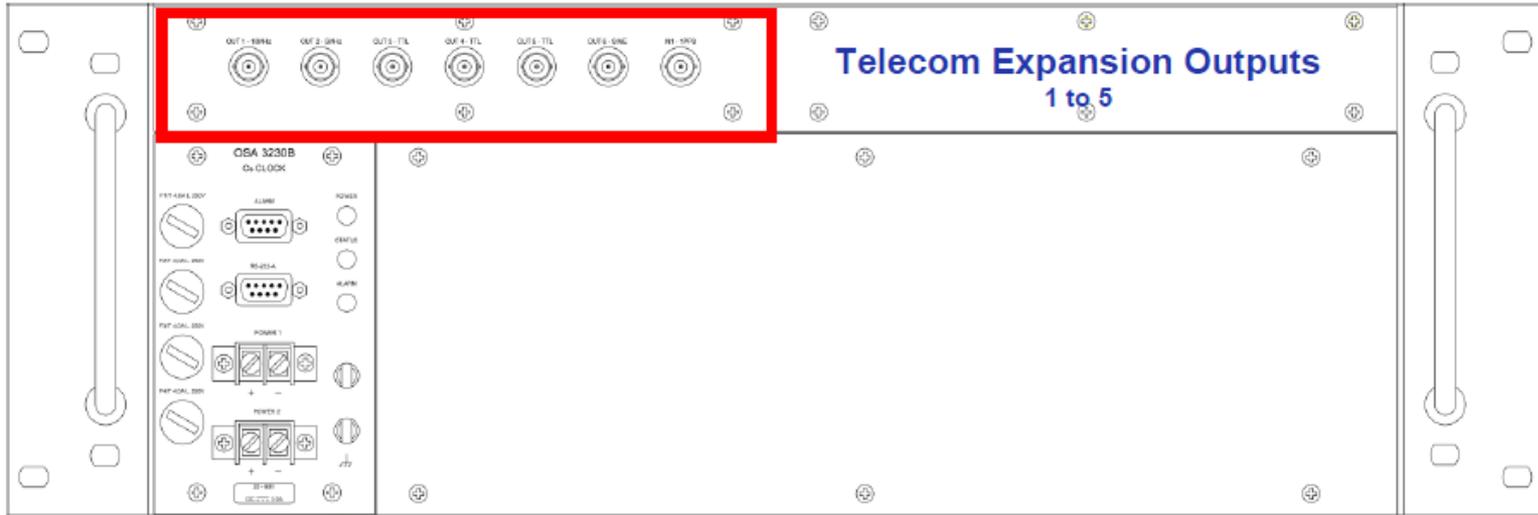
installation

- in order to work within its specification, the OSA 323xB should be installed in a location which doesn't exceed the following working conditions:
 - Operating temperature range:
 - -5°C to +55°C (no battery option for the 3235B)
 - 0°C to +35°C (with battery option for the 3235B)
 - altitude:
 - 0m to 3'000m (for DC version)
 - 0m to 2'000m (for version with AC)
 - humidity:
 - up to 95% at 25°C
 - external magnetic field:
 - +/- 1Gauss
 - no vibration

OSA 323xB Cesium Clock

installation

- connection 3230B



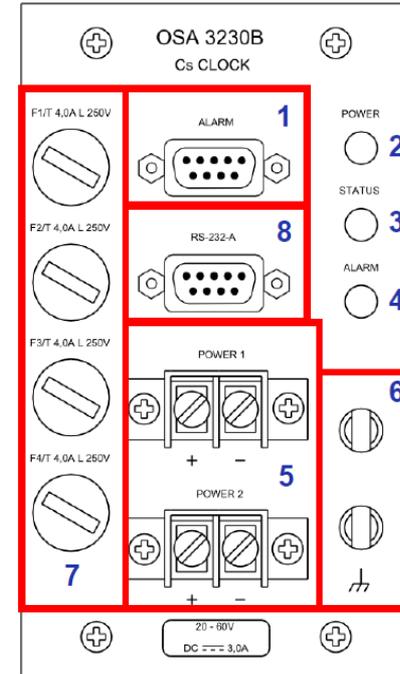
Front Panel general view ETSI version

OSA 323xB Cesium Clock

installation

- connection 3230B ETSI

Positions	Means of control or connectors designation	Description
1	ALARM	Sub-D9/F connector
2	LED POWER	--
3	LED STATUS	--
4	LED ALARM	--
5	POWER 20V-60V	--
6	Grounding Studs	--
7	Fuses	--
8	RS-232-A	Sub-D9/M connector. Rear and front access are available on the 19" shelf



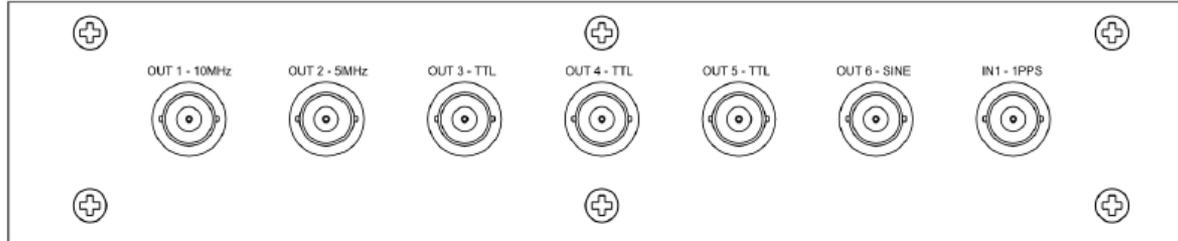
power and management connection ETSI version

OSA 323xB Cesium Clock

installation

- connection 3230B ETSI

Description	Frequ
Out 1 – 10MHz	Low nc
Out 2 – 5MHz	Low nc
Out 3 – TTL	PPS /1
Out 4 – TTL	PPS /1
Out 5 – TTL	PPS /1MHz / 5MHz / 10MHz
Out 6 – SINE	Programmable SINE wave analog output 100kHz to 50MHz
In 1 PPS	Synchronization input, Used to synchronize all shelf output



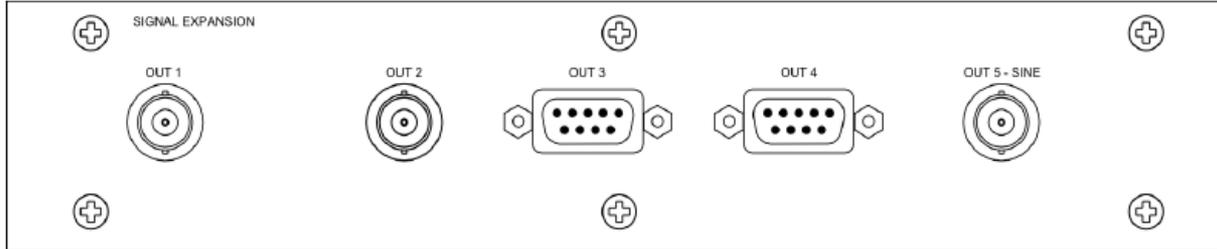
ETSI version main IN/OUT connectors

OSA 323xB Cesium Clock

installation

- **connection 3230B ETSI**
- telecom expansion connector can have 3 versions:
 - all BNC/F connectors
 - mix BCN/F and sub-D9/F
 - all sub-D9/F

Description	Frequenc
Out 1	PPS /10MI
Out 2	PPS /10MI
Out 3	PPS /10MI
Out 4	PPS /10MI
Out 5 – SINE	Programm 100kHz to

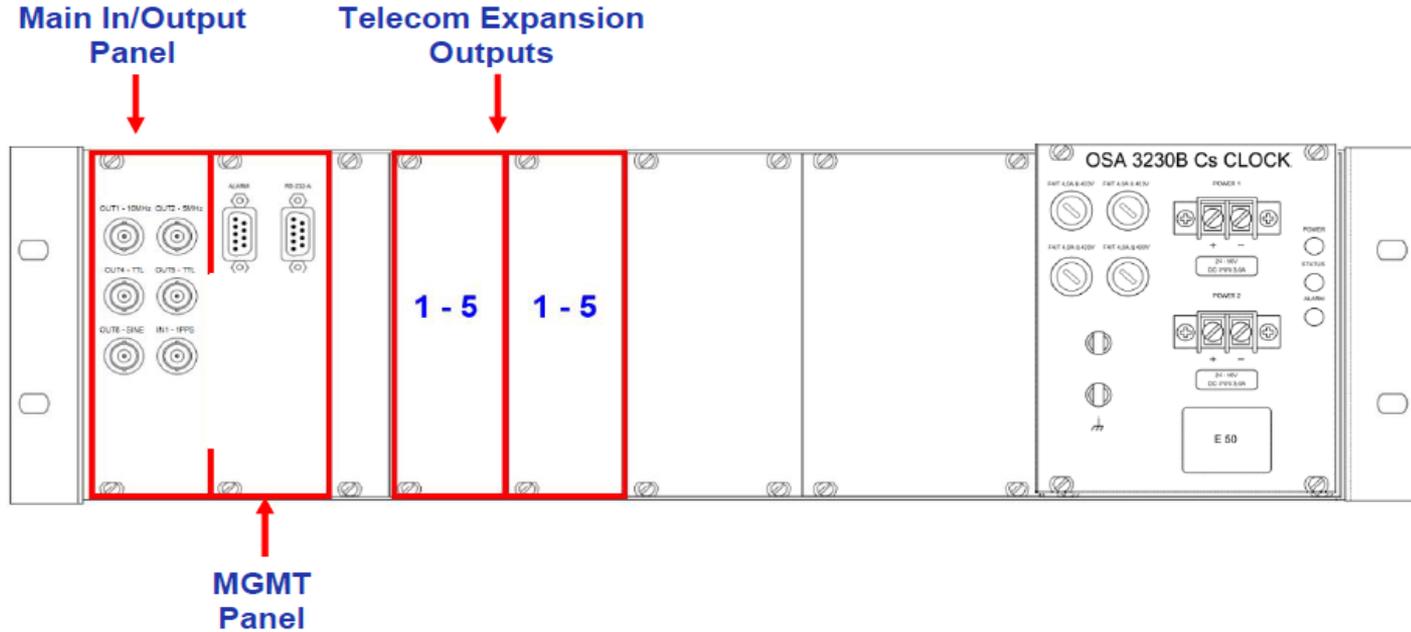


ETSI Telecom Expansion Outputs

OSA 323xB Cesium Clock

installation

- connection 3230B 19"



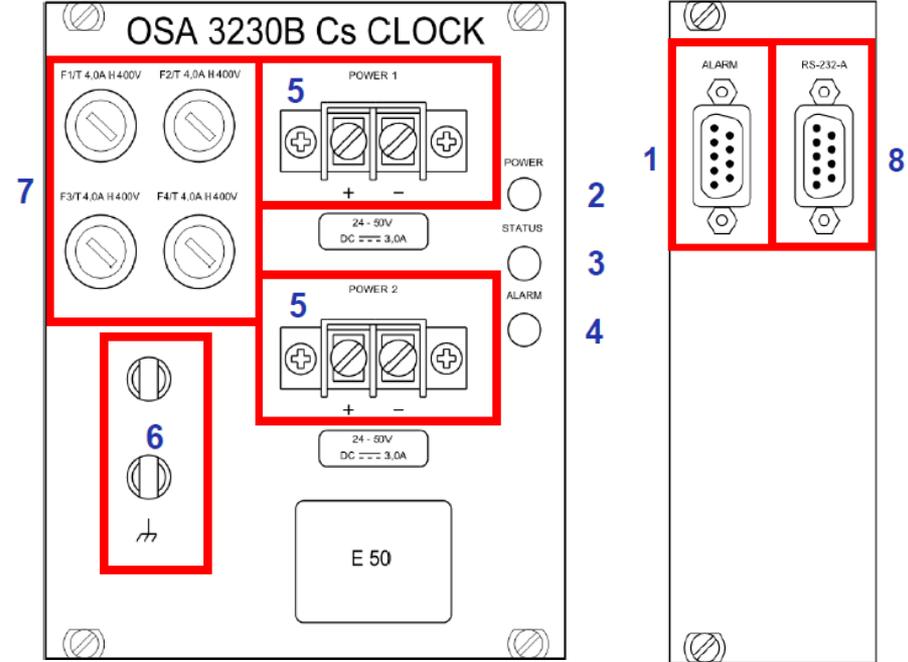
19" version Rear Panel view

OSA 323xB Cesium Clock

installation

- connection 3230B 19"

Positions	Means of control or connectors designation	Description
1	ALARM	Sub-D9/F connector
2	LED POWER	--
3	LED STATUS	--
4	LED ALARM	--
5	POWER 20V-60V	--
6	Grounding Studs	--
7	Fuses	--
8	RS-232	Sub-D9/M connector



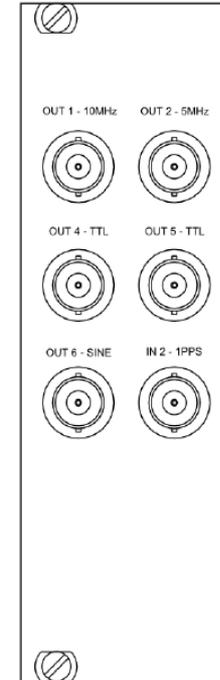
19" version rear panel power and management view

OSA 323xB Cesium Clock

installation

- connection 3230B 19"

Description	Frequency	Connector
Out 1 - 10MHz	Low Noise 10MHz	BNC/F
Out 2 - 5MHz	Low Noise 5MHz	BNC/F
Out 4 - TTL	PPS /1MHz / 5MHz / 10MHz	BNC/F
Out 5 - TTL	PPS /1MHz / 5MHz / 10MHz	BNC/F
Out 6 - SINE	SINE wave analog output 100kHz to 50MHz	BNC/F
In 2 - 1PPS	Synchronization input, Used to synchronize all outputs	BNC/F



rear panel IN / OUT connector

OSA 323xB Cesium Clock

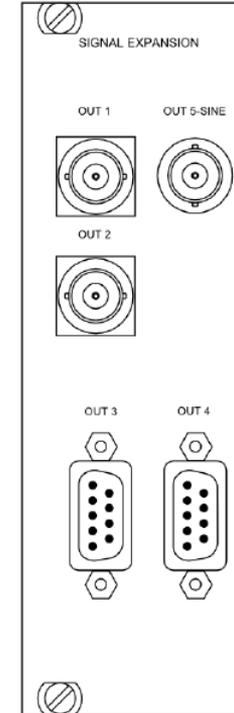
installation

- connection 3230B 19"**

- telecom expansion connector can have 3 versions:
 - all BNC/F connectors
 - mix BCN/F and sub-D9/F
 - all sub-D9/F

- this Telecom Expansion Outputs 19" is the same for the 3230B and the 3235B

Description	Frequency	Connector
Out 1	PPS /10MHz / 2.048MHz / 2.048Mbit/s / 1.544Mbit/s	BNC/F
Out 2	PPS /10MHz / 2.048MHz / 2.048Mbit/s / 1.544Mbit/s	BNC/F
Out 3	PPS /10MHz / 2.048MHz / 2.048Mbit/s	Sub-D9/F
Out 4	PPS /10MHz / 2.048MHz / 2.048Mbit/s	Sub-D9/F
Out 5 – SINE	SINE wave analog output 100kHz to 50MHz	BNC/F



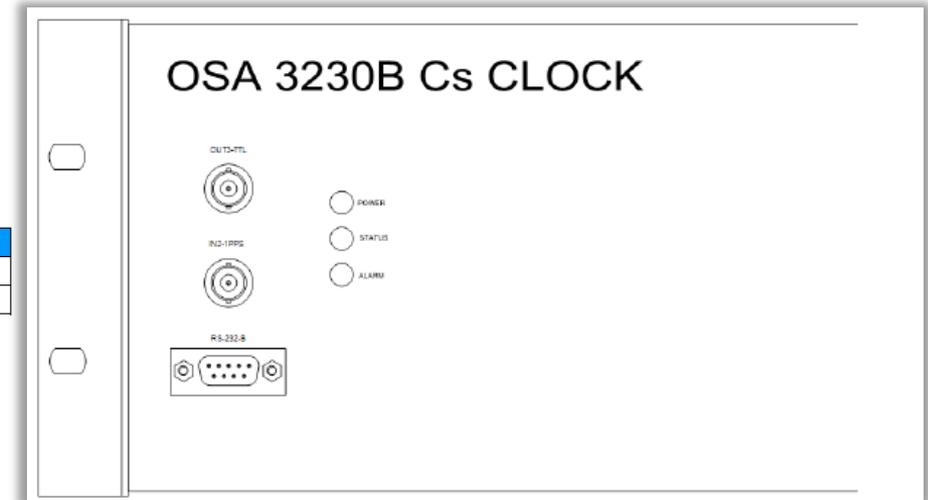
19" rear panel Telecom Expansion Outputs

OSA 323xB Cesium Clock

installation

- connection 3230B 19”

Description	Frequency	Connector
Out 3 - TTL	PPS /1MHz / 5MHz / 10MHz	BNC/F
In 1 - 1PPS	Synchronization input, Used to synchronize outputs	BNC/F

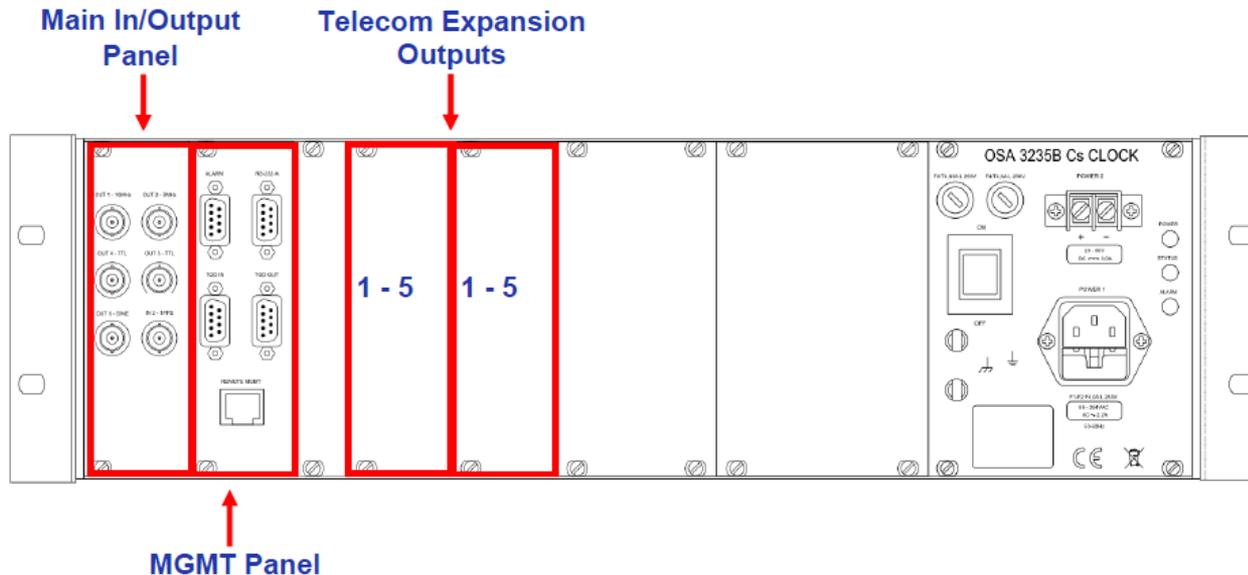


Front Panel

OSA 323xB Cesium Clock

installation

- connection 3235B 19"



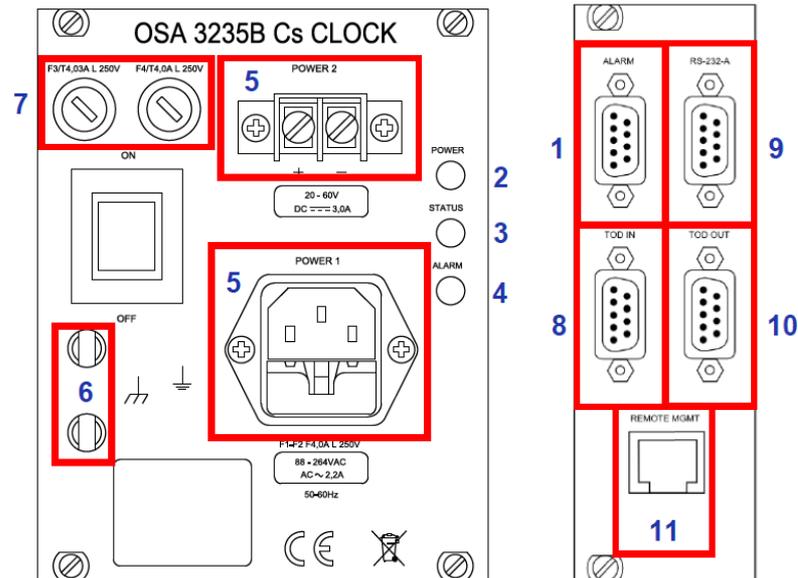
Rear Panel general view

OSA 323xB Cesium Clock

installation

- connection 3235B 19”

Positions	Means of control or connectors designation	Description
1	ALARM	Sub-D9/F connector
2	LED POWER	--
3	LED OPERATING	--
4	LED ALARM	--
5	POWER 1/ 88-264 VAC	--
5	POWER 2/ 20V-60V	--
6	Grounding Studs	--
7	Fuses	--
8	RS-232	Sub-D9/M connector
9	TOD IN	Sub-D9/M connector
10	TOD OUT	Sub-D9/F connector
11	REMOTE MGMT	RJ 45



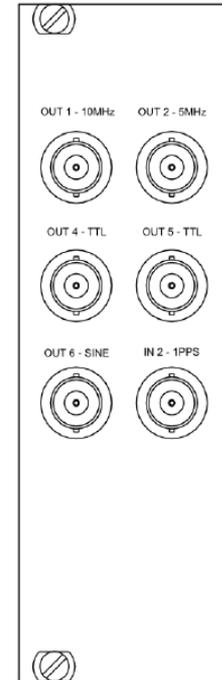
Rear Panel power and management connectors

OSA 323xB Cesium Clock

installation

- connection 3235B 19”

Description	Frequency	Connector
Out 1 - 10MHz	Low Noise 10MHz	BNC/F
Out 2 - 5MHz	Low Noise 5MHz	BNC/F
Out 4 - TTL	PPS /1MHz / 5MHz / 10MHz	BNC/F
Out 5 - TTL	PPS /1MHz / 5MHz / 10MHz	BNC/F
Out 6 - SINE	SINE wave analog output 100kHz to 50MHz	BNC/F
In 2 - 1PPS	Synchronization input, Used to synchronize all outputs	BNC/F

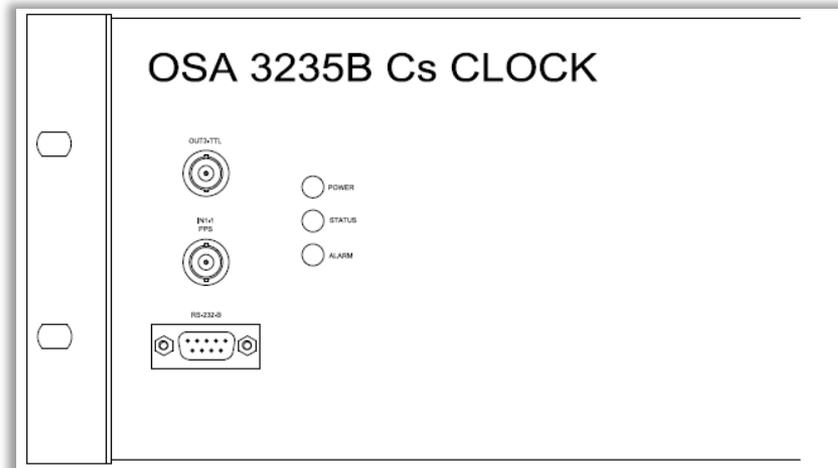


Rear Panel IN / OUT connector

OSA 323xB Cesium Clock installation

- connection 3235B 19”

Description	Frequency	Connector
Out 3 - TTL	PPS /1MHz / 5MHz / 10MHz	BNC/F
In 1 - 1PPS	Synchronization input, Used to synchronize outputs	BNC/F



Front Panel

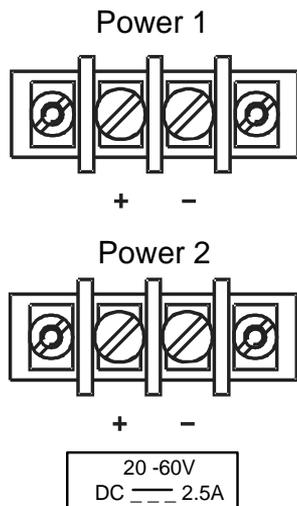
OSA 323xB Cesium Clock installation

Connector	Type	Description	Processed by	Comments
ALARMS	DB-9 Female	Alarms List	Relay status	refer to documentation
RS-232	DB-9 Male	Commands & Monitoring	External PC	refer to documentation
POWER (P) STATUS (S) ALARM (A)	LED	Red blinking	automatic	P: unit powered by battery S: N/A A: Major Alarm
		Green blinking	automatic	P: Unit powered by 1 x DC or 1 x AC S: Warm Up A: Minor Alarm
		Green fixed	automatic	P: Unit powered by 2 x DC or 1 x AC & 1 x DC S: Operational state A: No alarm
		Orange fixed	automatic	S: Standby mode (only ion pump is powered)
		Red fixed	automatic	P: N/A S: Critical alarm A: Critical alarm
POWER		20V-60V DC	N/A	refer to documentation

OSA 323xB Management and LED table

OSA 323xB Cesium Clock installation

- power up the 323xB



- VIN= 20-60 VDC
- never power the unit with voltage lower than 20 V and higher than 60VDC.
- max current can be more than 2.4A during “warm-up”
(# 20mn to 30mn function of external temperature)
- ensure that the power supply can withstand an “in-rush” current 6A during 1ms

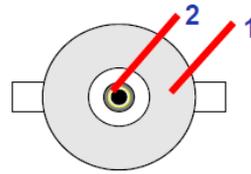
OSA 323xB Cesium Clock installation

- **warm-up of the 323xB**
 - OSA 323xB needs a warm-up time to reach its normal working condition
 - this is necessary to heats up the cesium and to stabilize the component inside the tube
 - minimum warm-up time is 90 minutes

OSA 323xB will reach its maximum accuracy after few days of operation.

OSA 323xB Cesium Clock installation

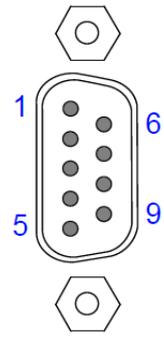
- BNC/F output connector:



Pin Nr.	Signal
1	Ground /Shield
2	Output

- Sub-D9/F connector:

- pin 1 and 5:
 - asymmetrical signal: 10MHz, 1PPS
- pin 1,2 and 5:
 - symmetrical signal , E1, T1, 2048kHz



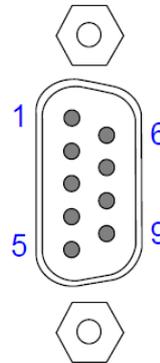
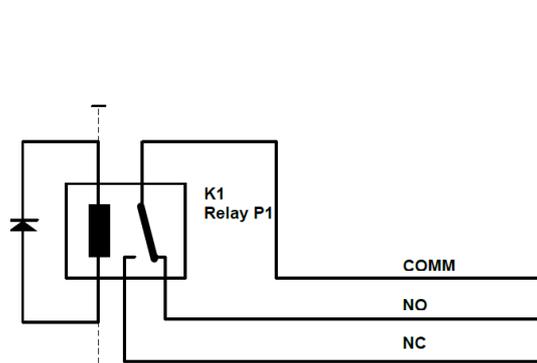
Pin Nr.	*Signal symm	*Signal asym
1	Out 1a (tip)	output
2	Out 1b (ring)	N/A
5	Shield	Shield
3, 4, 6, 7, 8, 9	NC	NC

output connector

OSA 323xB Cesium Clock

installation

- alarm output works in "Normally Closed" or "Normally Opened" mode
 - depending on the wiring
- in "Normally Closed" mode, the relay contacts are open when there is an alarm condition or when the OSA 3230 CESIUM CLOCK is switched-off while it is closed in "Normally opened" mode.



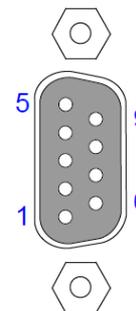
Pin No.	Functions
1	Minor Common
2	Minor Normally Open
3	Minor Normally Closed
4	Major Common
5	Major Normally Open
6	Major Normally Closed
7	Critical Common
8	Critical Normally Open
9	Critical Normally Closed

323xB Alarm connector

OSA 323xB Cesium Clock installation

- **CMSW (Configuration & Monitoring Software)**
 - application for management of OSA 323xB CESIUM CLOCK
- **Serial Port Configuration**
 - Baud-rate: 9600
 - Data bits: 8
 - Stop bits: 1
 - Parity: None
 - Handshake: None
- on the Rx line, the signal could be either
 - standard RS-232:
 - logical “zero” level [-15V,-3V]
 - logical “one” level [+3V,+15V],
 - ACMOS/TTL signal:
 - logical “zero” level (0V)
 - logical “one” level (+5V)
- on the Tx line, the signal is always standard RS-232:
 - logical “zero” level [-15V,-3V]
 - logical “one” level [+3V,+15V]

Pin No.	Function
2	Rx
3	Tx
5	Ground
1,4,6,7,8,9	NC



323xB CMSW / Serial Connections

OSA 323xB Cesium Clock

installation

- **323xB Maintenance**

- OSA 323xB does not require any routine maintenance
- to ensure correct operation, the following preventive maintenance is recommended on a monthly basis :
 - check the LED Status
 - check the status of the Cesium Clock using the CMSW software application

- in case the OSA 323xB is stored for a long period of time it is necessary to power up the unit every month and keep it powered for couple of days in standby mode to ensure that the vacuum inside the tube is correctly maintain
- failing to do so could damage the tube

Routine Maintenance.

Contacts

Training

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Technical Services

Global Support

- Email: adva-support@adtran.com

The Adtran **Web Page** News, Updates and
Customer Login

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Contact

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for access to **Customer Login**

