

## CX3 1.2 GHz Universal amplifier



The CX3 is a compact dual output amplifier. It has two gain and slope modes that makes this product universal. Output performance meets the requirements of forward and return path DOCSIS 3.1 signals.

Adjustments are using electrical circuits that are controlled with push buttons. A high gain return amplifier with 85/204 MHz pivot frequencies, variable slope control is fixed built on the mother board.

Key features include: electrical adjustments, 1.2 GHz forward path, GaN technology, 65/85/204 MHz return channel, high gain/low gain selection, flat/sloped output selection, push button and LED indication for adjustments, cable simulator option at input, and 2 output ports.

## Installation

Plan the installation with enough clearance to install the cable and cable connectors. The amplifier should be installed vertically so that the external cables are facing downwards. The CX3 enclosure classification is IP67. When installing the amplifier in its final location, make certain that it has adequate ventilation on all sides. In particular, it is necessary to provide at least 150 mm of room above and below the node for air circulation.

### Wall mounting

Drill two mounting holes 233 mm apart in the mounting surface. Figure 1 depicts the locations of the wall mount brackets (Fig. 1, Pos. B). Select appropriate length 5 mm mounting bolts (not supplied) and washers. Tighten the mounting bolts. The amount of torque required depends on the mounting surface.

The lid retaining bolts are fasten with a 10 mm hex nut driver. Use no more than 3 Nm torque. Before closing the lid it should be checked that:

- nothing is trapped between the lid and the case
- all case gaskets are intact and in their correct positions
- lid seats evenly on the rubber gasket

The CX3 housing should be grounded from an approved earth point to the housing ground lug (Fig. 1, Pos. A).

## Powering



NOTE! To reduce the risk of electric shock, do not remove the shielding cover of the power supply unit if it is connected. All electrical installations must be carried out by authorized and competent technicians in accordance with the national or regional electrical regulations.

### Common precautions:

- The CX3 amplifier is intended for installation in restricted access locations (dedicated equipment rooms, equipment closet, or the like)
- Operate the device only on the specified supply voltage.
- The CX3 must never be operated without its power supply unit shielding cover.
- The CX3 has no separate power switch thus the power plug must be easily accessible.
- Disconnect the power cord by the connector only. Never pull on the cable portion of the power cord.
- Do not place or drop heavy or sharp-edged objects on the power cord.
- The power must be disconnected when installing or removing the CX3.

### Additional safety requirements for Norway and Sweden:

- Equipment connected to the protective earthing of the building installation through the mains connection or through other equipment with a connection to protective earthing and to a cable distribution system using coaxial cable, may in some circumstances create a fire hazard. Connection to a cable distribution system must be provided through a device providing electrical isolation below a certain frequency range (galvanic isolator, see EN 60728-11).

The CX3 is available either with a remote or local powering options. The following subsections describe the differences.

#### **CX3 with remote powering: (27...65 V AC)**

If CX3 is a remotely powered, ensure that the power cord entry port is plugged.

The supply voltage of the remote powered CX3 (27...65 V AC) is supplied via coaxial cables. Feed through capacity is max. 7 A / port. On delivery, RF ports are provided with fuses.

#### **CX3 with local powering: (205...255 V AC)**

The locally powered CX3 is connected to the mains voltage of 205...255 V AC via its own power cord. The power supply unit is double shielded and does not require separate grounding. However, ensure that the housing of the CX3 is properly connected to the earth in order to meet safety requirements. Proper grounding will also improve protection from the effects of interference and thus increase the overall reliability of the system.

**Interfaces**

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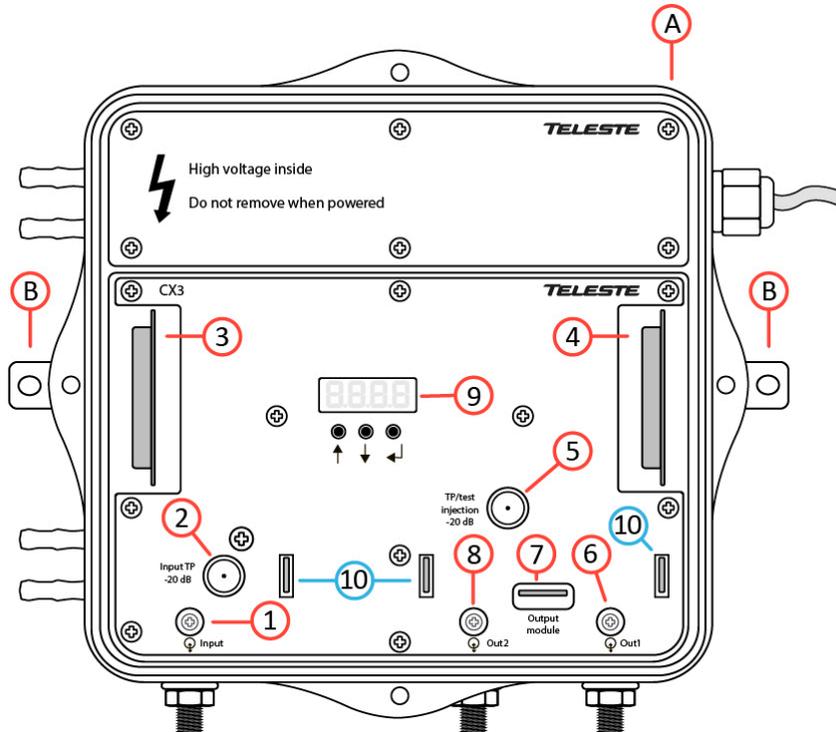


Figure 1 CX3 housing details

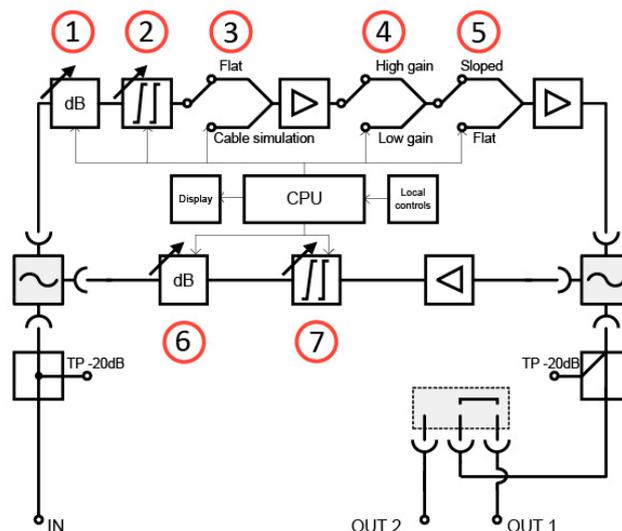
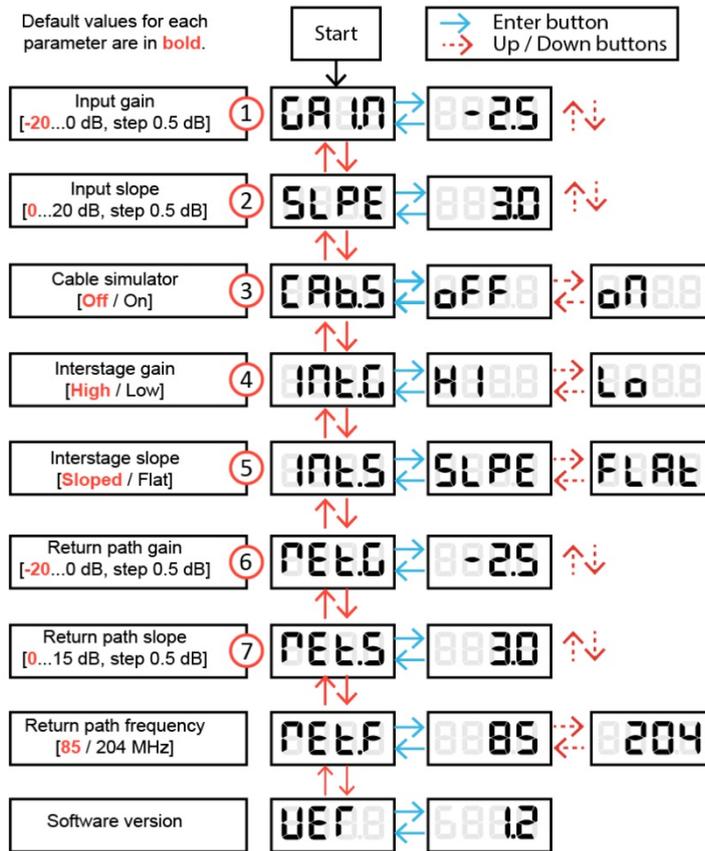
- |                                       |                                       |
|---------------------------------------|---------------------------------------|
| 1) Input port                         | 6) Output port 1                      |
| 2) Input test point -20 dB            | 7) Output module                      |
| 3) Input diplex filter module         | 8) Output port 2                      |
| 4) Output diplex filter module        | 9) Local user interface               |
| 5) Output test/injection point -20 dB | 10) Fuses (remote powered model only) |

**Local user interface**

The CX3 amplifier has a local user interface consisting of a 4\*7-segment display and 3 buttons. This local UI is used for basic configuration. During the power-up "Teleste" text scrolls through the display. Pressing "Enter" button wakes up the display and activates the first menu item. If there is no button activity during ~3 minutes, the display will go dark.

The "Up" / "Down" buttons browse through the menu items, The "Enter" button selects the item for modification / reading, "Up" / "Down" changes the value of a parameter and "Enter" returns to the menu.

**Menu and block diagram**



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