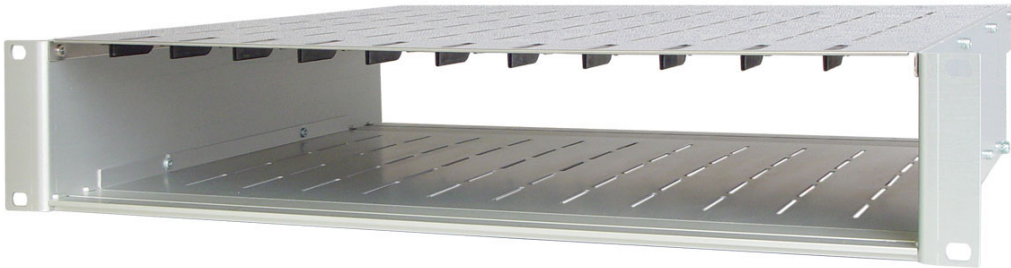


**HDO Series**

# **User Manual**

**Teleste Corporation**



**HDX002**

**Installation Frame**

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**Introduction**

HDX002 is an installation frame for the HDO product family. The 2 RU chassis accepts up to 12 small form factor application modules. The frame can be installed into a standard 19" installation cabinet and it includes integrated power and management busses.

**NOTICE**

This product complies with the relevant clauses of the European Directive 2002/96/EC on Waste Electrical and Electronic Equipment (WEEE). The unit must be recycled or discarded according to applicable local and national regulations.



**Part and functions**

**Front and rear panels**

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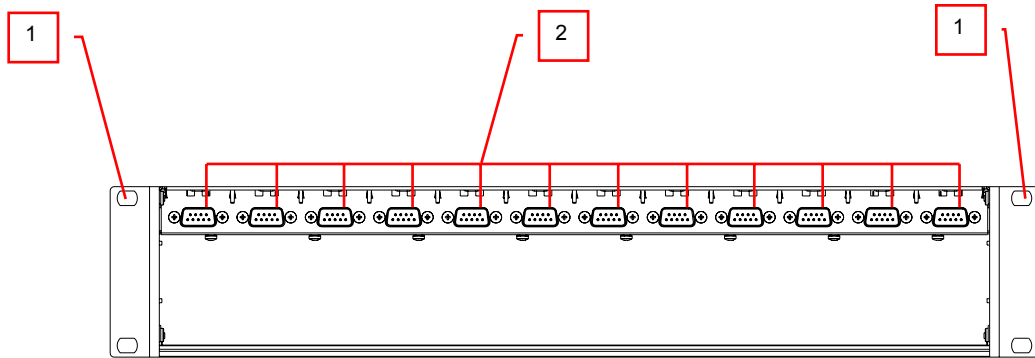


Figure 1. HDX002 Front view, 1) Mounting bracket(s), 2) Module data and power connectors

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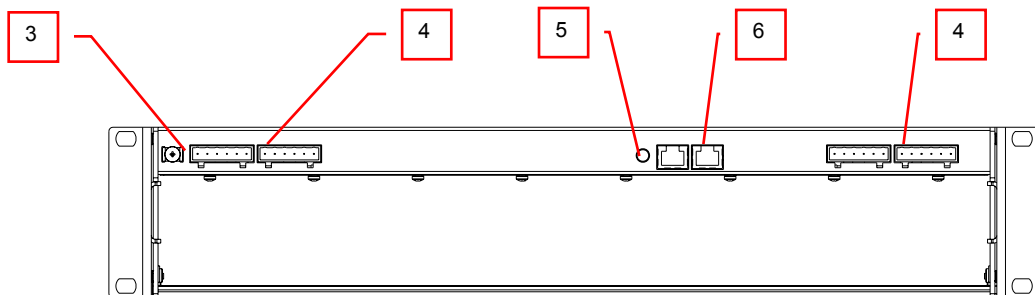


Figure 2. HDX002 Rear view, 3) Ground connector, 4) Power bus connectors, 5) Bus address switch, 6) Management bus with RJ-45 loop connectors

### 1) Chassis

Chassis slots are designated from 1 to 12. Designation starts with one on the left when viewed from the front of the chassis.

### 2) Module data and power connector

The D9 connectors inside the chassis provide powering and HDO bus data link to the HDO units.

### 3) Protective ground

The protective earth-terminal is indicated by the earth-terminal symbol next to it.

### 4) Power bus connector

The DC terminal block on the rear of the module provides power to other modules in the HDX002 chassis.

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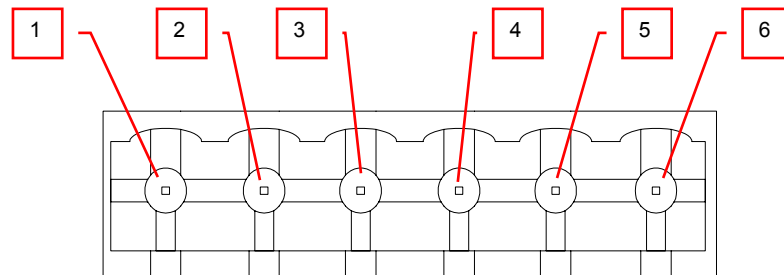


Figure 3. Power bus connector, 1) +6.3 V, 2) Ground 3) Load Balancing 1, 4) Load Balancing 2, 5) +24 V, 6) Ground

### 5) Bus address switch

Bus address switch is a 16-position rotary switch that can be operated with a small flat-blade screwdriver.

### 6) RS-485 data interfaces

The HDX002 installation frame connects to the management bus through the rear panel EMS/NMS interface. This interface consists of two RJ-45 ports.

## Installation

Slide the installation frame into a standard 19" installation cabinet, pushing it back until the brackets (at the front) meet the mounting strips or posts on both sides of the equipment rack.

While keeping the front panel brackets against the posts or mounting strips, position the frame so that the holes in the brackets are aligned with those in the mounting strips. Secure it on place using M6x12 mm screws through the front panel brackets (Fig. 1 pos. 1). Insert the bottom screws first to avoid damage to the front panel brackets. Use all four screws to fasten frame to the rack post, because the brackets support the weight of the chassis.

We also recommend that you mount rack-compatible mounting flanges on the rear panel of the installation frame to support the unit properly.

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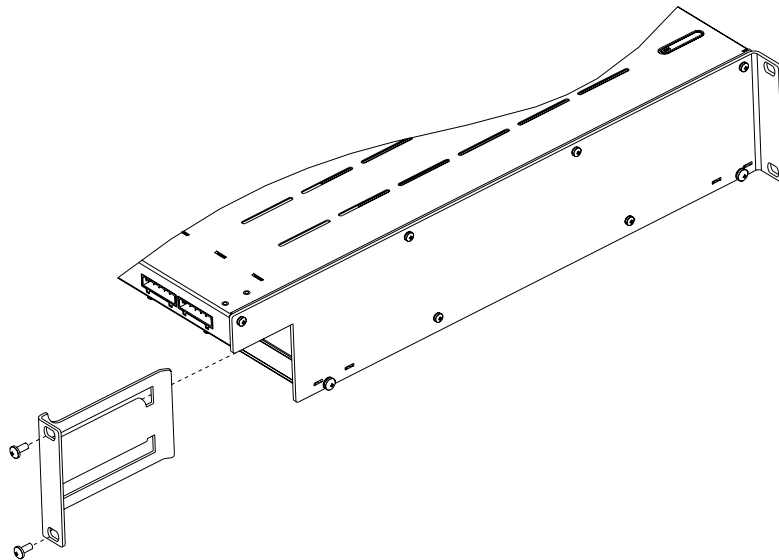


Figure 4. Rack-compatible mounting flanges on the rear panel.

## Grounding

Ensure that the installation frame is properly connected to the earth in order to meet safety requirements. Proper grounding will also improve the protection from the effects of interference and increase the overall reliability of the system. Each installation frame has an earth-terminal on the rear panel (Fig. 2 pos. 3). It is used to provide the common ground for the complete headend. It is recommended to ground all installation frames to the same potential.

**Bus address setting**

Several HDO installation frames are usually connected in serial with each other to form logical bus segments for management or to form islands of backup powering. In such case each installation frame must have a unique management bus address specified. It is set using the bus address rotary switch (16 positions, 0...15). The factory set address is 0 and it should be changed to an appropriate address in the initial installation before powering the system on.

Note! If the bus address is changed while the HDO units are powered, all units need to be reset by disconnecting the operating voltage for a few seconds. Each unit can be SW reset individually to avoid any disturbance in signal operation.

**Powering**

A power supply module from HDP230 series can be installed in any slot in the frame. The standard DC cable supplied with the module suggest using slots 1, 2, 11 or 12. The HDX002 installation frame connects the operating voltages (+25 V / +6,3 V) from the power supply to the installed HDO application modules. Multiple HDP230 power supplies can be connected in parallel to implement a power backup function. The power backup can be built inside one installation frame or between installation frames using HDX105 back up cable. (See the HDP230 User Manual for more details).

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