Project ESA V1 Rail kit
Mechanical Specification

V01

Author: Rex.Lee
Author: MiTAC Computing Technology
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1. **Introduction**

The ESA project provides a solution to make the OCP V.2 sled can be installed into the legacy EIA 19” rack. It is adjustable and able to support the depth rail mounting flanges for EIA rack from 24” to 30”. This design supports EIA standard IT equipment and OCP in the same rack. Components of ESA are categorized as rail kits, bus bar kits and shelf as shown in figure 1, 2 and 3.

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**Figure 1 : ESA with EIA rack**

1. EIA RACK
2. Rail kit(right side)
3. Shelf
4. Rail kit(left side)
5. Bus bar kit
Figure 2: ESA with shelf (front side)

Figure 3: ESA with shelf (rear side)
1.1 Scaleable Design

1.1.1 ESA 16 OU assembly example
1.1.2 ESA 32 OU assembly example
2. Shelf

ESA shelf is the IT equipment that installed into ESA rail and connects with bus-bar directly through connector clip pair. The ESA shelf supports two sets of OCP V.2 sled with 2OU type.

The shelf receives power from bus-bar through connector clip pair. Then distributes the power to the sleds through ESA shelf as shown in figure 4 and 5.

Figure 4: Top view of shelf with Sleds
Figure 5: System bus-bar with connector clip pair

Figure 6: Shelf dimensions
Figure 7: Shelf dimensions
Locked holes for OCP V.2 sled

Figure 7: Shelf dimensions

Stopper dimensions
(for OCP V.2 sled)
3. Rail kit

The rail kits in the rack support to retain the equipment and also limit it on horizontal movement. It aligns the bus bar clip of shelf to the bus bars. The rail kits will be mounted on EIA rack by screws as figure 8 shows.

Figure 8: Rail kits with EIA rack
3.1 Adjustable design
The rail kit design is adjustable for different configuration.

3.1.1 Rail kit for 1 OU shelf example

The rail brackets are removable for different configuration
3.1.2 Rail kit for 2 OU shelf example
3.2 Cable management solution
There are two components in front area for cable management.
3.2 Rail kit dimensions

Figure 9: Rail kits dimensions
Figure 10: Rail kits dimensions
4. **Bus bar**

The bus bars are located in the back of the rack and transmit the power from the system power sled to the shelf in the equipment bay of the rack, as shown in figure 11. The bus bars allow the shelf to plug in directly. So the technician does not need to go to the back of the rack to disconnect power cords prior to servicing equipment.

4.1 **ESA 16 OU bus bar**
Figure 11: Back view of rack
4.2 ESA 32 OU bus bar

Safety box

Connection by screws
5. Component interfaces

5.1 Rail kit to rack

Step #1: Insert the rail kit to the front flange of rack
Step #2: Adjust the rear bracket then insert the rail kit to the rear flange of rack
The rail kit will be fixed on the rack with screws
5.2 Bus bar to rail kit

Fixed on rail kit by screws
5.3 Shelf to rail kit

Pull the shelf in to rack through rail kit and be fixed by spring latch