

OPEN SWITCH AND CONTROL PLATFORM

Modular solution designed for RF switching and control tasks.

Introduction

The modular open switch and control platform can be used to perform RF switching and control tasks quickly and easily. It offers expandable module options, allowing for a broader range of RF wiring configurations to be implemented.

The control unit can be controlled via Ethernet switches. Multiple units can be combined into a master/auxiliary system setup through a local area network (LAN). Manual control can also be achieved using a touchscreen or external monitor, as well as a keyboard and mouse.

Automatic path switching is essential in complex RF testing systems. Typical applications include mobile and wireless communications, as well as broadcasting and EMC applications.

New technologies such as 5G, radar, and other applications require fast and precise switching between measurement instruments, antennas, and DUT ports during the development and production processes.

Hardware triggering options greatly enhance the switching speed of relays and digital I/O modules, enabling precise and repeatable path switching.



Advantages and Key Features

Modular, Reliable, and Cost-Effective

Due to its modular design, users can quickly and easily configure testing and measurement setups for production, testing laboratories, and development applications. The ability to implement complex wiring configurations with a single switch and control platform is crucial for reliable and repeatable measurements, enabling low-cost and efficient testing processes.

Compact and Flexible

The module units are equipped with powerful CPUs, providing maximum flexibility in controlling the switch and control modules. It allows for the use of both internal and external interfaces and supports a convenient web interface, providing an extended view on connected displays or PCs.

Module slots on the front and back panels can be combined into wider slots to accommodate larger modules that offer expanded functionalities.

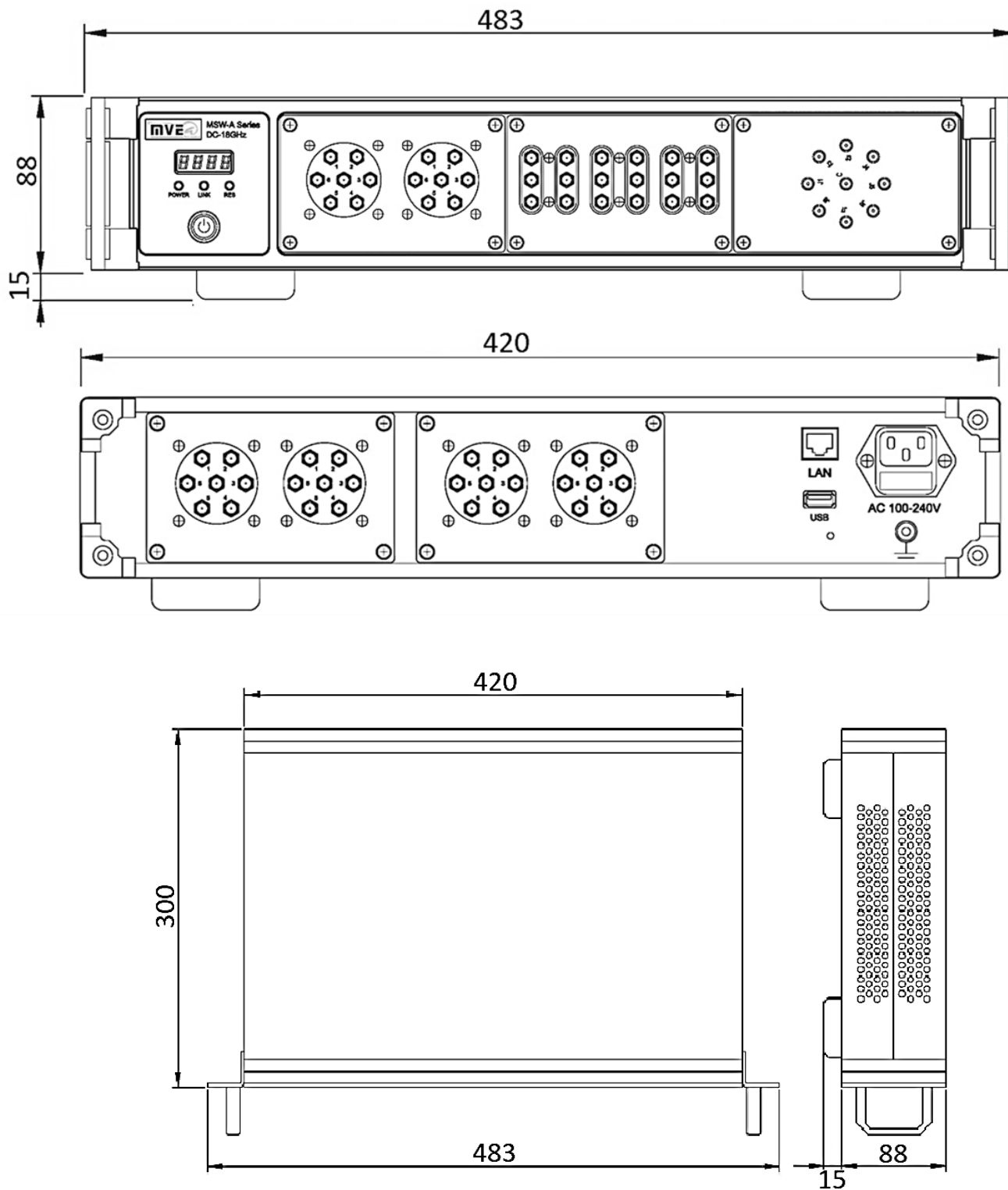
Compatibility with Traditional Products

The latest generation control platforms are highly compatible with various brands of switches. Specifically, all available universal switch and control modules can be used with the latest units. Dedicated compatibility modes reduce the effort required when using existing control software.



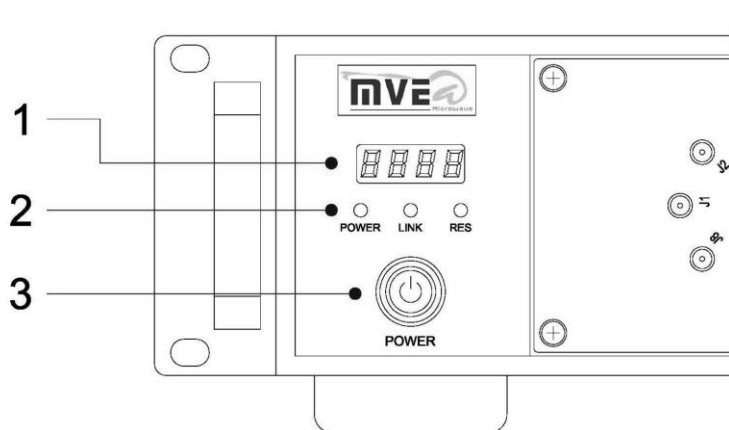
Tolerance: $\pm 2\%$

Outline Drawing: (mm)

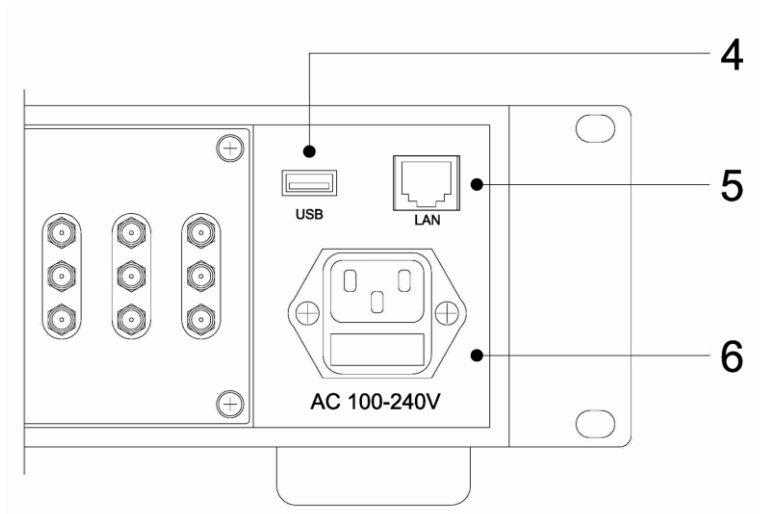


Control Platform Description

- 1. Digital Show IP Address
- 2. Running Indicating Light And IP Reset
- 3. Power Switch



- 4. USB Interface (Software Update)
- 5. LAN Interface (Remote Control)
- 6. Power Supply

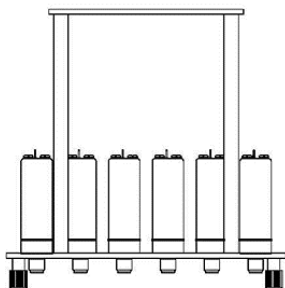
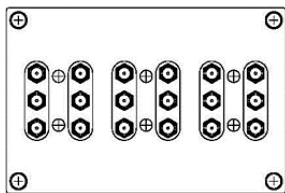


Switch and Control Modules

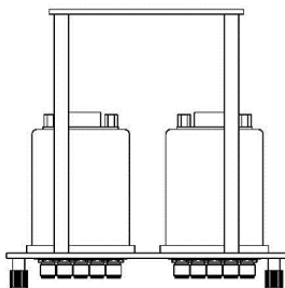
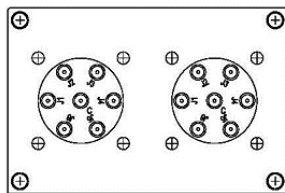
Each unit is equipped with powerful switch and control modules that can be inserted into front and rear module slots. Different types of modules can be combined within the same unit, ranging from simple RF switch modules to more complex application-specific modules, all of which are fully compatible.

The control platform automatically detects each module, eliminating the need for installation programs when replacing modules. New modules can be immediately put into operation.

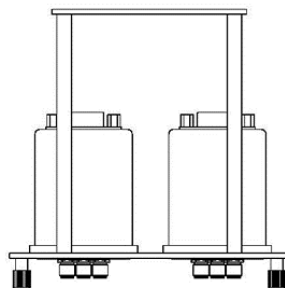
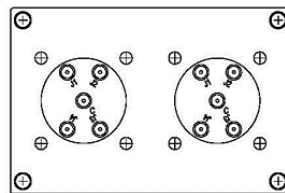
Modules Type



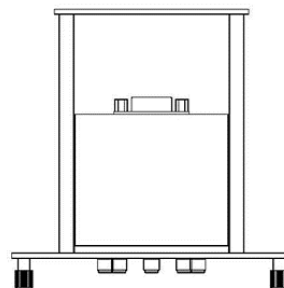
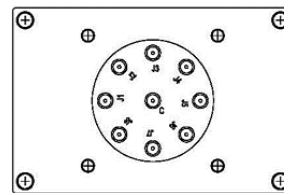
SPDT x 6



SP6T x 2

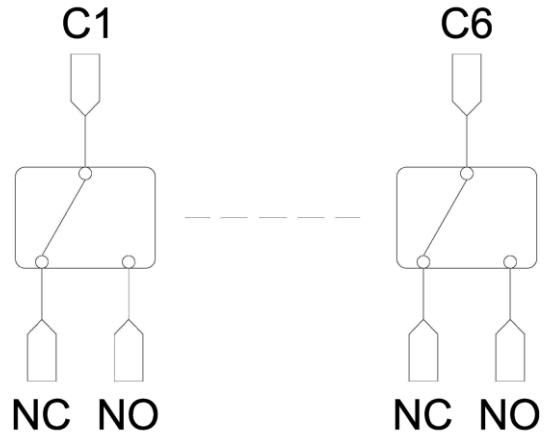
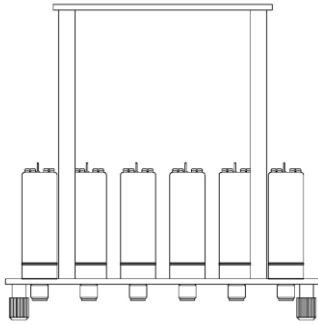
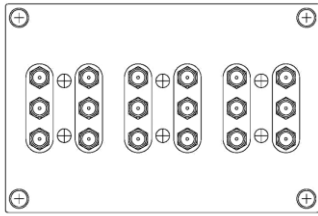


SP4T x 2

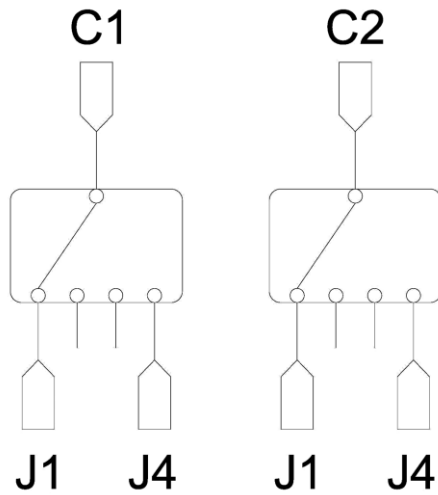
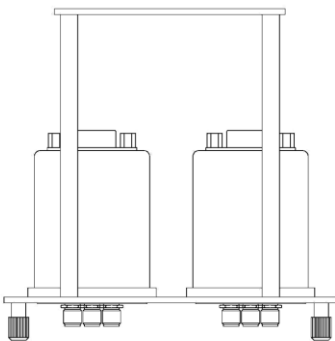
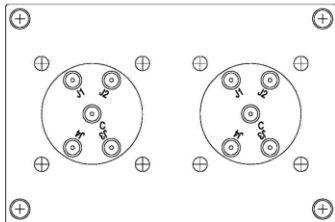


SP8T x 1

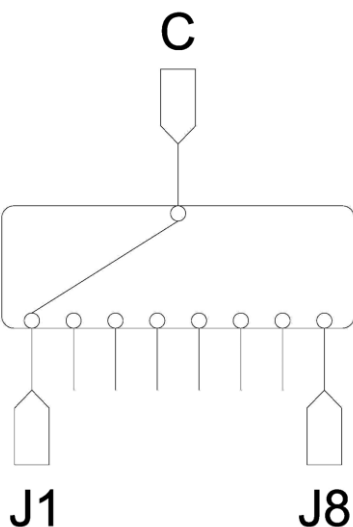
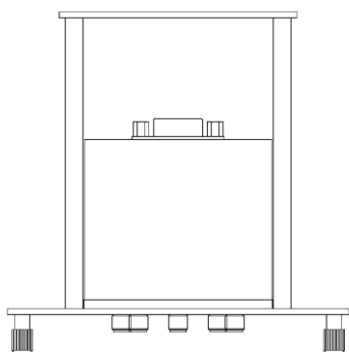
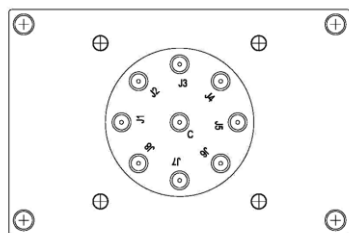
SPDT



SP4T

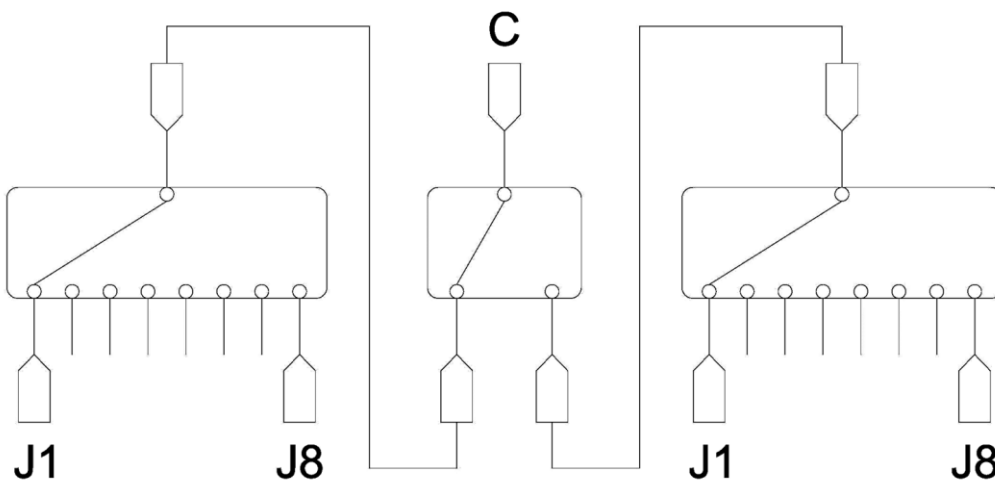


SP8T



The modules and control platform can be customized in a cost-effective manner according to the needs of the user's actual application.

Example for SP16T



Transmission Control Protocol:

Configuration Environment

All commands should be typed in halfwidth and should be ended by \r\n

<CR>= Carriage return <LF>= Line feed

Telnet connecting Hardware

Network Cable

TCP port	4001
IP Address	Default IP: 192.168.1.200 Netmask :255.255.0.0 broadcast :192.168.1.1

IP SETTING

Format	SetNETWORK <1>-<2>-<3>-<4>
Description	<1>: IP address <2>: broadcast <3>: netmask <4>: port
Response	SetNETWORK Success
Fail Response	SetNETWORK Fail
Example	SetNETWORK 192.168.1.200-192.168.1.1- 255.255.0.0-4001 Response: >>SetNETWORK Success

IP SEARCHING

Format	LstNETWORK
Response	IP, NETGATE and NETMASK
Fail Response	None
Example	LstNETWORK Response: >>IP:192.168.1.200- NETGATE:192.168.1.1-NETMASK:255.255.0.0- PORT:4001

Query the switch slot connected switch module model

Format	READ:IO:IN? <slot names>
Description	(@FxxMyy,FxxMyy,FxxMyy,...) xx:01,...99 (Frame id) yy : 01,...05 (Module id) <i>The current project supports 5 slots</i>
Response	SetNETWORK Success
Fail Response	SetNETWORK Fail
Example	SetNETWORK 192.168.1.200-192.168.1.1-255.255.0.0-4001 Response: >>SetNETWORK Success

SWITCH SETTING

Format	SS x y<CR><LF>
Description	Setting the switch to the specific port x = switch number y = port number
Example	SS 1 1<CR><LF> Response: >>S1:1

SITUATION OF CURRENT SWITCH

Format	RS x<CR><LF>
Description	x = switch number
Example	RS 1<CR> <LF> Response: _>>S1:1

TOTAL SWITCHING TIME OF NO. SWITCH

Format	SW x<CR><LF>
Description	x = switch number
Example	SW 1<CR> <LF> Response: >>S1:61,58,10,10,10,0,111,10; <i>*The return number means resetting times of each port of # 1 switch**.</i>

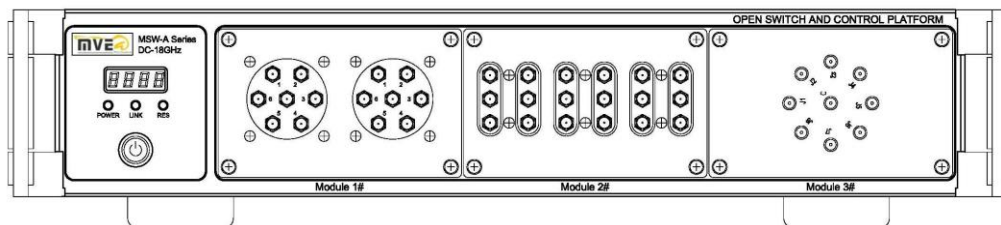
SN SEARCHING

Format	SN?<CR><LF>
Description	-
Example	SN?<CR><LF> Response: >>C70002S

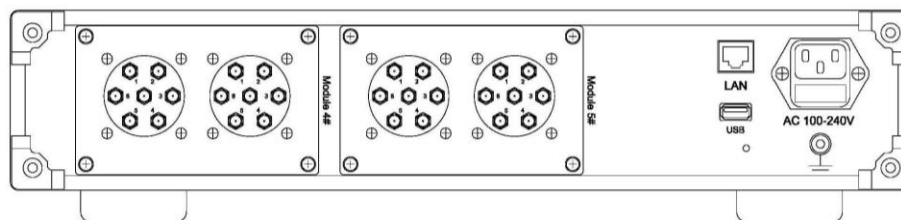
**The format is for reference only*

Disassembling Modules

- a) There are 5 slots for modules on the device – 3 on the front and 2 on the back. You can freely mix and match switch types for each module.

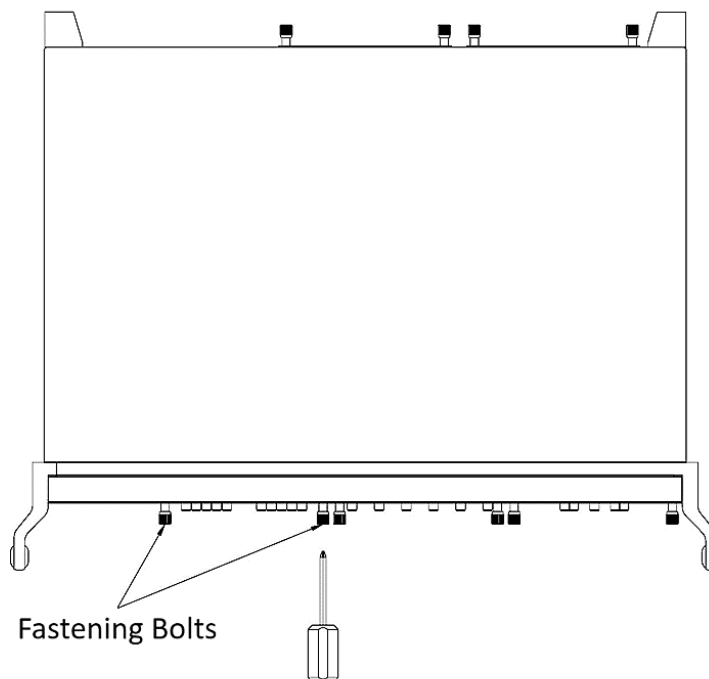


FRONT

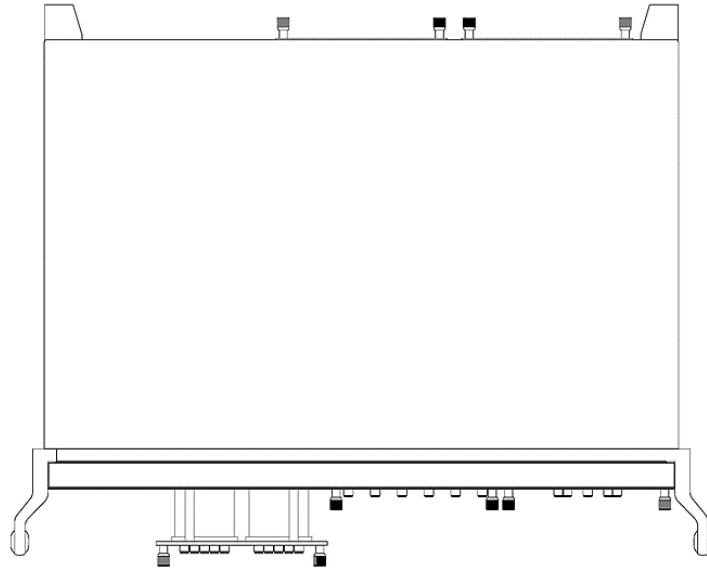


BACK

- b) To remove any module, first loosen the four bolts on the module using a crosshead screwdriver. The bolts are securely attached to the module panel and won't fall off when loosened.

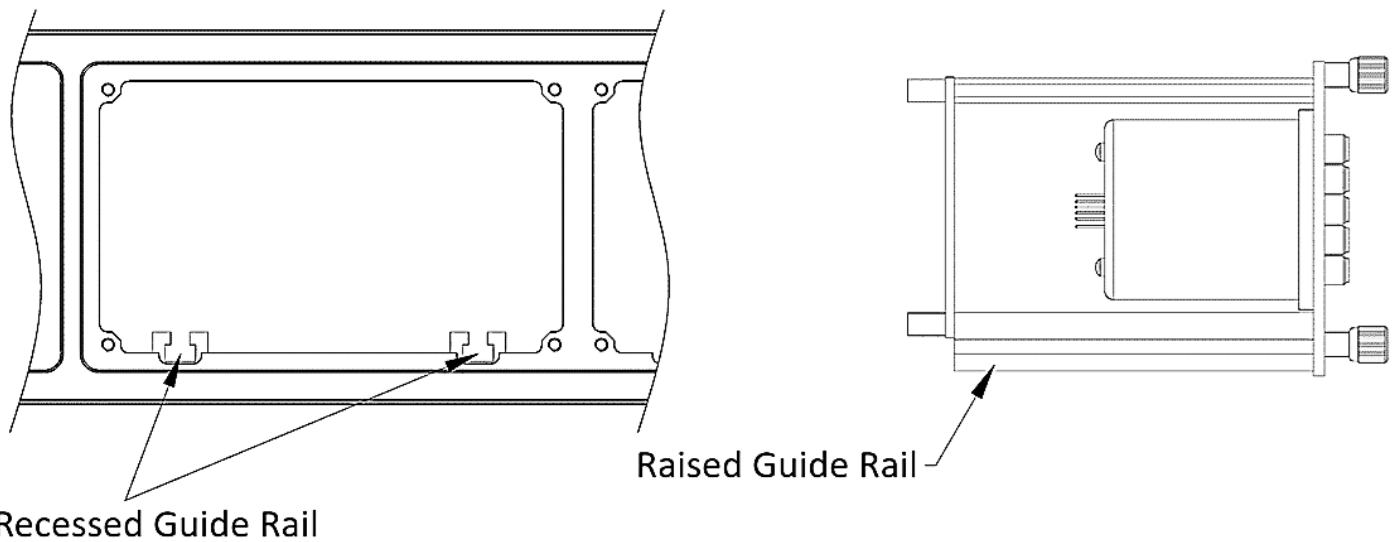


c) Then, grip the fastening bolts and slowly withdraw the module.

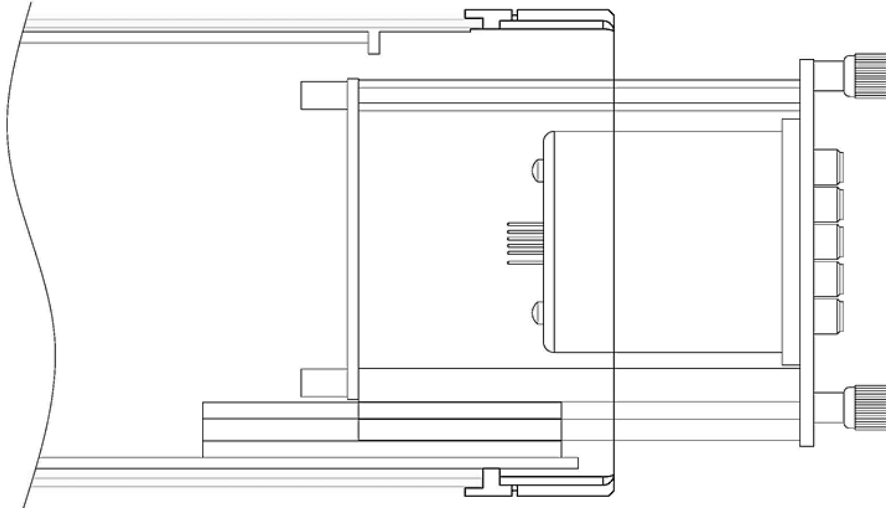


Installing Modules

a) Each module slot inside the chassis has two recessed guide rails, and each module's bottom has two raised guide rails.



- b) Align the raised rails with the slots on the chassis, slowly insert the module. When you feel resistance, it's the module connecting to the motherboard—apply gentle force to complete the insertion. After fully inserted, use a crosshead screwdriver to tighten the four corner bolts.



- c) After inserting the module, restart the device. The equipment will automatically recognize the corresponding switch module, requiring no additional configuration. You can use it directly!