



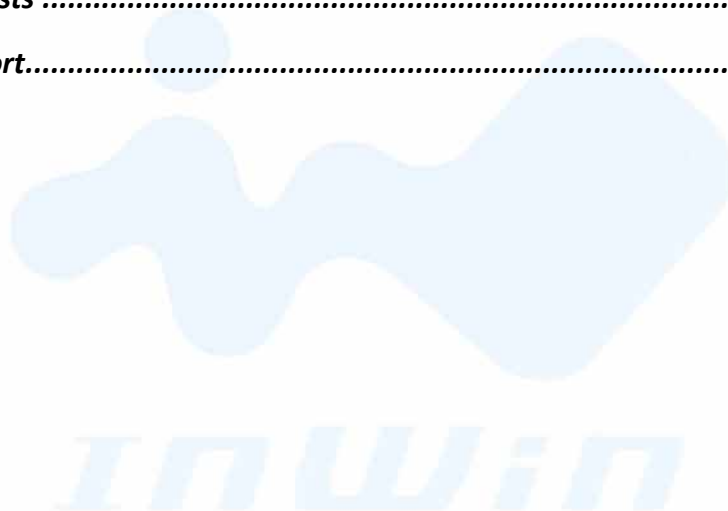
IW-RS448-05

User Manual

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PREFACE

Thank you for choosing the InWin IW-RS448-05. This manual is written for system technicians who are responsible for installation, troubleshooting, managing and repairing this server chassis. This document provides the overview of all the features of the chassis, a list of accessories or other components you may need to finish the installation, troubleshooting methods and instructions on adding and removing components on the InWin IW-RS448-05. For the latest version of this manual, you may visit InWin's server website to download the latest updated version.

SAFETY INFORMATION

To ensure a safe and smooth operation of your InWin IW-RS448-05, it is essential that you choose an appropriate location for the system, provide an appropriate operating environment and supply an adequate amount of power for all components of the system. As you plan for installation, follow the guidelines below to ensure that the system and its environment are safely and appropriately positioned for efficient operation and service. Your system should be installed and serviced only by a qualified technician.

Environment selection: The system is designed to operate in a typical office environment:

- The location should be clean, dry and free of airborne particles.
- It should be situated in a well-ventilated room, and away from sources of heat including direct sunlight and radiators.
- It should be kept away from sources of vibration or physical shock.
- The space should be accommodated with a properly grounded wall outlet, and with sufficient space to access the power supply cords.
- The operating environment temperature should be approximately 0°C to 40°C (32°F to 104°F).

Heed safety instructions: Before working with InWin Server/Storage products, we strongly recommend you use this guide as a reference and follow the safety instructions. The instructions in this manual will help you ensure and maintain compliance with existing product certifications and approvals. Follow the described, regulated components mentioned in this Manual. Use of non-UL listed products, or products from alternative regulators, may not comply with product regulations in the region(s) in which this product is sold.

System power on/off: The power button DOES NOT totally turn off the system AC power. To remove the power of the system, you must unplug the AC power cord from the outlet or the system's power supply units. Make sure the power cord is unplugged before you open the chassis to add/remove any components.

Hazardous conditions, devices and cables: Hazardous electrical conditions can be present on/in power supply units and their cables. Disconnect the power cord and any other device attached to the server before opening the case. Failure to follow safety procedures will increase the risk of personal injury or equipment damage.

Electrostatic discharge (ESD) and ESD protection: In most cases, ESD may damage disk drives, electronic boards and other parts. We recommend that you conduct installation only at an ESD free space. If not possible, perform ESD protection protocol by wearing an anti-static wrist/ankle straps attached to the ground on any unpainted metal surface on your server during operation.

Installing or removing jumpers: A jumper is a short length conductor used to close, open or bypass part of an electronic circuit. Jumpers on InWin backplanes have a small tab on top that you can pick up with your fingertips. Grip the jumper carefully, and plug the jumper to cover the jumper pins on the backplane. Once you need to remove the jumper, grip the jumper and carefully pull without squeezing.

CAUTION

To avoid damage and maintain your safety, please read the following terms listed below:

1. Do not populate hard drives and turn on the power until the system has secured.

Make sure hard drives and other components are properly connected before turning on the system.



2. Tighten or loosen all screws with a screwdriver.
3. Apply the correct screws included within the accessory box.
4. For your safety, please have at least two people lift and place the unit in its designated area.
5. Before mounting the unit to the cabinet, make sure the rail is installed correctly.
6. When installing and removing any module or part, please use the provided handles.

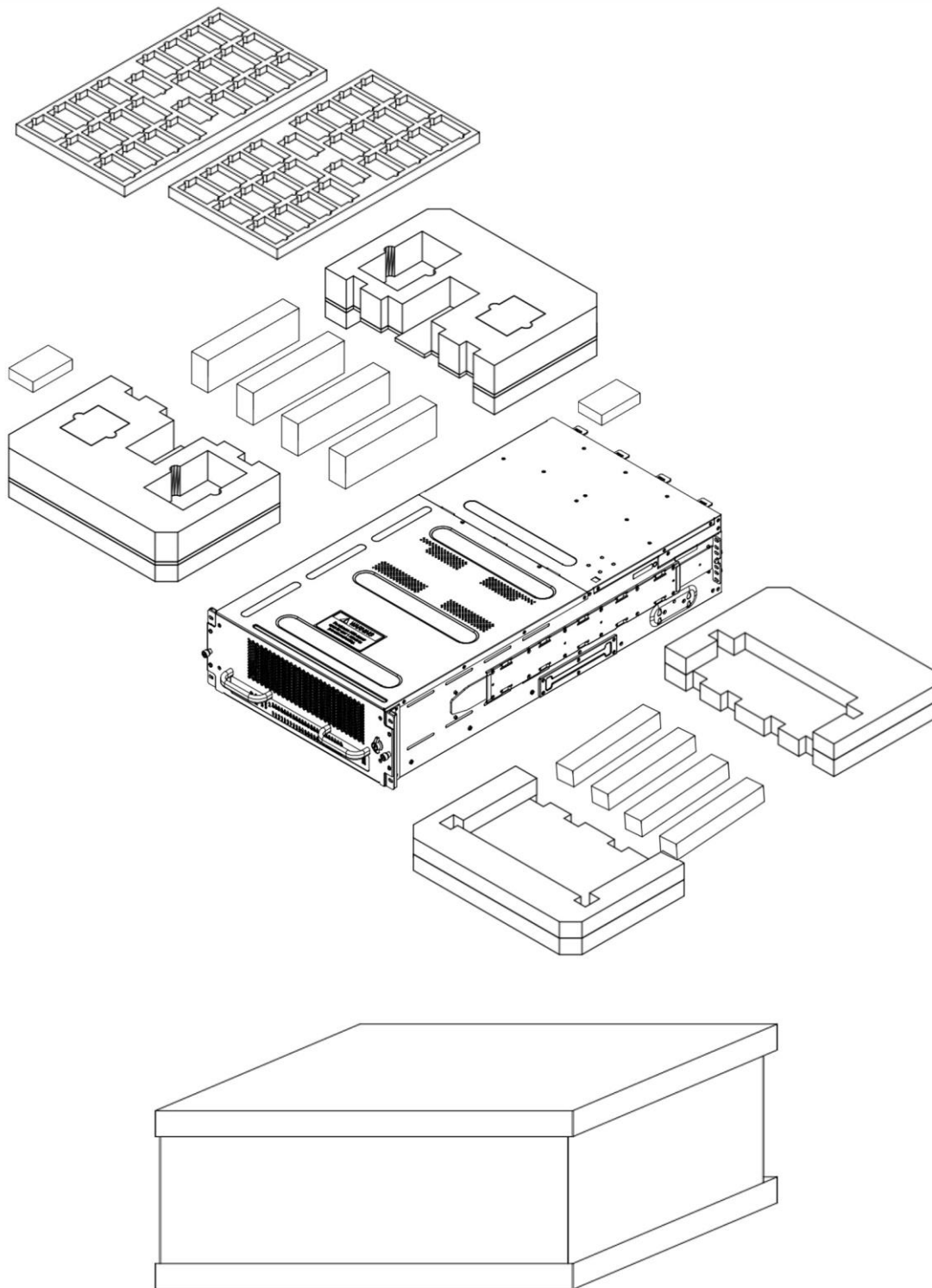
SPECIFICATIONS

Model Name	IW-RS448-05
Standard	EIA-RS310D
M/B Form Factor	ATX (12" x 9.6"), ATX (12" x 10"), EEB (12" x 13")
Dimensions (D x W x H)	878.6 x 482.6 x 176 mm
w/o Front Door	(34.6" x 19" x 7")
Drive Bay	External: Hot-swap 3.5" x 48 (SAS 12Gbps) Internal: 2.5" x 2, Rear hot-swap 2.5"(7mm SSD) x 4
Power Supply	Supports ▪ Form Factor: High efficiency redundant ▪ Watt: 1200W
Indicator	Power LED, LAN1/LAN2 LED, System LED, ID LED, HDD LED
Front Control Panel	Power On/Off, Reset, NMI, ID SW, USB 3.0 x 1
Backplane	Mini-SAS HD /12Gb/s with expander
Cooling Fan	97 x 33 mm PWM blower x 4
Expansion Slot	Full height PCI slot x 7
SAS 12G Expander	Supports LSI expander
Material	Material: SGCC Thickness: 1.6 mm
Rail Kit	Fixed rail blade

* The actual product is subject to change without prior notice. In Win Development Inc. reserves the right to make any final modifications.

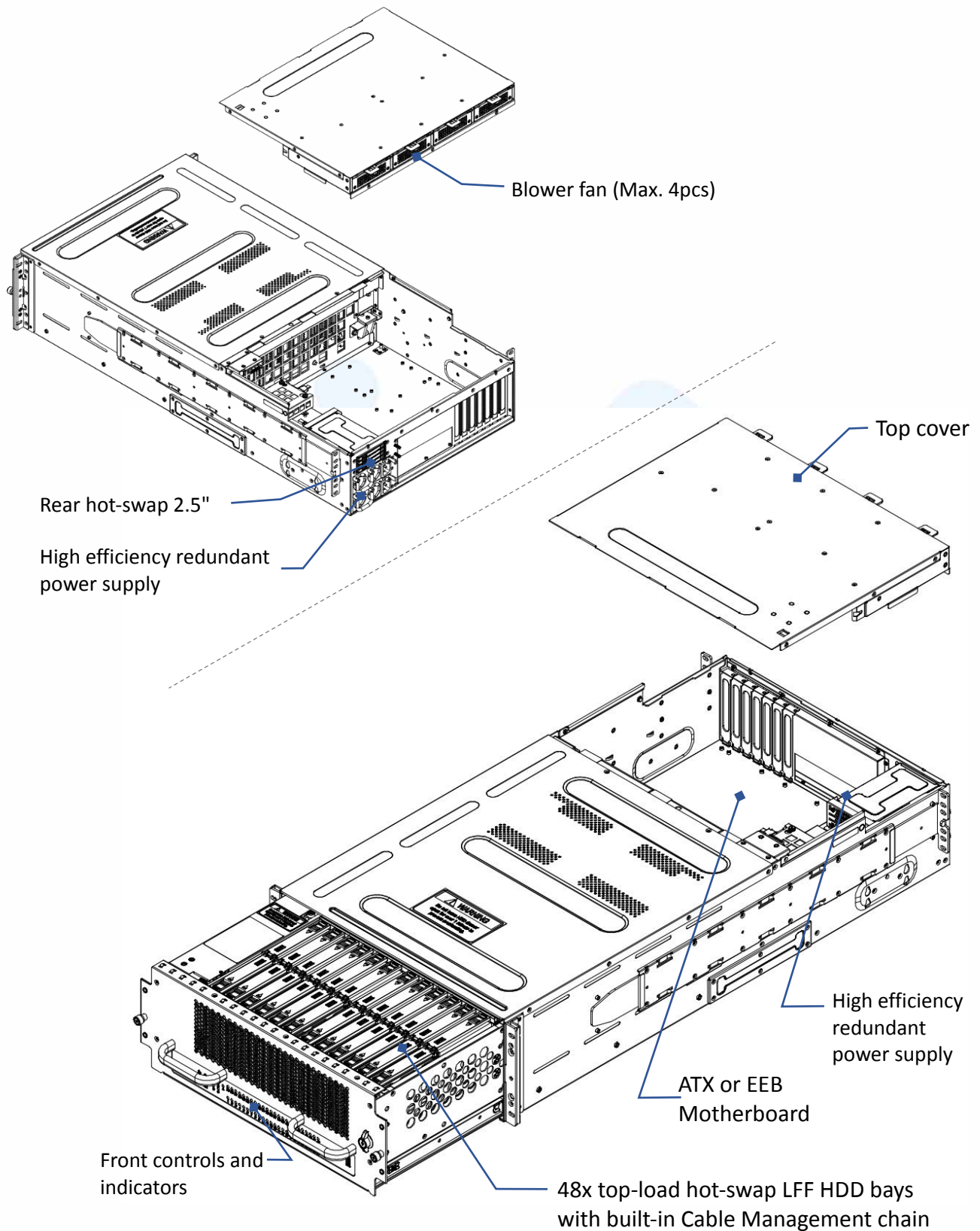
1 Product Introduction

1.1 Box Contents



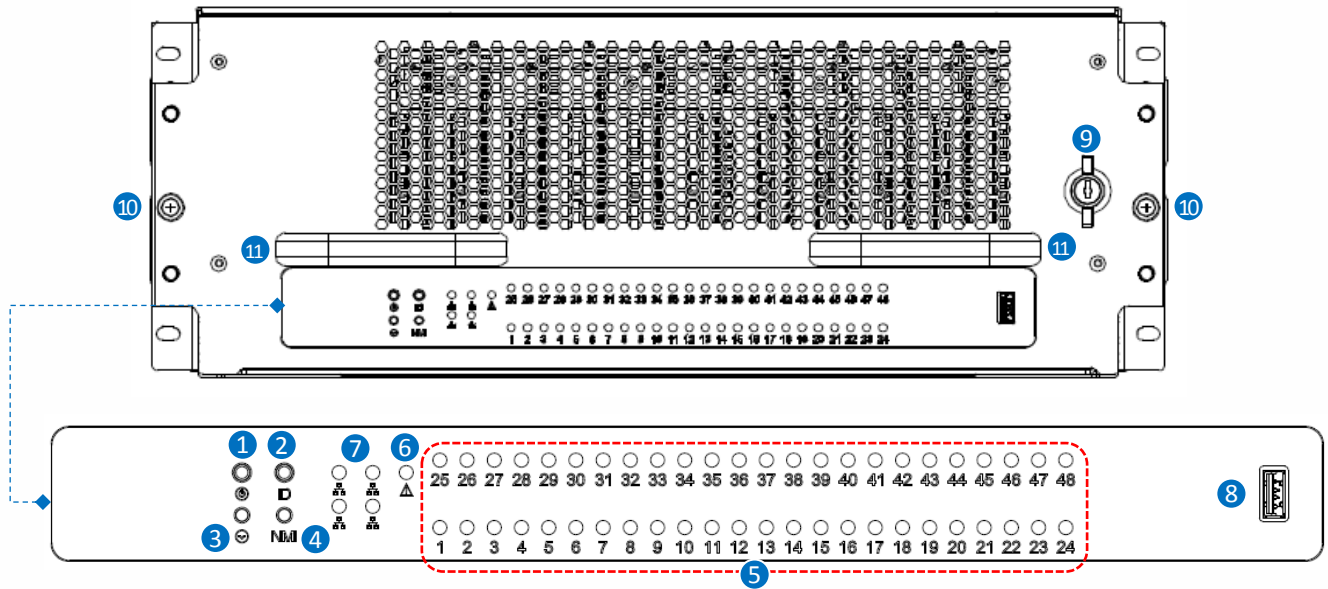
1.2 General Information

Diagram's image reflects the chassis opened.



1.2.1 Front Panel Controls and Indicators

The front panel includes control buttons and LED indicators.



No.	Name	Color	Status	Description
1	Power On/Off Button with LED	Blue	Solid on	System is powered on
		N/A	Off	System is off
2	Chassis ID Button with LED	Blue	Solid on	Press the button to access the chassis's identification
3	Reset Button	N/A		Press the button to activate system reset
4	NMI Button	N/A		Press the button to activate user define
5	Drives Status LEDs for Bays 1-48	Refer to the table below		
6	Status LED	Red	Solid on	System maintenance (PSU, fan malfunction)
7	LAN LED (LAN1 - LAN4)			
8	USB 3.0 Connector	N/A		USB devices connection
9	Drawer Lock			
10	Drawer Thumbscrews			
11	Drawer Handle			

Status LED:

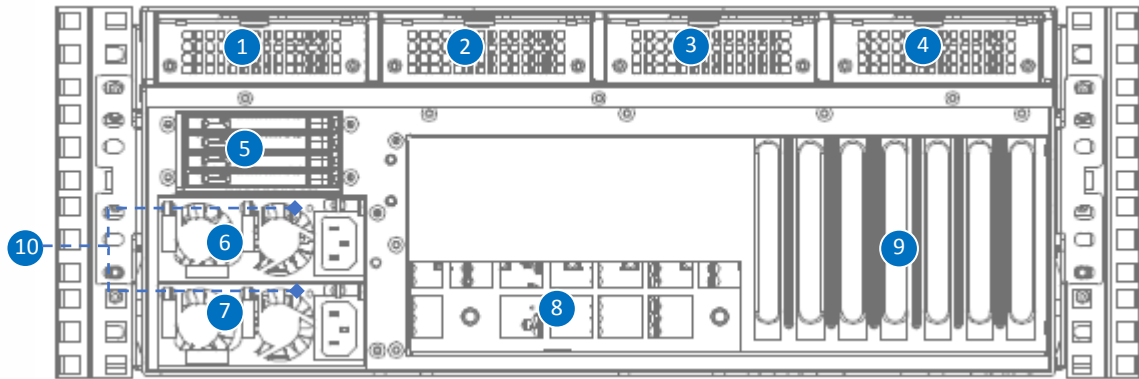
- System Healthy
- System Maintenance (PSU, fan malfunction)

Drive Status LED:

- (Solid) Drive Online
- (Blink) Drive Activity
- (Solid) Drive Failed*
- (Blink) Drive Missing*
- (Solid) RAID Drive*
- (Blink) Drive Locate*
- (Blinking Blue on Solid Purple) RAID Active*
- (Fast Blue Blink on Slow Red Blink) RAID Rebuild*
- (Alternating) Drive Faulty / Offline / RAID Failure*

* For RS448-05 with RAID Card

1.2.2 Rear Panel Configuration



No.	Name	Description
1	Fan Module 1	Default primary fan module 1
2	Fan Module 2	Backup fan module 1
3	Fan Module 3	Default primary fan module 2
4	Fan Module 4	Backup fan module 2
5	Rear 2.5" SAS/SATA Drive	For OS SSD or Cache SSD
6	Power Module 1	Default primary power supply module
7	Power Module 2	Backup power supply module
8	System I/O (depends on M/B specifications)	The I/O shield is dependent upon your choice of motherboard and is provided by your respective motherboard vendor
9	7 Full Height PCI-E Slots	The Slots support 120mm height PCI-E devices. The slot covers should be removed before use
10	PSU Status LED	Display the current status of the PSU

PSU Status LED:

- Power On
- Power Removed

2 Hardware Installation

2.1 Removing and Installing a Hard Drive

The IW-RS448-05 Storage Server features tool-less trays. Users are able to easily swap drives without the need for screws or tools.

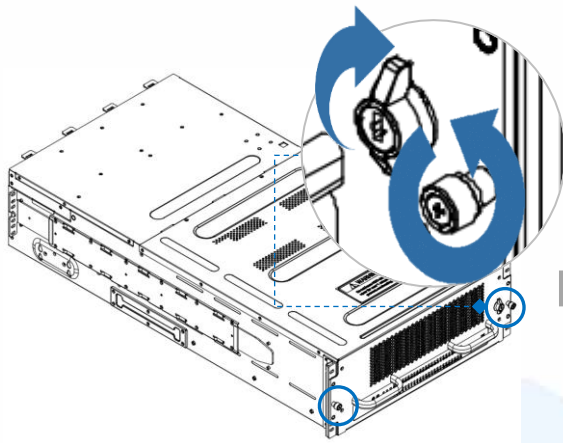
NOTE: Do not leave the HDD drawer open for more than 1 minute to prevent overheating.

2.1.1 Open the HDD Drawer

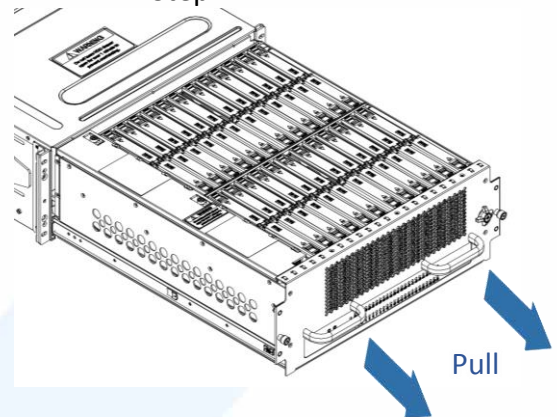
Step 1: Unlock the keylock and loosen the thumbscrews of the drawer.

Step 2: Pull the HDD drawer outward.

Step 1:



Step 2:

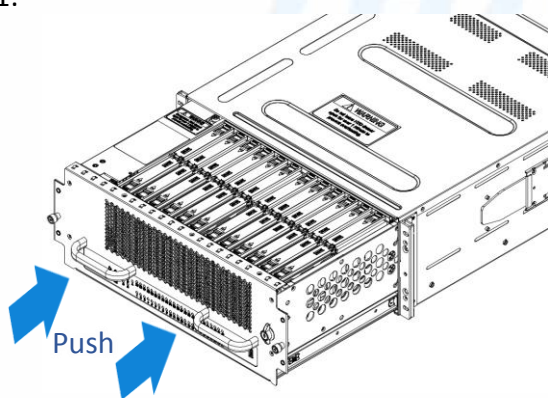


2.1.2 Close the HDD Drawer

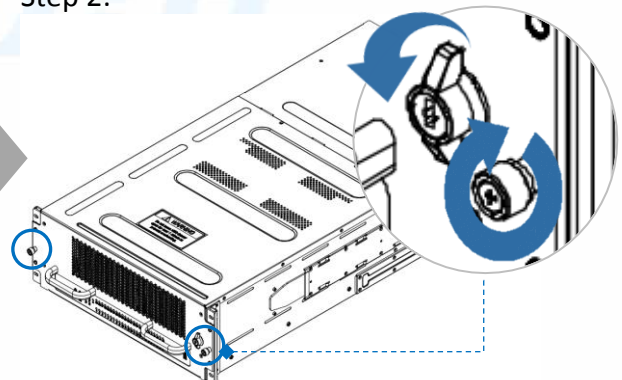
Step 1: Push the HDD drawer back to its closed position.

Step 2: Lock the keylock and tighten the thumbscrews.

Step 1:



Step 2:



2.1.3 Installing a Hard Drive

Step 1: Release the latch in the direction of the arrow on each drive tray.
Open the drive tray cover and pull it outward as a handle.

Step 2: Gently pull the tray up until it clicks.

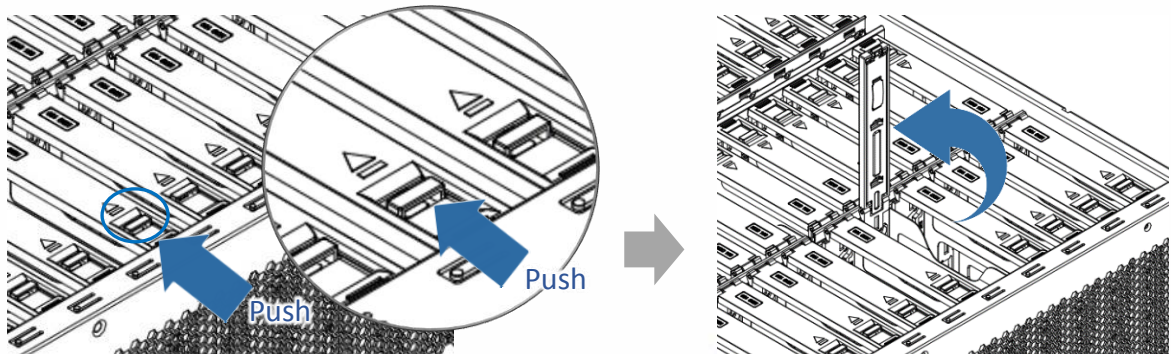
Fully insert the HDD into the tray from the correct disk port orientation.

Step 3: Align the HDD screw holes and plug in the pins on the side of each tray.

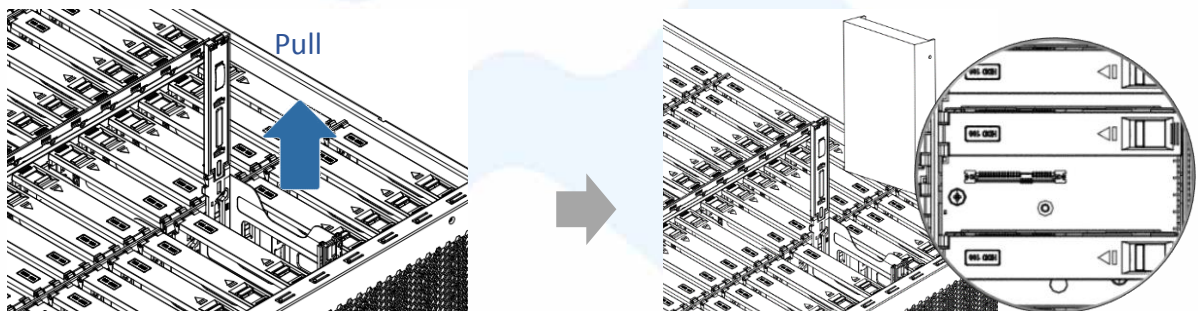
Keep the tray pins against the HDD screw holes and push the drive tray back to its seated position.

Step 4: Release the latch to close the cover in its locked position.

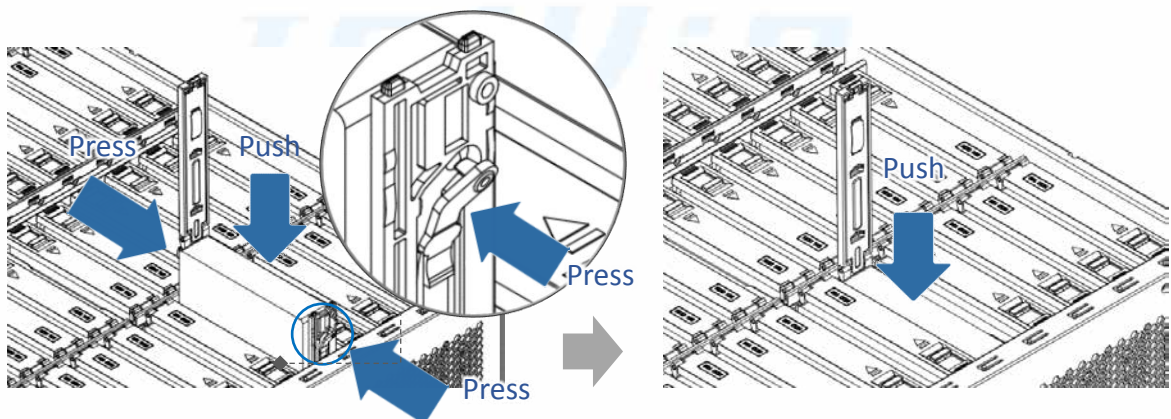
Step 1:



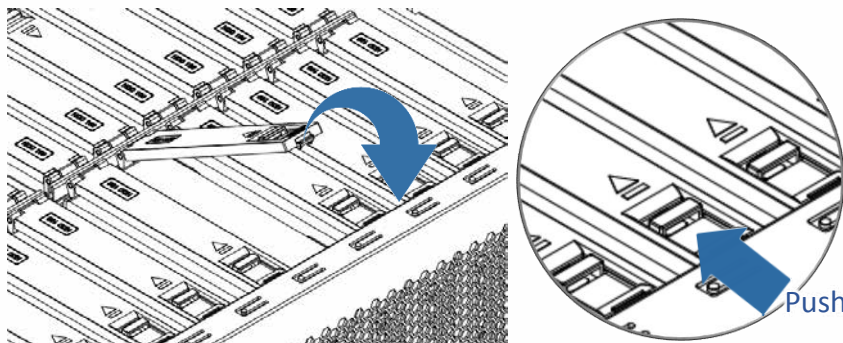
Step 2



Step 3



Step 4



2.1.4 Removing a Hard Drive

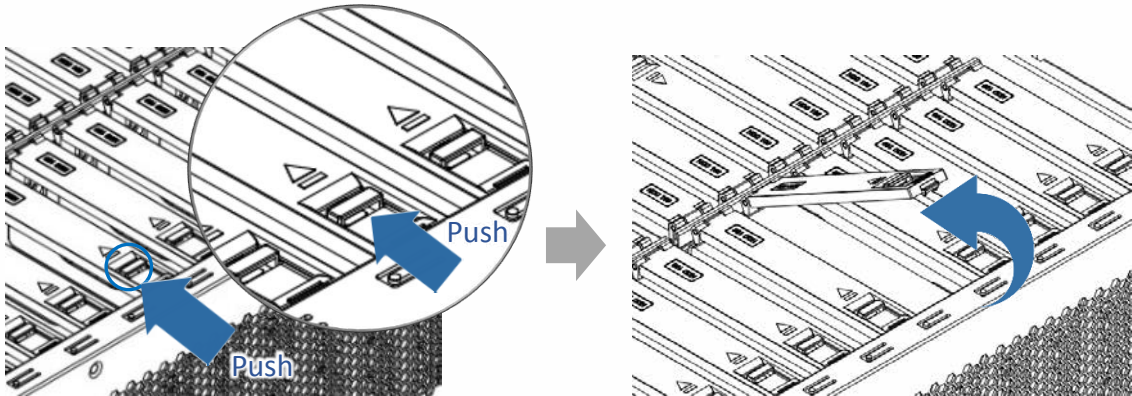
Step 1: Release the latch in the direction of the arrow on each drive tray.

Open the drive tray cover and pull it outward as a handle.

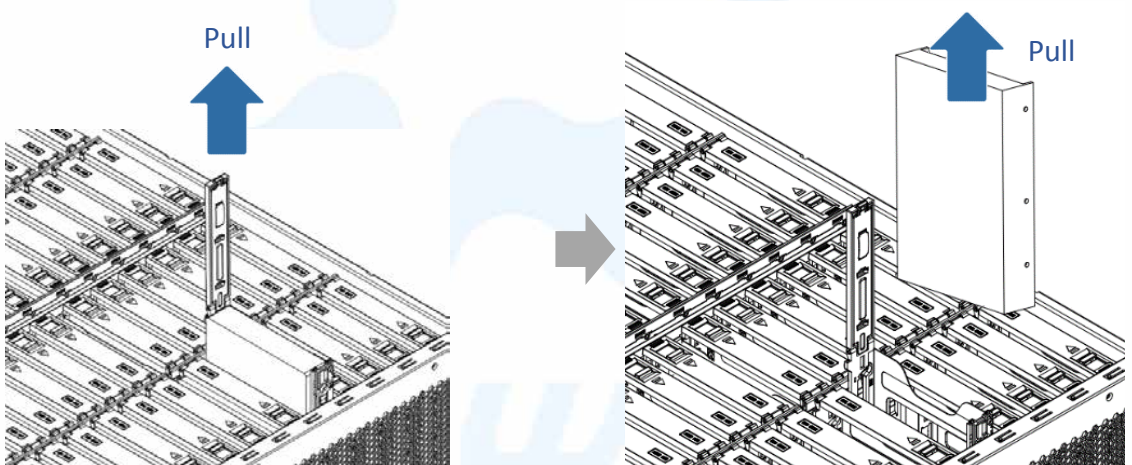
Step 2: Pull up the tray until it clicks. Pull the hard drive out carefully.

Step 3: Lower the drive tray back. Release the latch to close the cover to its locked position.

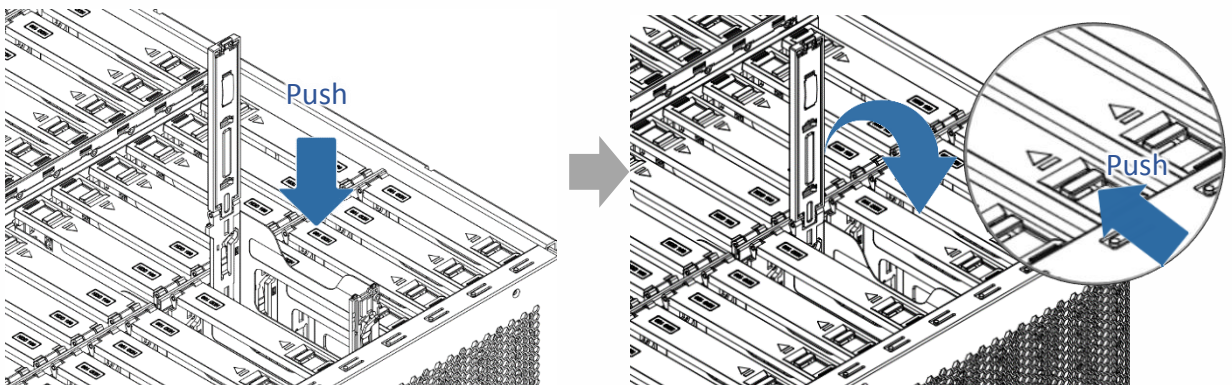
Step 1



Step 2



Step 3



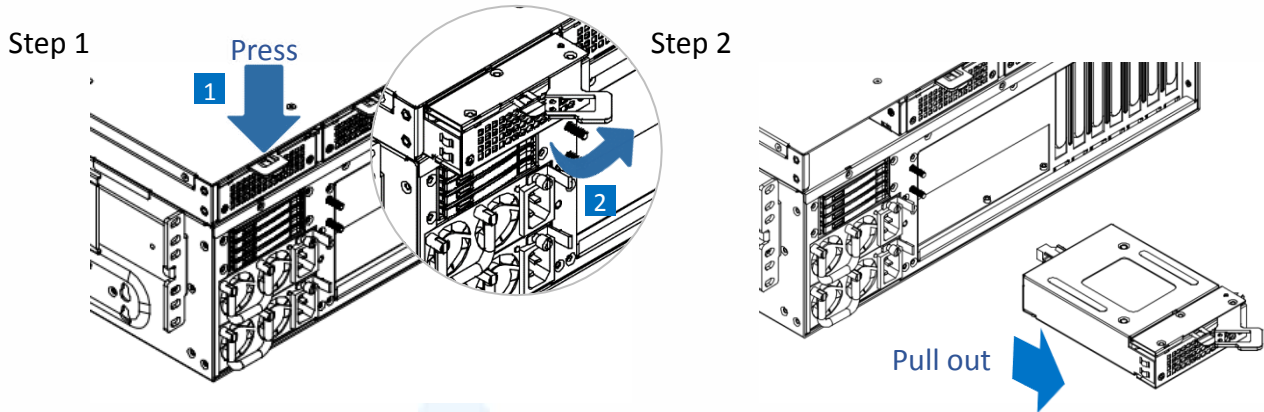
2.2 Removing and Installing the Fan Module

IW-RS448-05's built-in fan modules feature a tool-less design, which makes it easy to maintain.

2.2.1 Removing the Fan Module

Step 1: Press the clip and rotate the lever of the fan module outward.

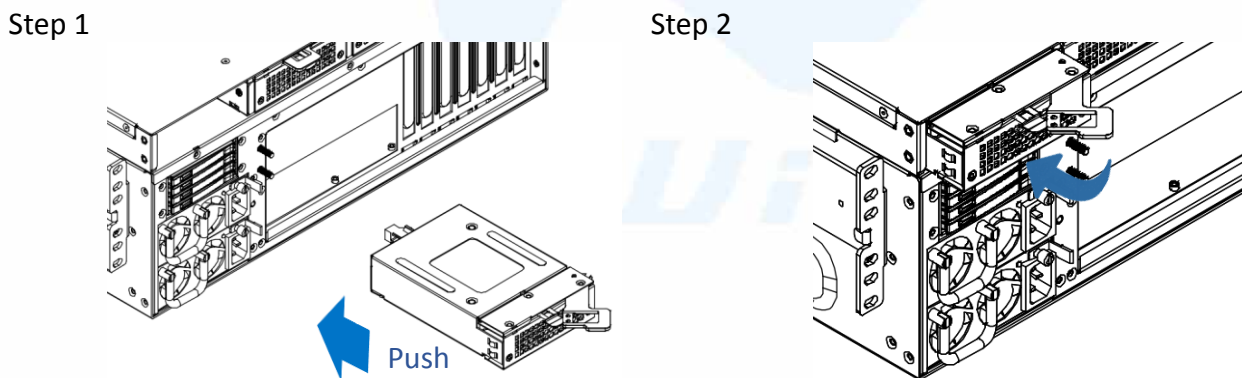
Step 2: Pull out the fan module from the fan slot.



2.2.2 Installing the Fan Module

Step 1: Push the fan module into the fan slot.

Step 2: Rotate the lever of the fan module inward until it clicks back to its original locked position.



2.3 Removing and Installing the PSU Module

The IW-RS448-05 includes a redundant power supply with two power supply units. With this feature, the system is capable of functioning if one of the modules fail. To replace it, the user only needs to remove the failed module and insert a functional module.

NOTE: 1. The unit supports InWin PSU modules only, please do not attempt to insert any other module brands.

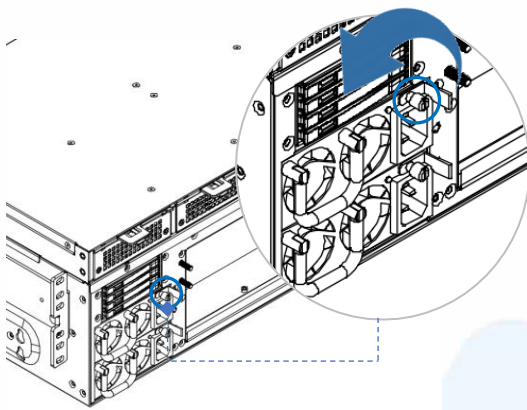
2. The two PSU modules' output wattage must be the same.

2.3.1 Removing the PSU Module

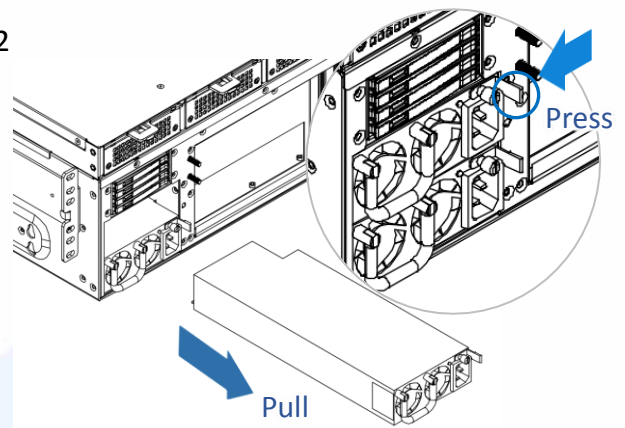
Step 1: Loosen the thumbscrew of the power supply module.

Step 2: Press the handle and pull the power module outwards.

Step 1



Step 2

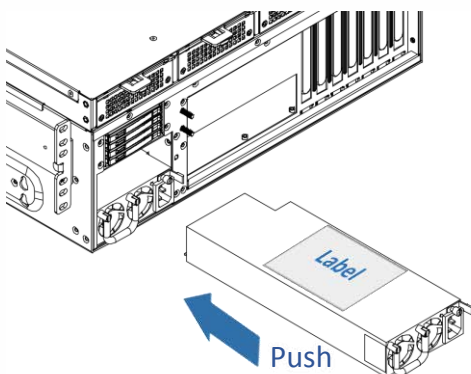


2.3.2 Installing the PSU Module

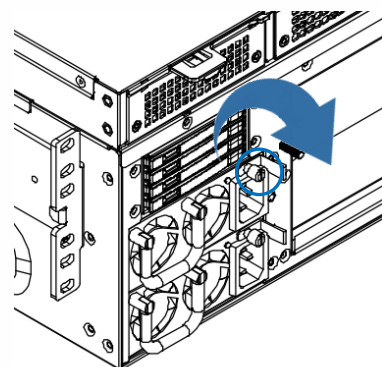
Step 1: Make sure the label is facing upward, and push the power supply module into the power supply housing until it clicks.

Step 2: Tighten the thumbscrew on the power supply module.

Step 1



Step 2



2.4 Removing and Installing the SAS Expander Module

NOTE: Do not leave the HDD drawer open for more than 1 minute to prevent overheating.

2.4.1 Removing the SAS Expander Module

Step 1: Open the HDD drawer. (Please refer to 2.1.1)

Step 2: Loosen the thumbscrews and the screws of the SAS expander module cover, then remove the cable management cover.

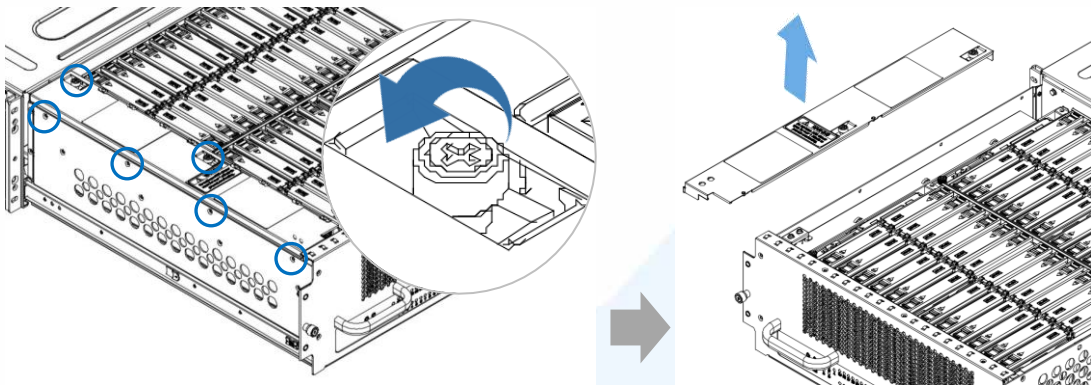
Step 3: Remove the cable from the SAS expander module.

Step 4: Loosen the thumbscrew of the module.

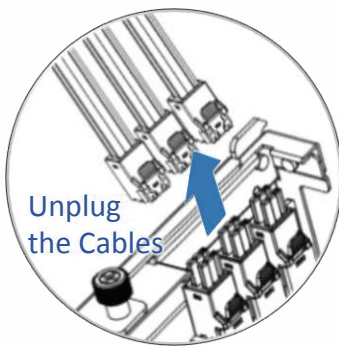
Step 5: Lift the SAS expander module's cover outward.

Step 6: Pull out the SAS expander module.

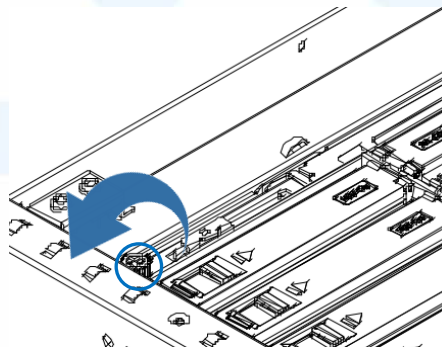
Step 2



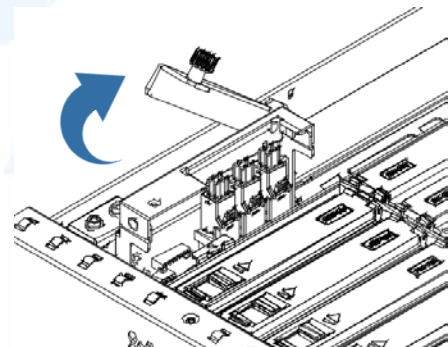
Step 3



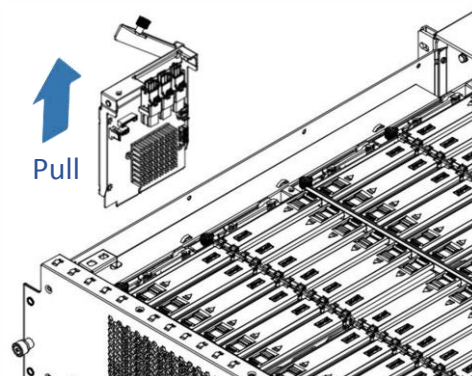
Step 4



Step 5



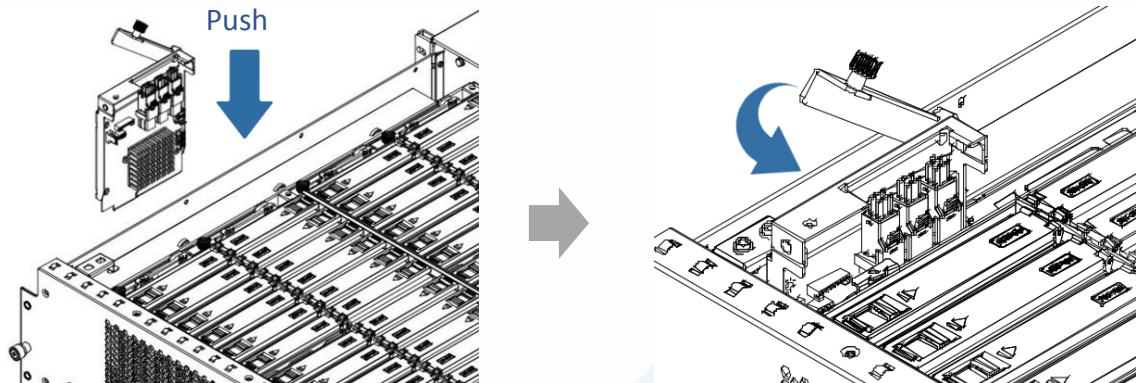
Step 6



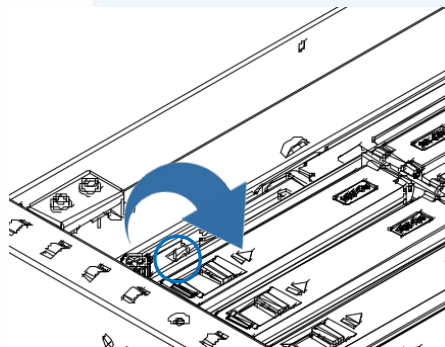
2.4.2 Installing the SAS Expander Module

- Step 1: Place the SAS Expander module into its housing until it clicks.
- Step 2: Align the thumbscrew into position and tighten the thumbscrew.
- Step 3: Connect the cable to the disk expander module.
- Step 4: Push the cable management cover back to its original position.
Tighten the thumbscrew and secure the screws of the SAS expander module cover.
- Step 5: Close the HDD drawer. (Please refer to 2.1.2)

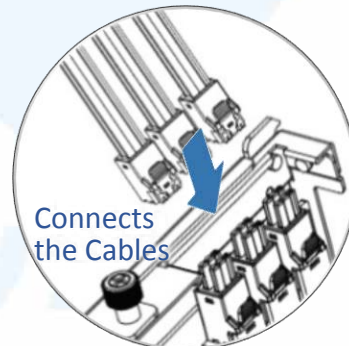
Step 1



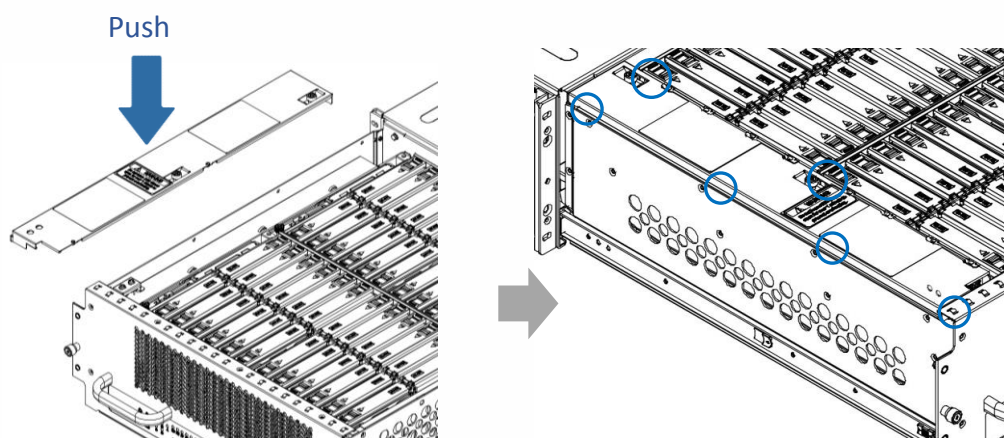
Step 2



Step 3



Step 4



2.5 Installing the Motherboard

Before installing the motherboard, please find the I/O shield from your motherboard packaging and install it into the system I/O window (Refer to 1.2.2). If you cannot find the I/O shield, please contact your motherboard vendor. Or, contact InWin for I/O shield OEM service.

Step 1: Remove 5 screws (red circles) securing the top cover and fan modules.

Step 2: Slide the cover towards the rear, then lift the top cover and fan modules off the chassis.

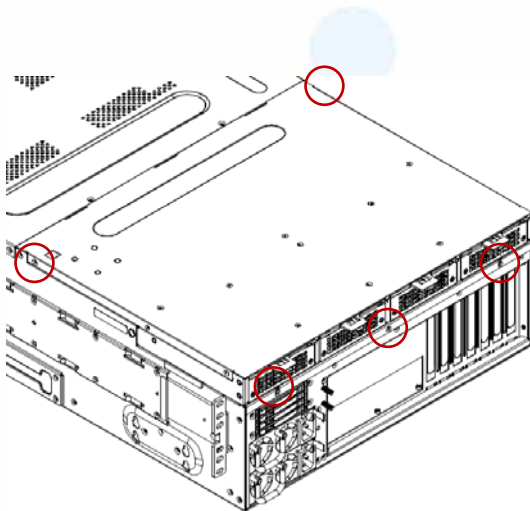
Step 3: Remove the mylar cut-outs that are covering the motherboard mounting holes.

Step 4: Secure the standoffs on the motherboard mounting tray which match with the corresponding motherboard mounting points.

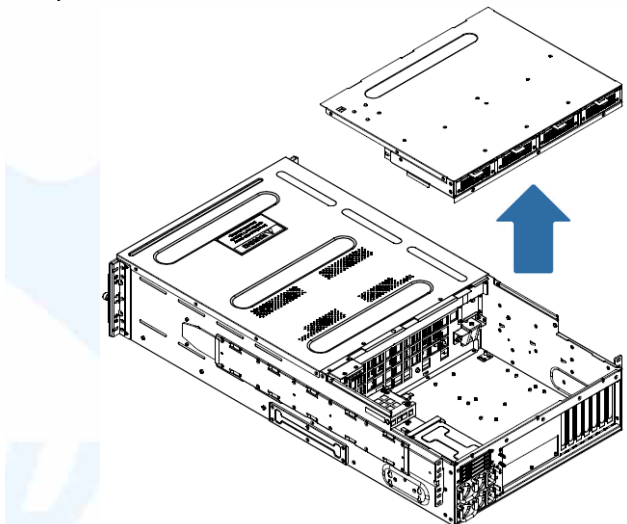
Step 5: Install and align the motherboard within the chassis.

Step 6: Fasten the screws to secure the motherboard within the chassis.

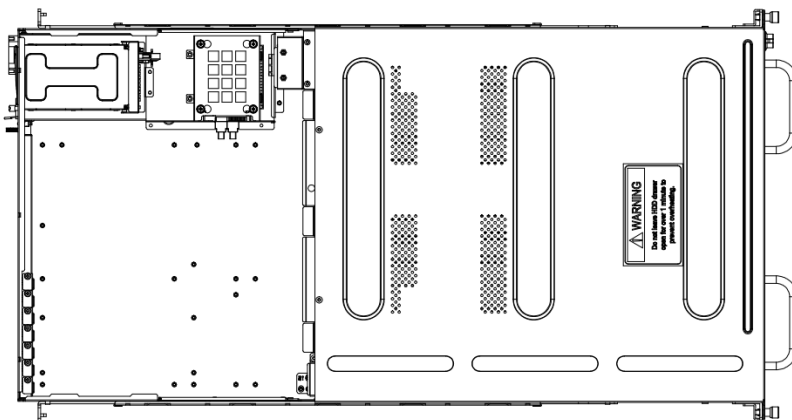
Step 1



Step 2



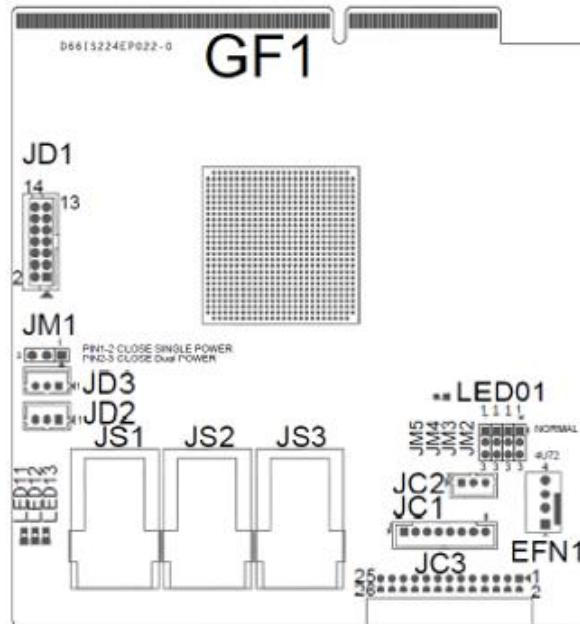
Step 3~6



2.6 Connecting Cables

2.6.1 Connecting Expander through SAS connectors

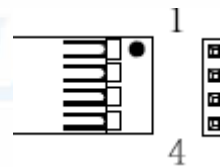
Use the SAS 8643 cable to connect the expander to the motherboard.
Use Ports JS2 and JS3 to connect to the motherboard, to an HBA or RAID controller, and Port JS1 for cascading.



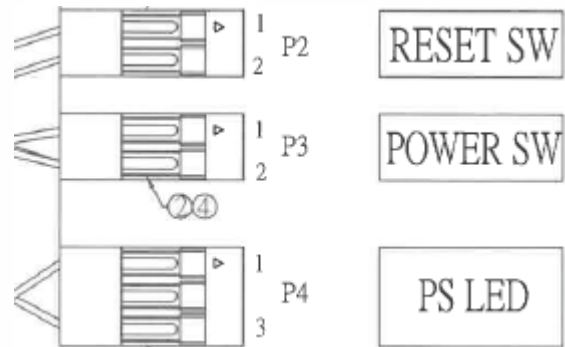
2.6.2 Connecting LED, Front Control Panel and Front USB

Refer to your motherboard's User Guide for pin functions and locations, then plug the connectors to the pins on the motherboard to activate the functions.

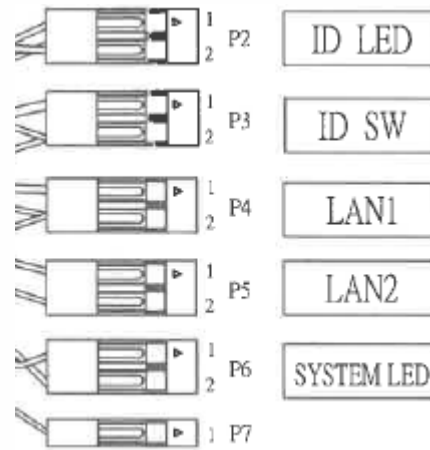
USB3.0 (M/B end)



LED Connector



Connector Name	Abbreviation	Color	Front IO Indication
Reset Switch	RESET SW	Brown/Black	System Reset Button
Power Switch (2 pin)	POWER SW	Orange/Black	Power ON/OFF Button with LED
Power Switch LED (3 pin)	PS LED	Red/Black	Power ON/OFF Button with LED



Connector Name	Abbreviation	Color	Front IO Indication
ID LED	ID LED	Green/Black	Chassis ID Button with LED
ID Switch	ID SW	Blue/Black	Chassis ID Button with LED
LAN1 LED	LAN1	Grey/Black	LAN LED
LAN2 LED	LAN2	Red/Black	LAN LED
SYSTEM LED	SYSTEM LED	Yellow/Orange	System Fail LED



2.7 Rail Installation

The IW-RS448-05 server is a high density 4U rackmount storage model, which supports EIA-RS310D standard cabinets and chassis racks. InWin provides standard fixed rail blades for mounting the RS448-05 server chassis to cabinets.

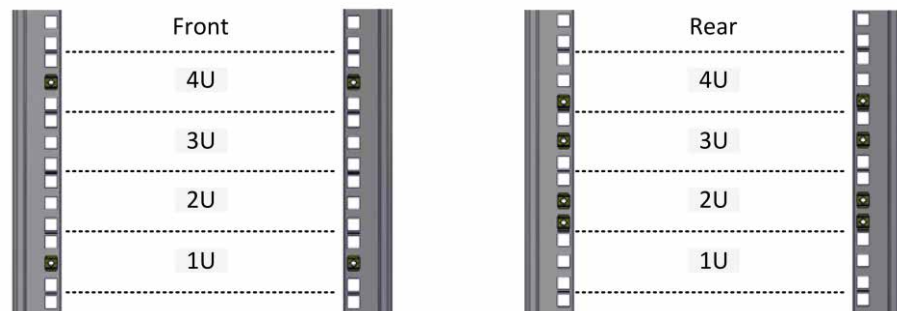
2.7.1 The Type of Rail Kit

Please follow the instructions to install the rails on the cabinet or chassis rack according to the rail type you ordered.

2.7.2 Fixed Rail Blades

2.7.2.1 Installing the Fixed Rail blades to the Rack

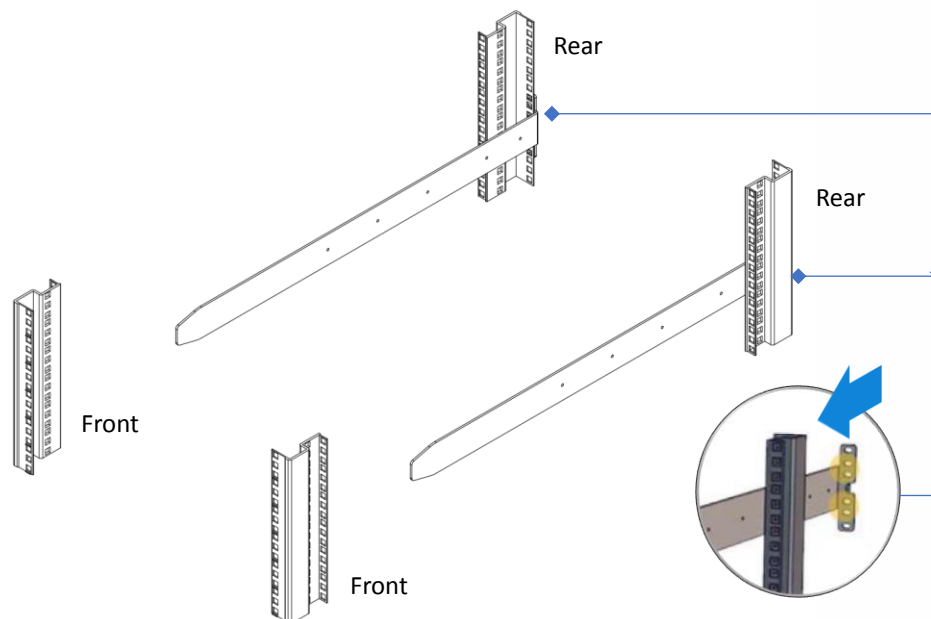
Step 1: Prepare the rack posts with square cage nuts (yellow squares).



Step 2: Adjust the fixed rail blades to match the rack depth. Secure with M4x6L screws (yellow circles).

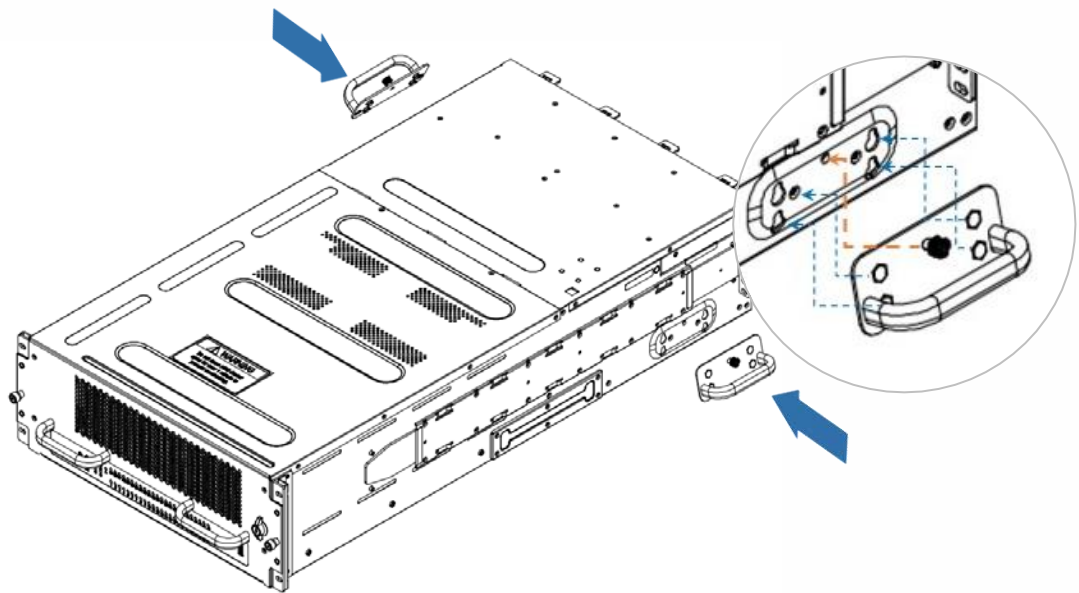
Attach the fixed rail blades to the rack and align the blades with the post holes on the rack. Secure with M5x10L screws.

Install the Fixed Rail Blades to the Rack



2.7.2.2 Mount the Enclosure to the Rack

Step 1: Place the removable handles into the slots (as shown in the image below) and slide upward. Secure the handles by tightening the thumbscrews clockwise.



Note: Heavy! Handle with Care!

Use and secure the removable handles while transporting.

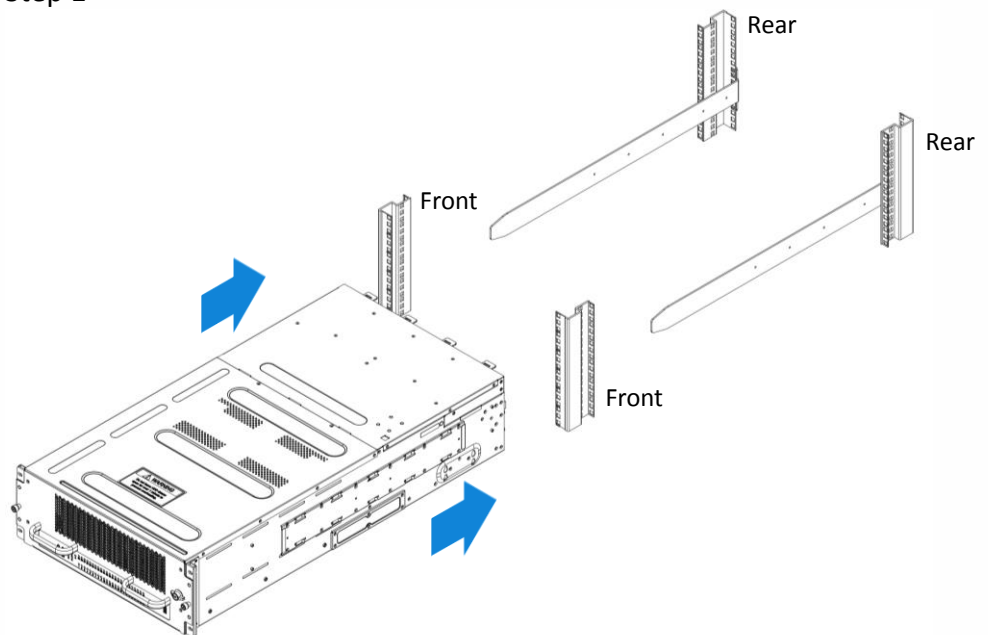
At least two people are required for the following operation:

Step 2: Place the enclosure into the rack carefully.

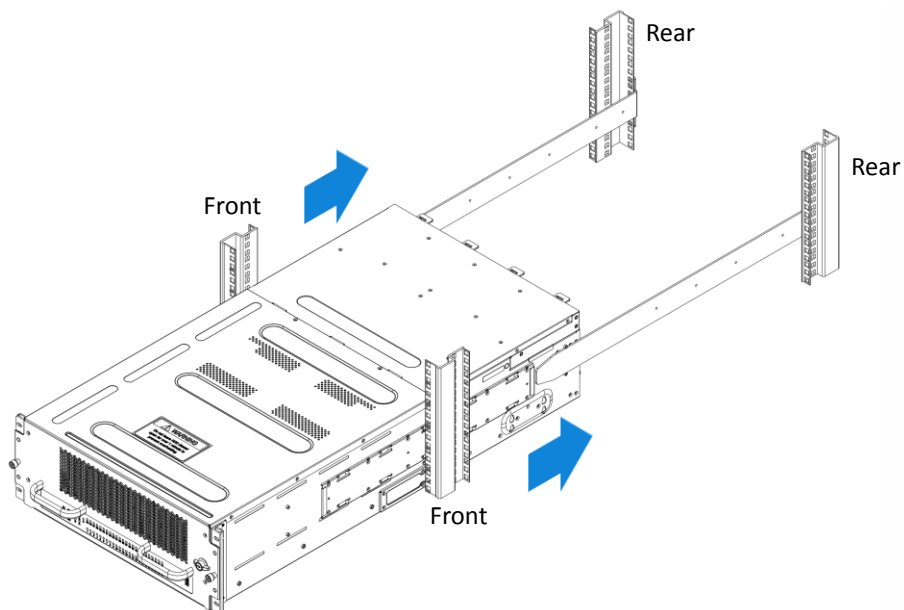
Align the fixed rail blade to the rail sleeve and push the chassis towards the rear of the cabinet.

Step 3: Tighten the mounting blades (circled in red) at the front of the rack with four screws.

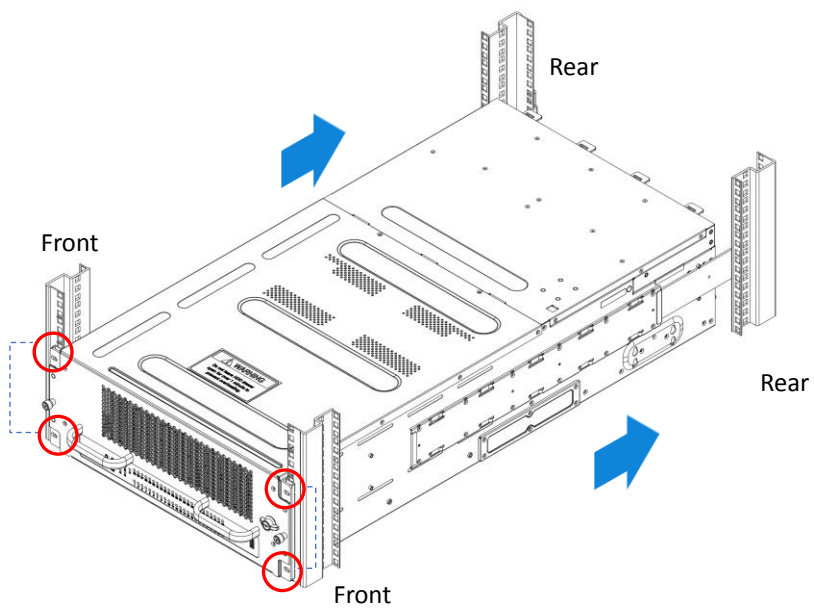
Step 1



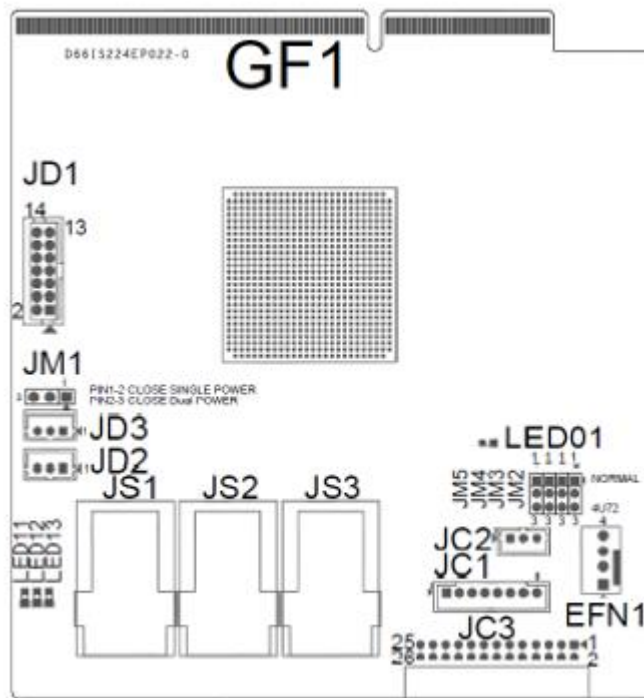
Step 2



Step 3



4 SAS Expander Board Introduction



Location	Description
JD1	Programming (Factory Only)
JD2	Console Debug Mode
JD3	Console Smart Mode
JC1	MB FAN Control
JC2	PMBUS
JC3	Front Panel Signal Connector
EFN1	Expander FAN Connector
LED11/12/13	(LED11-13) JS1-JS3 PHY LED
LED01	SAS Expander Heartbeat LED
JS1-JS3	JS1-JS2: Internal MINI SAS HD Uplink JS3: Internal MINI SAS HD Downlink
JM1	Power Mode Select

4.1 Key Features

- Reliable High Data Rate Support (up to 12Gbps)
 - SAS 12Gbps support and SATA3 6Gbps support to provide a reliable high-performance data rate.

- Hot-Swappable HDDs
 - Hot-swap your HDDs. No need to shut down your system for HDD installation and/or replacement when an HDD failure is present or while adding a new HDD to the system.
- Cascading
 - There is a cascading port on the Expander for cascading to another Expander for expanding disk space.

InWin High Density 4U Storage Server system shares the same InWin RSxxx-03 (04) Enclosure Management User Interface. Please use the following image of RS-212-03p as an example. The actual product's model will appear when the program is executed.

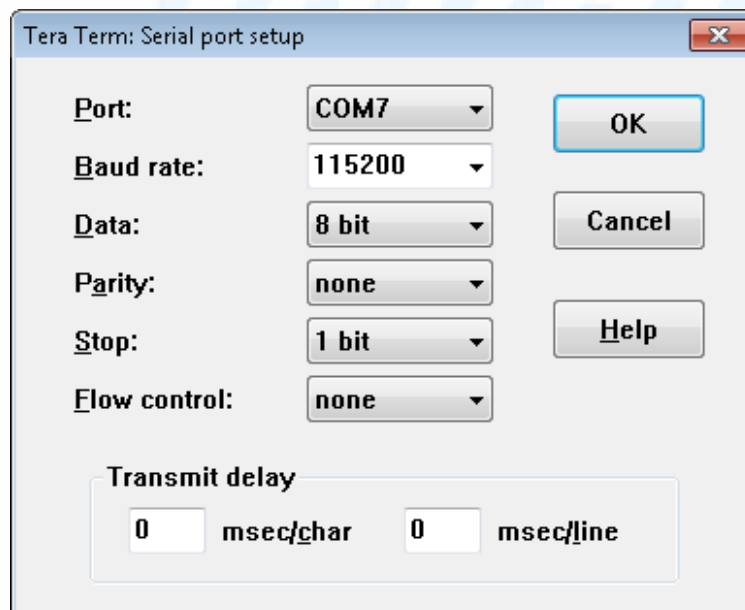
4.2 UART Usage

4.2.1 UART configuration

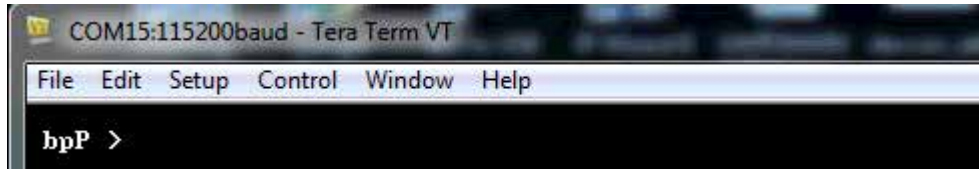
RS-232 UART port on the expander module provides a serial connection for users to manage Terminal applications such as: Tera Term, Hyper Term...etc.

To manage Expander through the UART port, the settings below must be properly configured to enable its function.

Baud Rate : 115200
 Data : 8 bit
 Parity : None
 Stop Bit : 1 bit
 Flow Control : None

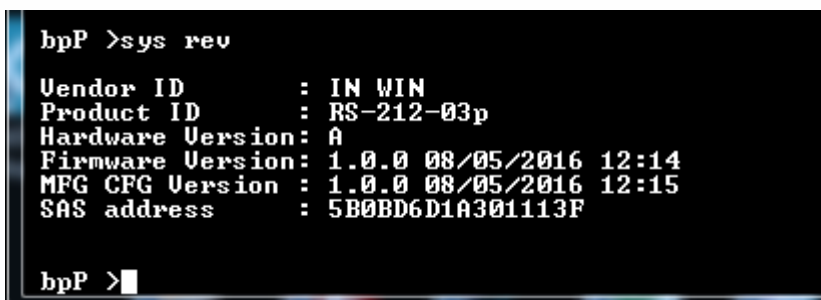
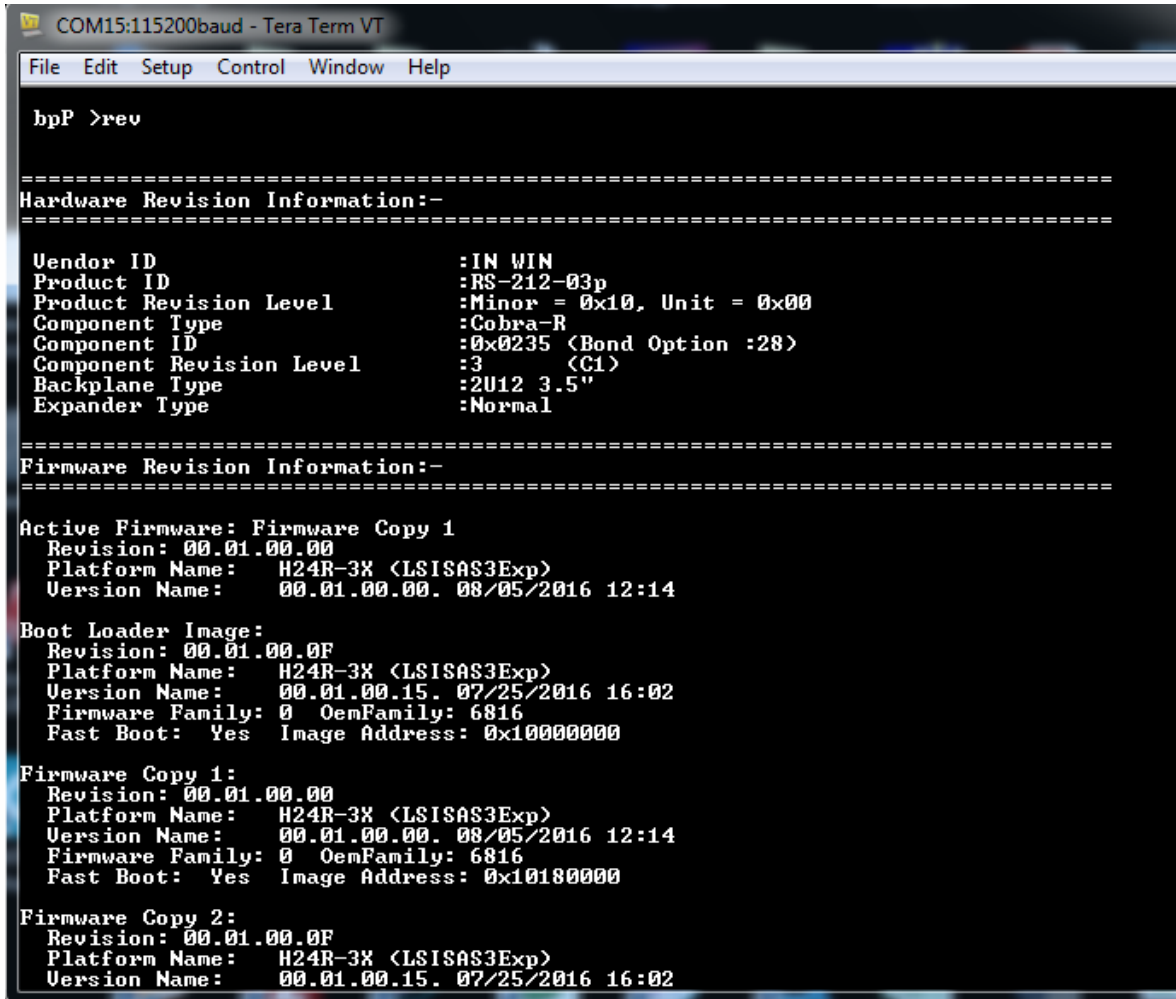


When connected, there is a display prompt on the Terminal interface screen, then users can start typing CLI commands.



4.2.2 System Revision

To check the Expander revision, type “rev” and “sys rev” to get the expander information such as Vendor ID, Firmware Version, SAS Address, ...etc.



4.2.3 System Monitoring

To monitor the status of the enclosure's sensors, such as Temperature and DC power amplitude, type command "sys" in the UART.

```
COM15:115200baud - Tera Term VT
File Edit Setup Control Window Help

bpP >sys

Platform : H24R-3X
EDFB state : enable

<< Manual Configuration >>
System Config : default
Product Identity : default

<< Alarm Status>>
Fan alarm : 0x0
Temp alarm : 0x0
Voltage alarm : 0x0
PSU alarm : 0x0

<< Thermal Profile Table >>
Threshold Level Quiet Trig-Speed Regular Trig-Speed Aggressive Trig-Speed Hysterical Trig-Speed
00 14(C) - 0 *14(C) - 1 14(C) - 3 14(C) - 6
01 18(C) - 1 *18(C) - 1 18(C) - 4 18(C) - 6
02 24(C) - 1 *24(C) - 2 24(C) - 5 24(C) - 6
03 32(C) - 2 *32(C) - 3 32(C) - 6 32(C) - 7
04 36(C) - 4 *36(C) - 4 36(C) - 7 36(C) - 7
05 42(C) - 5 *42(C) - 5 42(C) - 7 42(C) - 7
06 52(C) - 6 *52(C) - 6 52(C) - 7 52(C) - 7
07 60(C) - 7 *60(C) - 7 60(C) - 7 60(C) - 7
PWM Ctrl : disable

<< Enclosure Monitor >>
Temperature
< 1> Exp Die : 47 dC status : OK
< 2> Sense BP1 : 24 dC status : OK
< 3> Sense BP2 : 24 dC status : OK
Voltage
< 1> 5V Sensor : 5.06 V status : OK
< 2> 12V Sensor : 12.12 V status : OK

bpP >
```

```
bpP >sys alarm

Temperature 3 0x0
< 1> Exp Die : 47 dC status : OK
< 2> Sense BP1 : 25 dC status : OK
< 3> Sense BP2 : 24 dC status : OK
Voltage 2 0x0
< 1> 5V Sensor : 5.05 V status : OK
< 2> 12V Sensor : 12.12 V status : OK
```

4.2.4 Disk PHY Status

To monitor the SAS PHY status, type “Phyinfo” or “sys hdd” to check. Users can check the disk link status by using these commands.

```
COM15:115200baud - Tera Term VT
File Edit Setup Control Window Help

bpP >phyinfo

SSSSSSS
SIMSTMA
PPPPPTT
IIITTTA
ATTACHED SAS ADDR ROUTE ZONE ZONE Bay CONN CONN CONN MAP EE
PHY DEU PHY PHY SIMSTMA PPPTT ATTACHED SAS ADDR TYPE GRP BUS No. TYPE INDX PHY PHY ID DR
ID TYPE NLR CNT IITTTA ATTACHED SAS ADDR TYPE GRP BUS No. TYPE INDX PHY PHY ID FR BL

00 0x0 0x01 ----- T 0x01 0x04 ----- 0x00 ----- 0x00 016 --
01 0x0 0x01 ----- T 0x01 0x04 ----- 0x00 ----- 0x00 017 --
02 0x0 0x01 ----- T 0x01 0x04 ----- 0x00 ----- 0x00 018 --
03 0x0 0x01 ----- T 0x01 0x04 ----- 0x00 ----- 0x00 019 --
04 0x0 0x01 ----- T 0x01 0x04 ----- 0x00 ----- 0x00 020 --
05 0x0 0x01 ----- T 0x01 0x04 ----- 0x00 ----- 0x00 021 --
06 0x0 0x01 ----- T 0x01 0x04 ----- 0x00 ----- 0x00 022 --
07 0x0 0x01 ----- T 0x01 0x04 ----- 0x00 ----- 0x00 023 --
08 0x0 0x01 ----- T 0x01 0x04 ----- 0x00 ----- 0x00 024 --
09 0x0 0x01 ----- T 0x01 0x04 ----- 0x00 ----- 0x00 025 --
10 0x0 0x01 ----- T 0x01 0x04 ----- 0x00 ----- 0x00 026 --
11 0x0 0x01 ----- T 0x01 0x04 ----- 0x00 ----- 0x00 027 --
12 END 12G 0x03 -----1 5B0BD6D1_A3011100 D 0x01 0x04 00 0x20 00 0x00 000 11
13 END 12G 0x03 -----1 5B0BD6D1_A3011101 D 0x01 0x04 01 0x20 01 0x00 001 11
14 END 12G 0x03 -----1 5B0BD6D1_A3011102 D 0x01 0x04 02 0x20 02 0x00 002 11
15 END 12G 0x03 -----1 5B0BD6D1_A3011103 D 0x01 0x04 03 0x20 03 0x00 003 11
16 0x0 0x01 ----- D 0x01 0x04 04 0x20 04 0x00 004 11
17 0x0 0x01 ----- D 0x01 0x04 05 0x20 05 0x00 005 11
18 0x0 0x01 ----- D 0x01 0x04 06 0x20 06 0x00 006 11
19 0x0 0x01 ----- D 0x01 0x04 07 0x20 07 0x00 007 11
20 0x0 0x01 ----- D 0x01 0x04 08 0x20 08 0x00 008 11
21 0x0 0x01 ----- D 0x01 0x04 09 0x20 09 0x00 009 11
22 0x0 0x01 ----- D 0x01 0x04 10 0x20 10 0x00 010 11
23 0x0 0x01 ----- D 0x01 0x04 11 0x20 11 0x00 011 11
24 0x1 0x01 ----- D 0x01 0x04 ----- 0x00 ----- 0x00 012 --
25 0x1 0x01 ----- D 0x01 0x04 ----- 0x00 ----- 0x00 013 --
26 0x1 0x01 ----- D 0x01 0x04 ----- 0x00 ----- 0x00 014 --
27 0x1 0x01 ----- D 0x01 0x04 ----- 0x00 ----- 0x00 015 --
SXP0 END 12G 0x01 --11-- 5B0BD6D1_A301113D D 0x01 0x04 ----- 0x2F 12 0x00 028
SXP1 END 12G 0x01 1----1- 5B0BD6D1_A301113F D 0x01 0x04 ----- 0x00 ----- 0x00 029
SXP2 0x0 0x00 ----- D 0x01 0x04 ----- 0x00 ----- 0x00 030

Expander Change Count: 0027
Zone Configuring: 0
Self Configuring: 0
Configuring: 0
```

```
bpP >sys hdd

Phy SAS Address Link Speed Device Type Status
1 12 5B0BD6D1_A3011100 6G END OK
2 13 5B0BD6D1_A3011101 6G END OK
3 14 5B0BD6D1_A3011102 6G END OK
4 15 5B0BD6D1_A3011103 6G END OK
5 16 0x0 Not Installed
6 17 0x0 Not Installed
7 18 0x0 Not Installed
8 19 0x0 Not Installed
9 20 0x0 Not Installed
10 21 0x0 Not Installed
11 22 0x0 Not Installed
12 23 0x0 Not Installed

bpP >
```

4.2.5 Firmware Update

In some occasions, when required, users can update the expander's firmware through the UART port via Xmodem protocol.

* A power interruption or failure during firmware upgrade will cause damage to the device or unrecoverable data errors.

There are 2 firmware files for the Expander. Be sure these binary files are available in the host before conducting firmware updates.

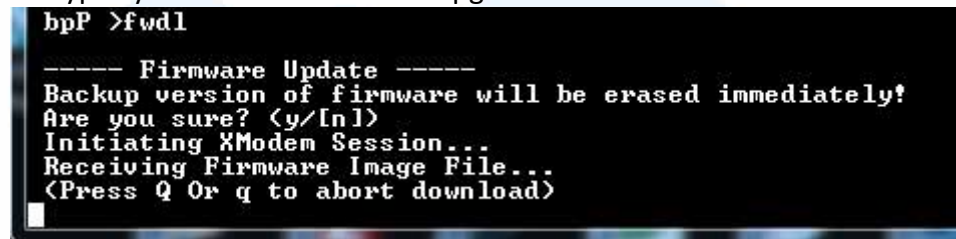
1. SAS Expander Operation Firmware
2. SAS Expander MFG CFG binary

The updated firmware does not take effect until a reset (either system reboot or reset expander via CLI command – “reset”).

4.2.5.1 SAS Expander Operation Firmware Update

A. “fwdl” command on terminal

B. Type “y” to commit firmware upgrade.

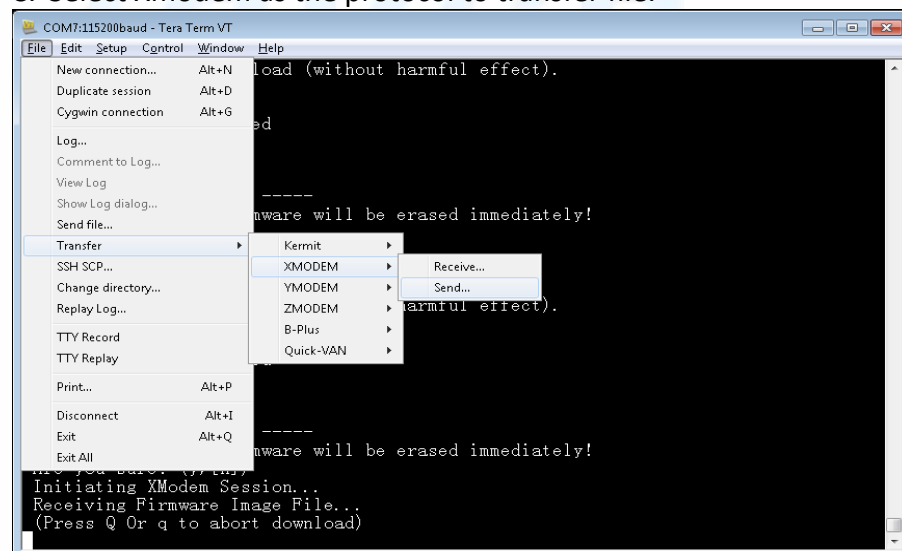


```

bpP >fwdl

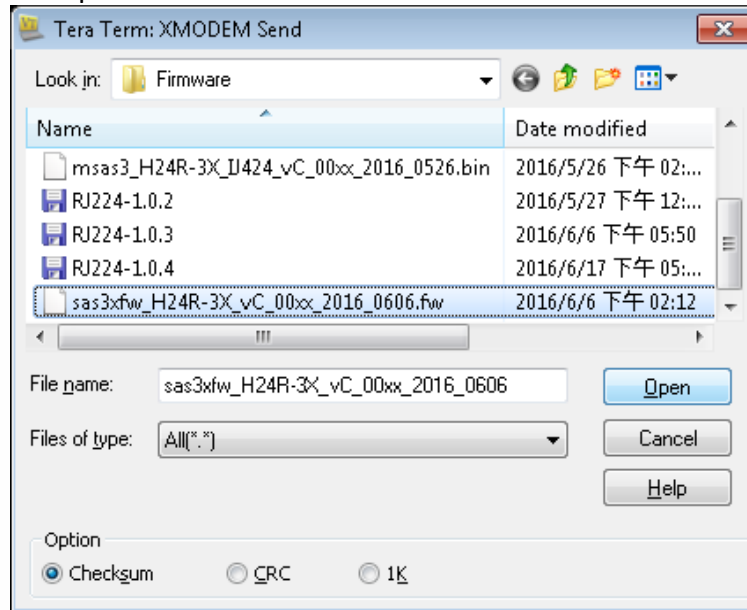
----- Firmware Update -----
Backup version of firmware will be erased immediately!
Are you sure? (y/[n])
Initiating XModem Session...
Receiving Firmware Image File...
(Press Q Or q to abort download)
  
```

C. Select Xmodem as the protocol to transfer file.

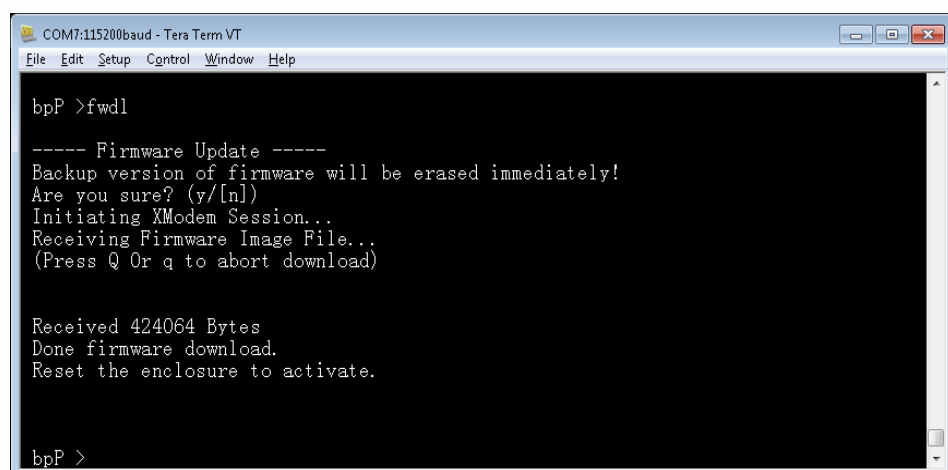
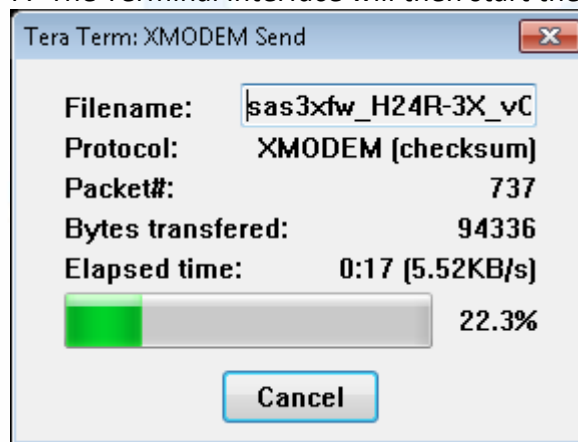


D. Select the correct SAS Expander firmware file.

- E. Click on “Open” to start the selected firmware transfer to the SAS Expander.



- F. The Terminal interface will then start the firmware transfer.



- G. After the firmware transfer is completed, type the ‘reset’ command in the Terminal interface screen or power cycle the system to activate the new firmware.

4.2.5.2 SAS Expander MFG CFG Binary Update

A. Similar to operation firmware upgrade, type “mfgdl” on console.

```
bpP >mfgdl

To update MFG configurations (with 'MFG image')...
Are you sure? (y/[n])
Initiating XModem Session...
Receiving Configuration Image File...
(Press Q Or q to abort download)
```

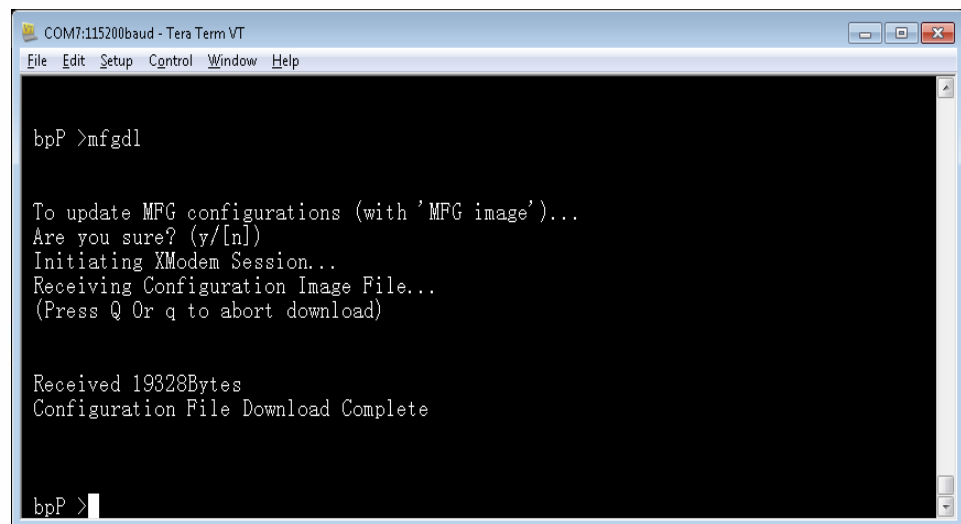
B. Type “y” to commit MFG file upgrade.

C. Select Xmodem as the file transfer protocol.

D. Select the correct MFG, CFG file from the file browser.

E. Click “Open” to start file transfer.

F. The Terminal interface should then start the file transfer.



```
COM7:115200baud - Tera Term VT
File Edit Setup Control Window Help

bpP >mfgdl

To update MFG configurations (with 'MFG image')...
Are you sure? (y/[n])
Initiating XModem Session...
Receiving Configuration Image File...
(Press Q Or q to abort download)

Received 19328Bytes
Configuration File Download Complete

bpP >
```

G. After the firmware transfer is completed, type ‘reset’ command in the Terminal interface screen or power cycle the system to activate the new firmware.

5 Compatibility Lists

To reach the best performance and avoid system failure, InWin strongly recommends users to choose the components from InWin’s compatibility list. All the components are tested in InWin’s lab and assured the components are complementary with InWin’s chassis.

You can download the latest updated device compatibility list from InWin’s website:

<https://www.in-win.com/en/ipc-server>

6 Technical Support

If you need help with installation or troubleshooting, you can contact your local InWin partner or send an e-mail to an InWin Branch nearest to your region for technical assistance.