PCIe Gen5 8Bay Passive JBOF

User's Manual

REV: 1.0

Jan. 2023

Packing List

1. Gen5 8bays JBOF enclosure x1

2. Power cord clip of PSU

3. Power cord

4. screws and cooper pillar

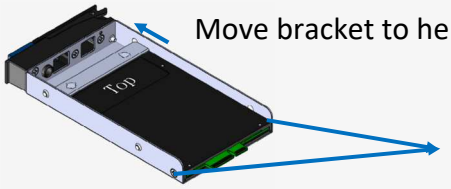
(For M.2 SSDs)

5. screws for interposer cards,

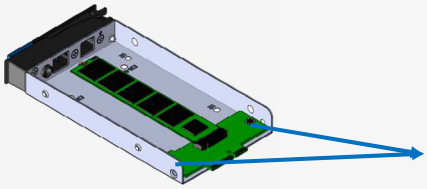
U2/U3/E3 SSDs.

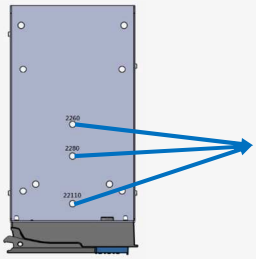
SSDs Installation

E3 SSDs

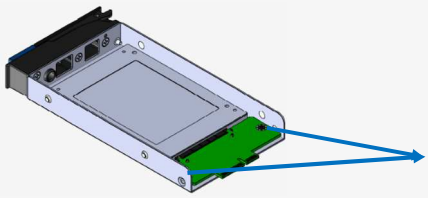


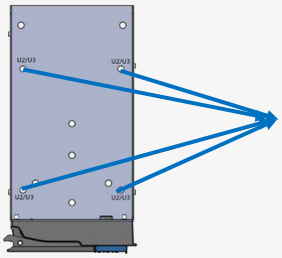
M.2 SSDs





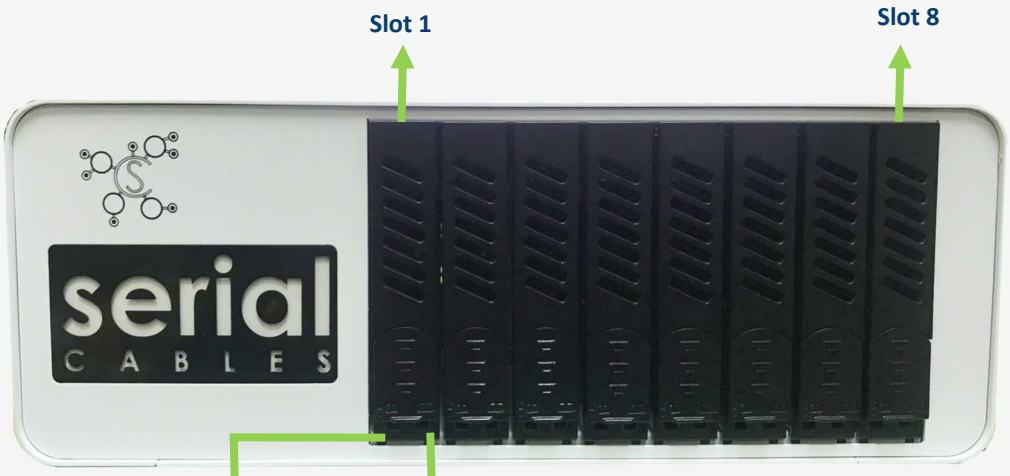
U.2/U.3 SSDs



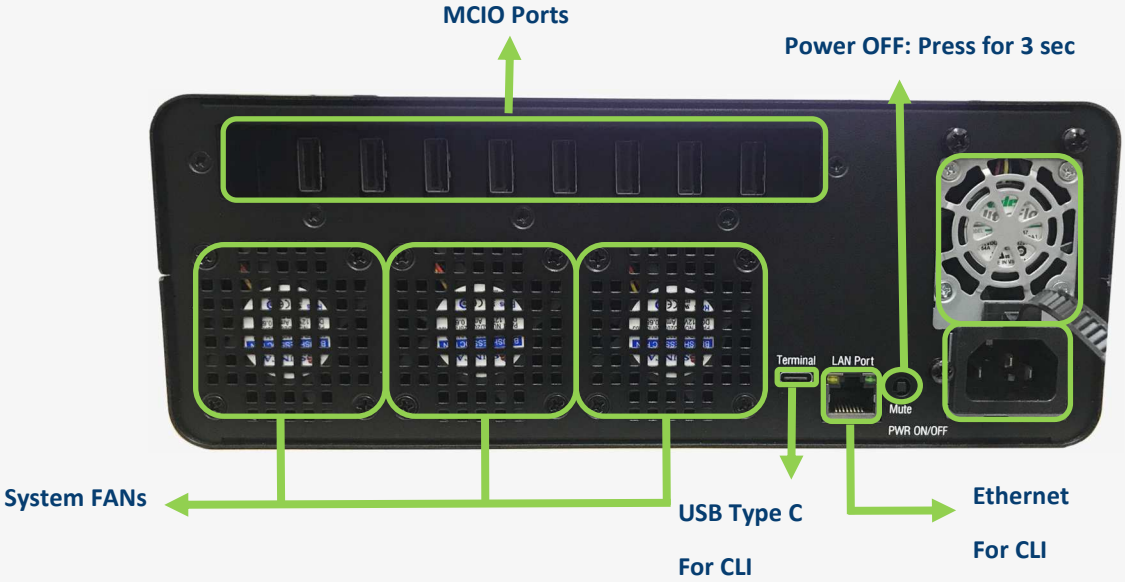


System Overview

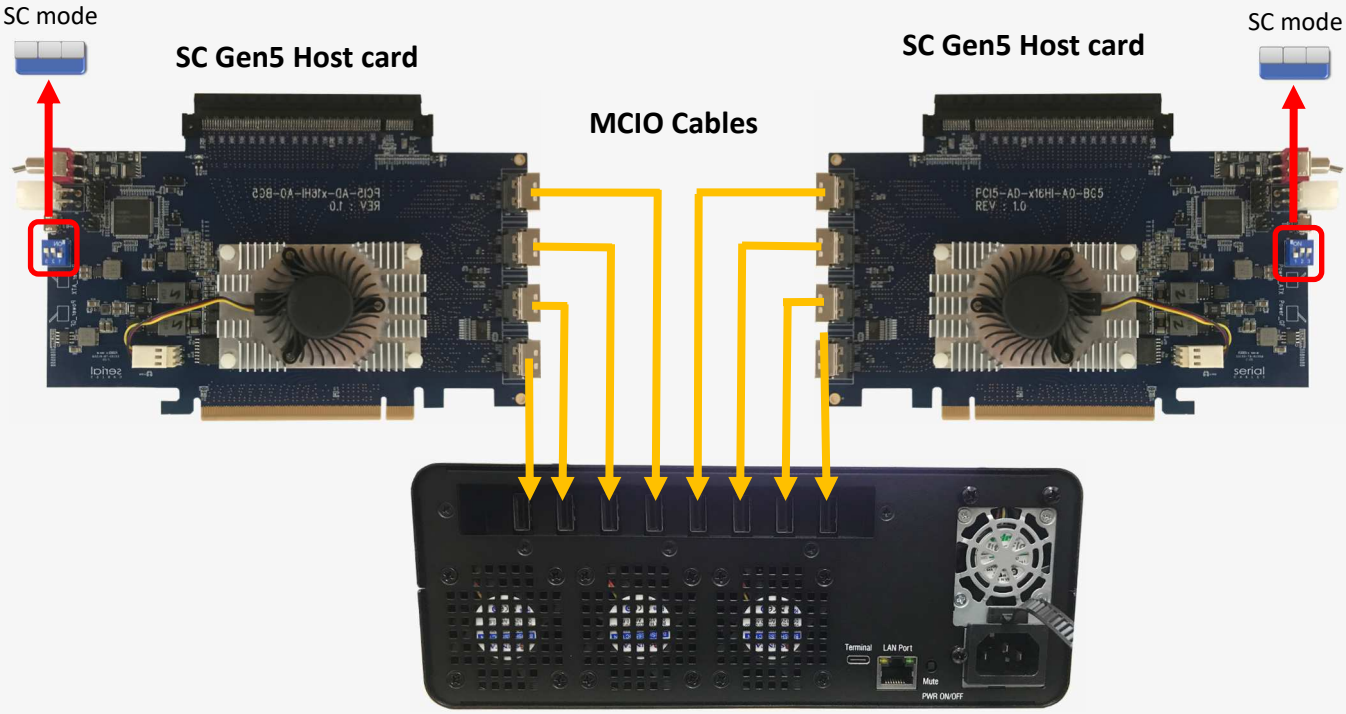
Front Panel



Rear I/O



Connecting to Atlas2 MCIO based host cards

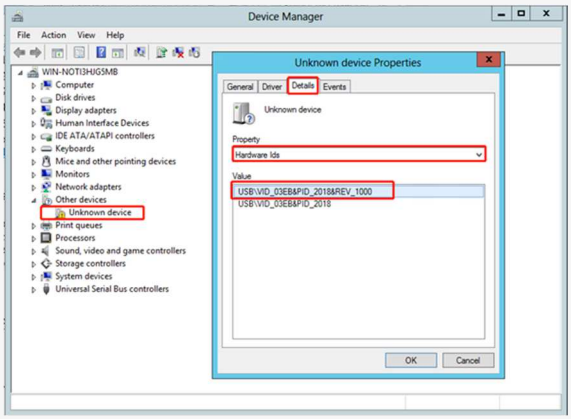


Install USB Driver

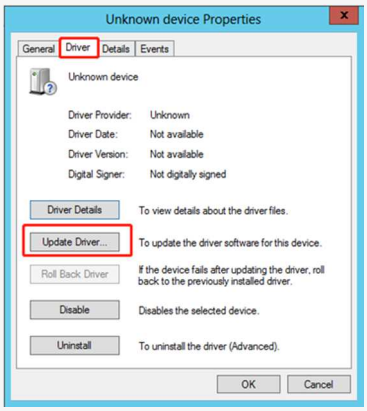
Download and install the CDC driver for unidentified device (VID_03EB&PID_2018)

Available at:

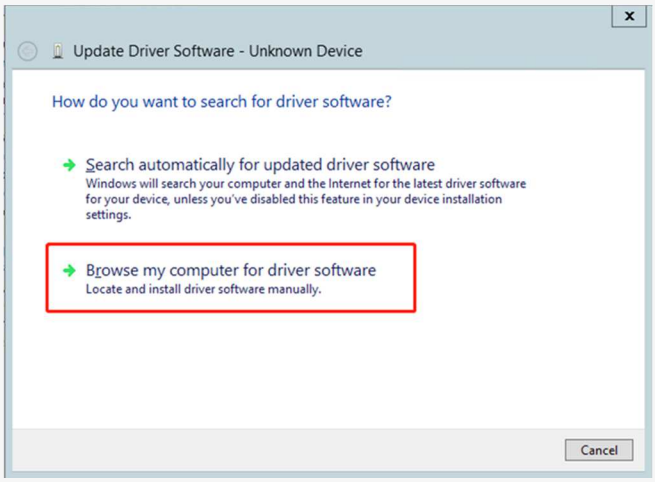
https://www.serialcables.com/wp-content/uploads/2018/11/SynergyUSBCDC_20180518.rar



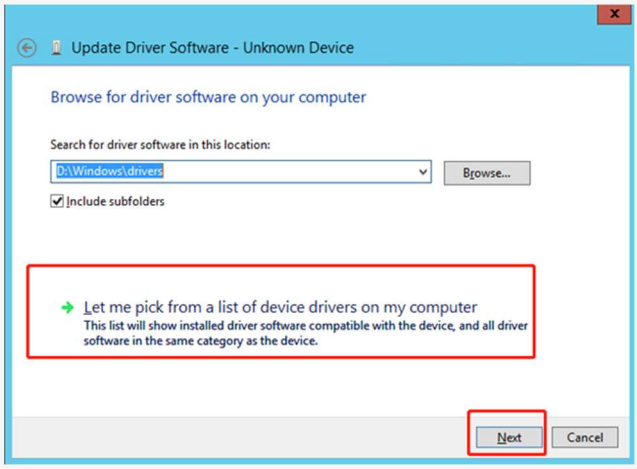
[Figure 1]



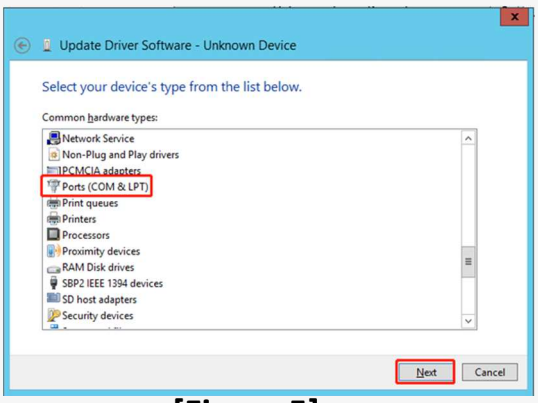
[Figure 2]



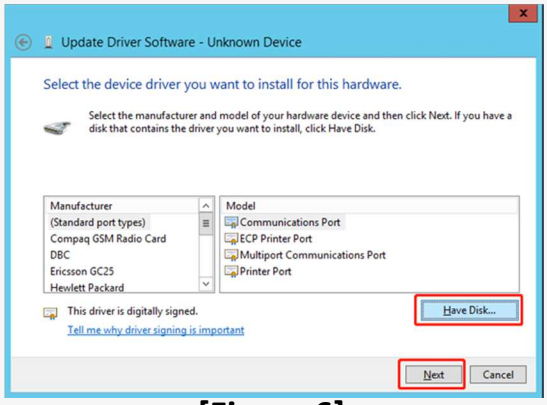
[Figure 3]



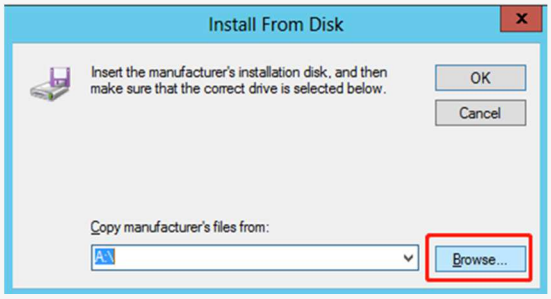
[Figure 4]



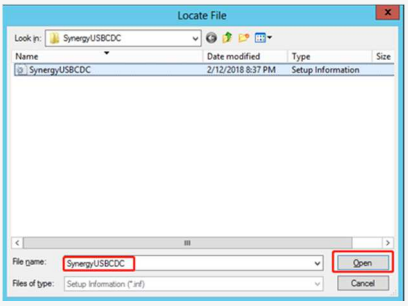
[Figure 5]



[Figure 6]

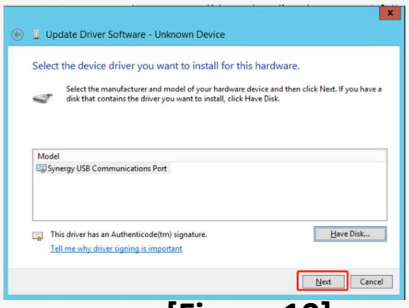


[Figure 7]

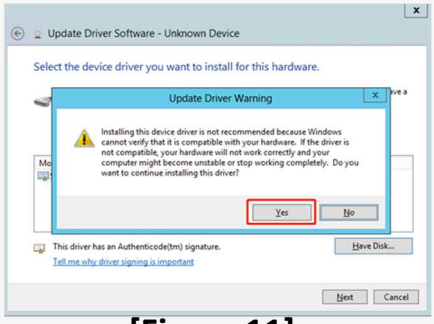


[Figure 8]

[Figure 9]

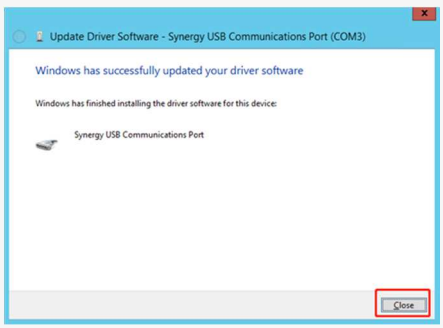


[Figure 10]

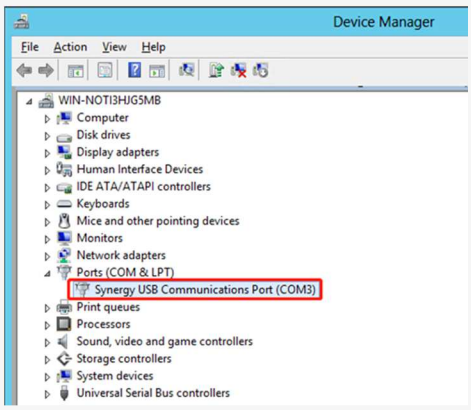


[Figure 11]

[Figure 12]



[Figure 13]



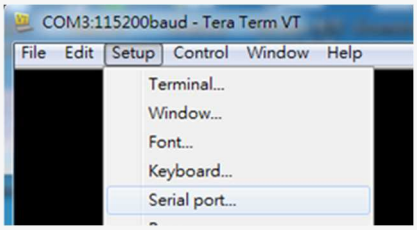
[Figure 14]

CLI Setup

Step 1. Install and launch Tera Term application

(or Hyper Terminal requires version 3.0 or higher).

Step 2: To ensure proper communications between host adapter card and the VT100 Terminal emulation, please configure the VT100 Terminal emulation settings to the values shown below:



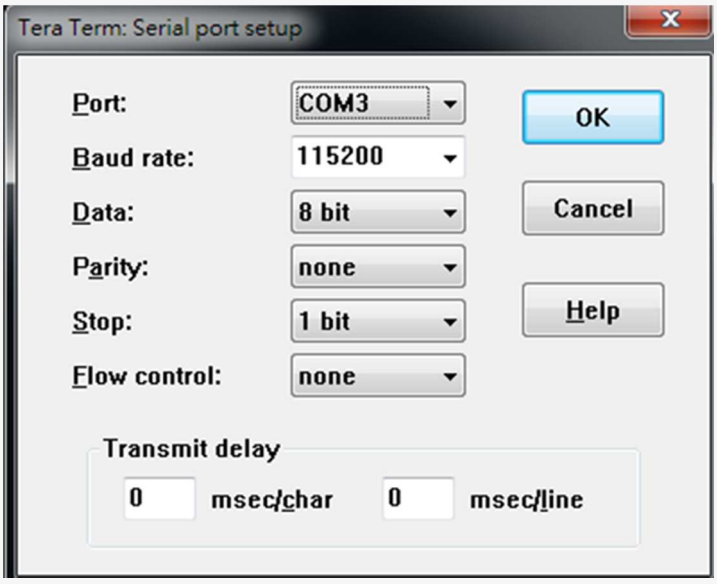
Step 3:

For “Port”, select COM3 in this example. (Depend on which COM port used on Host)

For “Baud rate”, select 115200.

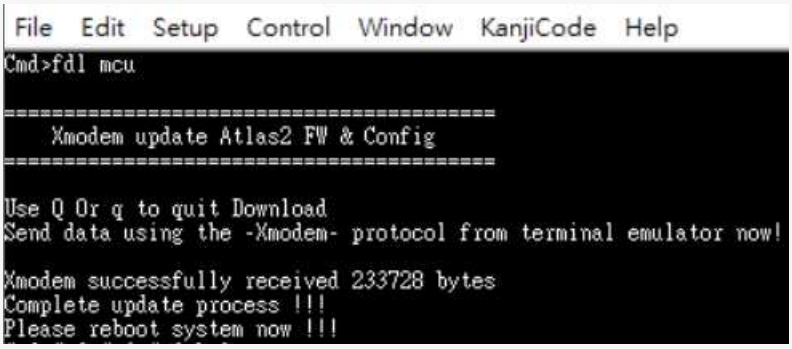
For “Data”, select 8 bit. For “Parity”, select none.

For “Stop”, select 1 bit. For “Flow control”, select: none.



MCU FW Upgrading (Option 1)

Step 1. Type “fdl mcu” in CLI commands



Step 2: Sending updated FW(i.e PCIe_Gen5_Passive_JBOF_FW_v002) via XMODEM.

It will take few seconds to complete update process.

Step 3. Power cycle host card to apply the new FW.

MCU FW Upgrading (Option 2)

Step 1. Connect the USB port of JBOF to PC or laptop

Step 2. Press the mute button in the rear of JBOF then power on.

Step 3.

a.) it will show an added USB device in PC or laptop.

b.) Put upgrading FW(i.e PCIe_Gen5_Passive_JBOF_FW_v002_SSP_V2_2_0.srec) into the folder of FW.

c.) Put update.txt in the root folder.

Step 4. Power cycle JBOF to apply the new FW.

MCU Commands List

Commands	Description
help	Show list of commands
syspwr	NVMe JBOF enclosure power ON/OFF control
eth	Ethernet IP configuration
dhcp	Ethernet DHCP function control
setmac	Set Ethernet MAC address
fdl	Update PCIe switch config/FW or MCU FW
lsd	Show environmental info, including temperatures, FANs, PSUs, voltages.
ssdpwr	Control the power of each EDSFF slot.
showslot	Show slot information
ssdrst	To reset SSDs which install in slots
setmode	Set enclosure mode
showmode	Show enclosure mode
dual	Set dual channel enable on/off
pwrdis	Set pwrdis in slot pin3 level to high/low
hled	EDSFF drives HLED control
buz	buzzer control
bist	On-board devices diagnostic
iicwr	I2C read/write
iicw	I2C write
ver	Show on-board mcu F/W information
sysinfo	Show system information
reset	Reset JBOF

syspwr Command

Gen5 8bays enclosure power on/off control.

This command allows users to remote power ON/OFF the NVMe JBOF enclosure from either switch controller board.

-Usage: syspwr [on|off]

```
Cmd>syspwr on
```

Power on the JBOF enclosure.

```
Cmd>syspwr off
```

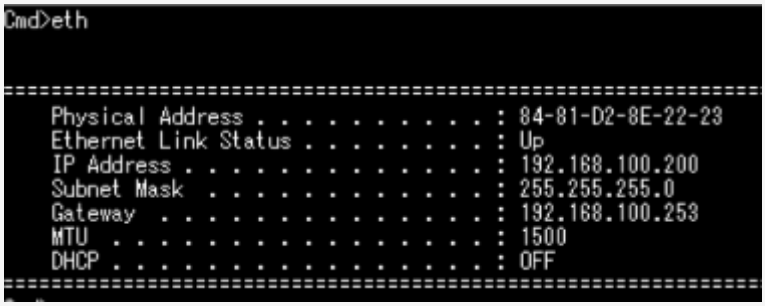
Power off the JBOF enclosure.

eth Command

Ethernet IP configuration.

Shows the Ethernet port configuration , etc. MAC address, IP address, link status, gateway, MTU, DHCP.

- Usage: eth <ipaddr(*)> <subnet(*)> <gateway(*)>

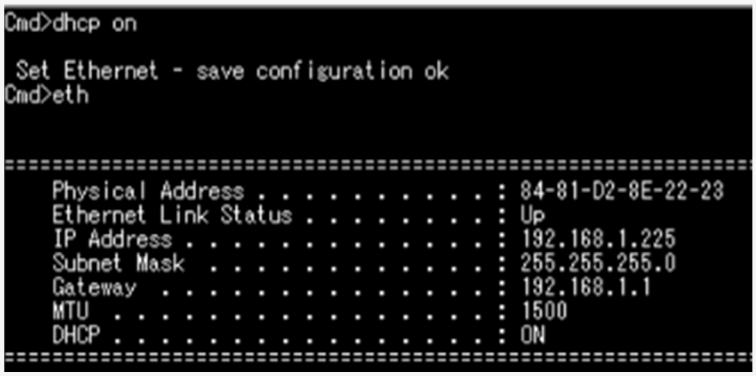


dhcp Command

Ethernet DHCP function control.

Enable or disable DHCP function support for Ethernet port.

- Usage: dhcp [on|off]



setmac Command

Setting the MAC address to the Ethernet.

To program any MAC address for testing purpose. The new MAC address will be applied after MCU reset or switch controller board power cycle.

-Usage: sage: setmac <xx:xx:xx:xx:xx:xx>

```
Cmd>setmac 00:11:22:33:44:55
 MacAddress[0]  0
 MacAddress[1] 11
 MacAddress[2] 22
 MacAddress[3] 33
 MacAddress[4] 44
 MacAddress[5] 55
 Set MAC - save configuration ok
```

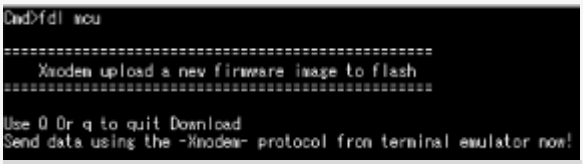
Set MAC address to 00:11:22:33:44:55

fdl Command

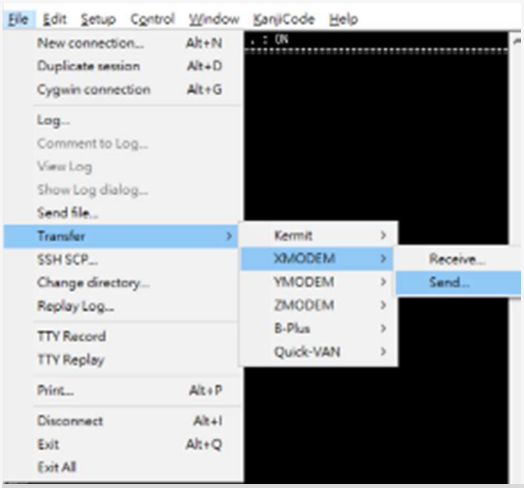
Xmodem download image.

For On-board MCU FW upgrading.

-Usage: fdl mcu



Update MCU FW.



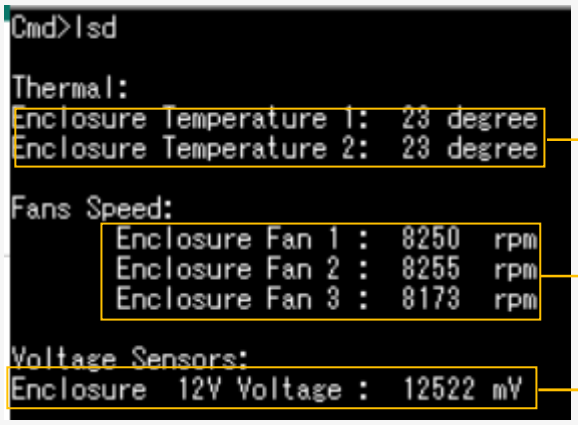
Sending the new FWs via XMODEM.

It will take few seconds for MCU FW updating.

lsd Command

Show environmental conditions information.

-Usage: lsd



□ Two temp sensors located in back plane board.

□ Three system FANs located in the rear of JBOF.

□ PSU 12V output monitoring

ssdpwr Command

Control the power of each EDSFF slot.

- Usage: ssdpwr [<slot(D|all)> <on|off>]
- slot(D) : slot number should be 1 ~ 8

```
Cmd>ssdpwr 1 off

Slot 01 turn off success.
```

Power off slot 1

```
Cmd>ssdpwr 1 on

Slot 01 turn on success.
```

Power on slot 1.

```
Cmd>ssdpwr all off

Slot 01 turn off success.

Slot 02 turn off success.

Slot 03 turn off success.

Slot 04 turn off success.

Slot 05 turn off success.

Slot 06 turn off success.

Slot 07 turn off success.

Slot 08 turn off success.
```

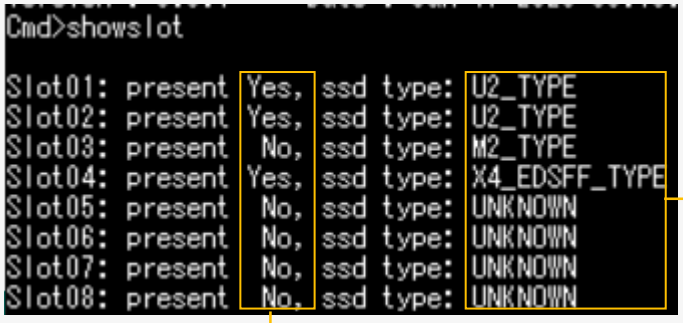
Power off for all slots.

showslot Command

Show slot information.

- Usage: ssdpwr [<slot(D|all)> <on|off>]

- slot(D) : slot number should be 1 ~ 8



SSDs present detection

SSD types support in interposer cards:

1. E3 to U2 INT card
2. E3 to U3 INT card
3. E3 to M2 INT card

EDSDD drive support:

1. E3.S
2. E3.L
3. E3.S.2T

setmode Command

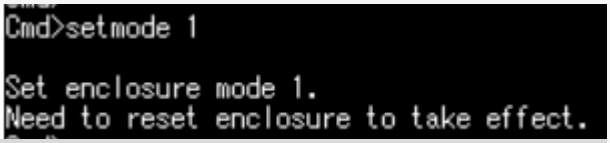
Set enclosure mode

- Usage: setmode <mode(D)>

- mode(D) : mode number should be 1 ~ 2

- mode1 : SC mode

- mode2 : Vendor mode

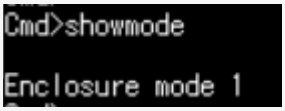


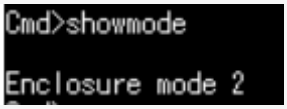
Set enclosure mode to mode 1.

showmode Command

Show enclosure mode

- Usage: showmode





dual Command

Set dual channel enable on/off in slots.

- Usage: dual [<slot(D)|all> <on/off>]

- slot(D) : slot number should be 1 ~ 8

- Ex : dual all on

- Ex : dual 1 on

pwrdis Command

Set pwrdis in slot pin3 level to high or low state.

- Usage: pwrdis [<slot(D)|all> <h/l>(C)]

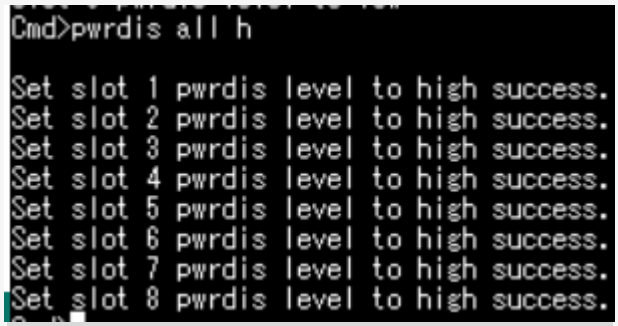
- slot(D) : slot number should be 1 ~ 8

- h(C) : disable SSD power

- l(C) : enable SSD power

- Ex : pwrdis all h

- Ex : pwrdis 1 h



Set PWRDIS to “H” state for all slots.

Set PWRDIS to “H” state in slot 1.

hled Command

Hled control

To control the host LED in EDSFF SSDs to be ON or OFF.

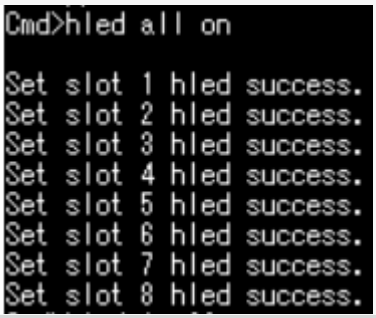
- Usage:hled <slot(D)|all> <on/off>

- slot(D) : slot number should be 1 ~ 8

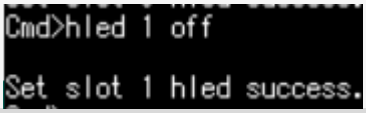
- Ex: hled 1 on

- Ex: hled 1 off

- Ex : pwrdis 1 h



Turn on the host LEDs in all of EDSFF drives attached in slot



Turn off the host LED in EDSFF drive attached in slot 1

buz Command

Buzzer control

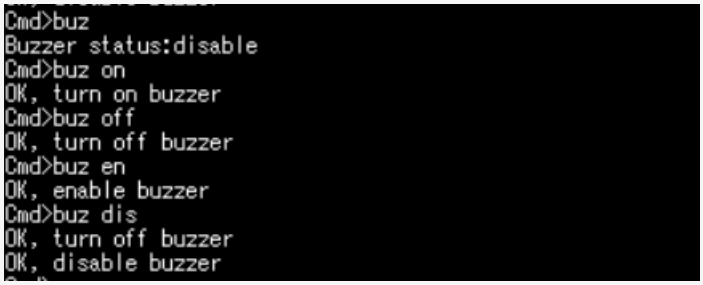
- Usage: buz <on|off|en|dis>

- [en]: enable the buzzer function

- [dis]: disable the buzzer function

- [on]: set buzzer to beep in one time

- [off]: mute buzzer beeping



bist Command

On-board devices diagnostic.

- Usage: bist

iicwr Command

I2C read/write.

- Usage: iicwr <Addr(H)> <Slot(D)> <ReadByte(D)> <WriteData(H)>

- Addr(H) : Device address

- Slot(D) : Slot should be 1 ~ 8

- ReadByte(D) : Max read byte is 128 byte

- WriteData(D) : Max write byte is 128 byte

- Ex : iicwr d4 1 8 0

Read 8 bytes data starts from register “0” from I2C slave address

“0xd4” in drive which install in slot 1

iicw Command

I2C write.

- Usage: iicw <Addr(H)> <Slot(D)> <WriteData(H)...>

- Addr(H) : Device address

- Slot(D) : Slot should be 1 ~ 8

- WriteData(D) : Max write byte is 128 byte

- Ex : iicw d4 1 ff

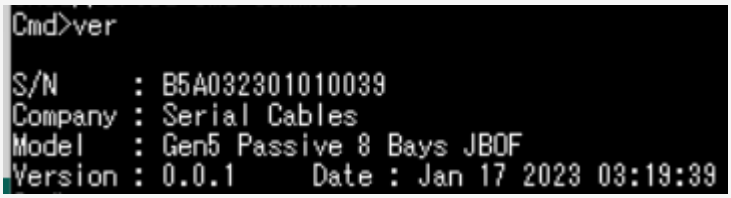
```
Cmd>iicw d4 1 ff

Write Data [0] = ff
```

Write data “0xff” to I2C slave address “0xd4” in drive which install in slot 1

ver Command

Show on-board MCU F/W information.

- Usage: ver



sysinfo Command

Show system information.

Sysinfo command is for JBOF enclosure diagnostic, it combines ver, lsd, ssdpwr, pwrdis, bist commands.

- Usage: sysinfo

```
Cmd>sysinfo

================================================================================
ver
================================================================================

S/N     : B5A032301010039
Company : Serial Cables
Model   : Gen5 Passive 8 Bays JBOF
Version : 0.0.1     Date : Jan 17 2023 03:19:39

================================================================================
lsd
================================================================================

Thermal:
Enclosure Temperature 1:  23 degree
Enclosure Temperature 2:  24 degree

Fans Speed:
       Enclosure Fan 1 :  0     rpm
       Enclosure Fan 2 :  0     rpm
       Enclosure Fan 3 :  0     rpm

Voltage Sensors:
Enclosure  12V Voltage :  0     mV


================================================================================
ssdpwr
================================================================================

Slot  1 power status: turn off
Slot  2 power status: turn off
Slot  3 power status: turn off
Slot  4 power status: turn off
Slot  5 power status: turn off
Slot  6 power status: turn off
Slot  7 power status: turn off
Slot  8 power status: turn off

================================================================================
pwrdis
================================================================================

Slot 1 pwrdis level to low
Slot 2 pwrdis level to low
Slot 3 pwrdis level to low
Slot 4 pwrdis level to low
Slot 5 pwrdis level to low
Slot 6 pwrdis level to low
Slot 7 pwrdis level to low
Slot 8 pwrdis level to low

================================================================================
bist
================================================================================


Devices Diagnostic ....
Channel_0 device address:0x4a ok.
Channel_0 device address:0x44 ok.
Channel_0 device address:0x46 ok.
Channel_0 device address:0x48 ok.
Channel_1 device address:0xe0 ok.
```