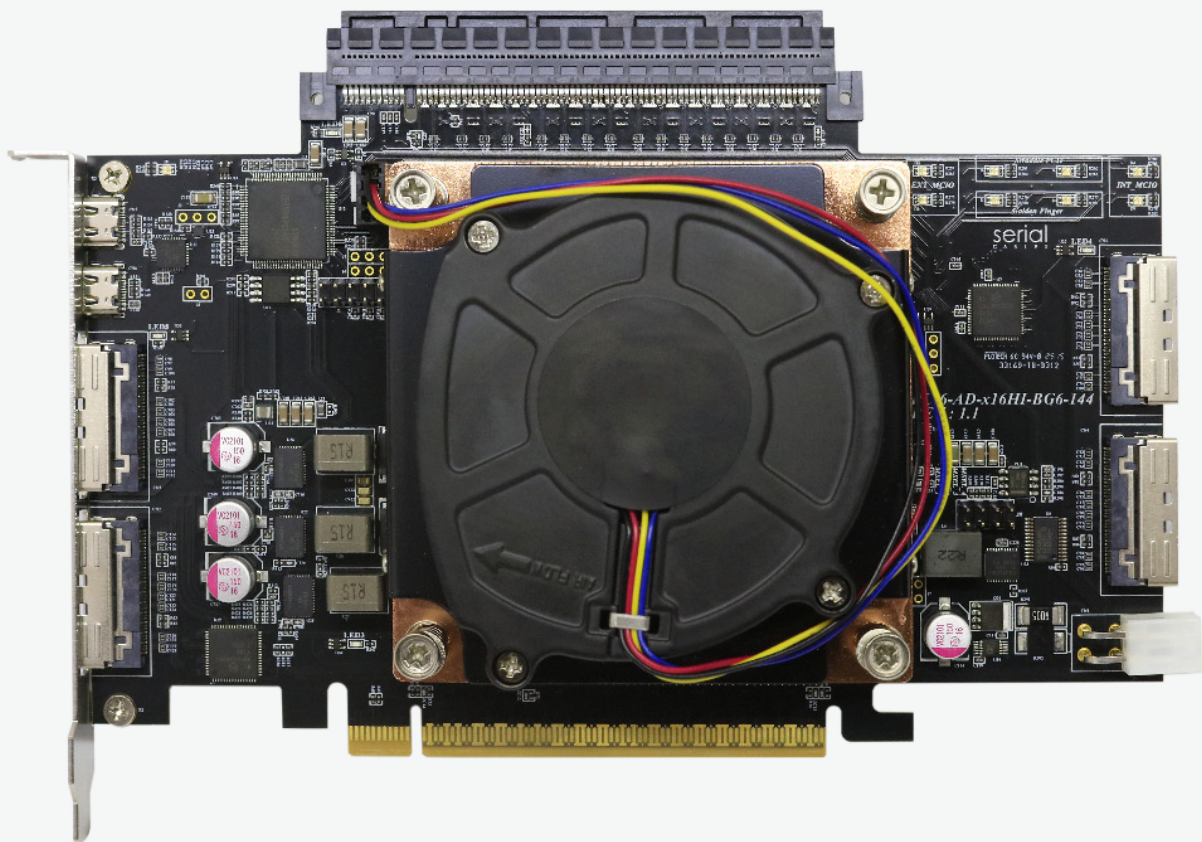




serial
CABLES

Atlas3 Host Adapter Card



User's Manual

REV : 0.82

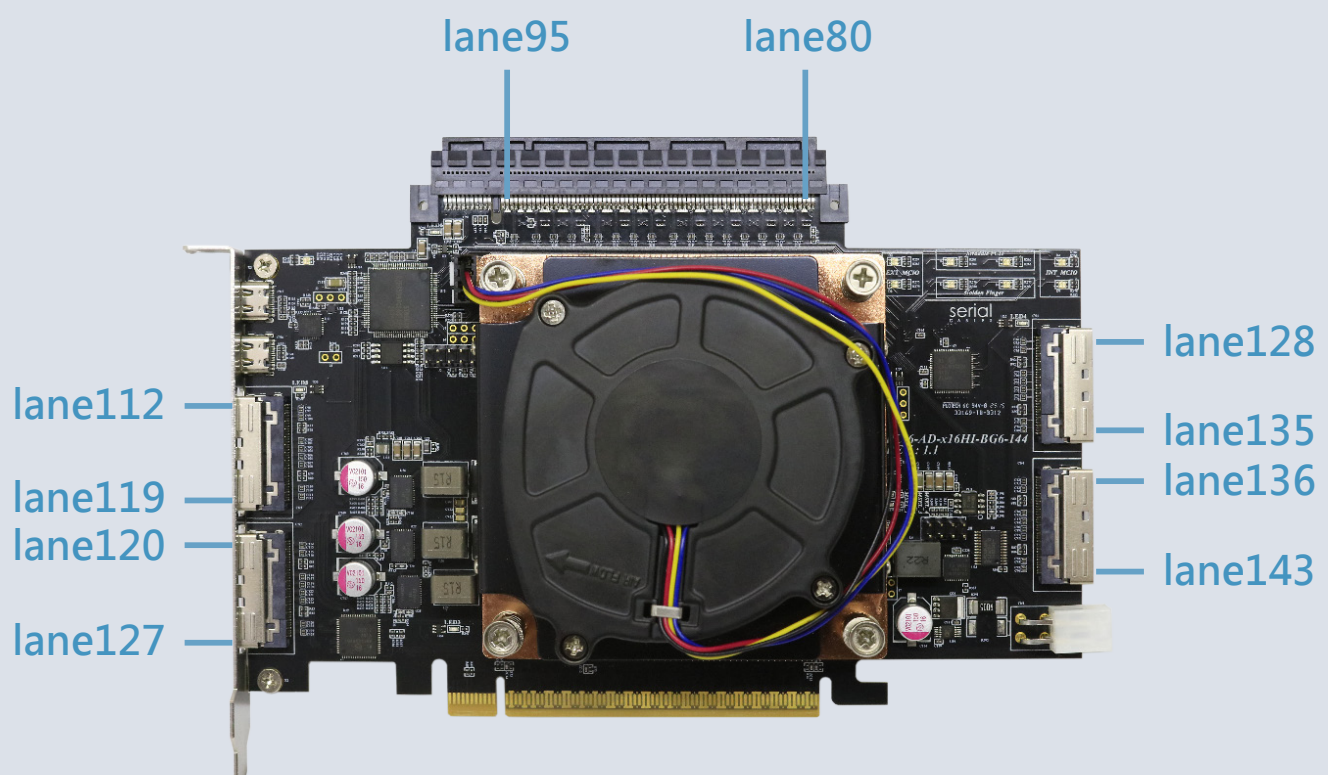
April. 2025



Change history

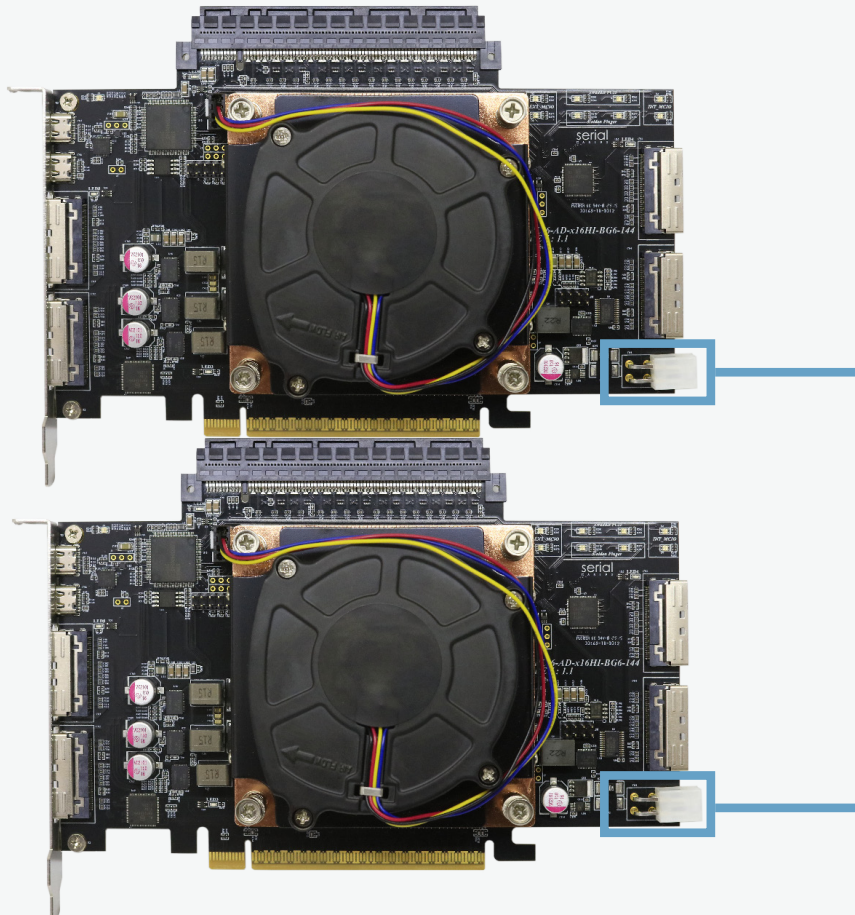
REV	Change history
0.82	

Lane Mapping





- ❌ **Make sure the ESP 12V input is connected.**
- ❌ **Make sure host card powered on together with the motherboard.**



NOTICE

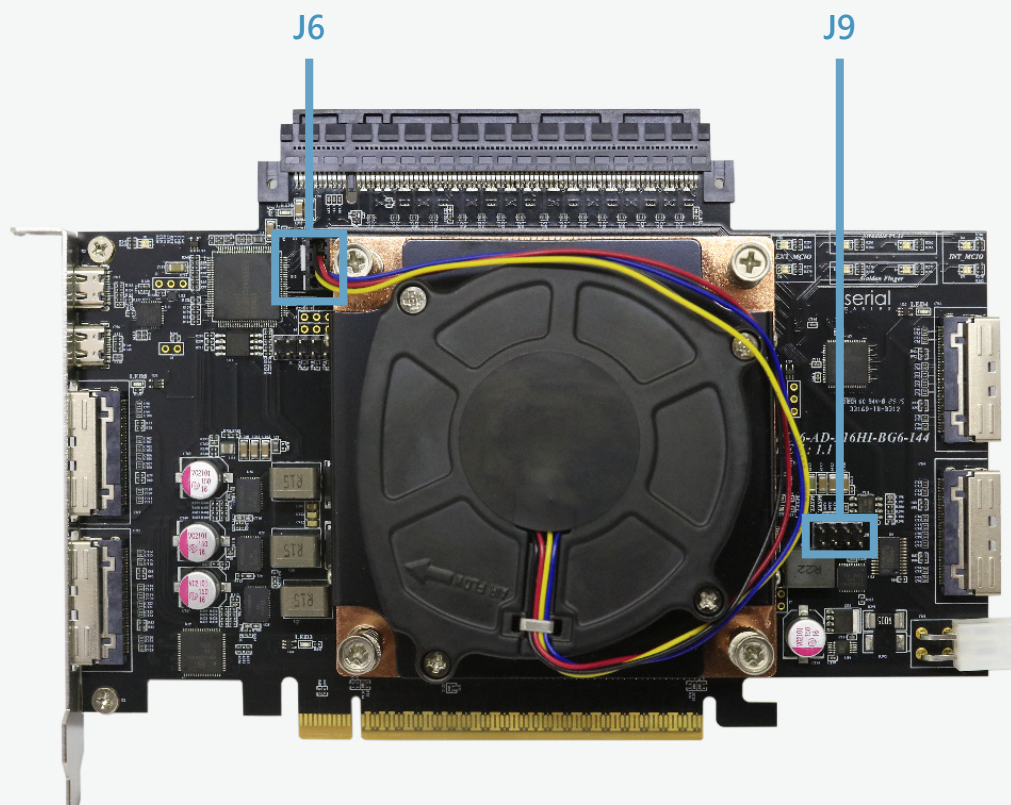
Standard PCIe x16 slots provide only 75W.
This switch requires 80–150W for proper operation.
Use the CN8 connector to supply additional power.
Please check your motherboard's PCIe power specifications.
Insufficient power may result in hardware damage.

POWER NOTICE

- **For Independent :** Minimum 12v 20A/300w
- **For combine with system (include host card and motherboard) :**
Minimum 800w



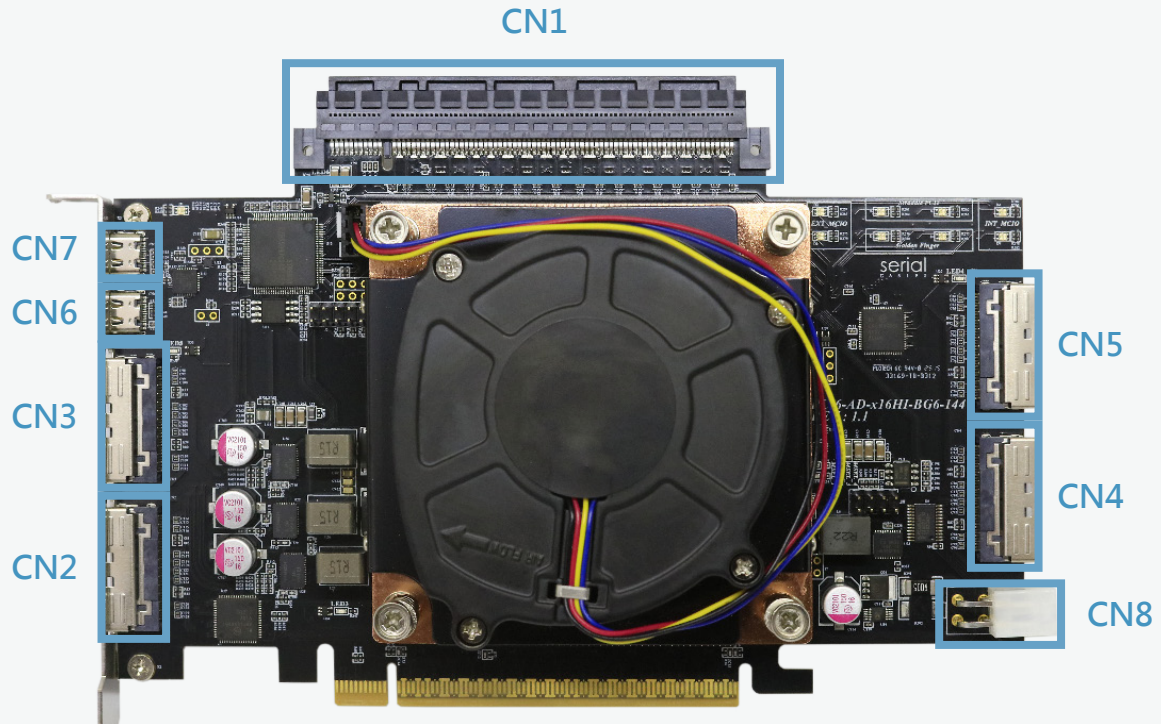
Function Description For Headers



Location	Descriptions
J6	fan power
J9	sbr mode sel (for 1.3version please use setmode command)



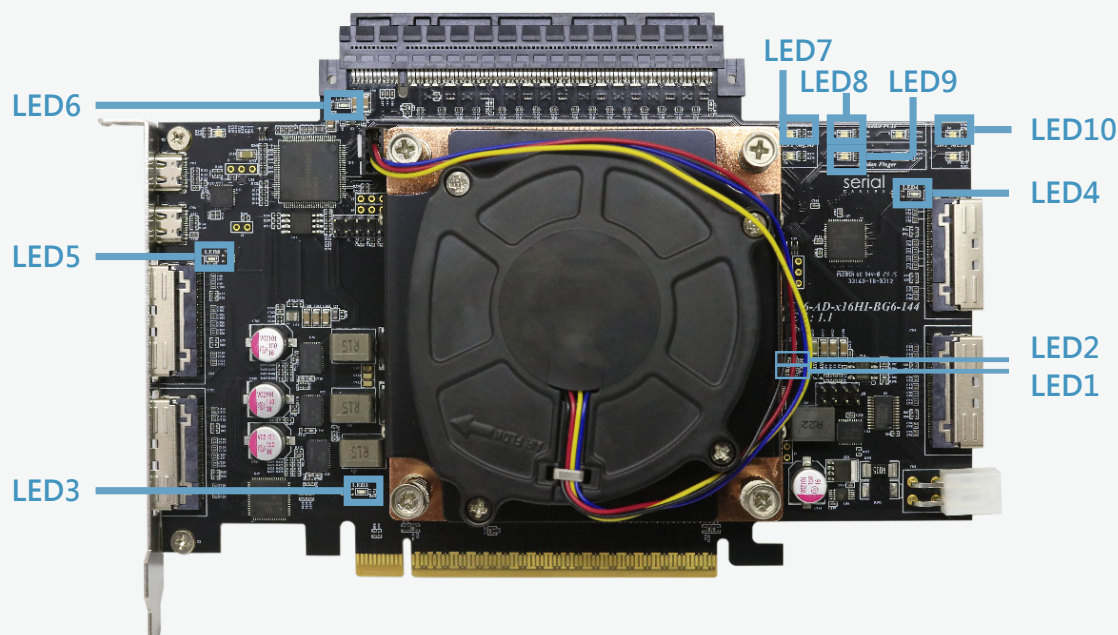
Function Description For Connectors



Location	Descriptions
CN1	Straddddle PCIE x16
CN2	MCIO x8 connector
CN3	MCIO x8 connector
CN4	MCIO x8 connector
CN5	MCIO x8 connector
CN6	Broadcom SDB/SMART port
CN7	MCU port
CN8	eps 12V power



Function Description For LEDs

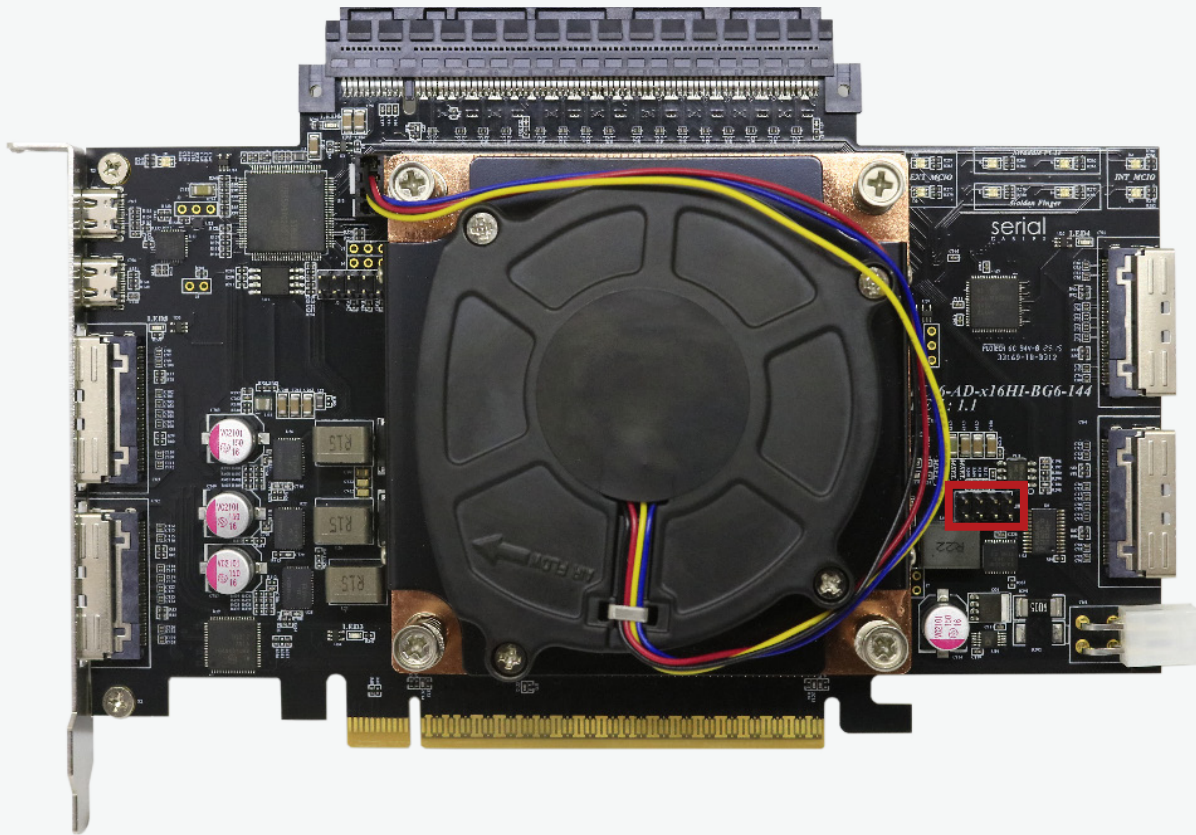


Location	Descriptions
LED1	SBR system error
LED2	power on
LED3	Golden finger link status
LED4	Right side MCIO link status
LED5	Left side MCIO link status
LED6	Straddle PCIE link status
LED7	MCIO left max link width
LED8	Straddle max link width
LED9	PCIE Golden finger max link width
LED10	MCIO right max link width

- LEDs 3, 4, 5, and 6 steadily lit indicate Gen6.
- LEDs 3, 4, 5, and 6 blink indicate Gen5.



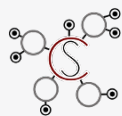
SBR Setting



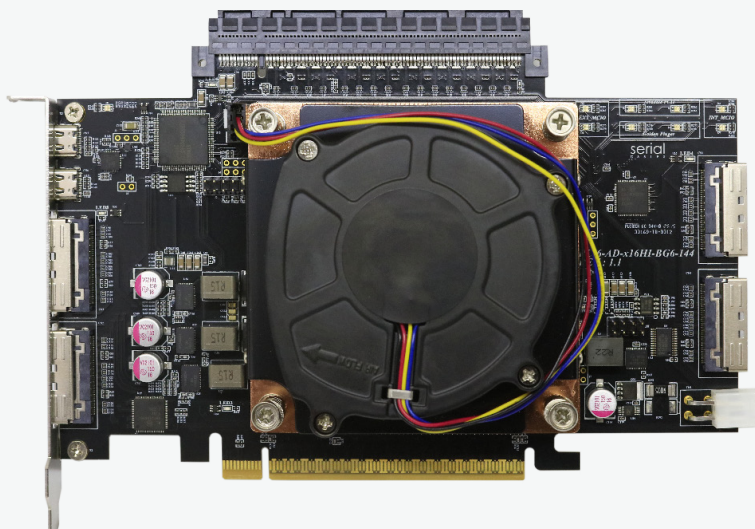
Location	Descriptions
	SBR0
	SBR1
	SBR2
	SBR3
	SBR4

Location	Descriptions
	SBR5
	SBR6

For more details, please refer to page 16. Power on the device only after the jumper has been inserted.



SBR Setting



SBR mode	Golden finger	Straddle PCIE	Left MCIO	RIGHT MCIO
0	X16(SSC)	X16(CC)	X16(CC)	X16(CC)
1	X16(SSC)	X16(CC)	X8(CC)	X8(CC)
2	X16(SSC)	X16(CC)	X4(CC)	X4(CC)
3	X16(SSC)	X16(CC)	X2(CC)	X2(CC)
4	X16(SSC)	X16(CC)	X8(CC)	X16(CC)
5	X16(SSC)	X16(CC)	X4(CC)	X16(CC)
6	X16(SSC)	X16(CC)	X16(CC)	X4(CC)



MCIO Pins Definition

CN2		2	3	5	6	8	9	11	12	14	15	17	18
	A	PERN8	PERP8	PERP9	PERP9	CLKP	CLKN	CLKP	CLKN	PERN10	PERP10	PERP11	PERN11
	B	PETN8	PETP8	PETP9	PETN9	SCL	SDA	REST	PREST	PETN10	PETP10	PETP11	PETN11
		20	21	23	24	26	27	29	30	32	33	35	36
	A	PERN12	PERP12	PERP13	PERN13	CLKP	CLKN	CLKP	CLKN	PERN14	PERP14	PERP15	PERN15
	B	PETN12	PETP12	PETP13	PETN13	SCL	SDA	REST	PREST	PETN14	PETP14	PETP15	PETN15

CN3		2	3	5	6	8	9	11	12	14	15	17	18
	A	PERN0	PERP0	PERP1	PERN1	CLKP	CLKN	CLKP	CLKN	PERN2	PERP2	PERP3	PERN3
	B	PETN0	PETP0	PETP1	PETN1	SCL	SDA	REST	PREST	PETN2	PETP2	PETP3	PETN3
		20	21	23	24	26	27	29	30	32	33	35	36
	A	PERN4	PERP4	PERP5	PERN5	CLKP	CLKN	CLKP	CLKN	PERN6	PERP6	PERP7	PERN7
	B	PETN4	PETP4	PETP5	PETN5	SCL	SDA	REST	PREST	PETN6	PETP6	PETP7	PETN7

CN4		2	3	5	6	8	9	11	12	14	15	17	18
	A	PERN15	PERP15	PERP14	PERN14	CLKP	CLKN	CLKP	CLKN	PERN13	PERP13	PERP12	PERN12
	B	PETN15	PETP15	PETP14	PETN14	SCL	SDA	REST	PREST	PETN13	PETP13	PETP12	PETN12
		20	21	23	24	26	27	29	30	32	33	35	36
	A	PERN11	PERP11	PERP10	PERN10	CLKP	CLKN	CLKP	CLKN	PERN9	PERP9	PERP8	PERN8
	B	PETN11	PETN11	PETP10	PETN10	SCL	SDA	REST	PREST	PETN9	PETP9	PETP8	PETN8

CN5		2	3	5	6	8	9	11	12	14	15	17	18
	A	PERN7	PERP7	PERP6	PERN6	CLKP	CLKN	CLKP	CLKN	PERN5	PERP5	PERP4	PERN4
	B	PETN7	PETP7	PETP6	PETN6	SCL	SDA	REST	PREST	PETN5	PETP5	PETP4	PETN4
		20	21	23	24	26	27	29	30	32	33	35	36
	A	PERN3	PERP3	PERP2	PERN2	CLKP	CLKN	CLKP	CLKN	PERN1	PERP1	PERP0	PERN0
	B	PETN3	PETP3	PETP2	PETN2	SCL	SDA	REST	PREST	PETN1	PETP1	PETP0	PETN0



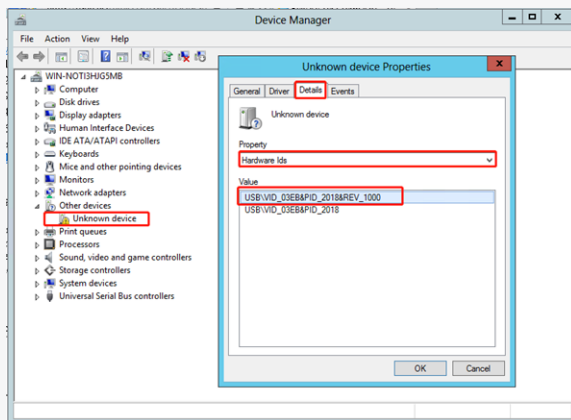
MCU CLI Setup

Step1: USB driver installation.

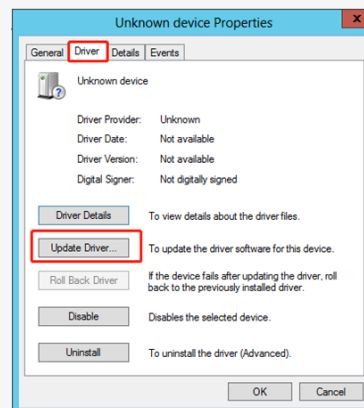
Note: No USB driver is required for Windows 10 and Linux

Download and install the CDC driver for unidentified device (VID_03EB&PID_2018), Available at:

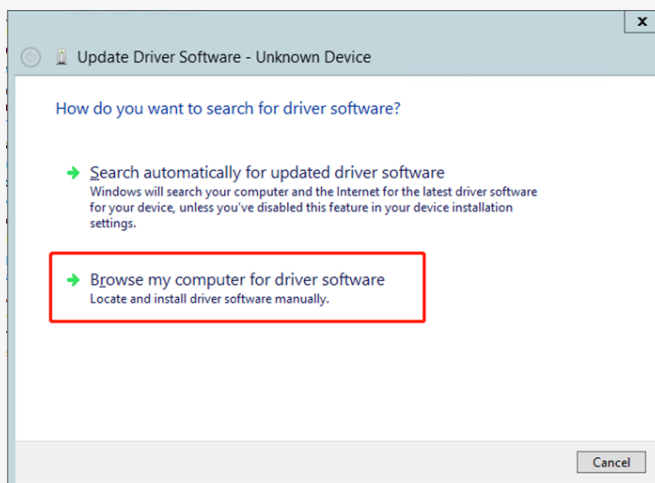
https://www.serialcables.com/wp-content/uploads/2018/11/SynergyUSBCDC_20180518.rar



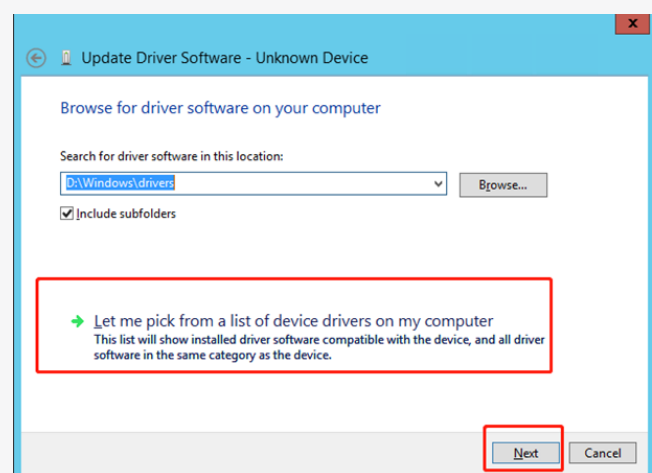
[Figure 1]



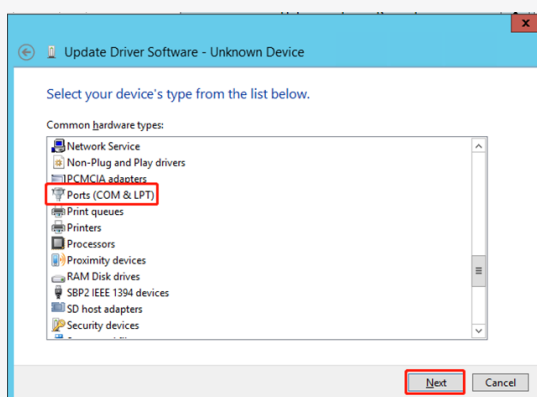
[Figure 2]



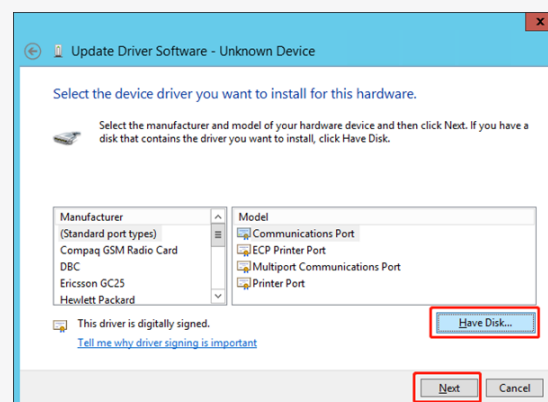
[Figure 3]



[Figure 4]



[Figure 5]

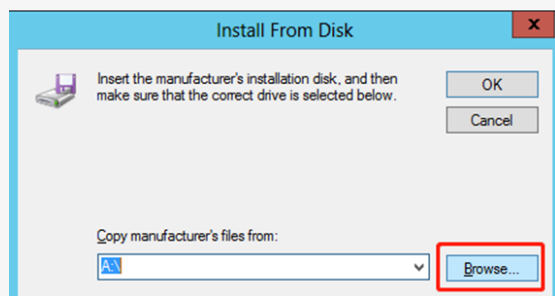


[Figure 6]

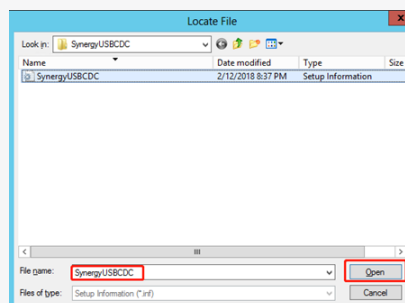


serial
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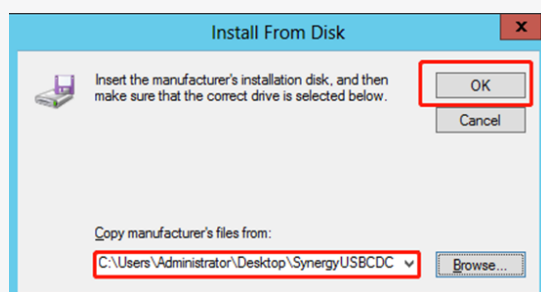
Atlas3 Host Adapter Card



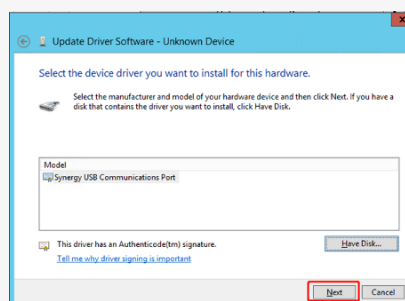
[Figure 7]



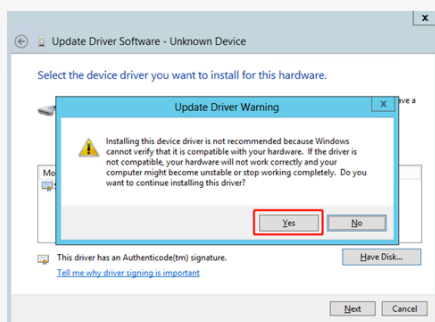
[Figure 8]



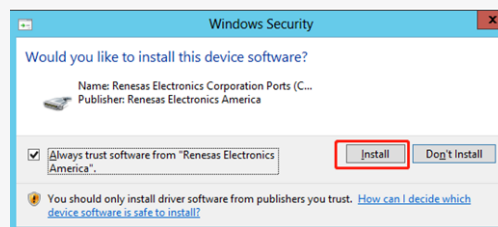
[Figure 9]



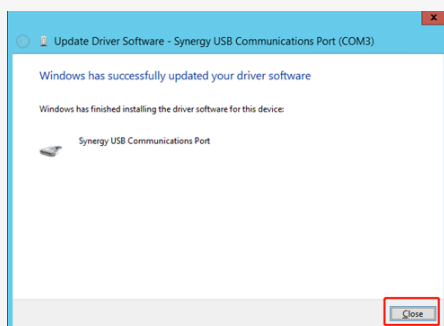
[Figure 10]



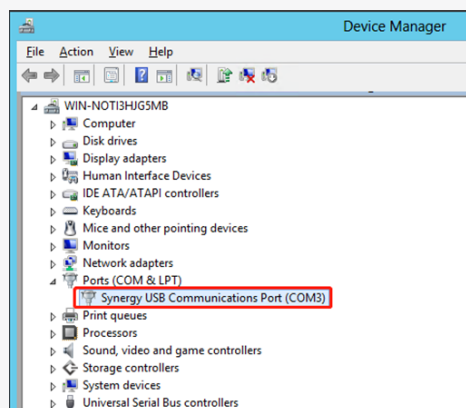
[Figure 11]



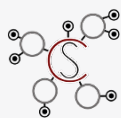
[Figure 12]



[Figure 13]



[Figure 14]

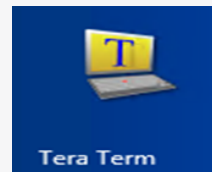


MCU CLI Setup

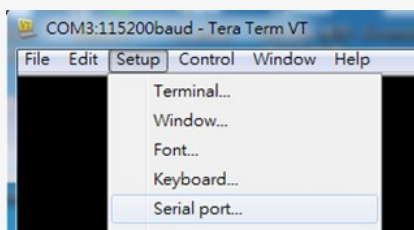
Step2: Tera-term setting

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:

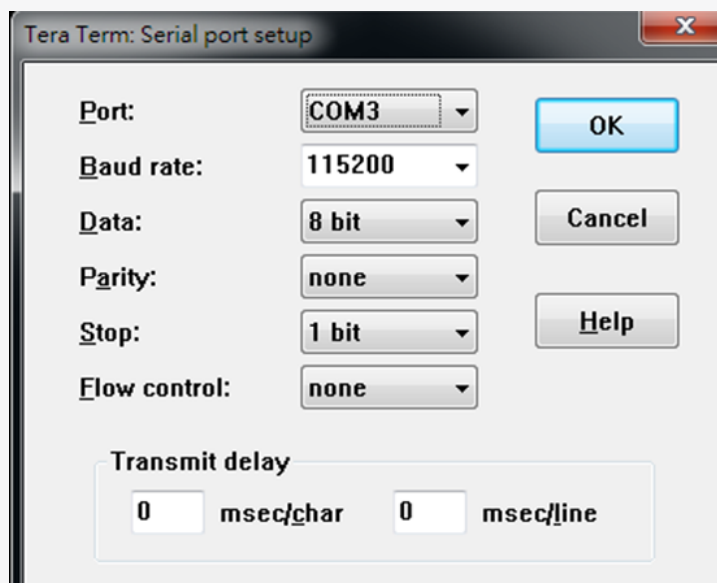
For “Port”, select COM3 in this example. (Depend on which COM port used on Host)

For “Baud rate”, select 115200.

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

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

Click OK when you have finished your selections.





MCU Commands List

Commands	Descriptions
fdl	Update synergy firmware / Atlas 3 SBR .
lsd	Show switch temperature, FAN speed, voltages and Side-band modes.
showport	Show link status for USP in golden finger, DSP for MCIO ports and straddle port.
ver	Show card information, MCU FW and Atlas3 FW version.
sysinfo	Show system information.
setmode	Set Atlas 3 SBR mode.
showmode	Show Atlas 3 SBR mode.
mrst	Reset MCIO or straddle PCIE slot.
clock	Enable/Disable clock output.
error	Display each port error count.
fmode	Enable/disable flit mode.
reset	System reset.
swreset	Atlas 3 switch reset.
mw	Write 32-bit data to Atlas 3 register.
dr	Dump switch-specific registers.
dp	Dump switch port-specific registers.
sdbe	Exchange to communication to Atlas 3.



fdl mcu Command

Update synergy firmware / Atlas 3 SBR .

-Usage: fdl mcu|sbr0|sbr1

```
Cmd>fdl mcu

=====
Xmodem upload a new firmware image to flash
=====

Use Q Or q to quit Download
Send data using the -Xmodem- protocol from terminal emulator now!
```

```
Cmd>fdl sbr0

=====
Xmodem upload a new firmware image to flash
=====

Use Q Or q to quit Download
Send data using the -Xmodem- protocol from terminal emulator now!
```

Updating the Atlas 3 firmware

Step 1 : Connect to the serial interface via the USB-C port at CN7

- Identify the COM port assigned using your system's Device Manager
- Use a terminal emulator to connect to the above COM port o (ex. TeraTerm/puTTY for Windows or minicom for Linux)
- Successful connection should show a cmd> prompt

Step 2 : Run the upload command and send the target file

- Run the 'fdl sbr0' command
- Send the target BIN file via XMODEM o In TeraTerm :
File > Transfer > XMODEM > Send o In minicom : Send File > XMODEM
- Run the 'fdl sbr1' command
- Send the target file BIN via XMODEM o In TeraTerm : File > Transfer > XMODEM > Send
- In minicom: Send File > XMODEM
- Once the upload completes, completely power cycle the host card
- Run the 'showport' command to verify the link status of both the upstream (gold finger) and the downstream (end points) are all linking at the desired speed and width.



Isd Command

Shows switch temperature, FAN speed, voltages, current and Side-band modes.

-Usage: Isd

```
Cnd>Isd  
  
Thermal:  
  Board Temperature : 54 degree  
  
Fans Speed:  
  Switch Fan : 6566 rpm  
  
Voltage Sensors:  
Board 0.8V Voltage : 902 mV  
Board 0.89V Voltage : 980 mV  
Board 1.2V Voltage : 1297 mV  
Board 1.5v Voltage : 1503 mV  
  
Current Status:  
Current : 10880 mA  
  
Error Status:  
Voltage 0.8V error : 0  
Voltage 0.89V error : 0  
Voltage 1.2V error : 0  
Voltage 1.5V error : 0
```



showport Command

Show link status for USP in golden finger, DSP for MCIO ports and Straddle port.

-Usage: showport

```
Cnd>showport
Port Slot-----
-----

Port00 : speed 06, width 08, max_speed06, max_width08
Port112: speed 06, width 08, max_speed06, max_width16
Port128: speed 06, width 08, max_speed06, max_width16
Port Upstream-----
-----

Golden finger: speed 06, width 08, max_width = 16
Cnd>
```



ver Command

Show card information, MCU FW and Atlas3 FW version.

-Usage: ver

```
Cmd>ver  
S/N      : 6BH144125062062  
Company  : SerialCables, Inc  
Model    : PCI6-AD-x16HI-BG6-144  
Version  : 0.1.0    Date : Jul 18 2025 11:05:16  
SBR Version : 0 34 160 28
```



Broadcom

Version One

Atlas3
chip
version

6 B H 1 4 4 1 2 5 0 4 2 0 0 1

Gen 6

Host Card

144 lanes

Warranty Period
(Year/Month)

Serial Number



sysinfo Command

Show system information

-Usage: fdl mcu|sbr0|sbr1

```
Cnd>sysinfo
=====
ver
=====
S/N      : 6BH144125062062
Company  : SerialCables, Inc
Model    : PCI6-AD-x16H1-BG6-144
Version  : 0.1.0      Date : Jul 18 2025 11:05:16
SBR Version : 0 34 160 28
=====
lsd
=====
Thermal:
  Board Temperature : 55 degree
Fans Speed:
  Switch Fan : 6310 rpm
Voltage Sensors:
Board 0.8V Voltage : 890 mV
Board 0.89V Voltage : 991 mV
Board 1.2V Voltage : 1304 mV
Board 1.5V Voltage : 1512 mV
Current Status:
Current : 10240 mA
Error Status:
Voltage 0.8V error : 0
Voltage 0.89V error : 0
Voltage 1.2V error : 0
Voltage 1.5V error : 0
=====
shouport
=====
Port Slot-----
Port80 : speed 01, width 00, max_speed06, max_width16
Port112: speed 01, width 00, max_speed06, max_width16
Port128: speed 01, width 00, max_speed06, max_width16
Port Upstream-----
Golden finger: speed 01, width 00, max_width = 16
Cnd>[]
```



setmode Command

Set Atlas 3 SBR mode.

-Usage: setmode 0

```
Cnd>setmode 0  
Write sbr setmode enable page success.
```

SBR mode	Golden finger	Straddle PCIE	Left MCIO	RIGHT MCIO
0	X16(SSC)	X16(CC)	X16(CC)	X16(CC)
1	X16(SSC)	X16(CC)	X8(CC)	X8(CC)
2	X16(SSC)	X16(CC)	X4(CC)	X4(CC)
3	X16(SSC)	X16(CC)	X2(CC)	X2(CC)
4	X16(SSC)	X16(CC)	X8(CC)	X16(CC)
5	X16(SSC)	X16(CC)	X4(CC)	X16(CC)
6	X16(SSC)	X16(CC)	X16(CC)	X4(CC)

▲ After setting, please perform a power cycle on the host card.



showmode Command

Show Atlas 3 SBR mode.

-Usage: showmode

```
Cnd>showmode  
SBR mode: 1
```



mrst Command

Reset MCIO or straddle PCIE slot.

-Usage: mrst [l|r|s|all]

```
cmd>mrst r  
Reset MCIO Right success.
```



clock Command

Enable/Disable clock output.

clock srise5 -- spread clock 0.5%

clock srise2 -- spread clock 0.25%

-Usage: clock

```
Cmd>clock
MCIO Left clock disable.
MCIO Right clock enable.
Straddle clock enable.
```

-Usage: clock [l|r|s] [e|d]

```
Cmd>clock l d
Set MCIO Left clock disable success.
```

-Usage: clock [srise5|srise2|srisd]

```
Cmd>clock srise5
Set SRIS Clock mode enable 0.5% success.
```



error Command

Display each port error count.

-Usage: error

```
Cnd>error  
Port32: PortRx:00, BadTLP:00, BadDLLP:00, RecDiag:00  
Port80: PortRx:00, BadTLP:00, BadDLLP:00, RecDiag:00  
Port112: PortRx:00, BadTLP:00, BadDLLP:00, RecDiag:00  
Port128: PortRx:00, BadTLP:00, BadDLLP:00, RecDiag:00
```



fmode Command

Enable/disable flit mode.

-Usage: fmode [lane(32|80|112|128)] [en|dis]

```
Cnd>fmode 32 en  
Write enable Flitmode page success.  
Set enable Flitmode success.  
Cnd>
```

```
Cnd>fmode 80 dis  
Write disable Flitmode page success.  
Set enable Flitmode success.  
Cnd>
```

```
Cnd>fmode  
Port 32 enable flitmode.  
Port 80 disable flitmode.  
Port 112 disable flitmode.  
Port 128 enable flitmode.  
Cnd>
```



serial
C A B L E S

Atlas3 Host Adapter Card

reset Command

System reset.

-Usage: reset

```
Cnd>reset  
System Reset...
```



swreset Command

Atlas 3 switch reset.

-Usage: swreset

```
Cnd>swreset  
Gen6 switch hw reset success
```



mw Command

Write 32-bit data to Atlas 3 register.

-Usage: mw <register(H)> <data(H)>

register(H) : register should be 0x00000000 ~ 0xFFFFFFFFC

data(H) : data should be 0x00000000 ~ 0xFFFFFFFF

```
Cnd>mw 0x60800000 0xffffffff
```



dr Command

Dump switch-specific registers.

-Usage: dr <register(H)> [count(H)]

register(H) : register should be 0x00000000 ~ 0xFFFFFFFFC

count(H) : count should be 0x00000000 ~ 0xFFFFFFFFC

```
Cmd>dr 0x60800000 20  
  
60800000:00000000 00100000 00000000 00000000  
60800010:00000000 00000000 00000000 000001f1
```



Atlas3 Host Adapter Card

dp Command

Dump switch port-specific registers

-Usage: dp <port_number(D)>

port_number(D) : port_number should be 0 ~ 144

```
Cnd>dp 32
60900000:c0401000 00100000 060400a0 00010000
60900010:00000000 00000000 00000000 000001f1
60900020:0000ffff 0001fff1 00000000 00000000
60900030:00000000 00000040 00000000 00000000
60900040:c8034801 00000008 03866805 00000000
60900050:00000000 00000000 00000000 00000000
60900060:00000000 00000000 8052a410 00028002
60900070:00000810 2042f106 00010000 00000000
60900080:00000000 00000000 00000000 00310840
60900090:00000000 81807f7e 03000006 00000000
609000a0:00000000 0000000d 01441000 00000000
609000b0:00000000 00000000 00000000 00000000
609000c0:00000000 00000000 00000000 00000000
609000d0:00000000 00000000 00000000 00000000
609000e0:00000000 00000000 00000000 00000000
609000f0:00000000 00000000 00000000 00000000
60900100:2941002f 00000002 00000078 00000000
60900110:db42001e 00000000 00000000 00000000
60900120:00000000 b0010003 00000008 00000000
60900130:00000000 00000000 db410004 00000000
60900140:00000000 00000001 af410002 00000000
60900150:00000000 00000000 00000001 800000ff
60900160:00000000 00000001 03000000 00020000
60900170:af410035 00000000 00000000 00000000
60900180:00000001 00000000 000000ff 00000000
60900190:00003200 00000200 00000000 00000000
609001a0:00000000 00000000 00000000 00000000
609001b0:00000000 00000000 00000000 00000000
609001c0:00000000 00000000 00000000 00000000
609001d0:00000000 00000000 00000000 00000000
609001e0:00000000 00000000 00000000 00000000
609001f0:00000000 00000000 00000000 00000000
60900200:00000000 00000000 00000000 00000000
60900210:00000000 00000000 00000000 00000000
60900220:00000000 00000000 00000000 00000000
60900230:00000000 00000000 00000000 00000000
60900240:00000000 00000000 00000000 00000000
60900250:00000000 00000000 00000000 00000000
60900260:00000000 00000000 00000000 00000000
60900270:00000000 00000000 00000000 00000000
60900280:00000000 00000000 00000000 00000000
60900290:00000000 13830001 00000000 00400000
609002a0:00460010 00000000 0000e000 0001c0bf
```



serial
C A B L E S

Atlas3 Host Adapter Card

sdbe Command

Exchange to communication to Atlas 3.