BPN-NVMe3-116UN Backplane

USER'S GUIDE

Rev. 1.0

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Contacting Supermicro

Headquarters

Address:	Super Micro Computer, Inc.
	980 Rock Ave.
	San Jose, CA 95131 U.S.A.
Tel:	+1 (408) 503-8000
Fax:	+1 (408) 503-8008
Email:	marketing@supermicro.com (General Information)
	support@supermicro.com (Technical Support)
Web Site:	www.supermicro.com

Europe

Address:	Super Micro Computer B.V.
	Het Sterrenbeeld 28, 5215 ML
	's-Hertogenbosch, The Netherlands
Tel:	+31 (0) 73-6400390
Fax:	+31 (0) 73-6416525
Email:	sales@supermicro.nl (General Information)
	support@supermicro.nl (Technical Support)
	rma@supermicro.nl (Customer Support)

Asia-Pacific

Address:	Super Micro Computer, Inc.
	4F, No. 232-1, Liancheng Rd.
	Chung-Ho 235, Taipei County
	Taiwan, R.O.C.
Tel:	+886-(2) 8226-3990
Fax:	+886-(2) 8226-3991
Web Site:	www.supermicro.com.tw
Technical Support:	
Email:	support@supermicro.com.tw
Tel:	886-2-8226-1900

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A receipt or copy of your invoice marked with the date of purchase is required before any warranty service will be rendered. You can obtain service by calling your vendor for a Returned Merchandise Authorization (RMA) number. When returning to the manufacturer, the RMA number should be prominently displayed on the outside of the shipping carton, and mailed prepaid or hand-carried. Shipping and handling charges will be applied for all orders that must be mailed when service is complete.

For faster service, RMA authorizations may be requested online (http://www.super-micro.com/support/rma/).

Whenever possible, repack the backplane in the original Supermicro box, using the original packaging materials. If these are no longer available, be sure to pack the backplane in an anti-static bag and inside the box. Make sure that there is enough packaging material surrounding the backplane so that it does not become damaged during shipping.

This warranty only covers normal consumer use and does not cover damages incurred in shipping or from failure due to the alteration, misuse, abuse or improper maintenance of products.

During the warranty period, contact your distributor first for any product problems.

Chapter 1

Safety Guidelines

To avoid personal injury and property damage, carefully follow all the safety steps listed below when accessing your system or handling the components.

1-1 ESD Safety Guidelines

Electrostatic Discharge (ESD) can damage electronic components. To prevent damage to your system, it is important to handle it very carefully. The following measures are generally sufficient to protect your equipment from ESD.

- Use a grounded wrist strap designed to prevent static discharge.

- Touch a grounded metal object before removing a component from the antistatic bag.

- Handle the backplane by its edges only; do not touch its components, peripheral chips, memory modules, or gold contacts.

- When handling chips or modules, avoid touching their pins.

- Put the card and peripherals back into their antistatic bags when not in use.

1-2 General Safety Guidelines

- Always disconnect power cables before installing or removing any components from the computer, including the backplane.

- Disconnect the power cable before installing or removing any cables from the backplane.

- Make sure that the backplane is securely and properly installed on the motherboard to prevent damage to the system due to power shortage.

1-3   An Important Note to Users

- All images and layouts shown in this user's guide are based upon the latest PCB revision available at the time of publishing. The card you have received may or may not look exactly the same as the graphics shown in this manual.

1-4   Introduction to the BPN-NVMe3-116UN Backplane

The BPN-NVMe3-116UN backplane has been designed to utilize the most up-to-date technology available, providing your system with reliable, high-quality performance.

This manual reflects BPN-NVMe3-116UN Revision 1.00, the most current release available at the time of publication. Always refer to the Supermicro Web site at www.supermicro.com for the latest updates, compatible parts, and supported configurations.

Chapter 2

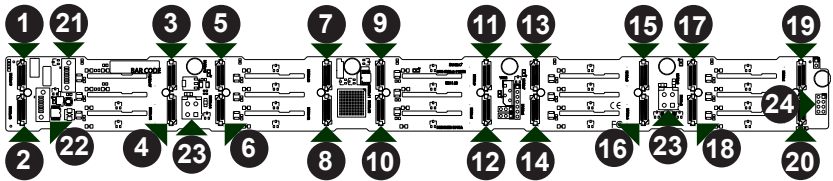# Connectors and Pin Definitions

2-1   Front Connectors

Figure 2-1. Front Connectors

1. NVMe Connector #19: CN20

2. NVMe Connector #18: CN19

3. NVMe Connector #17: CN18

4. NVMe Connector #16: CN17

5. NVMe Connector #15: CN16

6. NVMe Connector #14: CN15

7. NVMe Connector #13: CN14

8. NVMe Connector #12: CN13

9. NVMe Connector #11: CN12

10. NVMe Connector #10: CN11

11. NVMe Connector #9: CN10

12. NVMe Connector #8: CN9

13. NVMe Connector #7: CN8

14. NVMe Connector #6: CN7

15. NVMe Connector #5: CN6

16. NVMe Connector #4: CN5

17. NVMe Connector #3: CN4

18. NVMe Connector #2: CN3

19. NVMe Connector #1: CN2

20. NVMe Connector #0: CN1

21. SAS Connector #1: SAS1

22. SAS Connector #0: SAS0

23. Power Connectors: JPWR1 and
    JPWR2 (4-pin)

24. Sideband Connector: SGPIO, J32

2-2   Front Connector Pin Definitions

#1. - 20. NVMe Connectors

The NVMe ports are used to connect the NVMe drive cables. Each connector controls one NVMe drive. Pins are defined according to the NVMe standard. The connectors are designated CN1 through CN20.

#21. - 22. SAS Connectors

The SAS connectors are used to connect the SAS or SATA drive cables. The 2 ports are designated SAS0 and SAS1, for drives at DRV#18 and DRV#19 if those drives are used for SAS3, SAS2, or SATA3 devices. (See section 2-4 for SAS drive locations.)

#23. Backplane Main Power Connectors

The 4-pin connectors, designated JPWR1 and JPWR2, provide power to the backplane. See the table on the right for pin definitions.

Backplane Main Power 4-Pin Connector	
Pin#	Definition
1 and 2	Ground
3 and 4	+12VDC

#24. Sideband Connector

This is the sideband connector for SAS3 and is designated SGPIO and J32.

Sideband Connector (T-SGPIO1)			
Pin	Definition	Pin	Definition
2	SDataIn (SGPIO Data In)	1	N/C
4	SDataOut (SGPIO Data Out)	3	GND
6	GND	5	SLoad (SGPIO Load)
8	N/C	7	SClock (SGPIO Clock)

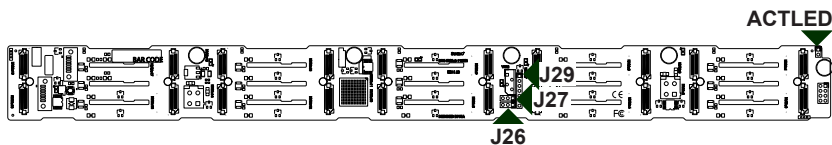## 2-3   Front Jumper Locations and Pin Definitions

Figure 2-2. Front Jumpers

Explanation of Jumpers

To modify the operation of the backplane, jumpers can be used to choose between optional settings. Jumpers create shorts between two pins to change the function of the connector. Pin 1 is identified with a square solder pad on the printed circuit board.

Note: On two pin jumpers, "Closed" means the jumper is on and "Open" means the jumper is off the pins.
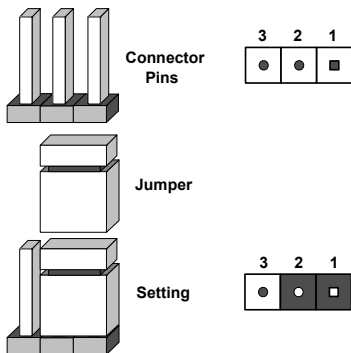
Jumper Settings for NVMe Drives				
J26	**J27**	**CPU1**	**CPU2**	**Notes**
2-3	2-3	8	12	
2-3	1-2	10	10	Default setting
1-2	2-3	12	8	
1-2	1-2	N/A	N/A	

Other Jumper Settings		
Jumper	**Jumper Settings**	**Notes**
J29	Open: Default	This is used for internal testing only.
ACTLED	Open: Default	This is used for internal testing only.

2-4   Front LED Indicators

Figure 2-3. Front LEDs

<table>
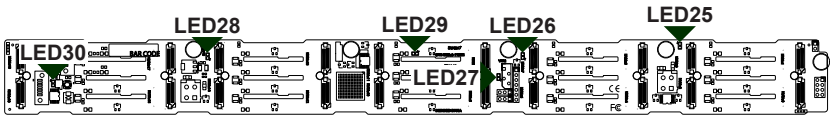<tr><th colspan="3">Front Panel LEDs</th></tr>
<tr><th>LED</th><th>State</th><th>Specification</th></tr>
<tr><td>LED25</td><td>On</td><td>12V status for drives at DRV#0 - DRV#4.</td></tr>
<tr><td>LED26</td><td>On</td><td>12V status for drives at DRV#5 - DRV#9.</td></tr>
<tr><td>LED27</td><td>On</td><td>5V status LED.</td></tr>
<tr><td>LED28</td><td>On</td><td>12V status for drives at DRV#15 - DRV#19.</td></tr>
<tr><td>LED29</td><td>On</td><td>12V status for drives at DRV#10 - DRV#14.</td></tr>
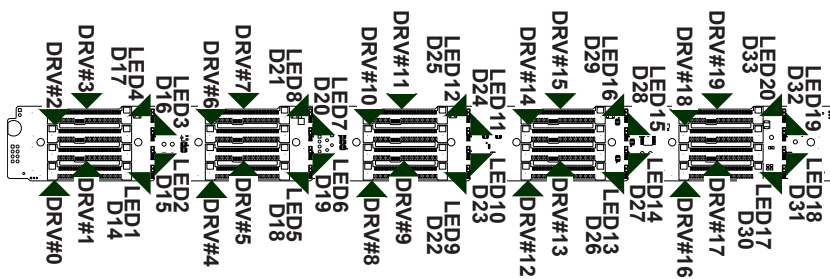<tr><td>LED30</td><td>On</td><td>3.3V status LED.</td></tr>
</table>

2-5   Rear Connectors and LED Indicators

Figure 2-4. Rear Connectors & LED Indicators

SAS/SATA/NVMe Connectors and LED Indicators			
Rear Connector	**SAS Drive Number**	**Failure LED**	**Activity LED**
DRV#0	NVMe HDD #0	D14	LED1
DRV#1	NVMe HDD #1	D15	LED2
DRV#2	NVMe HDD #2	D16	LED3
DRV#3	NVMe HDD #3	D17	LED4
DRV#4	NVMe HDD #4	D18	LED5
DRV#5	NVMe HDD #5	D19	LED6
DRV#6	NVMe HDD #6	D20	LED7
DRV#7	NVMe HDD #7	D21	LED8
DRV#8	NVMe HDD #8	D22	LED9
DRV#9	NVMe HDD #9	D23	LED10
DRV#10	NVMe HDD #10	D24	LED11
DRV#11	NVMe HDD #11	D25	LED12
DRV#12	NVMe HDD #12	D26	LED13
DRV#13	NVMe HDD #13	D27	LED14
DRV#14	NVMe HDD #14	D28	LED15
DRV#15	NVMe HDD #15	D29	LED16
DRV#16	NVMe HDD #16	D30	LED17
DRV#17	NVMe HDD #17	D31	LED18
DRV#18	NVMe/SAS/SATA HDD #18	D32	LED19
DRV#19	NVMe/SAS/SATA HDD #19	D33	LED20

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