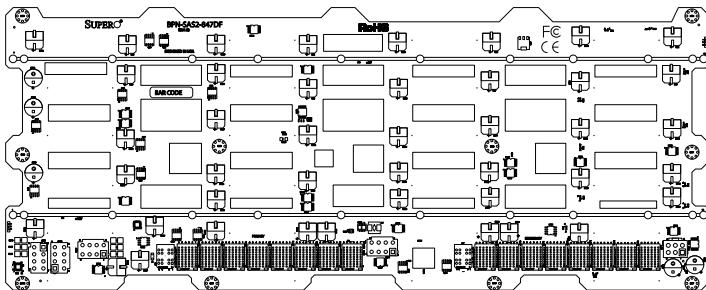


# SUPER○



## SAS2-847D Backplanes and Extender Boards

USER'S GUIDE

Revision 1.0b

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**WARNING: Handling of lead solder materials used in this product may expose you to lead, a chemical known to the State of California to cause birth defects and other reproductive harm.**

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## Returning Merchandise for Service

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.supermicro.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.

## Notes

# Chapter 1

## Overview

### 1-1 Chassis Configuration

The SC847D chassis configuration consists of the following components:

- One front backplane, BPN-SAS2-847DF
- One or two front expander cards, BPN-EXP-847DF2EL1
- One rear backplane, BPN-SAS2-847DR
- One or two rear expander cards, BPN-EXP-847DR1EL1
- Thirty-six adapter cards, MCP-280-00024-0N, in double-depth hard drive carriers.

Refer to the chassis manual for removal and installation instructions.

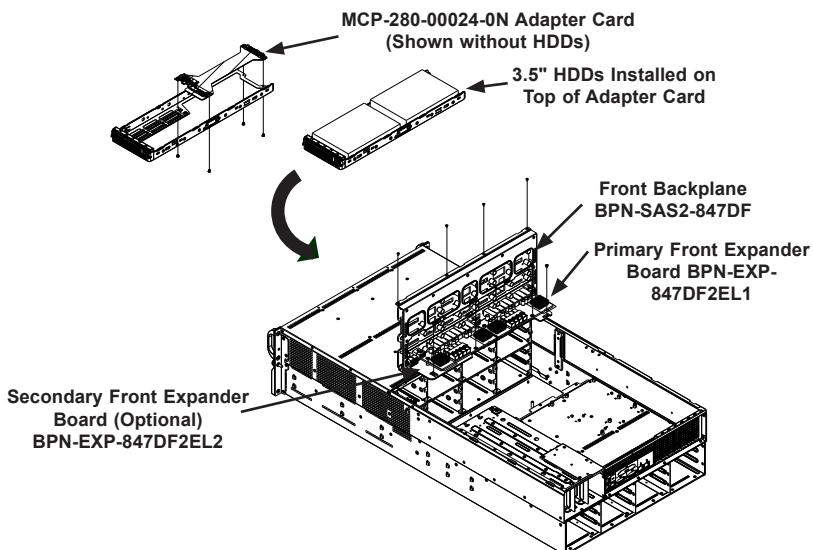
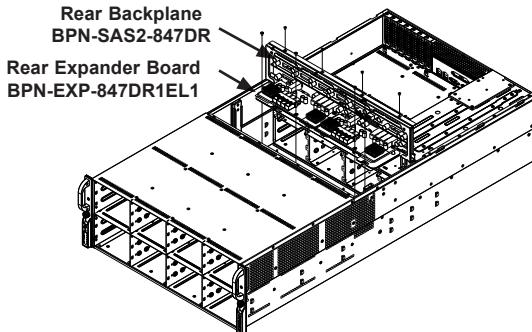


Figure 1-1. BPN-SAS2-847DF Front Backplane Configuration



**Figure 1-2. BPN-SAS2-847DR Rear Backplane Configuration**

## 1-2 Version at Time of Publication

The backplanes have been designed to utilize the most up-to-date technology available, providing your system with reliable, high-quality performance.

This manual reflects BPN-SAS2-847DF Revision 1.02, BPN-EXP-847DFEL1/EL2 Revision 1.02 and MCP0280-00024-0N Revision 1.02, the most current releases available at the time of publication. Always refer to the Supermicro web site at [www.supermicro.com](http://www.supermicro.com) for the latest updates, compatible parts and supported configurations.

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

## Chapter 2

### 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.

#### 2-1 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 backplane and peripherals back into their antistatic bags when not in use.

#### 2-2 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 a power shortage.

## Chapter 3

### Connectors and Jumpers

#### 3-1 BPN-SAS2-847DF Backplane

##### Front Connectors

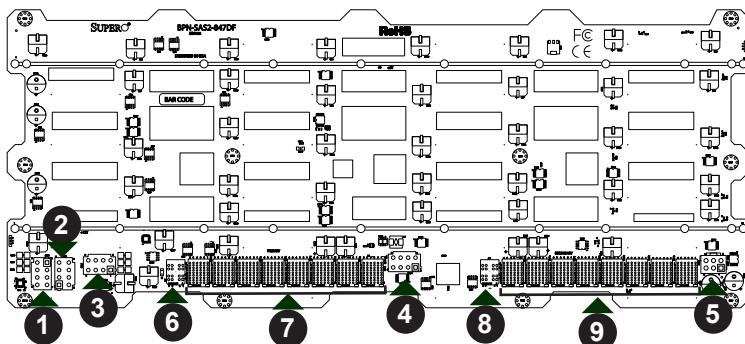


Figure 3-1. BPN-SAS2-847DF Backplane Front Connectors

##### Front Connectors

1. Main Power Connector: JPW1
2. Main Power Connector: JPW2
3. Main Power Connector: JPW3
4. Main Power Connector: JPW4
5. Main Power Connector: JPW5
6. Primary Expander Power Connector: J26
7. Primary Airmax Connectors: P\_M1 to P\_M8
8. Secondary Expander Power Connector: J27
9. Secondary Airmax Connectors: S\_M1 to S\_M8

### **1. - 3. Power Connectors**

These connectors, designated JPW1, JPW2, JPW3, JPW4 and JPW5 supply power to the chassis.

### **4. Primary Expander Power Connector**

Supplies power to the primary expander board. This connector is designated J26

### **5. Primary Airmax Connectors**

These connectors are SAS2 signal connectors that connect the backplane and the primary expander board. These connectors are designated P-M1 through P\_M8.

### **6. Secondary Expander Power Connector**

Supplies power to the secondary expander board. This connector is designated J27

### **7. Secondary Airmax Connectors**

These connectors are SAS2 signal connectors that connect the backplane and the secondary expander board. These connectors are designated S-M1 through S\_M8.

## Rear SAS2 Receptacles

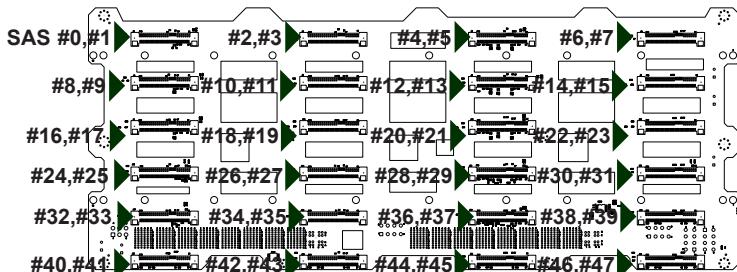


Figure 3-2. BPN-SAS2-847DF Rear SAS2 Receptacles

Rear SAS2 Receptacles		
Rear Receptacle	SAS Drive Number	Reference
SAS #0, #1	HDD 0, 1	J1
SAS #2, #3	HDD 2, 3	J2
SAS #4, #5	HDD 4, 5	J3
SAS #6, #7	HDD 6, 7	J4
SAS #8, #9	HDD 8, 9	J5
SAS #10, #11	HDD 10, 11	J6
SAS #12, #13	HDD 12, 13	J7
SAS #14, #15	HDD 14, 15	J8
SAS #16, #17	HDD 16, 17	J9
SAS #18, #19	HDD 18, 19	J10
SAS #20, #21	HDD 20, 21	J11
SAS #22, #23	HDD 22, 23	J12
SAS #24, #25	HDD 24, 25	J13
SAS #26, #27	HDD 26, 27	J14
SAS #28, #29	HDD 28, 29	J15
SAS #30, #31	HDD 30, 31	J16
SAS #32, #33	HDD 32, 33	J17
SAS #34, #35	HDD 34, 35	J18
SAS #36, #37	HDD 36, 37	J19
SAS #38, #39	HDD 38, 39	J20
SAS #40, #41	HDD 40, 41	J21
SAS #42, #43	HDD 42, 43	J22
SAS #44, #45	HDD 44, 45	J23
SAS #46, #47	HDD 46, 47	J24

### 3-2 BPN-EXP-847DFEL1/EL2 Expander Boards

The BPN-EXP-847DFEL1 and EL2 expander boards plug into the BPN-SAS2-847DF backplane. One or two expander boards may be used.

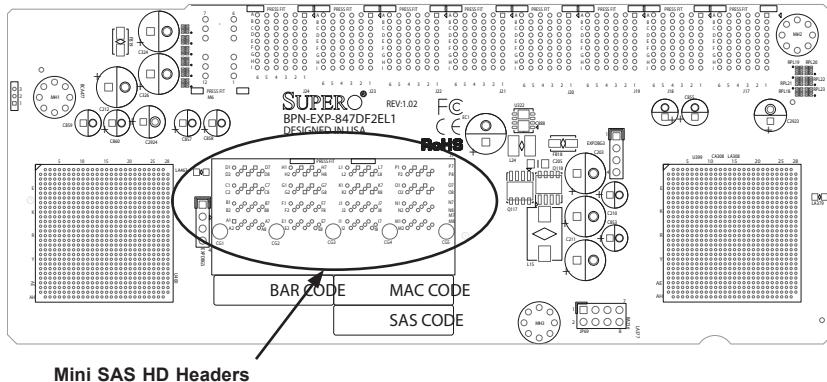


Figure 3-3. BPN-EXP-847DFEL1/EL2 SAS Mini Headers

BPN-EXP-847DFEL1/EL2 SAS Mini Headers	
Header	Pins
CGI1	A1-A8, B1-B8, C1-C8, D1-D8
CGI2	E1-E8, F1-F8, G1-G8, H1-H8
CGI3	I1-I8, J1-J8, K1-K8, L1-L8
CGI4	M1-M8, N1-N8, O1-O8, P1-P8

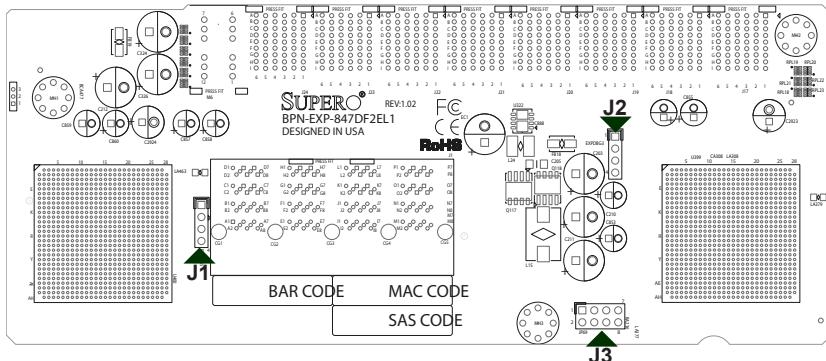


Figure 3-4. BPN-EXP-847DFEL1/EL2 Jumpers

BPN-EXP-847DFEL1/EL2 SAS Mini Headers		
Jumper	Name	Function
J1	EXPDBG5	Debug jumper, for manufacturer use only
J2	EXPDBG3	Debug jumper, for manufacturer use only
J3	JP69	For manufacturer use only

### 3-3 BPN-SAS2-847DR Backplane

#### Front Connectors

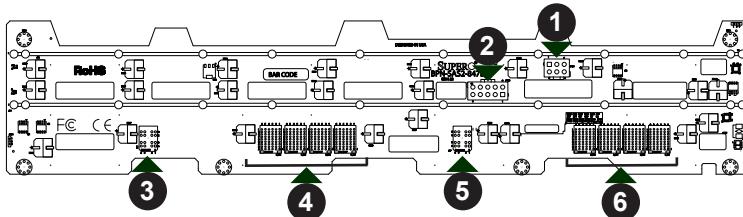


Figure 3-5. BPN-SAS2-847DR Backplane Front Connectors

#### **Front Connectors**

1. Main Power Connector: JPW1
2. Main Power Connector: JPW2
3. Primary Expander Power Connector: J26
4. Primary Airmax Connectors: P\_M1 to P\_M4
5. Secondary Expander Power Connector: J27
6. Secondary Airmax Connectors: S\_M1 to S\_M4

## **1. - 2. Power Connectors**

These connectors, designated JPW1 and JPW2 supply power to the backplane.

## **3. Primary Expander Power Connector**

Supplies power to the primary expander board. This connector is designated J26.

## **4. Primary Airmax Connectors**

These connectors are SAS2 signal connectors that connect the backplane and the primary expander board. These connectors are designated P-M1 through P\_M4.

## **5. Secondary Expander Power Connector**

Supplies power to the secondary expander board. This connector is designated J27.

## **6. Secondary Airmax Connectors**

These connectors are SAS2 signal connectors that connect the backplane and the secondary expander board. These connectors are designated S-M1 through S\_M4.

## Rear SAS2 Receptacles

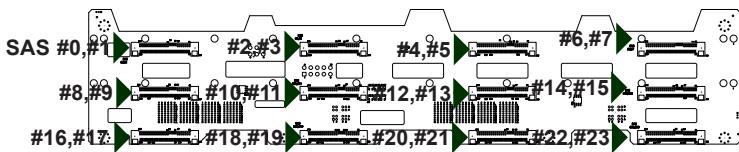
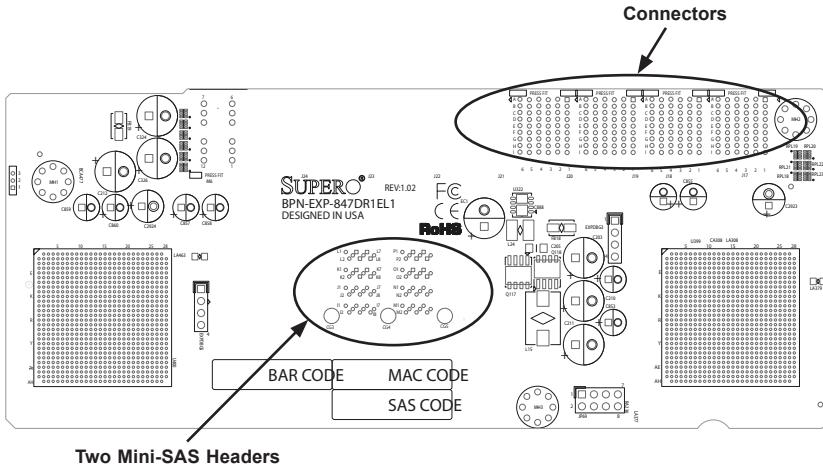


Figure 3-6. BPN-SAS2-847DR Rear SAS2 Receptacles

Rear SAS2 Receptacles		
Rear Receptacle	SAS Drive Number	Reference
SAS #0, #1	HDD 0, 1	J13
SAS #2, #3	HDD 2, 3	J14
SAS #4, #5	HDD 4, 5	J15
SAS #6, #7	HDD 6, 7	J16
SAS #8, #9	HDD 8, 9	J17
SAS #10, #11	HDD 10, 11	J18
SAS #12, #13	HDD 12, 13	J19
SAS #14, #15	HDD 14, 15	J20
SAS #16, #17	HDD 16, 17	J21
SAS #18, #19	HDD 18, 19	J22
SAS #20, #21	HDD 20, 21	J23
SAS #22, #23	HDD 22, 23	J24

### 3-4 BPN-EXP-847DR1EL1/EL2 Expander Boards

The BPN-EXP-847DR1EL1 and EL2 expander boards plug into the BPN-SAS2-847DR backplane. One or two expander boards may be used. The BPN-EXP-847DREL1/EL2 features four connectors and two Mini-SAS headers.



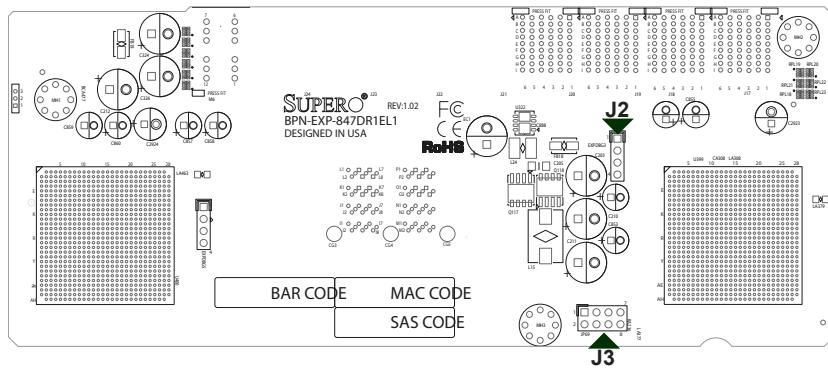


Figure 3-8. BPN-EXP-847DR1EL1/EL2 Jumpers

BPN-EXP-847DR1EL1/EL2 Jumpers		
Jumper	Name	Function
J2	EXPDBG3	Debug jumper, for manufacturer use only
J3	JP69	Reserved for SMC CB3

## Notes

### Disclaimer (cont.)

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