

User Manual

ASMB-831 Series

Socket SP5 (LGA 6096) AMD EPYC[™] 9004 Server Board with 6 REG-DDR5, 5 PCIe 5.0 x16, 2 PCIe 5.0 x8, 2 M.2 NVMe, 9 SATA3, 7 USB 3.2 Gen1, Dual 10GbE, IPMI



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Part No. 2002083100 Printed in China Edition 1 August 2023

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- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment to a power outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for assistance.

Caution! There is danger of a new battery exploding if it is incorrectly installed. Do



not attempt to recharge, force open, or heat the battery. Replace the battery only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.

Initial Inspection

Before installing the motherboard, please make sure that the following materials have been shipped:

- 1 x ASMB-831 ATX motherboard
- 1 x ASMB-831 Startup Manual
- 1 x Serial ATA HDD data cable
- 1 x I/O port bracket
- 2 x CPU power cables (8P)
- 1 x SATA power cable
- 1 x front panel converter cable
- 2 x screws for an M.2 device
- 1 x warranty card
- 1 x PCIe I/O support plate

If any of these items are missing or damaged, contact your distributor or sales representative immediately. We have carefully inspected the ASMB-831 mechanically and electrically before shipment. It should be free of marks and scratches and in perfect working order upon receipt. When unpacking the ASMB-831, check it for signs of shipping damage. (For example, damaged box, scratches, dents, etc.) If it is damaged or it fails to meet the specifications, notify our service department or local sales representative immediately. Also notify the carrier. Retain the shipping carton and packing material for inspection by the carrier. After inspection, we will make arrangements to repair or replace the unit.

Ordering Information

Part Number	Storage	Expansion Slot	IPMI	10GbE LAN	VGA Chip
ASMB-831T2-00A1	9*SATA3 + 2*M.2	5 PCIe x16 + 2 PCIe x8 (Gen5)	Yes	Yes	AST2600

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Overview

1.1 Introduction

The ASMB-831 server board is the most advanced AMD EPYC 9004 Processor family board for server-grade IPC applications that require high-performance computing power and multi-expansion slots. This board supports DDR5 ECC-REG 4800 MHz memory up to a maximum of 768 GB. Equipped with PCIe 5.0, the ASMB-831 offers a configuration that comprises five PCIe x16 slots and two PCIe x8 slots. Additionally, the variant ASMB-831T2 SKU includes dual 10GbE Ethernet LAN ports, effectively eliminating potential network bottlenecks. Furthermore, there's a dedicated GbE LAN RJ-45 reserved for IPMI function, enabling seamless remote-control management through AST-2600 BMC.

The ASMB-831 excels as an industrial server and networking solution due to its high reliability and exceptional performance. Leveraging EPYC processors, this board incorporates a range of features such as seven USB 3.2 Gen1 connectors, two Mini-SAS HD ports supporting eight SATA III connections, one SATA III port, and two M.2 NVMe interfaces operating at PCIe 4.0 speeds. The integration of AMD Infinity Guard enhances security by minimizing potential attack surfaces during software boot-up and execution, ensuring data protection during processing.

Benefitting from the capabilities of the EPYC processor, the ASMB-831 single-socket server board delivers robust computing power capable of efficiently managing substantial workloads. This eliminates the need to transition to dual-socket servers, thereby reducing licensing costs and minimizing power consumption while still satisfying your business requirements.



- 1. The IPMI module will be included in ASMB-831T2 SKU, and the ASMB-831T2 SKU can support 10GbE LAN ports.
- 2. Please refer to the ordering information at the front for IPMI and LAN support for individual product SKUs.

1.2 Features

1.2.1 General

- AMD EPYC 9004 Series Processor support: ASMB-831 is equipped with a single CPU socket to support AMD EPYC 9004 Series processors from 16 to 96 cores (or 32 to 192 threads per socket).
- High performance I/O capability: 2 x 10GbE LAN, 5 x PCIe 5.0 x16 slots (x16 link) + 2 x PCIe 5.0 x8 slots (x8 link), 9 x SATA (incl. 8 via Mini-SAS HD), and 2 x M.2 NVMe 2280/22110, 7 x USB 3.2 Gen1 (incl. 1 x Type-A) ports.
- Standard ATX form factor with industrial features: ASMB-831 provides industrial features like a long product lifecycle, reliable operation under a wide temperature range, watchdog timer, etc.
- IPMI 2.0 support: ASMB-831 is equipped with an ASPEED 2600 BMC chip and supports IPMI 2.0 (Intelligent Platform Management Interface 2.0) via a dedicated LAN and a shared LAN port.
- KVM over IP: KVM over IP allows BIOS level remote control of ASMB-831 through your own computer.

1.3 Specifications

Table 1.1: Specifica	ation	IS		
Processor				
CPU	 Single socket LGA 6096 SP5 Supports the AMD EPYC 9004 processor family, from 96 cores (32 to 192 threads) Supports TDP for up to 240 W 			
System Memory				
Memory Capacity		DDR5 memory bus Total 6 memory slots Maximum 128GB ECC-REG per DIMM One DIMM per channel		
Memory Type	Sup	ports DDR5 3600/4000/4400/4800 MHz RDIMM modules		
DIMM Sizes	Eacl men	h memory slot supports 8GB, 16GB, 32GB, 64GB, 128GB nory modules.		
Memory Voltage	1.1 \	V		
Error Detection		Corrects single-bit errors Detects double-bit errors (using ECC memory)		
Onboard Devices				
SoC	AMD EPYC 9004 SoC			
Network Controllers	 2 x Intel® X710 10GbE Ethernet Controllers connected to AMD EPYC CPU Network supports 10GbE Base-T with RJ-45 output. 			
VGA	ASPEED AST2600 controller with 64 MB VGA memory provides basic 2D VGA functionality.			
BMC Chip	One Realtek 8211F Gigabit PHY connected to AST2600 for BMC remote management			
Input/Output				
Storage	•	Total 9 x SATA ports and 2 x M.2 provide SATA 6 Gb/s and PCIe 8 Gb/s bandwidth		
LAN		2 x RJ-45 LAN ports (2 x 10GbE LAN) 1 x RJ-45 dedicated IPMI LAN port (10/100 Mbps) for IPMI only, there is no regular LAN function		
USB	:	4 x USB 3.2 Gen1 ports at the rear window 1 x USB 3.2 Gen1 internal header (2 ports) 1 x USB 3.2 Gen1 internal Type-A port		
Graphics		1 x VGA port.		
Serial Port		1 x RS232 port at the rear window		
Power Connector				
System Power 1		24-pin SSI EPS 12V power connector (Input 12V, 5V, 3.3V, b)		
CPU Power	1 x 8 men	8-pin and 1 x 4-pin SSI EPS 12V power connectors for CPU & nory power (12V)		
PCIe slot power	1 x 8	3-pin 12V power connector for PCIe slot 12V input		
Expansion Slots				

Table 1.1: Specifications				
	atioi			
		5 x PCIe x16 slots		
		- PCIEx16_SLOT1 (Gen5 x16 link, from CPU)		
		- PCIEX16_SLOT3 (Gen5 x16 link, from CPU)		
		- PCIEX16_SLOT5 (Gen5 x16 link, from CPU)		
PCI-Express Gen5		- PCIEX16_SLOT6 (Gen5 x16 link, from CPU)		
	_	- PCIEX16_SLOT7 (Gen5 X16 link, from CPU)		
		2 X POIE X8 SIOIS		
		- PCIEX8_SLOT2 (Gen5 x8 link, from CPU)		
System BIOS				
BIOS Type	256	Mb SPI Flash EEPROM with AMI BIOS		
PC Health Monitoring				
Voltage	oltage Monitors for CPU Cores, +3.3V, +5V, +12V, +5V Standby, VBA			
		One 4-pin header for the CPU cooler and five 4-pin headers		
EAN		for system fans (front*4 + rear*1)		
FAN		All fans have tachometer status monitoring		
		Thermal control for all fan connectors		
Tomporatura		Monitoring for CPU (PECI)		
remperature		Monitoring for System (BMC)		
Other Features (Case		Chassis intrusion detection		
Open)		Chassis intrusion header		
Operating Environmen	t/Co	ompliance		
RoHS	RoH	IS 6/6 Pb-Free Compliant		
		Operating temperature: 0 to 60 °C		
		Non-operating temperature: -40 to 85 °C		
Environmental Spec.		Operating relative humidity: 10% to 95% (non-condensing)		
		Non-operating relative humidity: 10% to 95% (non-condens-		
		ing)		

1.4 Board Layout, Jumpers and Connectors

Connectors on the ASMB-831 are linked to external devices such as hard disk drives. In addition, ASMB-831 has a number of jumpers that are used to configure the system for specific applications.

The tables below list the functions of each jumper and connector. Later sections in this chapter give instructions for setting jumpers. Chapter 2 gives instructions for connecting external devices to ASMB-831.



Figure 1.1 Board Layout



Figure 1.2 Rear IO of Full SKU

- LAN 2 is shared LAN with BMC.
- LAN 3 is dedicated BMC LAN.

Table 1.2: Onboard LAN LED Color Definition

100/1000 & 10G Mbps LAN Link/Activity LED Scheme

Left	Right	LAN1 & LAN2 (LAN1 & LAN2 (10G)		
		Left LED	Right LED		
100 Mbps	Link Active	Off Off	Green Blinking green		
1000 Mbps	Link Active	Amber Amber	Green Blinking green		
10G Mbps	Link Active	Green Green	Green Blinking green		
No Link		Off	Off		

Table 1.3: Jumpers					
Label	Function	Default			
JCMOS1	Clear CMOS	1-2			
JWDT1	Watchdog timer reset	1-2			
PSON1	AT(1-2) / ATX(2-3)	2-3			
JCASE1	Chassis case open alarm	1-2			





Keep CMOS data

Clear CMOS data

Table 1.4: Connectors			
Label	Function		
ATX12V1	SSI EPS 12V auxiliary power connector for CPU0		
ATX12V2	SSI EPS 12V auxiliary power connector for CPU0		
ATXPWR1	SSI EPS 24-pin main power connector (for system)		
BH1	For RTC battery		
BH2	For optional battery kit		
BIOS_SKT1	BIOS SPI ROM		
BMC_LAN_USB3C2	IPMI dedicated LAN connector & USB 3.2 port 3, 4		
BMC_SKT1	IPMI ROM		
BMC_UART1	IPMI UART connector		
COM1	Serial port: RS-232		
CPU0	AMD LGA6096 CPU0 socket		
CPUFAN0	CPU0 fan connector (4-pin)		
C0_DIMM_A1	Channel A DIMM1		
C0_DIMM_B1	Channel B DIMM1		

C0_DIMM_C1 Channel C DIMM1 C0_DIMM_G1 Channel G DIMM1 C0_DIMM_H1 Channel H DIMM1 C0_DIMM_I1 Channel H DIMM1 C0_DIMM_I1 Channel H DIMM1 ESPI ESPI connector for external thermistor. Jumper JTHR_SEL1 doesn't need to be adjusted GPI01 GPIO function for customized usage Front panel pin header. To support 1U chassis (Cable P/N: 1700031926-11) Power Switch/Power Reset/Power LED/LAN1LED/LAN2LED/HDD LED JFP1 Tront panel pin header. Power Switch/Reset connector External speaker/HDD LED connector / SMBus connector JFP3 Front panel pin header. Keyboard Lock and Power LED LAN1, LAN2 RJ-45 LAN connector LAN1, LAN2 RJ-45 LAN connector LAN1, LAN2 RJ-45 LAN connector LAN1, ED1 LAN LED extension connector M2_22110_1 M.2 connector (PCIe x4) PMBUS1 PMBUS connector to communicate with power supply SATA_CON1, SSATA Serial ATA0~8 (SATA 0~7 via SFF8643 connector) PCIEX16_SLOT1 PCIE x16 slot (x16 link) (CPU) PCIEX8_SLOT2 PCIE x8 slot (x8 link) (CPU) PCIEX8_SLOT5 PCIE x16 slot (x16 link) (CPU) <	Table 1.4: Connector	'S		
C0_DIMM_G1 Channel G DIMM1 C0_DIMM_H1 Channel H DIMM1 C0_DIMM_I1 Channel I DIMM1 ESPI ESPI connector EX_THR1 Connector for external thermistor. Jumper JTHR_SEL1 doesn't need to be adjusted GPI01 GPI0 function for customized usage Front panel pin header. To support 1U chassis (Cable P/N: 1700031926-11) Power Switch/Power Reset/Power LED/ LAN1LED/LAN2LED/HDD LED JFP1 1700031926-11) Power Switch/Reset connector External speaker/HDD LED connector / SMBus connector JFP3 Front panel pin header. Keyboard Lock and Power LED LAN1_LAN2 RJ-45 LAN connector LANLED1 LAN LED extension connector M2_22110_1 M.2 connector (PCIe x4) M2_22110_2 M.2 connector to communicate with power supply SATA_CON1, SSATA Serial ATA0~8 (SATA 0~7 via SFF8643 connector) PCIEX16_SLOT1 PCIE x16 slot (x16 link) (CPU) PCIEX16_SLOT3 PCIE x16 slot (x16 link) (CPU) PCIEX16_SLOT5 PCIE x16 slot (x16 link) (CPU) </td <td>C0_DIMM_C1</td> <td>Channel C DIMM1</td>	C0_DIMM_C1	Channel C DIMM1		
C0_DIMM_H1 Channel H DIMM1 C0_DIMM_I1 Channel I DIMM1 ESP11 ESPI connector EX_THR1 Connector for external thermistor. Jumper JTHR_SEL1 doesn't need to be adjusted GPI01 GPIO function for customized usage JFP1 1700031926-11) Power Switch/Power Reset/Power LED/LAN2LED/LAN2LED/LAN2LED/HDD LED JFP1+JFP2 Front panel pin header. Power Switch/Reset connector External speaker/HDD LED connector / SMBus connector JFP3 Front panel pin header. Keyboard Lock and Power LED LAN1, LAN2 RJ-45 LAN connector LAN1, LAN2 RJ-45 LAN connector M2_22110_1 M.2 connector (SATA & PCle x4) M2_22110_2 M.2 connector (PCle x4) PMBUS1 PMBUS connector to communicate with power supply SATA_CON1, SSATA Serial ATA0~8 (SATA 0~7 via SFF8643 connector) PCIEX16_SLOT1 PCIE x16 slot (x16 link) (CPU) PCIEX8_SLOT2 PCIE x8 slot (x8 link) (CPU) PCIEX6_SLOT5 PCIE x16 slot (x16 link) (CPU) PCIEX16_SLOT6 PCIE x16 slot (x16 link) (CPU) PCIEX16_SLOT7 PCIE x16 slot (x16 link) (CPU) PCIEX16_SLOT7 PCIE x16 slot (x16 link) (CPU) PCIEX16_SLOT7 PCIE x16 slot (x1	C0_DIMM_G1	Channel G DIMM1		
C0_DIMM_I1 Channel I DIMM1 ESPI1 ESPI connector EX_THR1 Connector for external thermistor. Jumper JTHR_SEL1 doesn't need to be adjusted GPI01 GPI0 function for customized usage JFP1 1700031926-11) Power Switch/Power Reset/Power LED/LAN1LED/LAN2LED/HDD LED JFP1 Tront panel pin header. To support 1U chassis (Cable P/N:LAN1LED/LAN2LED/HDD LED JFP1 Tront panel pin header. Power Switch/Reset connector External speaker/HDD LED connector / SMBus connector JFP3 Front panel pin header. Keyboard Lock and Power LED LAN1, LAN2 RJ-45 LAN connector LANLED1 LAN LED extension connector M2_22110_1 M.2 connector (PCle x4) PMBUS1 PMBUS connector to communicate with power supply SATA_CON1, SSATA Serial ATA0-8 (SATA 0-7 via SFF8643 connector) PCIEX16_SLOT1 PCIE x16 slot (x16 link) (CPU) PCIEX8_SLOT2 PCIE x8 slot (x8 link) (CPU) PCIEX6_SLOT3 PCIE x16 slot (x16 link) (CPU) PCIEX16_SLOT4 PCIE x8 slot (x8 link) (CPU) PCIEX16_SLOT5 PCIE x16 slot (x16 link) (CPU) PCIEX16_SLOT7 PCIE x16 slot (x16 link) (CPU) PCIEX16_SLOT7	C0_DIMM_H1	Channel H DIMM1		
ESPI1 ESPI connector EX_THR1 Connector for external thermistor. Jumper JTHR_SEL1 doesn't need to be adjusted GPI01 GPI0 function for customized usage JFP1 1700031926-11) Power Switch/Power Reset/Power LED/LAN1LED/LAN2LED/HDD LED JFP1 1700031926-11) Power Switch/Reset connector External speaker/HDD LED connector / SMBus connector JFP3 Front panel pin header. Power Switch/Reset connector External speaker/HDD LED connector LAN1_LAN2 RJ-45 LAN connector LAN1_ED1 LAN LED extension connector M2_22110_1 M.2 connector (SATA & PCle x4) M2_22110_2 M.2 connector (PCle x4) PMBUS1 PMBUS connector to communicate with power supply SATA_CON1, SSATA Serial ATA0-8 (SATA 0-7 via SFF8643 connector) PCIEX16_SLOT1 PCIE x16 slot (x16 link) (CPU) PCIEX8_SLOT2 PCIE x8 slot (x8 link) (CPU) PCIEX6_SLOT3 PCIE x16 slot (x16 link) (CPU) PCIEX16_SLOT7 PCIE x16 slot (x16 link) (CPU) PCIEX16_SLOT7 <td>C0_DIMM_I1</td> <td>Channel I DIMM1</td>	C0_DIMM_I1	Channel I DIMM1		
EX_THR1Connector for external thermistor. Jumper JTHR_SEL1 doesn't need to be adjustedGPI01GPIO function for customized usageJFP11700031926-11) Power Switch/Power Reset/Power LED/ LAN1LED/LAN2LED/HDD LEDJFP11700031926-11) Power Switch/Reset connector External speaker/HDD LED connector / SMBus connectorJFP3Front panel pin header. Reyboard Lock and Power LEDLAN1_LAN2RJ-45 LAN connectorLAN1_ED1LAN LED extension connectorM2_22110_1M.2 connector (SATA & PCle x4)M2_22110_2M.2 connector to communicate with power supplySATA_CON1, SSATASerial ATA0-8 (SATA 0~7 via SFF8643 connector)PCIEX16_SLOT1PCIE x16 slot (x16 link) (CPU)PCIEX16_SLOT2PCIE x16 slot (x16 link) (CPU)PCIEX16_SLOT3PCIE x16 slot (x16 link) (CPU)PCIEX16_SLOT4PCIE x16 slot (x16 link) (CPU)PCIEX16_SLOT5PCIE x16 slot (x16 link) (CPU)PCIEX16_SLOT6PCIE x16 slot (x16 link) (CPU)PCIEX16_SLOT7PCIE x16 slot (x16 link) (CPU)SMBUS1SMBus header (SMBus from either BMC or CPU)SMBUS1SMBus header (SMBus from either BMC or CPU)SYSFAN0~SYSFAN4System FAN connectorSYSFAN0~SYSFAN4System FAN connectorUSB3A1, USB3C1,USB 3.2 port 1, 2; USB 3.2 port 5, 6 (20-pin header); USB 3.2USB3H1port 7 (Type-A)VGA1VGA connector <td>ESPI1</td> <td>ESPI connector</td>	ESPI1	ESPI connector		
GPI01GPI0 function for customized usageJFP1Front panel pin header. To support 1U chassis (Cable P/N: 1700031926-11) Power Switch/Power LED/ LAN1LED/LAN2LED/HDD LEDJFP1+JFP2Front panel pin header. Power Switch/Reset connector External speaker/HDD LED connector / SMBus connectorJFP3Front panel pin header. Keyboard Lock and Power LEDLAN1_LED1LAN LED extension connectorM2_22110_1M.2 connector (SATA & PCIe x4)M2_22110_2M.2 connector (PCIe x4)PMBUS1PMBUS connector to communicate with power supplySATA_CON1, SSATASerial ATA0-8 (SATA 0~7 via SFF8643 connector)PCIEX16_SLOT1PCIE x16 slot (x16 link) (CPU)PCIEX8_SLOT2PCIE x8 slot (x8 link) (CPU)PCIEX16_SLOT3PCIE x16 slot (x16 link) (CPU)PCIEX16_SLOT4PCIE x16 slot (x16 link) (CPU)PCIEX16_SLOT5PCIE x16 slot (x16 link) (CPU)PCIEX16_SLOT7PCIE x16 slot (x16 link) (CPU)PCIEX16_SLOT7PCIE x16 slot (x16 link) (CPU)PCIEX16_SLOT7PCIE x16 slot (x16 link) (CPU)PCIEX16_SLOT6PCIE x16 slot (x16 link) (CPU)PCIEX16_SLOT7PCIE x16 slot (x16 link) (CPU)PCIEX16_SLOT6PCIE x16 slot (x16 link) (CPU)SMBUS1SMBus header (SMBus from either BMC or CPU)SMBUS1SMBus header (SMBus from either BMC or CPU)SMBUS1System FAN connectorSYSF_LED1System FAN connectorSYSF_LED1System FAN connectorUSB3A1, USB3C1,USB 3.2 port 5, 6 (20-pin header); USB 3.2USB3H1port 7 (Type-A)VG	EX_THR1	Connector for external thermistor. Jumper JTHR_SEL1 doesn't need to be adjusted		
Front panel pin header. To support 1U chassis (Cable P/N: 1700031926-11) Power Switch/Power Reset/Power LED/ LAN1LED/LAN2LED/HDD LEDJFP11700031926-11) Power Switch/Reset connector External speaker/HDD LED connector / SMBus connectorJFP3Front panel pin header. Reyboard Lock and Power LEDLAN1, LAN2RJ-45 LAN connectorLANLED1LAN LED extension connectorM2_22110_1M.2 connector (SATA & PCIe x4)M2_22110_2M.2 connector (PCIe x4)PMBUS1PMBUS connector to communicate with power supplySATA_CON1, SSATASerial ATAO-8 (SATA 0~7 via SFF8643 connector)PCIEX16_SLOT1PCIE x16 slot (x16 link) (CPU)PCIEX16_SLOT2PCIE x8 slot (x8 link) (CPU)PCIEX16_SLOT3PCIE x16 slot (x16 link) (CPU)PCIEX16_SLOT4PCIE x8 slot (x8 link) (CPU)PCIEX16_SLOT5PCIE x16 slot (x16 link) (CPU)PCIEX16_SLOT7PCIE x16 slot (x16 link) (CPU)SMBUS1SMBus header (SMBus from either BMC or CPU)SPI_CN1Connector for BIOS update toolSYSFAN0~SYSFAN4System FAN connectorSYS_LED1System LED connectorUSB3A1, USB3C1,USB 3.2 port 1, 2; USB 3.2 port 5, 6 (20-pin header); USB 3.2USB3H1port 7 (Type-A)VGA1VGA connector	GPIO1	GPIO function for customized usage		
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M2_22110_1M.2 connector (SATA & PCIe x4)M2_22110_2M.2 connector (PCIe x4)PMBUS1PMBUS connector to communicate with power supplySATA_CON1, SSATASerial ATA0~8 (SATA 0~7 via SFF8643 connector)PCIEX16_SLOT1PCIE x16 slot (x16 link) (CPU)PCIEX8_SLOT2PCIE x8 slot (x8 link) (CPU)PCIEX6_SLOT3PCIE x16 slot (x16 link) (CPU)PCIEX8_SLOT4PCIE x8 slot (x8 link) (CPU)PCIEX16_SLOT5PCIE x16 slot (x16 link) (CPU)PCIEX16_SLOT6PCIE x16 slot (x16 link) (CPU)PCIEX16_SLOT7PCIE x16 slot (x16 link) (CPU)PCIEX16_SLOT7PCIE x16 slot (x16 link) (CPU)PCIEX16_SLOT7PCIE x16 slot (x16 link) (CPU)SLOT12V1For PCIe slot 12V input onlySMBUS1SMBus header (SMBus from either BMC or CPU)SPI_CN1Connector for BIOS update toolSYS_LED1System LED connectorUSB3A1, USB3C1,USB 3.2 port 1, 2; USB 3.2 port 5, 6 (20-pin header); USB 3.2USB3H1port 7 (Type-A)VGA1VGA connector	LANLED1	LAN LED extension connector		
M2_22110_2M.2 connector (PCle x4)PMBUS1PMBUS connector to communicate with power supplySATA_CON1, SSATASerial ATA0~8 (SATA 0~7 via SFF8643 connector)PCIEX16_SLOT1PCIE x16 slot (x16 link) (CPU)PCIEX8_SLOT2PCIE x8 slot (x8 link) (CPU)PCIEX8_SLOT3PCIE x16 slot (x16 link) (CPU)PCIEX8_SLOT4PCIE x8 slot (x8 link) (CPU)PCIEX16_SLOT5PCIE x16 slot (x16 link) (CPU)PCIEX16_SLOT6PCIE x16 slot (x16 link) (CPU)PCIEX16_SLOT7PCIE x16 slot (x16 link) (CPU)PCIEX16_SLOT7PCIE x16 slot (x16 link) (CPU)SLOT12V1For PCIe slot 12V input onlySMBUS1SMBus header (SMBus from either BMC or CPU)SPI_CN1Connector for BIOS update toolSYS_LED1System LED connectorUSB3A1, USB3C1,USB 3.2 port 1, 2; USB 3.2 port 5, 6 (20-pin header); USB 3.2USB3H1port 7 (Type-A)VGA1VGA connector	M2_22110_1	M.2 connector (SATA & PCIe x4)		
PMBUS1PMBUS connector to communicate with power supplySATA_CON1, SSATASerial ATA0~8 (SATA 0~7 via SFF8643 connector)PCIEX16_SLOT1PCIE x16 slot (x16 link) (CPU)PCIEX8_SLOT2PCIE x8 slot (x8 link) (CPU)PCIEX8_SLOT3PCIE x16 slot (x16 link) (CPU)PCIEX8_SLOT4PCIE x8 slot (x8 link) (CPU)PCIEX16_SLOT5PCIE x16 slot (x16 link) (CPU)PCIEX16_SLOT6PCIE x16 slot (x16 link) (CPU)PCIEX16_SLOT7PCIE x16 slot (x16 link) (CPU)PCIEX16_SLOT7PCIE x16 slot (x16 link) (CPU)SLOT12V1For PCIe slot 12V input onlySMBUS1SMBus header (SMBus from either BMC or CPU)SYFAN0~SYSFAN4System FAN connectorSYS_LED1System LED connectorUSB3A1, USB3C1,USB 3.2 port 1, 2; USB 3.2 port 5, 6 (20-pin header); USB 3.2VGA1VGA connector	M2_22110_2	M.2 connector (PCIe x4)		
SATA_CON1, SSATASerial ATA0~8 (SATA 0~7 via SFF8643 connector)PCIEX16_SLOT1PCIE x16 slot (x16 link) (CPU)PCIEX8_SLOT2PCIE x8 slot (x8 link) (CPU)PCIEX16_SLOT3PCIE x16 slot (x16 link) (CPU)PCIEX8_SLOT4PCIE x8 slot (x8 link) (CPU)PCIEX16_SLOT5PCIE x16 slot (x16 link) (CPU)PCIEX16_SLOT6PCIE x16 slot (x16 link) (CPU)PCIEX16_SLOT7PCIE x16 slot (x16 link) (CPU)PCIEX16_SLOT7PCIE x16 slot (x16 link) (CPU)SLOT12V1For PCIe slot 12V input onlySMBUS1SMBus header (SMBus from either BMC or CPU)SYSFAN0~SYSFAN4System FAN connectorSYS_LED1System LED connectorUSB3A1, USB3C1,USB 3.2 port 1, 2; USB 3.2 port 5, 6 (20-pin header); USB 3.2VGA1VGA connector	PMBUS1	PMBUS connector to communicate with power supply		
PCIEX16_SLOT1PCIE x16 slot (x16 link) (CPU)PCIEX8_SLOT2PCIE x8 slot (x8 link) (CPU)PCIEX16_SLOT3PCIE x16 slot (x16 link) (CPU)PCIEX8_SLOT4PCIE x8 slot (x8 link) (CPU)PCIEX16_SLOT5PCIE x16 slot (x16 link) (CPU)PCIEX16_SLOT6PCIE x16 slot (x16 link) (CPU)PCIEX16_SLOT7PCIE x16 slot (x16 link) (CPU)PCIEX16_SLOT7PCIE slot slot (x16 link) (CPU)SLOT12V1For PCIe slot 12V input onlySMBUS1SMBus header (SMBus from either BMC or CPU)SPI_CN1Connector for BIOS update toolSYSFAN0~SYSFAN4System FAN connectorSYS_LED1System LED connectorUSB3A1, USB3C1,USB 3.2 port 1, 2; USB 3.2 port 5, 6 (20-pin header); USB 3.2VGA1VGA connector	SATA_CON1, SSATA	Serial ATA0~8 (SATA 0~7 via SFF8643 connector)		
PCIEX8_SLOT2PCIE x8 slot (x8 link) (CPU)PCIEX16_SLOT3PCIE x16 slot (x16 link) (CPU)PCIEX8_SLOT4PCIE x8 slot (x8 link) (CPU)PCIEX16_SLOT5PCIE x16 slot (x16 link) (CPU)PCIEX16_SLOT6PCIE x16 slot (x16 link) (CPU)PCIEX16_SLOT7PCIE x16 slot (x16 link) (CPU)PCIEX16_SLOT7PCIE x16 slot (x16 link) (CPU)SLOT12V1For PCIe slot 12V input onlySMBUS1SMBus header (SMBus from either BMC or CPU)SPI_CN1Connector for BIOS update toolSYSFAN0~SYSFAN4System FAN connectorSYS_LED1System LED connectorUSB3A1, USB3C1,USB 3.2 port 1, 2; USB 3.2 port 5, 6 (20-pin header); USB 3.2USB3H1port 7 (Type-A)VGA1VGA connector	PCIEX16_SLOT1	PCIE x16 slot (x16 link) (CPU)		
PCIEX16_SLOT3PCIE x16 slot (x16 link) (CPU)PCIEX8_SLOT4PCIE x8 slot (x8 link) (CPU)PCIEX16_SLOT5PCIE x16 slot (x16 link) (CPU)PCIEX16_SLOT6PCIE x16 slot (x16 link) (CPU)PCIEX16_SLOT7PCIE x16 slot (x16 link) (CPU)SLOT12V1For PCIe slot 12V input onlySMBUS1SMBus header (SMBus from either BMC or CPU)SPI_CN1Connector for BIOS update toolSYSFAN0~SYSFAN4System FAN connectorSYS_LED1System LED connectorUSB3A1, USB3C1,USB 3.2 port 1, 2; USB 3.2 port 5, 6 (20-pin header); USB 3.2VGA1VGA connector	PCIEX8_SLOT2	PCIE x8 slot (x8 link) (CPU)		
PCIEX8_SLOT4PCIE x8 slot (x8 link) (CPU)PCIEX16_SLOT5PCIE x16 slot (x16 link) (CPU)PCIEX16_SLOT6PCIE x16 slot (x16 link) (CPU)PCIEX16_SLOT7PCIE x16 slot (x16 link) (CPU)SLOT12V1For PCIe slot 12V input onlySMBUS1SMBus header (SMBus from either BMC or CPU)SPI_CN1Connector for BIOS update toolSYSFAN0~SYSFAN4System FAN connectorSYS_LED1System LED connectorUSB3A1, USB3C1,USB 3.2 port 1, 2; USB 3.2 port 5, 6 (20-pin header); USB 3.2VGA1VGA connector	PCIEX16_SLOT3	PCIE x16 slot (x16 link) (CPU)		
PCIEX16_SLOT5PCIE x16 slot (x16 link) (CPU)PCIEX16_SLOT6PCIE x16 slot (x16 link) (CPU)PCIEX16_SLOT7PCIE x16 slot (x16 link) (CPU)SLOT12V1For PCIe slot 12V input onlySMBUS1SMBus header (SMBus from either BMC or CPU)SPI_CN1Connector for BIOS update toolSYSFAN0~SYSFAN4System FAN connectorSYS_LED1System LED connectorUSB3A1, USB3C1,USB 3.2 port 1, 2; USB 3.2 port 5, 6 (20-pin header); USB 3.2VGA1VGA connector	PCIEX8_SLOT4	PCIE x8 slot (x8 link) (CPU)		
PCIEX16_SLOT6PCIE x16 slot (x16 link) (CPU)PCIEX16_SLOT7PCIE x16 slot (x16 link) (CPU)SLOT12V1For PCIe slot 12V input onlySMBUS1SMBus header (SMBus from either BMC or CPU)SPI_CN1Connector for BIOS update toolSYSFAN0~SYSFAN4System FAN connectorSYS_LED1System LED connectorUSB3A1, USB3C1,USB 3.2 port 1, 2; USB 3.2 port 5, 6 (20-pin header); USB 3.2VGA1VGA connector	PCIEX16_SLOT5	PCIE x16 slot (x16 link) (CPU)		
PCIEX16_SLOT7PCIE x16 slot (x16 link) (CPU)SLOT12V1For PCIe slot 12V input onlySMBUS1SMBus header (SMBus from either BMC or CPU)SPI_CN1Connector for BIOS update toolSYSFAN0~SYSFAN4System FAN connectorSYS_LED1System LED connectorUSB3A1, USB3C1,USB 3.2 port 1, 2; USB 3.2 port 5, 6 (20-pin header); USB 3.2VGA1VGA connector	PCIEX16_SLOT6	PCIE x16 slot (x16 link) (CPU)		
SLOT12V1For PCIe slot 12V input onlySMBUS1SMBus header (SMBus from either BMC or CPU)SPI_CN1Connector for BIOS update toolSYSFAN0~SYSFAN4System FAN connectorSYS_LED1System LED connectorUSB3A1, USB3C1, USB3H1USB 3.2 port 1, 2; USB 3.2 port 5, 6 (20-pin header); USB 3.2 port 7 (Type-A)VGA1VGA connector	PCIEX16_SLOT7	PCIE x16 slot (x16 link) (CPU)		
SMBUS1SMBus header (SMBus from either BMC or CPU)SPI_CN1Connector for BIOS update toolSYSFAN0~SYSFAN4System FAN connectorSYS_LED1System LED connectorUSB3A1, USB3C1,USB 3.2 port 1, 2; USB 3.2 port 5, 6 (20-pin header); USB 3.2USB3H1port 7 (Type-A)VGA1VGA connector	SLOT12V1	For PCIe slot 12V input only		
SPI_CN1Connector for BIOS update toolSYSFAN0~SYSFAN4System FAN connectorSYS_LED1System LED connectorUSB3A1, USB3C1, USB3H1USB 3.2 port 1, 2; USB 3.2 port 5, 6 (20-pin header); USB 3.2 port 7 (Type-A)VGA1VGA connector	SMBUS1	SMBus header (SMBus from either BMC or CPU)		
SYSFAN0~SYSFAN4System FAN connectorSYS_LED1System LED connectorUSB3A1, USB3C1,USB 3.2 port 1, 2; USB 3.2 port 5, 6 (20-pin header); USB 3.2USB3H1port 7 (Type-A)VGA1VGA connector	SPI_CN1	Connector for BIOS update tool		
SYS_LED1System LED connectorUSB3A1, USB3C1, USB3H1USB 3.2 port 1, 2; USB 3.2 port 5, 6 (20-pin header); USB 3.2 port 7 (Type-A)VGA1VGA connector	SYSFAN0~SYSFAN4	System FAN connector		
USB3A1, USB3C1, USB 3.2 port 1, 2; USB 3.2 port 5, 6 (20-pin header); USB 3.2 port 7 (Type-A) VGA1 VGA connector	SYS_LED1	System LED connector		
VGA1 VGA connector	USB3A1, USB3C1, USB3H1	USB 3.2 port 1, 2; USB 3.2 port 5, 6 (20-pin header); USB 3.2 port 7 (Type-A)		
	VGA1	VGA connector		

Table 1.5: Onboard LED				
LED	Description	LED Definition		
+5V_LED1	Power on LED	Off: Power off	On (Green): System is on	
+5V_SB_LED1	Standby LED	Off: No input AC Power	On (Green): System is on, in sleep mode, or in soft-off mode	
BMC_HBLED1	BMC heartbeat LED	Blinking (Green): Controller is working	normally	

1.5 Block Diagram



Figure 1.3 Block Diagram

1.6 System Memory

ASMB-831 has 6 x 288-pin memory slots for DDR5 4400/4800 MHz memory modules, maximum 128 GB for each DIMM. ASMB-831 supports registered DIMM memory modules.

1.7 Installation of Memory Modules

Memory performance is affected by different DIMM configurations. To reach optimal memory interleaving, be sure to install identical DIMM types with the same size, speed, and number of ranks on those memory slots corresponding to the correct processor.

The following table indicates recommended DIMM configurations with a single EPYC processor. Based on the guideline, you may adjust your memory configuration according to your PCIe expansion card configuration.

The motherboard will support odd-numbered modules (1 or 3 modules installed) but is unable to activate Dual Channel Technology. For great performance, a balanced memory population is recommended.

Table 1.6: DIMM Configurations with a Single CPU					
Quantity of memory installed					
	1	2	4	6	
DIMMA1	V	V	V	V	
DIMMB1				V	
DIMMC1			V	V	
DIMMG1		V	V	V	
DIMMH1				V	
DIMMI1			V	V	

Note! 3, 5 DIMMs are not recommended DIMM populations.



1.8 Processor Installation

The ASMB-831 is designed for AMD EPYC 9004 Series processors.

1. Unscrew the one screw (shown above in red circle) on the top of the socket retention mechanism (SRM), then rotate the Retention Frame and Rail Frame (with external cap).



2. Remove the external cap by pulling upwards.



3. Install the carrier frame/CPU package to the rail frame, then remove the PnP cover cap. Be very careful not to drop the PnP cover cap into the exposed contact field during the removal process.



4. Rotate and push the rail frame and retention frame until they are in the horizontal position.



5. Tighten the one screw (shown above in red circle) by using a T-20 screwdriver.



 Install the processor heatsink module into the socket retention mechanism (SRM) by using a T-20 screwdriver (follow the heatsink label direction 1-2-3-4-5-6).





Connections

2.1 Introduction

You can access most of the connectors from the top of the board as it is being installed in the chassis. If you have a number of cards installed, you may need to partially remove a card to make all the connections.

2.2 USB Ports (USB3C1, USB3C2, USB3H1, USB3A1)

The USB ports comply with USB 2.0 and USB 3.2 Gen1. Transmission rates of up to 480 Mbps (USB 2.0) / 5Gbps (USB 3.2 Gen1) and fuse protection are supported. The USB interface can be disabled in the system BIOS setup.



2.3 LAN Ports (LAN1, LAN2, LAN3)

The ASMB-831 is equipped with two 10GbE LAN ports. They are all with RJ-45 jacks and supported by all major network operating systems. One GbE LAN (LAN3) is for IPMI for system management.



2.4 VGA Connector (VGA1)

The ASMB-831 includes a VGA interface that can drive conventional CRT and LCD displays.



2.5 Serial Ports (COM1)

The ASMB-831 offers one serial port on the rear plate and one 2.50 mm on board with 2 x 5-pin pitch.





2.6 SPI Flash Connector (SPI_CN1)

The SPI flash programmer pin header (for RMA) can be connected to the BIOS-flashing tools for flashing the BIOS. Remember to power off the ASMB-831 motherboard before flashing the BIOS.



2.7 CPU Fan Connector (CPUFAN0)

If a fan is used, this connector supports cooling fans that draw up to 1.5A (18W).



CPUFAN0

2.8 System Fan Connector (SYSFAN0~4)



2.9 Front Panel Connector (JFP1+JFP2, JFP3)

There are several external switches and LEDs to monitor and control the ASMB-831.





JFP1+JFP2 JFP3

2.9.1 Power LED (JFP3)

JFP3 pin 1 and pin 3 are for the power LED. Refer to Appendix B for detailed information on the pin assignments. If an ATX power supply is used, the system's power LED status will be as indicated.

Table 2.1: ATX Power Supply LED Status		
ACPI Power Mode LED (ATX power)		
System On (S0)	On	
System Hibernation (S4)	Slow flashes	
System Off (S5)	Off	



2.9.2 External Speaker (JFP1+JFP2 Pins 1, 4, 7, 10)

JFP1+JFP2 pins 1, 4, 7, and 10 connect to an external speaker. ASMB-831 provides an onboard buzzer as an alternative. To enable the buzzer, set pins 7-10 as closed.



2.9.3 HDD LED Connector (JFP1+JFP2 Pins 2 & 5)

You can connect an LED to JFP1+JFP2 to indicate when the HDD is active.



2.9.4 Reset Connector (JFP1+JFP2 Pins 9 & 12)

Many computer cases offer the convenience of a reset button.



Chapter 2 Connections

2.10 Front Panel Connector (JFP1)

There are several external switches and LEDs to monitor and control the ASMB-831.



2.0 mm JPF on board				
Description	Pin Number		Description	
RST BTN	2	▼1	PWR BTN	
RST GND	4	3	PWR GND	
LAN1_LED+	6	5	LAN2_LED+	
LAN1_LED-	8	7	LAN2_LED-	
CRPS Detect (Reserved)	10	9	SYS_LED+ (Reserved)	
GND	12	11	SYS_LED- (Reserved)	
PWR LED+	14	13	HDD_LED+	
PWR LED-	16	15	HDD_LED-	
	0 mm IDE to 2	E4 mm Ditab U	oodor	
Description		umbor	Departmention	
(Red) RWR RTN			BST BTN (White)	
(Red) PWR BIN	•1	2	RST BIN (White)	
(Black) PWR GND	3	4	RST GND (Black)	
(Blue) LAN1_LED+	5	6	LAN2_LED+ (Brown)	
(Red) LAN1_LED-	7	8	LAN2_LED- (Black)	
		Key		
(Orang) HDD_LED+	13	14	PWR LED+ (Red)	
(Black) HDD_LED-	15			
Ì	Key	16	PWR LED- (Black)	

2.10.1 ATX Soft Power Switch (Pins 1, 3)

If your computer case is equipped with an ATX power supply, you should connect the power on/off button on your computer case to pins 1 and 3 on JFP1. This connection enables you to turn your computer on and off.

2.10.2 Reset Connector (Pins 2, 4)

JFP1 pins 2 & 4 are for a reset button.

2.10.3 Front Panel LAN Indicator Connector (Pins 5, 6, 7, 8)

You can connect an LED to connector JFP1 to indicate when LAN1 & LAN2 are active.

2.10.4 HDD LED Connector (Pins 13, 15)

You can connect an LED to connector JFP1 to indicate when the HDD is active.

2.10.5 Power LED (Pins 14, 16)

Refer to Appendix A for detailed information on the pin assignments. If an ATX power supply is used, the system's power LED status is as follows.

Table 2.2: System's power LED status			
Power Mode	LED Status		
System On	On		
System Suspend	Fast Flash (S1, S3) / Slow Flash (S4)		
System Off	Off		
System Off in deep sleep	Off		

2.11 Case Open (JCASE1)

A chassis intrusion header is located at JCASE1 on the motherboard. Attach the appropriate cable from the chassis to be informed of a chassis intrusion when the chassis has been opened. The default function is disabled and Pins 1 and 2 are bridged by a jumper cap.

0 1 0 2

JCASE1



JCASE1 <

2.12 Front Panel LAN Indicator Connector (LANLED1)



2.13 SATA Connector (SATA_CON1, SSATA)

ASMB-831 features eight serial ATA III interfaces (up to 600 MB/s) and eases cabling to hard drives with long and thin cables.







SATA_CON1

SSATA

2.14 M.2 Connector (M2_22110_1, M2_22110_2)

The M.2 22110 connector can support both SATA and PCIe SSD devices.



2.15 PCIe Expansion Slots

The ASMB-831 provides seven expansion slots that can support four double-deck cards. The riser card for 1U or 2U chassis can be used in slot 6 only.



Table 2.3: PCIe Expansion Slots				
	Slot Length	Link	PCI-E Generation	PCle link from
SLOT1	PCI-E x16	PCI-E x16	5	CPU
SLOT2	PCI-E x8	PCI-E x8	5	CPU
SLOT3	PCI-E x16	PCI-E x16	5	CPU
SLOT4	PCI-E x8	PCI-E x8	5	CPU
SLOT5	PCI-E x16	PCI-E x16	5	CPU
SLOT6	PCI-E x16	PCI-E x16	5	CPU
SLOT7	PCI-E x16	PCI-E x16	5	CPU

Table 2.4: PCIe Expansion Slots				
	Part Number	Description	Remarks	
D .	ASMB-RF28-20B1	ASMB-RF28 (2U Gen5 riser card)	2*PCI-E x8	
Card	ASMB-RF2F-10B1	ASMB-RF2F (2U Gen5 riser card)	1*PCI-E x16	
Caru	ASMB-RF1F-10B1	ASMB-RF1F (1U Gen5 riser card)	1*PCI-E x16	

2.16 Auxiliary Power Connector (ATXPWR1/ ATX12V1/ATX12V2)



Note!

- 1. Please use a power supply of SSI type; minimum output should be at least 700W with 5Vsb @ 2.5A.
- 2. ATXPWR1 & ATX12V1 & ATX12V2 should be all connected to the power supply, otherwise ASMB-831 will not boot up normally.

2.17 PCIe Power Connector (SLOT12V1)





This EPS style connector is only necessary if PCIe cards that draw more than 70 watts from the PCIe bus are installed on the motherboard.

2.18 System LED Connector (SYS_LED1)



Chapter 2 Connections

2.19 Clear CMOS Connector (JCMOS1)

Setting the jumper from pins 1-2 to pins 2-3, then back to pins 1-2 resets the CMOS data.



2.20 PMBUS Connector (PMBUS1)

The PMBUS connector on ASMB-831 is reserved for communicating with the power supply via BMC



PMBUS1

JCMOS1

2.21 Front Panel SMBUS Connector (SMBUS1)



2.22 BMC IC Socket (BMC_SKT1)

The IPMI feature can be enabled with BMC_SPI1. The BMC IC socket has already been pre-installed on ASMB-831T2.



2.23 GPIO Connector (GPIO1)






AMI BIOS

3.1 Introduction

With the AMI BIOS Setup program, you can modify BIOS settings and control the special features of your computer. The setup program uses a number of menus for making changes and turning special features on or off. This chapter describes the basic navigation of the ASMB-831 setup screens.

Main Advanced Chipset Secur	Aptio Setup – AMI Pity Boot Save & Exit Server	Mgmt
BIOS Information BIOS Vendor Core Version Compliancy Project Version Build Date and Time Access Level	American Megatrends 5.0.2.7 0.16 x64 UEFI 2.8; PI 1.7 SB310006050X018 05/30/2023 15:10:55 Administrator	Set the Date. Use Tab to switch between Date elements. Default Ranges: Year: 1998–9999 Months: 1–12 Days: Dependent on month Range of Years may vary.
Memory Information Total Memory Main Board	Total Memory: 16384 MB (DDR5) ASMB-831	
Serial Number UUID	Default string 5757F7FD2893B146 B34C80663C791FC1	<pre>++: Select Screen 1↓: Select Item Enter: Select +/-: Change Opt. E1: General Help</pre>
System Date System Time	[Thu 06/15/2023] [10:45:33]	F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Vers	ion 2.22.1285 Copyright (C) 20	23 AMI

Figure 3.1 Main Setup Screen

AMI's BIOS ROM has a built-in setup program that allows users to modify the basic system configuration. This type of information is stored in CMOS which is backed up by a battery to retain the setup information when the power is turned off.

Note!



The BIOS setup screens shown in this chapter are for reference only, they may not exactly match what you see on your display devices.

3.2 Entering BIOS Setup

3.2.1 Main Menu

Press during bootup to enter the AMI BIOS CMOS setup utility; the Main menu will appear on the screen. Use the arrow keys to select among the items and press <Enter> to accept or enter the submenu.

Aptio Setup – AMI Main Advanced Chipset Security Boot Save & Exit Server Mgmt		
BIOS Information BIOS Vendor Core Version Compliancy Project Version Build Date and Time Access Level	American Megatrends 5.0.2.7 0.16 x64 UEFI 2.8; PI 1.7 S8310006050X018 05/30/2023 15:10:55 Administrator	Set the Date. Use Tab to switch between Date elements. Default Ranges: Year: 1998–9999 Months: 1–12 Days: Dependent on month Range of Years may vary.
Memory Information Total Memory Main Board	Total Memory: 16384 MB (DDR5) ASMB-831	
Serial Number UUID	Default string 5757F7FD2893B146 B34C80663C791FC1	<pre>++: Select Screen 1↓: Select Item Enter: Select +/-: Change Opt. F1: General Help</pre>
System Date System Time	[Thu 06/15/2023] [10:45:33]	F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.22.1285 Copyright (C) 2023 AMI		

Figure 3.2 Main Setup Screen

The Main BIOS setup screen has two main frames. The left frame displays all the options that can be configured. Grayed-out options cannot be configured; options in blue can be. The right frame displays the legend. Above the legend is an area reserved for a text message. When an option is selected in the left frame, it is high-lighted in white. Often a text message will accompany it.

3.2.2 System Date / System Time

Use this option to change the system time and date. Highlight System Time or System Date using the <Arrow> keys. Enter new values through the keyboard. Press the <Tab> key or the <Arrow> keys to move between fields. The date must be entered in MM/DD/YY format. The time must be entered in HH:MM:SS format.

3.3 Advanced BIOS Features Setup

Select the Advanced tab from the ASMB-831 setup screen to enter the Advanced BIOS setup screen. You can select any of the items in the left frame of the screen, such as CPU configuration, to go to the submenu for that item. You can display an Advanced BIOS Setup option by highlighting it using the <Arrow> keys. All Advanced BIOS Setup options are described in this section. The Advanced BIOS Setup screens are shown below. The submenus are described on the following pages.

Aptic Main Advanced Chipset Security Boot S) <mark>Setup − AMI</mark> Save & Exit Server Mgmt
 Main Advanced Chipset Security Boot S Trusted Computing PSP Firmware Versions Redfish Host Interface Settings AMD CBS AST2600 Super IO Configuration Hardware Monitor S5 RTC Wake Settings Serial Port Console Redirection CPU Configuration PCI Subsystem Settings USB Configuration Network Stack Configuration SATA Configuration T1s Auth Configuration 	Trusted Computing Settings ++: Select Screen 14: Select Item Enter: Select +/-: Change Opt.
▶ Driver Health	F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.22.128	35 Copyright (C) 2023 AMI

Figure 3.3 Advanced BIOS Features Setup Screen

3.3.1 Trusted Computing

Advanced	Aptio Setup – AMI	
Configuration Security Device Support NO Security Device Found	[Disable]	Enables or Disables BIOS support for security device. O.S. will not show Security Device. TCG EFI protocol and INT1A interface will not be available. ++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2	2.22.1285 Copyright (C) 2023	AMI

Figure 3.4 Trusted Computing Screen

 Security Device Support Enables or Disables BIOS support for security devices.

3.3.2 PSP Firmware Versions

Advanced	Aptio Setup – AMI	
PSP Firmware Versions		
ABL Version PSP BootLoader Version SMU FW Version SEV FW Version PHY FW Version TF MPDMA FW Version GMI FW Version GMI FW Version SEC FW Version PMU FW Version uCode B0 Version APCB Version APCB Version APCB Version	10038016 00.29.00.78 04.71.88.00 01.01.35.05 00.01.33.00 01.00.13.9D 00.47.03.00 00.47.34.00 AB.01.27.00 02.00.08.28 0D.0E.90.5C 00.00.90.43 A101020 0000 0000	<pre>++: Select Screen fl: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>
	Version 2.22.1285 Copyright (C) 2023	3 AMI

Figure 3.5 PSP Firmware Versions Screen

Chapter 3 AMI BIOS

3.3.3 Redfish Host Interface Settings

Advanced	Aptio Setup – AMI	
Redfish Host Interface Settings		Enable/Disable AMI Redfish
Redfish	[Enabled]	
BMC Redfish Version BIOS Redfish Version BIOS RTP Version Authentication mode	N/A 1.11.0 RB_1.0.16 [Basic Authentication]	
Redfish BMC Settings IP address IP Mask address	10.234.147.1	
IP Port	443	<pre>++: Select Screen fl: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>
Version 2	.22.1285 Copyright (C) 2023	AMI

Figure 3.6 Redfish Host Interface Settings screen

Redfish

Enable/Disable AMI Redfish.

- Authentication mode
 Select authentication mode: Basic Authentication; Session Authentication
- Redfish BMC Settings Set IP address, IP Mask address, IP Port.

3.3.4 AMD CBS



Figure 3.7 AMD CBS Screen

3.3.4.1 CPU Common Options



Figure 3.8 CPU Common Options Screen

- Core Performance Boost Enable or Disable Core Performance Boost (CPB) options.
- Global C-state Control Controls I/O-based C-state generation and DF C-states.
 Local APIC Mode Select local APIC mode:

Compatibility, xAPIC or x2APIC.

- AVX512 Enable or Disable AVX512.
- Performance

Advanced	Aptio Setup – AMI	
Performance OC Mode ▶ Custom Core Pstates ▶ CCD/Core/Thread Enablement SMT Control	[Normal Operation] [Auto]	Select overclock operation modes
	OC Mode - Normal Operation Customized	<pre>++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>
Version 3	2.22.1285 Copyright (C) 2023	AMI

Figure 3.9 CPU Common Options - Performance screen

- OC Mode

Select overclock operation modes: Normal Operation; Customized.

- Custom Core Pstates
- CCD/Core/Thread Enablement
- SMT Control

Can be used to disable symmetric multi-threading. To re-enable SMT, a POWER CYCLE is needed after selecting the 'Enable' option. Select 'Auto' based on the BIOS PCD (PcdAmdSmtMode) default setting.

3.3.4.2 DF Common Options



Figure 3.10 DF Common Options Screen

Memory Addressing



Figure 3.11 DF Common Options - Memory Addressing Screen

NUMA nodes per socket

Specifies the number of desired NUMA nodes per socket: NPS1; NPS2; NPS4, Auto.

3.3.4.3 NBIO Common Options

Advanced	Aptio Setup — AMI	
NBIO Common Options		Enable/Disable IOMMU
IOMMU • SMU Common Options Enable AER Cap Data Link Feature Cap PCIE Link Speed Capability	[Auto] [Disabled] [Disabled] [Auto]	
		<pre>++: Select Screen fl: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>
Version 2.22.1285 Copyright (C) 2023 AMI		

Figure 3.12 NBIO Common Options Screen

Enable or Disable IOMMU function.

- Enable AER Cap
 Enables Advanced Error Reporting Capability.
- Data Link Feature Cap Data Link Feature Capability.

SMU Common Options



Figure 3.13 SMU Common Options Screen

- TDP Control
 - Auto = Use the fused TDP; Manual = User can set customized TDP.
- PPT Control
 Package Power Limit 240W based on ASMB-831 CPU power design.
- APBDIS
 - 0 = not APBDIS (mission mode), 1 = APBDIS.

Chapter 3 AMI BIOS

PCIE Link Speed Capability

Set all PCIe port speed capability: Maximum speed; Gen1; Gen2; Gen3; Gen4; Gen5; Auto.



Figure 3.14 NBIO Common Options - PCIE Link Speed Capability screen

3.3.4.4 FCH Common Options



Figure 3.15 FCH Common Options Screen

SATA Configuration Options

Advanced	Aptio Setup — AMI	
SATA Configuration Options SATA Enable ▶ SATA Controller options	[Auto]	Disable or enable OnChip SATA controller
	SATA Enable Disabled Enabled Auto	<pre>++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>
Version 2	.22.1285 Copyright (C) 2023	AMI

Figure 3.16 SATA Configuration Options Screen

- SATA Enable

Disable or enable the OnChip SATA controller.

SATA Controller options

Aptio Setup – An Advanced	MI
SATA Controller options	SATA Controller Enable
▶ SATA Controller Enable ▶ SATA Controller eSATA	
	<pre>++: Select Screen 1↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>
Version 2.22.1285 Copyright	t (C) 2023 AMI

Figure 3.17 SATA Controller Options Screen

SATA Controller Enable



Figure 3.18 SATA Controller Enable Screen

 Sata0-7 Enable Enable or Disable Sata0~7. Each IOD has 4 SATA Controllers.
 Sata8 Enable

Enable or Disable Sata8. Each IOD has 4 SATA Controllers.

SATA Controller eSATA



Figure 3.19 SATA Controller eSATA Screen

SATA Port HotPlug

Enable or Disable SATA Port0~Port8 HotPlug function.

Advanced	Aptio Setup – AMI	
SATA Port HotPlug		No help string
SATA PortO HotPlug SATA Port1 HotPlug SATA Port2 HotPlug SATA Port3 HotPlug SATA Port4 HotPlug SATA Port5 HotPlug SATA Port6 HotPlug SATA Port6 HotPlug SATA Port8 HotPlug	[Enabled] [Enabled] [Enabled] [Enabled] [Enabled] [Enabled] [Enabled] [Enabled]	
		<pre>++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>
	Version 2.22.1285 Copyright (0	C) 2023 AMI



USB Configuration Options



Figure 3.21 USB Configuration Options Screen

- XHCI Controller0 enable Enable or disable USB3 controller0.
- XHCI Controller1 enable
 Enable or disable USB3 controller1.

Chapter 3 AMI BIOS

AC Power Loss Options



Figure 3.22 AC Power Loss Options Screen

– AC Loss Control

Select AC Loss Control Method: Always Off; Always On; Previous.

3.3.5 AST2600 Super IO Configuration



Figure 3.23 AST2600 Super IO Configuration Screen

Serial Port 1 Configuration



Figure 3.24 Serial Port 1 Configuration Screen

- Serial Port Enable or Disable Serial Port (COM).
- Change Settings
 - To select an optimal setting for Super IO Device.

3.3.6 Hardware Monitor

Advanced	Aptio Setup – AMI	
Hardware Monitor		Fan Sensor Event Configuration.
▶ Fan Sensor Event Configuration Watch Dog Timer CPU Warning Temperature ACPI Shutdown Temperature Case Open Warning Fan Mode Function	[Disabled] [Disabled] [Disabled] [Disabled] [Smart FAN / Manual Mode]	
▶ Smart Fan / Manual Mode Configu	ration	
PC Health Status		
CPU Temperature EXT_THR1 Temperature System Temperature +12V +5V +3.3V VBAT CPUFANO Speed SYSFANO Speed SYSFAN1 Speed	: +40 °C : +33 °C : +33 °C : +11.858 V : +5.013 V : +3.212 V : +2.806 V : 4100 RPM : N/A : N/A	<pre>++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>
Vers	ion 2.22.1285 Copyright (C)	2023 AMI

Figure 3.25 IT8528 HW Monitor Screen

Fan Sensor Event Configuration

Enabled/Disabled CPUFAN1 and SYSFAN0~SYSFAN4 Fan Sensor Event.



Figure 3.26 Fan Sensor Event Configuration screen

Watchdog Timer

Enable or Disable the watchdog timer function.

CPU Warning Temperature

Enable or Disable the CPU warning temperature threshold. When the system reaches the warning temperature, the speaker will beep.



Figure 3.27 CPU Warning Temperature screen

ACPI Shutdown Temperature

Enable or Disable the ACPI shutdown temperature threshold. When the system reaches the shutdown temperature, it will automatically shut down by the ACPI OS to protect the system from overheating damage.





Case Open Warning

Enable or Disable Case Open Warning Message.

Fan Mode Function

Select FAN control policy: Full Speed; Smart FAN/Manual Mode; Quiet Mode.

Advensed	Aptio Setup — AMI	
Havancea		
Hardware Monitor		▲ Select FAN control policy.
Fan Sensor Event Configuration		
Watch Dog Timer	[Disabled]	
CPU Warning Temperature	[Disabled]	
ACPI Shutdown Temperature	[Disabled]	
Case Open Warning	[Disabled]	
Fan Mode Function	[Smart FAN / Manual	
	Mode]	
Smart Fan / Manual Mode Configur	ra <mark>tion</mark>	
	Fan Mode Function —	
PC Health Status	Full Speed	
	Smart FAN / Manual Mode	
CPU Temperature	Quiet Mode	→+: Select Screen
EXT_THR1 Temperature		↓: Select Item
System Temperature		Enter: Select
		+/-: Change Opt.
+12V	: +11.858 V	F1: General Help
+5V	: +4.980 V	F2: Previous Values
+3.3V	: +3.190 V	F3: Optimized Defaults
VBAT	: +2.806 V	F4: Save & Exit
		ESC: Exit
CPUFANO Speed	: 4900 RPM	
SYSFANO Speed	: NZA	
SYSFAN1 Speed	: N/A	400 ▼
Version 2.22.1285 Copyright (C) 2023 AMI		

Figure 3.29 Fan Mode Function screen

Smart Fan / Manual Mode Configuration

The default mode of the CPU/System FAN is Smart FAN mode and the BIOS will automatically control the FAN speed according to the CPU temperature. When set to manual mode, the fan duty setting can be changed; the range is from 10%~100%, and the default setting is 100%.



Figure 3.30 Smart Fan and Manual Mode Configuration screen

Chapter 3 AMI BIOS

3.3.7 S5 RTC Wake Settings



Figure 3.31 S5 RTC Wake Settings Screen

Wake system from S5

Enable or disable system wake on alarm event. Select FixedTime, and the system will wake on the hr:min:sec specified. Select DynamicTime, and the system will wake at the current time + the added minute(s).

3.3.8 Serial Port Console Redirection



Figure 3.32 Serial Port Console Redirection Screen

Console Redirection Settings

The settings specify how the host computer and the remote computer (which the user is using) will exchange data. Both computers should have the same or compatible settings.

Advanced	Aptio Setup — AMI	
COM1 Console Redirection Settings Terminal Type Bits per second Data Bits Parity Stop Bits Flow Control VT-UTF8 Combo Key Support Recorder Mode Resolution 100x31 Putty KeyPad	[ANSI] [115200] [8] [None] [1] [None] [Enabled] [Disabled] [Disabled] [VT100]	Emulation: ANSI: Extended ASCII char set. VT100: ASCII char set. VT100Plus: Extends VT100 to support color, function Keys, etc. VT-UTF8: Uses UTF8 encoding to map Unicode chars onto 1 or more bytes. ++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Vers	ion 2.22.1285 Copyright (C) :	2023 AMI

Figure 3.33 COM1 Console Redirection Settings Screen

- Terminal Type

Select a terminal type to be used for console redirection. Options available: VT100/VT100+/ANSI /VT-UTF8.

Bits Per Second

Select the baud rate for console redirection. Options available: 9600/19200/57600/115200

Data Bits

- Parity

A parity bit can be sent with the data bits to detect transmission errors. Even: parity bit is 0 if the number of 1's in the data bits is even. Odd: parity bit is 0 if the number of 1's in the data bits is odd. Mark: parity bit is always 1. Space: Parity bit is always 0. Mark and Space Parity do not allow for error detection. Options available: None/Even/Odd/Mark/Space.

– Stop Bits

Stop bits indicate the end of a serial data packet. (A start bit indicates the beginning). The standard setting is 1 stop bit. Communication with slow devices may require more than 1 stop bit. Options available: 1/2.

- Flow Control

Flow control can prevent data loss from buffer overflow. When sending data, if the receiving buffers are full, a 'stop' signal can be sent to stop the data flow. Once the buffers are empty, a 'start' signal can be sent to re-start the flow. Hardware flow control uses two wires to send start/stop signals. Options available: None/Hardware RTS/CTS

VT-UTF8 Combo Key Support

Enable VT-UTF8 combination key support for ANSI/VT100 terminals.

- Recorder Mode

When this mode is enabled, only text will be sent. This is to capture terminal data.

Options available: Enabled/Disabled.

Resolution 100x31

Enables or disables extended terminal resolution.

Putty Keypad

Select function keys and keypad on putty.

Legacy Console Redirection Settings

Select a COM port to display redirection of Legacy OS and Legacy OPROM Messages.

Advanced	Aptio Setup – AMI	
Legacy Console Redirection Setting	ţs	Select a COM port to display
Redirection COM Port Resolution Redirect After POST	[COM1] [80x24] [Always Enable]	redirection of Legacy US and Legacy OPROM Messages
		<pre>++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>
Versio	n 2.22.1285 Copyright (C) 20	23 AMI

Figure 3.34 Legacy Console Redirection Settings Screen

Console Redirection Settings



Figure 3.35 Console Redirection Settings Screen

- Out-of-Band Mgmt Port

To select the com port the user would like to set for console redirection.

- Terminal Type EMS Set as "VT100", "VT100+", "VT-UTF8", or "ANSI". "VT-UTF8" is the default setting.
- Bits Per Second EMS

To select serial port transmission, the speed must be matched on the other side. It can be set as "9600", "19200", "57600", or "115200". "115200" is the default setting.

- Flow Control EMS

Flow control can prevent data loss from buffer overflow. It can be set as "None", "Hardware RTS/CTS", or "Software Xon/Xoff". "None" is the default setting.

- Data Bits EMS
- Parity EMS
- Stop Bits EMS

3.3.9 CPU Configuration

Advanced	Aptio Setup — AMI	
CPU Configuration SVM Mode ▶ Node 0 Information	[Enabled]	Enable∕disable CPU Virtualization
	SVM Mode Disabled Enabled	<pre>++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>
Version 2.	.22.1285 Copyright (C) 2023	AMI

Figure 3.36 CPU Configuration Screen

SVM Mode

Enable/Disable CPU Virtualization.

Node 0 Information View memory information related to Node 0 AMD EPYC CPU.



Figure 3.37 Node 0 Information Screen

3.3.10 PCI Subsystem Settings



Figure 3.38 PCI Subsystem Settings Screen

Above 4G Decoding

Enable or Disable 64-bit capable devices to be decoded in the above 4G address space (Only if the system supports 64-bit PCI decoding).





SR-IOV Support

If the system has SR-IOV capable PCIe Devices, this option Enables or Disables Single Root IO Virtualization support.

3.3.11 USB Configuration

Advanced	Aptio Setup – AMI	
USB Configuration		Enables Legacy USB support.
USB Module Version	29	AUIU option disables legacy support if no USB devices are connected. DISABLE option will
USB Controllers: 4 XHCIs		keep USB devices available only for EFI applications.
USB Devices: 1 Drive, 2 Keyboards, 1 Mouse,	1 Hub	
Legacy USB Support XHCI Hand-off	[Enabled] [Enabled]	
USB Mass Storage Driver Support Port 60/64 Emulation	[Enabled] [Enabled]	
USB hardware delays and time-outs:		↔: Select Screen t↓: Select Item
USB transfer time-out	[20 sec]	Enter: Select
Device reset time-out	[20 sec]	+/−: Change Opt.
Device power-up delay	[Auto]	F1: General Help F2: Previous Values
Mass Storage Devices:		F3: Optimized Defaults
JetFlashTranscend 2GB 8.07	[Auto]	F4: Save & Exit
		ESC: Exit
. Version 2	.22.1285 Conuright (C) 2023	АМТ

Figure 3.39 USB Configuration Screen

Legacy USB Support

This is to support a USB device under a legacy OS such as DOS. When "Auto" is selected, the system will automatically detect if a USB device is plugged into the computer and enable USB legacy mode when a USB device is plugged in, or disable USB legacy mode when no USB device is attached.

XHCI Hand-off

This is a workaround for an OS without XHCI hand-off support. The XHCI ownership change should be claimed by the XHCI driver.

USB Mass Storage Driver Support

Enable or Disable USB mass storage driver support.

Port 60/64 Emulation

Enables I/O port 60h/64h emulation support. This should be enabled for the complete USB keyboard legacy support for non-USB aware OS.

USB Transfer Time-out

Selects the USB transfer time-out value. [1,5,10,20sec]

Advanced	Aptio Setup — AMI	
USB Configuration		The time-out value for
USB Module Version	29	transfers.
USB Controllers: 4 XHCIs		
USB Devices: 1 Drive, 2 Keyboards, 1 Mu	ouse, 1 Hub	
Legacy USB Support XHCI Hand-off USB Mass Storage Driver Support Port 60/64 Emulation	USB transfer time-out 1 sec 5 sec 10 sec 20 sec	t. Select Screen
USB hardware delays and time–ou USB transfer time–out		↓: Select Item nter: Select
Device reset time-out	[20 sec]	+/-: Change Opt.
Device power–up delay	[Auto]	F1: General Help F2: Previous Values
Mass Storage Devices:		F3: Optimized Defaults
JetFlashTranscend 26B 8.07	[Auto]	F4: Save & Exit ESC: Exit
Vers	ion 2.22.1285 Copyright (C) 2023	AMI

Figure 3.40 USB Transfer Time-Out Screen

Device Reset Time-out

Selects the USB device reset time-out value. [10,20,30,40 sec]

Aptio Setup - AMI		
Advanced		
USB Configuration		USB mass storage device Start
USB Module Version	29	
USB Controllers: 4 XHCIs		
USB Devices:		
1 Drive, 2 Keyboards, 1 M	ouse, 1 Hub	
Legacy USB Support	Device reset time-out —	
XHCI Hand-off USB Mass Storage Driver Support	10 sec 20 sec	
Port 60/64 Emulation	30 sec	
UCD handware delays and time av	40 sec	+: Select Screen
USB transfer time-out		nter: Select
Device reset time–out	[20 sec]	+/-: Change Opt.
Device power-up delay	[Auto]	F1: General Help
Mass Storage Devices:		F3: Optimized Defaults
JetFlashTranscend 2GB 8.07	[Auto]	F4: Save & Exit
		ESC: Exit
Version 2.22.1285 Copyright (C) 2023 AMI		

Figure 3.41 Device Reset Time-Out Screen

Device Power-Up Delay

This item appears only when Device power-up delay is set to [manual].

Advanced	Aptio Setup – AMI	I
USB Configuration		Maximum time the device will
USB Module Version	29	reports itself to the Host Controller. 'Auto' uses
USB Controllers: 4 XHCIs		default value: for a Root port it is 100 ms, for a Hub port
USB Devices: 1 Drive, 2 Keyboards, 1 M	ouse, 1 Hub	the delay is taken from Hub descriptor.
Legacy USB Support XHCI Hand-off USB Mass Storage Driver Support Port 60/64 Emulation	[Enabled] Device power-up de; Auto Manual	lay
USB hardware delays and time-ou	ts	↓: Select Item
USB transfer time-out	[20 sec]	Enter: Select
Device reset time-out	[20 SEC]	+/-: Change Upt.
Device power-up delay	[Hulo]	F1. General netp F2: Previous Values
Mass Storage Devices:		F3: Optimized Defaults
JetFlashTranscend 268 8.07	[Auto]	F4: Save & Exit ESC: Exit
Vers	ion 2.22.1285 Copyright	(C) 2023 AMI

Figure 3.42 Device Power-Up Delay Screen

Mass Storage Devices

Default is "Auto" to enumerate mass storage devices according to media format. Auto; Floppy; Forced FDD; Hard Disk; CD-ROM.

Advanced	Aptio Setup – AMI	
USB Configuration		Mass storage device emulation
USB Module Version	29	devices according to their media format. Optical drives
USB Controllers: 4 XHCIs		are emulated as 'CDROM', drives with no media will be
USB Devices: 1 Drive, 2 Keyboards, 1	. Mouse, 1 Hub	emulated according to a drive type.
Legacy USB Support XHCI Hand-off USB Mass Storage Driver Supp Port 60/64 Emulation	JetFlashTranscend 2GB 8.07 Auto Floppy Forced FDD	
USB hardware delays and time	Hard Disk CD–ROM	Select Screen Select Item
USB transfer time-out Device reset time-out		er: Select : Change Opt.
Device power-up delay	[Auto]	F1: General Help F2: Previous Values
Mass Storage Devices:		F3: Optimized Defaults
JetFlashTranscend 268 8.07	LAUTOJ	ESC: Exit
Ve	ersion 2.22.1285 Copyright (C) 2023	AMI

Figure 3.43 Mass Storage Devices Screen

3.3.12 Network Stack Configuration

Advanced	Aptio Setup – AMI	
Network Stack IPv4 PXE Support IPv4 HTTP Support IPv6 PXE Support IPv6 HTTP Support PXE boot wait time Media detect count	[Enabled] [Disabled] [Disabled] [Disabled] [Disabled] 0 1	Enable/Disable UEFI Network Stack
		<pre>++: Select Screen fl: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>
Version	2.22.1285 Copyright (C) 2023	3 AMI



Network Stack

Enable or Disable UEFI network stack function. IPv4 PXE support IPv4 HTTP support IPv6 PXE support IPv6 HTTP support PXE boot wait time Media detect count

3.3.13 CSM Configuration

Enable or disable CSM (Compatibility Support Module) configuration support. When disabled, the system can only support UEFI mode.

Advanced	Aptio Setup – AMI	
Compatibility Support Module Configu	ration	Enable/Disable CSM Support.
CSM Support	[Enabled]	
CSM16 Module Version	03.E0	
GateA20 Active INT19 Trap Response HDD Connection Order	[Upon Request] [Immediate] [Adjust]	
Boot option filter	[UEFI and Legacy]	
Option ROM execution		
Network Storage Video Other PCI devices	[UEFI] [UEFI] [UEFI] [UEFI]	<pre>++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>
Version 2.22.1285 Copyright (C) 2023 AMI		

Figure 3.45 CSM Configuration Screen

GateA20 Active

This is useful when RT code is executed above 1MB. When it's set as 'Upon Request', GA20 can be disabled using BIOS services. When it's set as 'Always', it does not allow disabling of GA20.

INT19 Trap Response

The BIOS INT19 trap response is set by option ROM. When it's set as 'Immediate', the trap will be executed right away. When it's set as 'Postponed', the trap will be executed during legacy boot.

HDD Connection Order

Some OS require HDD handles to be adjusted.

Boot Option Filter

Change UEFI/legacy ROM priority for the boot option.



Figure 3.46 Boot Option Filter Screen

Network

Controls the execution of UEFI and legacy PXE OpROM.



Figure 3.47 Option ROM Execution - Network Screen
Storage

Control the execution of UEFI and legacy storage OpROM.



Figure 3.48 Option ROM Execution – Storage Screen

Video

Control the execution of UEFI and legacy Video OpROM.

Advanced	Aptio Setup – AMI			
Compatibility Support Module Config	Controls the execution of UEFI			
CSM Support	[Enabled]	and Legacy video opkom		
CSM16 Module Version	03.E0			
GateA20 Active INT19 Trap Response HDD Connection Order	[Upon Request] [Immediate] [Adjust]			
Boot option filter Option ROM execution Network Storage Video Other PCI devices	Video Do not launch UEFI Legacy [UE [UEFI] [UEFI]	<pre> ++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>		
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Figure 3.49 Option ROM execution - Video screen

Other PCI devices

Determines execution of OpROM policy for devices other than Network, Storage, or Video.



Figure 3.50 Option ROM execution - Other PCI devices screen

3.3.14 NVMe Configuration

NVMe Device Options Settings





3.3.15 SATA Configuration

SATA Device Information

Advanced	Aptio Setup - AMI	
SATA Configuration		
Port 0 Port 1 Port 2 Port 3 Port 4 Port 5 Port 6 Port 7 Port 8	Not Present Not Present Not Present Not Present Not Present Not Present Not Present Not Present Not Present	<pre>++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>
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Figure 3.52 SATA Configuration Screen

3.3.16 TLs Auth Configuration





Server CA Configuration

Configure Server CA. Enroll or Delete Cert.



Figure 3.54 Server CA Configuration Screen

Enroll Cert

Enroll Cert Using File

Cert GUID: Input digit characters in 11111111-2222-3333-4444-1234567890ab format.



Figure 3.55 Server CA Configuration - Enroll Cert screen

3.3.17 Driver Health

Provides Health Status for the Drivers/Controllers.

Advanced	Aptio Setup – AMI
Advanced Healthy Healthy	Provides Health Status for the Drivers/Controllers ++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Vens	1 2.22.1285 COPYRIGNT (C) 2023 AMI

Figure 3.56 Driver Health screen

3.4 Chipset

Main Advanced Chipset	Security B	Apt Boot	io Setup – AM Save & Exit	I Server M	gmt
 North Bridge Network Configuration PCIE Configuration 					North Bridge Parameters
					<pre> ++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>
Version 2.22.1285 Copyright (C) 2023 AMI					



3.4.1 North Bridge

North Bridge Parameters.



Figure 3.58 North Bridge Screen

Memory Information

Total memory capacity information.

Socket 0 Information

View Information related to Node 0 AMD EPYC CPU.

Aptio Setup - AMI Chipset	
Socket 0 Information	
CO_DIMM_A1: Not Present CO_DIMM_B1: Not Present CO_DIMM_C1: Size 16384 MB, Speed 4800 MT/s CO_DIMM_G1: Not Present CO_DIMM_H1: Not Present CO_DIMM_I1: Not Present	<pre>++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>
Version 2.22.1285 Copyright (C) 2023	AMI

Figure 3.59 Socket 0 Information Screen

3.4.2 Network Configuration



Figure 3.60 Network Configuration screen

LAN Controller

Enabled/Disabled Onboard LAN Controller (Intel X710).

- LAN1 OpROM Enabled/Disabled boot option for LAN Controller.
- LAN2 OpROM

Enabled/Disabled boot option for LAN Controller.

3.4.3 PCIe Configuration



Figure 3.61 PCIe Configuration screen

	 Onboard VGA Controller Enabled/Disabled Onboard VGA Controller (ASPEED AST2600). 				
	PCle	Slot6 Bifurcation			
	Selec	t PCIe Port Bifurcation for P	Cle Slot6:		
	X4X4	X4X4; X8X4X4; X4X4X8; X8	X8; X16.		
N	ote!	Riser card Part Number	PCIe Slot6 Bifurcation Setting		
	A	ASMB-RF28-20B1	X8X8		
		ASMB-RF2F-10B1	X16		

Chapter 3 AMI BIOS

3.5 Security



Figure 3.62 Security Screen

Note!		

With AC power & Battery. Short CMOS1 Jumper: Date/Time & Password: Keep Setting: reset to default With AC power and CMOS battery removed. Short CMOS1 Jumper: Date/Time: reset to default Password: keep Setting: reset to default

Secure Boot



Figure 3.63 Secure Boot Screen

Secure Boot function

Secure Boot feature is Active if Secure Boot is Enabled, Platform Key (PK) is enrolled and the System is in User mode. The mode change requires platform reset.

Secure Boot Mode

Secure Boot mode options: Standard or Custom. In Custom mode, Secure Boot Policy variables can be configured by a physically present user without full authentication.

Restore Factory Keys

Force System to User Mode. Install factory default Secure Boot Key databases.

Key Management

Enables expert users to modify Secure Boot Policy variables without variable authentication.

Aptio Setup – AMI <mark>Security</mark>			
Vendor Keys	Valid	Install factory default Secure	
Factory Key Provision Restore Factory Keys Reset To Setup Mode Enroll Efi Image Export Secure Boot variable	[Disabled] S	reset and while the System is in Setup mode	
Secure Boot variable > Platform Key (PK) > Key Exchange Keys (KEK) > Authorized Signatures (db)	Size Keys Key Source 0 0 No Keys 0 0 No Keys 0 0 No Keys		
 Forbidden Signatures(dbx) Authorized TimeStamps(dbt) OsRecovery Signatures(dbr) 	0 0 No Keys 0 0 No Keys 0 0 No Keys	<pre>++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>	
Version 2.22.1285 Copyright (C) 2023 AMI			

Figure 3.64 Key Management Screen

3.6 **Boot**



Figure 3.65 Boot Screen

- Setup Prompt Timeout Number of seconds to wait for setup activation key.
- Bootup NumLock State Select the keyboard NumLock state as "On" or "Off".
- Quiet Boot Enable or Disable the quiet boot option.
- Boot Option Priorities
 Sets the system boot priorities.

Chapter 3 AMI BIOS

3.7 Save & Exit

Antia Ontur ANT				
Aptio Setup – AMI Main Advanced Chinset Security Boot Save & Exit Server Mømt				
Save Options Save Changes and Exit Discard Changes and Exit Save Changes and Reset Discard Changes and Reset Save Changes Discard Changes	Exit system setup after saving the changes.			
Restore Defaults Restore User Defaults Restore User Defaults Boot Override UEFI: Built-in EFI Shell UEFI: JetFlashTranscend 2GB 8.07, Partition 1 (JetFlashTranscend 2GB 8.07)	++: Select Screen fl: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit			
Version 2.22.1285 Copyright (C) 2023 AMI				

Figure 3.66 Save & Exit Screen

- Save Changes and Exit
 Exit system setup after saving the changes.
- Discard Changes and Exit Exit system setup without saving any changes.
- Save Changes and Reset Reset the system after saving changes.
- Discard Changes and Reset Reset system setup without saving any changes.
- Save Changes Save changes done so far to any of the setup options.
- Discard Changes
 Discard changes done so far to any of the setup options.
- Restore Defaults Restore/Load default values for all the setup options.
- Save as User Defaults Save the changes done so far as user defaults.
- Restore User Defaults Restore the user defaults to all the setup options.

3.8 Server Management

Figure 3.67 Server Management Screen

Wait for BMC

If enabled, the motherboard will wait 18 ~ 36 seconds until the BMC module boots up completely. After that, the normal BIOS post screen will be displayed. If disabled, the motherboard will not wait for the BMC module's response. Wait for BMC Counter:

6 Times; 8 Times; 10 Times; 12 Times.

Disable BMC Virtual USB Device
 Enable/Disable BMC internal Virtual USB Device after end of BIOS POST.

FRB-2 Timer

Enable or Disable FRB-2 timer (POST timer).



Figure 3.68 Wait for BMC screen

3.8.1 System Event Log

Press <Enter> to change the SEL event log configuration.

Aptio Setup – AMI Server Mgmt			
Enabling/Disabling Options SEL Components	[Enabled]	Change this to enable or disable event logging for error/progress codes during	
Erasing Settings Erase SEL	[No]	boot.	
Custom EFI Logging Options Log EFI Status Codes	[Error code]		
NOTE: All values changed here do not effect until computer is resta	take rted.		
		<pre> ++: Select Screen f↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>	
Version 2.22.1285 Copyright (C) 2023 AMI			

Figure 3.69 System Event Log screen

SEL Components

Change this to enable or disable event logging for error/progress codes during boot.

Erase SEL

Choose options for erasing SEL.

Log EFI Status Codes

Disable the logging od EFI Status Codes or log only error code or only progress code or both.

3.8.2 BMC Self Test Log

Logs the report returned by BMC self test command.



Figure 3.70 BMC Self-Test Log Screen

Erase Log

Erase log options.

When Log is Full Select the action to be taken when the log is full.

Chapter 3 AMI BIOS

3.8.3 BMC Network Configuration

Configure BMC network parameters

Aptio Setup – AMI Server Mgmt			
Configure IPv4 support Lan channel 1 Configuration Address source Current Configuration Address Source Station IP address Subnet mask Station MAC address Router IP address Router MAC address Lan channel 2 Configuration Address source Current Configuration Addre source Station IP address Subnet mask Station MAC address Router IP address Router IP address Router IP address Router IP address	<pre> [Unspecified] s StaticAddress 192.168.0.1 255.255.255.0 00-0B-AB-BE-EF-01 0.0.0.0 Configuration Address source - Unspecified Static DynamicBmcDhcp 192.168.1.1 255.255.255.0 00-0B-AB-BE-EF-02 0.0.0.0 00-00-00-00-00 </pre>	Select to configure LAN channel parameters statically or dynamically(by BIOS or BMC). Unspecified option will not modify any BMC network parameters during BIOS phase Select Screen Select Item r: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit	
1	Version 2 22 1285 Convright (C) 202	3 AMT	

Figure 3.71 BMC Network Configuration Screen

Configuration Address Source

Select to configure LAN channel parameters statically or dynamically (by BMC). Unspecified option will not modify any BMC network parameters during BIOS phase.

Unspecified; Static; DynamicBMCDhcp.



Chipset Software Installation Utility

4.1 Before Beginning

To facilitate the installation of the enhanced display drivers and utility software, read the instructions in this chapter carefully. The drivers for the ASMB-831 are available online for download from the Advantech support website.

Before beginning, it is important to note that most display drivers need to have the relevant software application already installed on the system prior to installing the enhanced display drivers. In addition, many of the installation procedures assume that you are familiar with both the relevant software applications and operating system commands. Review the relevant operating system commands and the pertinent sections of your application software's user manual before performing the installation.

4.2 Introduction

The AMD Chipset Software Installation (CSI) utility installs the Windows INF files that outline to the operating system how the chipset components will be configured. This is needed for the proper functioning of the following features:

- Core PCI PnP services
- Serial ATA interface support
- USB 1.1/2.0/3.0 support
- Identification of AMD chipset components in the Device Manager

Note!

The chipset driver is used for the following versions of Windows, and it has to be installed before installing all the other drivers:

Windows Server 2022 Standard	x64
Windows Server 2019 Standard	x64
Windows 11 Ultimate	x64
Windows 10 Ultimate	x64

Ν	ote!

It is necessary to update all the latest Microsoft hot fix files when using this OS.

4.3 Windows Series Driver Setup

When the folder is displayed, navigate to the "Chipset" folder and click the executable file to complete the installation of the drivers for the OS that you need.

Į.	ASMB-831_Chipset
ļ.	ASMB-831_Graphic
	ASMB-831_LAN

Figure 4.1 ASMB-831 Chipset Driver



Graphics Setup

5.1 Introduction

Install the ASPEED VGA driver to enable this function, which includes the following features:

- 32-bit 2D graphics engine on board for normal use.
- 64 MB RAM for this chip; the highest resolution is 1920x1200.

5.2 Windows Series Driver Setup

When the folder is displayed, navigate to the "Graphic" folder and click the executable file to complete the installation of the drivers for the OS that you need.



Figure 5.1 ASMB-831 Graphic Driver

- **Note!** 1. If ASMB-831 carries an additional graphics card for VGA output, please set this additional graphics card as "major output" under the "Display properties" of the OS.
 - 2. The WDDM driver supports the following OS versions:
 - Windows 10 x64 version
 - Windows 11 x64 version
 - Windows Server 2012R2 version (WHQL
 - Windows Server 2016 version (WHQL)
 - Windows Server 2019 version (WHQL)
 - Windows Server 2022 version (WHQL)
 - 3. ASPEED Graphics WDDM Driver Limitation on Microsoft Windows OS:
 - It is a non-WHQL certified driver because ASPEED VGA is a 2D VGA, it cannot meet the WHQL requirement for WDDM drivers which require 3D VGA functions.
 - Because it is a non-WHQL certified driver, it may have some compatibility issues with some specific applications.



LAN Configuration

6.1 LAN Configuration

6.1.1 Introduction

The ASMB-831 has two 10G Base-T LAN connectors LAN1 and LAN2 - Intel $\ensuremath{\mathbb{R}}$ X710-AT2. They eliminate the bottleneck of network data flow and incorporate Gigabit Ethernet at 10 Gbps.

- 100/1000 & 10G Base-T Ethernet controller
- 100/1000 & 10G Base-T triple-speed MAC
- Full duplex at 100/1000 Mbps or 10 Gbps and half duplex at 100/1000 Mbps
- Wake-on-LAN (WOL) support

The integrated Intel® Gigabit Ethernet controller supports all major network operating systems. However, the installation procedure varies with different operating systems. In the following sections, refer to the one that provides the driver setup procedure for the operating system you are using.

6.1.2 Windows Series Driver Setup

When the folder is displayed, navigate to the "LAN" folder and click the executable file to complete the installation of the drivers for the OS that you need.



Figure 6.1 ASMB-831 LAN Driver



I/O Pin Assignments

A.1 USB 3.2 Gen1 Header (USB3H1)

11	19
00000	0000
10	21

Table A.1: USB Header (USB3H1)			
Pin	Signal	Pin	Signal
1	+5 V	2	STDA_SSRX-
3	STDA_SSRX+	4	GND
5	STDA_SSRX-TX-	6	STDA_SSRX+TX+
7	GND	8	D-
9	D+	10	NC (reserved for OC pin)
11	D+	12	D-
13	GND	14	STDA_SSRX+TX+
15	STDA_SSRX-TX-	16	GND
17	STDA_SSRX+	18	STDA_SSRX-
19	+5 V	20	

A.2 LAN Ports (LAN1, LAN2)



LAN1 LAN2

Table A.2: LAN RJ-45 Port (LAN1, LAN2)				
Pin	Signal	Pin	Signal	
1	MID0+	4	MID2+	-
2	MID0-	5	MID2-	
3	MID1+	7	MID3+	
6	MID1-	8	MID3-	

A.3 VGA Connector (VGA1)

5	00000	71
10	00000	6
15	00000	11

Table A.3: VGA Connector (VGA1)			
Pin	Signal	Pin	Signal
1	RED	9	VCC
2	GREEN	10	GND
3	BLUE	11	N/C
4	N/C	12	SDT
5	GND	13	H-SYNC
6	GND	14	V-SYNC
7	GND	15	SCK
8	GND		

A.4 RS-232 Interface (COM1)

$$\begin{array}{c}
1 & 5 \\
\circ & \circ & \circ & \circ \\
\circ & \circ & \circ & \circ \\
6 & 9
\end{array}$$

Table A.4: RS-232 Connector (COM1)		
Pin	Signal	
1	DCD	
2	DSR	
3	RXD	
4	RTS	
5	TXD	
6	CTS	
7	DTR	
8	RI	
9	GND	

A.5 System & CPU Fan Power Connector (SYSFAN0~4, CPUFAN0)



Table A.5: CPU FAN Connector (CPUFAN0)

	CPUFAN0
1	GND
2	+12V
3	CPU_FAN0_TACH
4	CPU0_PWM

Table A.6: SYS FAN Connector (SYSFAN0~4)					
	SYSFAN0	SYSFAN1	SYSFAN2	SYSFAN3	SYSFAN4
1	GND	GND	GND	GND	GND
2	+12V	+12V	+12V	+12V	+12V
3	FAN0_TACH	FAN1_TACH	FAN2_TACH	FAN3_TACH	FAN4_TACH
4	FAN0_PWM	FAN1_PWM	FAN2_PWM	FAN3_PWM	FAN4_PWM

A.6 Power LED (JFP3)

Table A.7: Power LED Connector (JFP3)	
Pin	Function
1	LED power (3.3 V)
2	NC
3	Ground

A.7 External Speaker Connector (JFP1+JFP2)



Table A.8: External Speaker Connector (JFP1+JFP2)		
Pin	Function	
1	SPK+	
4	NC	
7	BZ-	
10	SPK-	

A.8 Reset Connector (JFP1+JFP2)



Table A.9: Reset Connector (JFP1+JFP2)		
Pin	Signal	
9	RESET	
12	GND	

A.9 HDD LED Connector (JFP1+JFP2)



Table A.10: HDD LED Connector (JFP1+JFP2)		
Pin	Signal	
2	HDD_LED+	
5	HDD_LED-	

A.10 ATX Soft Power Switch (JFP1+JFP2)



Table A.11: ATX Soft Power Switch (JFP1+JFP2)		
Pin	Signal	
3	PWR-BTN	
6	GND	

A.11 ATX Soft Power Switch (JFP1)

0		1
0	0	3
0	0	
0	0	
0	0	
0	0	
0	0	
0	0	

Table A.12: ATX Soft Power Switch ((JFP1)
Pin	Signal	
1	PWR BTN	
3	PWR GND	

A.12 Reset Connector (JFP1)

2	0	
4	0	0
	0	0
	0	0
	0	0
	0	0
	0	0
	0	0

Table A.13: Reset Connector (JFP1)		
Pin	Signal	
2	RST BTN	
4	RST GND	

A.13 Front Panel LAN LED Connector (JFP1)

	0		
	0	0	
6	0	0	5
8	0	0	7
	0	0	
	0	0	
	0	0	
	0	0	

Table A.14: Front Panel LAN LED Connector (JFP1)	
Pin	Signal
5	LAN2_LED+
6	LAN1_LED+
7	LAN2_LED-
8	LAN1_LED-

A.14 HDD LED Connector (JFP1)

0		
0	0	
0	0	
0	0	
0	0	
0	0	
0	0	13
0	0	15

Table A.15: SNMP SMBus Connector (JFP2)		
Pin	Signal	
13	HDD_LED+	
15	HDD_LED-	

A.15 Power LED (JFP1)

	0	
	0	0
	0	0
	0	0
	0	0
	0	0
14	0	0
16	0	0

Table A.16: Power LED (JFP1)			
Pin	Signal		
14	PWR LED+		
16	PWR LED-		

A.16 SMBus Connector (SMBUS1)



Table A.17: Front	Panel SMBus Connector (SMBUS1)
Pin	Signal
1	+5V
2	RESUME_SMB_CLK
3	RESUME_SMB_DATA
4	GND

A.17 USB & LAN Ports (BMC_LAN_USB3C2)



Table A.18:	USB Port (BMC_LAN_	USB3C2)
Pin	Signal	
1	VBUS	
2	D-	
3	D+	
4	GND	
5	StdA_SSRX-	
6	StdA_SSRX+	
7	GND_DRAIN	
8	StdA_SSTX-	
9	StdA_SSTX-	

Table A.19: I	_AN RJ-45 Port (BMC_	LAN_USB3C2)	
Pin	Signal	Pin	Signal
1	MID0+	4	MID2+
2	MID0-	5	MID2-
3	MID1+	7	MID3+
6	MID1-	8	MID3-

A.18 Case Open Connector (JCASE1)

Table A.20: Case Open Connector (JCASE1)PinSignal1CASEOP2GND

01 02

A.19 Front Panel LAN LED Connector (LANLED1)

_	2	4	6	8	10
	0	0	0	0	
Þ		Ο	Ο	0	$^{\circ}$
	1	3	5	7	9

Table A.21: LAN LED Connector (LANLED1)				
Pin	Signal	Pin	Signal	
1	LAN1_LED1_ACT#	2	LAN2_LED1_ACT#	
3	+V3.3_AUX	4	+V3.3_AUX	
5	LAN3_ACT_LVC3#	6	LAN4_ACT_LVC3#	
7	+V3.3_AUX	8	+V3.3_AUX	
9	NC	10	NC	

A.20 Clear CMOS Connector (JCMOS1)



Table A.22:	Clear CMOS Connect	or (JCMOS1)
Pin	Signal	
	JCMOS1	
1	NC	
2	RTC_RST_PCH	
3	GND	

A.21 PMBUS Connector (PMBUS1)



Table A.23: PMBUS Connector (PMBUS1)		
Pin	Signal	
1	PMBUS_SMB_CLK	
2	PMBUS_SMB_DATA	
3	PMBUS_SW_ALERT#	
4	GND	
5	+V3.3_AUX	

A.22 GPIO Connector (GPIO1)



Table A.24: GPIO Connector (GPIO1)				
Pin	Signal	Pin	Signal	
1	GPIO0	2	GPIO4	
3	GPIO1	4	GPIO5	
5	GPIO2	6	GPIO6	
7	GPIO3	8	GPI07	
9	VCC_GPIO	10	GND	



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