

Network Appliance Platform

Hardware Platforms for Network Computing

NCA-1515 User Manual

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Icon Descriptions

The icons are used in the manual to serve as an indication of interest topics or important messages. Below is a description of these icons:



Note: This check mark indicates that there is a note of interest and is something that you should pay special attention to while using the product.



Warning: This mark indicates that there is something that could damage your property or product.

Online Resources

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Federal Communication Commission Interference Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

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

FCC Caution

- Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.
- This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Operations in the 5.15-5.25GHz band are restricted to indoor usage only. This device meets all the other requirements specified in Part 15E, Section 15.407 of the FCC Rules.

Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.



Note: The country code selection is for non-US model only and is not available to all US model. Per FCC regulation, all WiFi product marketed in the US must be fixed to US operation channels only.

Safety Guidelines

Follow these guidelines to ensure general safety:

- ▶ Keep the chassis area clear and dust-free during and after installation.
- Do not wear loose clothing or jewelry that could get caught in the chassis. Fasten your tie or scarf and roll up your sleeves.
- Wear safety glasses if you are working under any conditions that might be hazardous to your eyes.
- Do not perform any action that creates a potential hazard to people or makes the equipment unsafe.
- Disconnect all power by turning off the power and unplugging the power cord before installing or removing a chassis or working near power supplies
- Do not work alone if potentially hazardous conditions exist.
- ▶ Never assume that power is disconnected from a circuit; always check the circuit.

Lithium Battery Caution:

- Risk of Explosion if Battery is replaced by an incorrect type. Dispose of used batteries according to the instructions.
- Installation only by a trained electrician or only by an electrically trained person who knows all English Installation and Device Specifications which are to be applied.
- Do not carry the handle of power supplies when moving to another place.

Operating Safety

- ► Electrical equipment generates heat. Ambient air temperature may not be adequate to cool equipment to acceptable operating temperatures without adequate circulation. Be sure that the room in which you choose to operate your system has adequate air circulation.
- ► Ensure that the chassis cover is secure. The chassis design allows cooling air to circulate effectively. An open chassis permits air leaks, which may interrupt and redirect the flow of cooling air from internal components.
- Electrostatic discharge (ESD) can damage equipment and impair electrical circuitry. ESD damage occurs when electronic components are improperly handled and can result in complete or intermittent failures. Be sure to follow ESD-prevention procedures when removing and replacing components to avoid these problems.
- Wear an ESD-preventive wrist strap, ensuring that it makes good skin contact. If no wrist strap is available, ground yourself by touching the metal part of the chassis.
- Periodically check the resistance value of the antistatic strap, which should be between 1 and 10 megohms (Mohms).

Mounting Installation Precaution

Environment:

- ▶ Do not install and/or operate this unit in any place that flammable objects are stored or used in.
- ► If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consideration should be given to installing the equipment in an environment compatible with the maximum ambient temperature (Tma) specified by the manufacturer.
- ► Installation of the equipment (especially in a rack) should consider the ventilation of the system's intake (for taking chilled air) and exhaust (for emitting hot air) openings so that the amount of air flow required for safe operation of the equipment is not compromised.
- > To avoid a hazardous load condition, be sure the mechanical loading is even when mounting.
- Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on over-current protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.
- Reliable earthing should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (e.g., use of power strips).

Installation & Operation:

- ► The installation of this product must be performed by trained specialists; otherwise, a non-specialist might create the risk of the system's falling to the ground or other damages.
- Lanner Electronics Inc. shall not be held liable for any losses resulting from insufficient strength for supporting the system or use of inappropriate installation components.

Consignes de sécurité

Suivez ces consignes pour assurer la sécurité générale :

- Laissez la zone du châssis propre et sans poussière pendant et après l'installation.
- Ne portez pas de vêtements amples ou de bijoux qui pourraient être pris dans le châssis. Attachez votre cravate ou écharpe et remontez vos manches.
- > Portez des lunettes de sécurité pour protéger vos yeux.
- N'effectuez aucune action qui pourrait créer un danger pour d'autres ou rendre l'équipement dangereux.
- Coupez complètement l'alimentation en éteignant l'alimentation et en débranchant le cordon d'alimentation avant d'installer ou de retirer un châssis ou de travailler à proximité de sources d'alimentation.
- ▶ Ne travaillez pas seul si des conditions dangereuses sont présentes.
- Ne considérez jamais que l'alimentation est coupée d'un circuit, vérifiez toujours le circuit. Cet appareil génère, utilise et émet une énergie radiofréquence et, s'il n'est pas installé et utilisé conformément aux instructions des fournisseurs de composants sans fil, il risque de provoquer des interférences dans les communications radio.

Avertissement concernant la pile au lithium

- Risque d'explosion si la batterie est remplacée par un type incorrect. Mettre au rebus les batteries usagées selon les instuctions.
- L'installation doit être effectuée par un électricien formé ou une personne formée à l'électricité connaissant toutes les spécifications d'installation et d'appareil du produit.
- ▶ Ne transportez pas l'unité en la tenant par le câble d'alimentation lorsque vous déplacez l'appareil.

Sécurité de fonctionnement

L'équipement électrique génère de la chaleur. La température ambiante peut ne pas être adéquate pour refroidir l'équipement à une température de fonctionnement acceptable sans circulation adaptée. Vérifiez que votre site propose une circulation d'air adéquate.

- Vérifiez que le couvercle du châssis est bien fixé. La conception du châssis permet à l'air de refroidissement de bien circuler. Un châssis ouvert laisse l'air s'échapper, ce qui peut interrompre et rediriger le flux d'air frais destiné aux composants internes.
- Les décharges électrostatiques (ESD) peuvent endommager l'équipement et gêner les circuits électriques. Des dégâts d'ESD surviennent lorsque des composants électroniques sont mal manipulés et peuvent causer des pannes totales ou intermittentes. Suivez les procédures de prévention d'ESD lors du retrait et du remplacement de composants.
- Portez un bracelet anti-ESD et veillez à ce qu'il soit bien au contact de la peau. Si aucun bracelet n'est disponible, reliez votre corps à la terre en touchant la partie métallique du châssis.
- Vérifiez régulièrement la valeur de résistance du bracelet antistatique, qui doit être comprise entre 1 et 10 mégohms (Mohms).

This equipment must be grounded. The power cord for product should be connected to a socket-outlet with earthing connection.

Battery Precautions

- ▶ Lithium Battery Caution: There is a danger of explosion if the battery is incorrectly replaced. Replace only with the same or equivalent type. Dispose of batteries according to the manufacturer's instructions.
- Disposal of a BATTERY into fire or a hot oven, or mechanically crushing or cutting of a BATTERY can result in an EXPLOSION.
- ► Leaving a BATTERY in an extremely high temperature surrounding environment can result in an EXPLOSION or the leakage of flammable liquid or gas.
- ► A BATTERY subjected to extremely low air pressure may result in an EXPLOSION or the leakage of flammable liquid or gas.

Cet équipement doit être mis à la terre. La fiche d'alimentation doit être connectée à un e prise de terre correctement câblée.

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CHAPTER 1: PRODUCT OVERVIEW

The NCA-1515, a desktop network appliance powered by Intel® Atom® C3000 (codenamed Denverton) CPU, featuring robust performance and Intel's QuickAssist Technology, offering cryptographic acceleration and commercial-grade LAN functions in a small 231mm x 200mm x 44mm (WxDxH) form factor.

The NCA-1515 offers a mPCIe expansion slot that supports Intel Movidius Myriad X Vision Processing Unit (VPU). The Intel Movidius VPU creates a reliable hardware platform for developers to deploy a robust Edge AI solution for intelligent surveillance, traffic management, access control, retail and beyond.

Package Content

Your package contains the following items:

- 1x NCA-1515 Network Appliance
- 1x Power Adapter
- 1x Power Cable (provided plug type will vary by region)
- 4x Rubber Pads



Note: (1) If any component is missing or damaged, please contact your dealer immediately for assistance. (2) The supplied power adapter and power cable are dedicated to this product only; do not use them with devices other than this model.

Ordering Information

SKU No.	Specification
NCA-1515A	C3758, 2x DDR4 ECC SODIMM, 4x GbE RJ45 w/ 1 Pair of Gen3 Bypass, 2x GbE SFP w/ LED, 2x GbE RJ45 w/BMC 60W Adapter
NCA-1515B	C3558, 2x DDR4 ECC SODIMM, 4x GbE RJ45 w/ 1 Pair of Gen3 Bypass, 2x GbE SFP w/ LED, 2x GbE RJ45 w/ BMC, 60W Adapter
NCA-1515C	C3308, 1x DDR4 ECC SODIMM, 4x GbE RJ45 w/o Bypass, 60W Adapter
NCA-1515D	C3558, 2x DDR4 ECC SODIMM, 4x GbE RJ45 w/ 1 Pair of Gen3 Bypass, 2x GbE SFP w/ LED, w/ BMC, 60W Adapter
NCA-1515E	C3858, 2x DDR4 ECC SODIMM, 4x Gbe RJ45, 2x GbE SFP w/ LED, 2x GbE RJ45 w/ BMC, 60W Adapter
NCA-1515F	C3958, 2x DDR4 ECC SODIMM, 4x GbE RJ45, 2x GbE SFP w/ LED, 2x GbE RJ45 w/ BMC, 60W Adapter
A Note:	ntole Atome C2000 processor supports only 2400 Mbz RANA (To use memory with lower frequencies, places check

Note: Intel[®] Atom[®] C3000 processor supports only 2400Mhz RAM. (To use memory with lower frequencies, please check with your sales representative.)

Optional Accessory

- HDD/SSD Kit
- 1U Rack-mount kit (Ear Bracket)
- Wall Mount Kit

System Specifications

Processor Options Intel® Atom® C3000 (Denverton) (By SKU) Platform CPU Socket Onboard Chipset So C Security Acceleration Intel® QuickAssist Technology BIOS Technology DR4 2400/213MHz ECC DIMM System Memory Max. Capacity 64GB (By SKU) Socket 2x 260-pin SODIMM Metworking Ethernet Ports 2x GbE R145 Intel® 1350 (by SKU) Papass 1 Pair of Gen3 (by SKU) Networking Ethernet Ports 2x GbE R145 Intel® 1350 (by SKU) Papass 1 Pair of Gen3 (by SKU) 2x GbE SPT Intel® 1350 (by SKU) IOM IO Interface 1x R145 (By SKU) IDM (Chickator Power/Status/Storage Power/Status/Storage Power Button 1x R1X Power Switch Console Port 1x R145 Console Port USB Port 2x USB 2.0 Ports 2242 storage Mini-PCle Mini-PCle 2x Mini-PCle (PCle/USB2.0) Mini-PCle Mini-PCle Expansion Mini-PCle 2x Mano SIM Card Slots (dedicated to an optionally installed LTE module) Mini-PCle Miscellaneou	Form Factor		Desktop		
CPU Socket Onboard Chipset SoC Security Acceleration Intel® QuickAssist Technology BIOS AMI SPI Flash BIOS System Memory Technology DDR4 2400/2133MHz ECC DIMM Max, Capacity 64GB (8y SKU) Socket System Memory Max, Capacity 64GB (8y SKU) Max, Capacity 2x G6b FL81 Intel® 350 (by SKU) May, Capacity 2x G6b FL81 Intel® 1350 (by SKU) May 1 Pair of Gen3 (by SKU) Max Capacity X GBE FL81 Intel® 1350 (by SKU) Max Capacity Yes MINC Module Slot N/A LOM OPMA slot Yes OPMA slot Yes Gensele Port 1x R45 (By SKU) OPMA slot Yes I/O Interface 1 N DC Power Status/Storage Power Button 1x ATX Power Switch Console Port 1x R45 (Optional) Onboard Slots 1x EMMC 8GB, 1x M.2 2242 storage Mini Pole 2x Mini Pole Revet Slots Storage Max Calslot 2x Nano SIM Card Slots (dedicate		Processor Options	Intel® Atom® C3000 (Denverton) (By SKU)		
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OPMA slot Yes I/O Interface Reset Button 1x Reset Button I/O Interface Reset Button 1x ATX Power Switch Console Port 1x RI45 Console Port USB Port 2x USB 2.0 Ports Power input 1x DC Power Adaptor HDD/SSD Support 1x 2.5" Bay (Optional) Onboard Slots 1x EMMC 8GB, 1x M.2 2242 storage Mini-PCle 2x Mini-PCle (PCle/USB2.0). M2 1x M.2 3042 B Key (USB3.0) Storage Mini-PCle Mini-PCle 2x Nano SIM Card Slots (dedicated to an optionally installed LTE module) Miscellaneous Internal RTC with Li-Battery Yes TPM Yes, onboard TPM 2.0 Cooling Processor Processor Passive CPU heatsink System 1x Cooling Fan w/ Smart Fan Veight 1.2 kg Humidity (RH) 5% to 90% Operating -20~70°C Non-Operating System Dimensions WxDxH) 231 x 200 x 44 mm Weight 1.2 kg Power (WxDxH) 358 x 135 x 290 mm Weight 1.2 kg Power Type/Watts 60W Power Adapter Input AC 100~240V @50~60 Hz Approvals and Compliance Cooling CUL, RCM, NBTC, EAC, BIS, <td>LOM</td> <td>IO Interface</td> <td>1x RJ45 (By SKU)</td>	LOM	IO Interface	1x RJ45 (By SKU)		
Kesset Button 1x Reset Button LED Indicator Power/Status/Storage Power Button 1x ATX Power Switch Console Port 1x RV45 Console Port USB Port 2x USB 2.0 Ports Power input 1x DC Power Adaptor Storage HDD/SSD Support 1x 2.5" Bay (Optional) Onboard Slots 1x EMMC 8GB, 1x M.2 2242 storage Mini-PCle 2x Mini-PCle (PCle/USB2.0), MA2 1x M.2 3042 Key (USB3.0) SiM Card Slot 1x MA2 BKey (USB3.0) Miscellaneous Machdog Vatchdog Yes Internal RTC with Li-Battery Yes TPM Yes, onboard TPM 2.0 Cooling Processor Pasive CPU heatsink System System Dimensions Yes Humidity (RH) 5% to 90% Operating System Dimensions WXXDH) 231 x 200 x 44 mm Weight 1.2 kg Power (WXDxH) 358 x 135 x 290 mm Weight 2.75 kg Power Type/Watts GOW Power Adapter		OPMA slot	Yes		
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Power input 1x DC Power Adaptor Storage HDD/SSD Support 1x 2.5" Bay (Optional) Onboard Slots 1x EMMC 8GB, 1x M.2 2242 storage Mini-PCle 2x Mini-PCle (PCle/USB2.0), M.2 1x M.2 3042 B Key (USB3.0) Zx Nano SIM Card Slots (dedicated to an optionally installed LTE module) Miscellaneous Matchdog Vatchdog Yes TPM Yes, onboard TPM 2.0 Cooling Processor Pasive CPU heatsink System 1x Cooling Fan w/ Smart Fan Promerature 0~40°C Operating -20~70°C Non-Operating Humidity (RH) 5% to 90% Operating 5% to 95% Non-Operating System Dimensions (WxDxH) 231 x 200 x 44 mm Weight 1.2 kg Power (WxDxH) 358 x 135 x 290 mm Weight 2.75 kg Power Type/Watts 60W Power Adapter Input AC 100~240V @50~60 Hz Approvals and Compliance RoHS, CE/FCC CLASS B, UL, VCCI, RCM, NBTC, EAC, BIS, CE/FCC CLASS B, UL, VCCI, RCM, NBTC, EAC, BIS, CE/FCC CLASS B, UL, VCCI, RCM, NBTC, EAC, BIS, CE/FCC CLASS B, UL, VCCI, RCM, NBTC, EAC, BIS, CE/FCC CLASS B, UL, VCCI, RCM, NBTC, EAC, BIS, CE/FCC CLASS B, UL, VCCI, RCM, NBTC, EAC, B		USB Port	2x USB 2.0 Ports		
StorageHDD/SSD Support1x 2.5" Bay (Optional)Onboard Slots1x EMMC 8GB, 1x M.2 2242 storageImi-PCle2x Mini-PCle (PCle/USB2.0),M21x M.2 3042 B Key (USB3.0)SIM Card Slot2x Nano SIM Card Slots (dedicated to an optionally installed LTE module)MiscellaneousWatchdogMinernal RTC with Li-BatteryYesTPMYes, onboard TPM 2.0CoolingProcessorProcessorPassive CPU heatsinkSystem1x Cooling Fan w/ Smart FanInternal RTC with Li-Battery-20 ~70°C Non-OperatingProcessorPassive CPU heatsinkSystem1x Cooling Fan w/ Smart FanImidity (RH)5% to 90% Operating 5% to 95% Non-OperatingSystem Dimensions(WxDxH)Watchdu1.2 kgPower(WxDxH)Acting2.75 kgPowerType/WattsApprovals and ComplianceROHS, CE/FCC CLASS B, UL, VCCI, RCM, NBTC, EAC, BIS, ROHS, CE/FCC CLASS B, UL, VCCI, RCM, NBTC, EAC, BIS,		Power input	1x DC Power Adaptor		
StorageOnboard Slots1x EMMC 8GB, 1x M.2 2242 storageMini-PCle2x Mini-PCle (PCle/USB2.0),M.21x M.2 3042 B Key (USB3.0)SIM Card Slot2x Nano SIM Card Slots (dedicated to an optionally installed LTE module)MiscellaneousWatchdogYesMiscellaneousInternal RTC with Li-BatteryProcessorPassive CPU heatsinkCoolingProcessorProcessorPassive CPU heatsinkSystem1x Cooling Fam. W Smart FanProcessor0~40°C Operating -20~70°C Non-OperatingHumidity (RH)5% to 90% Operating 5% to 95% Non-OperatingSystem Dimensions(WxDxH) Weight231 x 200 x 44 mm VeightPower(WxDxH)358 x 135 x 290 mm WeightPowerType/Watts Input60W Power Adapter InputApprovals and ComplianceColongian Call Compliance	Storage	HDD/SSD Support	1x 2.5" Bay (Optional)		
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SIM Card Slot2x Nano SIM Card Slots (dedicated to an optionally installed LTE module)MiscellaneousWatchdogYesInternal RTC with Li-BatteryYesTPMYes, onboard TPM 2.0CoolingProcessorPassive CPU heatsinkSystem1x Cooling Fan w/ Smart FanTemperature0~40°C Operating -20~70°C Non-OperatingLumidity (RH)5% to 90% Operating 5% to 95% Non-OperatingSystem Dimensions(WxDxH) Weight231 x 200 x 44 mm Yes x 135 x 290 mmPackage Dimensions(WxDxH) Weight358 x 135 x 290 mmPowerType/Watts60W Power Adapter InputApprovals and ComplianceRoHS, CEL/FCC CLASS B, UL, VCCI, RCM, NBTC, EAC, BIS, CEC (FWL W M C M M C M C M M C M M C M M C M M C M M C M M C M M C M M C M C M M C M C M M C M M C M C M M C M C M M C M C M M C M C M C M M C M C M M C M C M M C M C M M C M C M M C M C M C M M C M C M M C M C M M C M C M C M M C M C M M C M C M M C M C M M C M C M M C M C M M C M C M M C M C M M C M C M M C M C M M C M C M M C M C M M C M C M M C M C M M C M M C M C M M C M C M M C M C M M C M M C M C M M C M M C M C M M C M C M M C M M C M M C M M C M C M M C M M C M M C M C M M C M M C M C M M C M M C M M C M M C M C M M M C M C M M M C M C M M C M C M M M C M C M M C M M C M M C M M C M M C M C M M M C M M C M C M M C M C M M M C M C M M C M C M M C M C M M M C M C M M M C M C M M M C M C M	Fxpansion	M.2	1x M.2 3042 B Key (USB3.0)		
Installed LTE module)MiscellaneousWatchdogYesInternal RTC with Li-BatteryYesTPMYes, onboard TPM 2.0CoolingProcessorPassive CPU heatsinkSystem1x Cooling Fan w/ Smart FanTemperature0~40°C Operating -20~70°C Non-OperatingFemperature5% to 90% Operating 5% to 95% Non-OperatingSystem Dimensions(WxDxH) Weight231 x 200 x 44 mm 1.2 kgPackage Dimensions(WxDxH) Weight258 x 135 x 290 mm 2.75 kgPowerType/Watts60W Power Adapter InputApprovals and ComplianceROHS, CE/FCC CLASS B, UL, VCCI, RCM, NBTC, EAC, BIS, CE/FCC CLASS B, UL, VCCI, RCM, NBTC, EAC, BIS,		SIM Card Slot	2x Nano SIM Card Slots (dedicated to an optionally		
Watchdog Yes Internal RTC with Li-Battery Yes, onboard TPM 2.0 TPM Yes, onboard TPM 2.0 Cooling Processor System Passive CPU heatsink System 1x Cooling Fan w/ Smart Fan Processor 0~40°C Operating -20~70°C Non-Operating -20~70°C Non-Operating Humidity (RH) 5% to 90% Operating System Dimensions (WxDxH) 231 x 200 x 44 mm Weight 1.2 kg Package Dimensions (WxDxH) 358 x 135 x 290 mm Power Type/Watts 60W Power Adapter Input AC 100~240V @50~60 Hz Approvals and Compliance ROFS, CE/FCC CLASS B, UL, VCCI, RCM, NBTC, EAC, BIS			installed LTE module)		
Miscellaneous Internal RTC with Li-Battery Yes TPM Yes, onboard TPM 2.0 Cooling Processor Passive CPU heatsink System 1x Cooling Fan w/ Smart Fan Imperature 0~40°C Operating -20~70°C Non-Operating -20~70°C Non-Operating Humidity (RH) 5% to 90% Operating System Dimensions (WxDxH) 231 x 200 x 44 mm Weight 1.2 kg Package Dimensions (WxDxH) 358 x 135 x 290 mm Weight 2.75 kg Power Type/Watts 60W Power Adapter Input AC 100~240V @50~60 Hz Approvals and Compliance ROHS, CE/FCC CLASS B, UL, VCCI, RCM, NBTC, EAC, BIS, CE/FCC CLASS B, UL, VCCI, RCM, NBTC, EAC, BIS, CE/FCC CLASS B, UL, VCCI, RCM, NBTC, EAC, BIS, CE/FCC CLASS B, UL, VCCI, RCM, NBTC, EAC, BIS, CE/FCC CLASS B, UL, VCCI, RCM, NBTC, EAC, BIS, CE/FCC CLASS B, UL, VCCI, RCM, NBTC, EAC, BIS, CE/FCC CLASS B, UL, VCCI, RCM, NBTC, EAC, BIS, CE/FCC CLASS B, UL, VCCI, RCM, NBTC, EAC, BIS, CE/FCC CLASS B, UL, VCCI, RCM, NBTC, EAC, BIS, CE/FCC CLASS B, UL, VCCI, RCM, NBTC, EAC, BIS, CE/FCC CLASS B, UL, VCCI, RCM, NBTC, EAC, BIS, CE/FCC CLASS B, UL, VCCI, RCM, NBTC, EAC, BIS, CE/FCC CLASS B, UL, VCCI, RCM, NBTC, EAC, BIS, CE/FCC CLASS B, UL, VCCI, RCM, NBTC, EAC, BIS, CE/FCC CLASS B, UL, VCCI, RCM, NBTC, EAC, BIS, CE/FCC CLASS B, UL, VCCI, RCM, NBTC, EAC, BIS, CE/FCC CLASS B, UL, VCCI, RCM, NBTC, EAC, BIS, CE/FCC CLASS B, UL, VC		Watchdog	Yes		
TPMYes, onboard TPM 2.0CoolingProcessor SystemPassive CPU heatsink 1x Cooling Fan w/ Smart FanEnvironmental ParametersTemperature Humidity (RH)0~40°C Operating -20~70°C Non-OperatingSystem Dimensions(WxDxH) Weight231 x 200 x 44 mm 1.2 kgPackage Dimensions(WxDxH) Weight231 x 200 x 44 mm 2.75 kgPowerType/Watts Input60W Power Adapter AC 100~240V @50~60 HzApprovals and ComplianceFerson (With D) MG (With D) WG (With D)	Miscellaneous	Internal RTC with Li-Battery	Yes		
CoolingProcessor SystemPassive CPU heatsink 1x Cooling Fan w/ Smart FanEnvironmental ParametersTemperature0~40°C Operating -20~70°C Non-OperatingHumidity (RH)5% to 90% Operating 5% to 95% Non-OperatingSystem Dimensions(WxDxH) Weight231 x 200 x 44 mm 1.2 kgPackage Dimensions(WxDxH) Weight358 x 135 x 290 mm 2.75 kgPowerType/Watts Input60W Power Adapter AC 100~240V @50~60 HzApprovals and ComplianceRoHS, CE/FCC CLASS B, UL, VCCI, RCM, NBTC, EAC, BIS, CE/FCC CLASS B, UL, VCCI, RCM, NBTC, EAC, BIS,		TPM	Yes, onboard TPM 2.0		
System1x Cooling Fan w/ Smart FanEnvironmental ParametersTemperature0~40°C Operating -20~70°C Non-OperatingHumidity (RH)5% to 90% Operating 5% to 95% Non-OperatingSystem Dimensions(WxDxH) Weight231 x 200 x 44 mm 1.2 kgPackage Dimensions(WxDxH) Weight358 x 135 x 290 mm 2.75 kgPowerType/Watts Input60W Power Adapter AC 100~240V @50~60 HzApprovals and ComplianceRoHS, CE/FCC CLASS B, UL, VCCI, RCM, NBTC, EAC, BIS, CE/FCC CLASS B, UL, VCCI, RCM, VECI, RCM, VECI	Cooling	Processor	Passive CPU heatsink		
Environmental ParametersTemperature0~40°C Operating -20~70°C Non-Operating 5% to 90% Operating 5% to 95% Non-OperatingSystem Dimensions(WxDxH)231 x 200 x 44 mm 1.2 kgPackage Dimensions(WxDxH)235 x 135 x 290 mmWeight1.2 kgPower(WxDxH)358 x 135 x 290 mmPowerType/Watts60W Power Adapter InputApprovals and ComplianceRoHS, CE/FCC CLASS B, UL, VCCI, RCM, NBTC, EAC, BIS, CE/FCC CLASS B, UL, VCCI, RCM, CAB, CE/FCC CLASS B, UL, VCCI, RCM		System	1x Cooling Fan w/ Smart Fan		
Environmental Parametersremperature-20~70°C Non-OperatingHumidity (RH)5% to 90% Operating 5% to 95% Non-OperatingSystem Dimensions(WxDxH) Weight231 x 200 x 44 mm 1.2 kgPackage Dimensions(WxDxH) Weight358 x 135 x 290 mm 2.75 kgPowerType/Watts Input60W Power Adapter AC 100~240V @50~60 HzApprovals and ComplianceRoHS, CE/FCC CLASS B, UL, VCCI, RCM, NBTC, EAC, BIS, CE/FCC CLASS B, UL, VCCI, RCM, OPPL		Tomooratura	0~40°C Operating		
Environmental ParametersHumidity (RH)5% to 90% Operating 5% to 95% Non-OperatingSystem Dimensions(WxDxH) Weight231 x 200 x 44 mm 1.2 kgPackage Dimensions(WxDxH) Weight358 x 135 x 290 mm 2.75 kgPowerType/Watts Input60W Power Adapter AC 100~240V @50~60 HzApprovals and ComplianceRoHS, CE/FCC CLASS B, UL, VCCI, RCM, NBTC, EAC, BIS, CCE (FKH B) KC (FKH		remperature	-20~70°C Non-Operating		
Humidity (RH)5% to 95% Non-Operating 5% to 95% Non-OperatingSystem Dimensions(WxDxH) Weight231 x 200 x 44 mm 1.2 kgPackage Dimensions(WxDxH) Weight358 x 135 x 290 mm 2.75 kgPowerType/Watts Input60W Power Adapter 00 × 240V @50~60 HzApprovals and ComplianceRoHS, CE/FCC CLASS B, UL, VCCI, RCM, NBTC, EAC, BIS, CCE (FKH A) PTCPP, OPI	Environmental Parameters		5% to 90% Operating		
System Dimensions (WxDxH) 231 x 200 x 44 mm Weight 1.2 kg Package Dimensions (WxDxH) Weight 2.75 kg Power Type/Watts Input AC 100~240V @50~60 Hz RoHS, CE/FCC CLASS B, UL, VCCI, RCM, NBTC, EAC, BIS, CGC (CKUL B) KGC (CKUL B)		Humidity (RH)	5% to 95% Non-Operating		
System Dimensions (WxDxH) Weight 231 x 200 x 44 mm Package Dimensions (WxDxH) 358 x 135 x 290 mm Weight 2.75 kg Power Type/Watts 60W Power Adapter Input AC 100~240V @50~60 Hz RoHS, CE/FCC CLASS B, UL, VCCI, RCM, NBTC, EAC, BIS, CGC (CKUL B) VCCI, RCM, NBTC, EAC, BIS,					
Weight 1.2 kg Package Dimensions (WxDxH) 358 x 135 x 290 mm Weight 2.75 kg Power Type/Watts 60W Power Adapter Input AC 100~240V @50~60 Hz Approvals and Compliance RoHS, CE/FCC CLASS B, UL, VCCI, RCM, NBTC, EAC, BIS,	System Dimensions	(WxDxH)	231 x 200 x 44 mm		
Package Dimensions (WxDxH) 358 x 135 x 290 mm Weight 2.75 kg Power Type/Watts 60W Power Adapter Input AC 100~240V @50~60 Hz Approvals and Compliance RoHS, CE/FCC CLASS B, UL, VCCI, RCM, NBTC, EAC, BIS,		Weight	1.2 kg		
Weight 2.75 kg Power Type/Watts 60W Power Adapter Input AC 100~240V @50~60 Hz Approvals and Compliance RoHS, CE/FCC CLASS B, UL, VCCI, RCM, NBTC, EAC, BIS,	Package Dimensions	(WxDxH)	358 x 135 x 290 mm		
Type/Watts 60W Power Adapter Input AC 100~240V @50~60 Hz Approvals and Compliance RoHS, CE/FCC CLASS B, UL, VCCI, RCM, NBTC, EAC, BIS, CE/FCC CLASS B, UL, VCCI, RCM, NBTC, CE/FCC CLASS B, UL, VCCI, RCM, NBTC, CE/FCC CLASS B, CAC, BIS, CE/FCC CLASS B, CAC, BIS, CE/FCC CLASS B, CAC, BIS, CE/FCC CLASS B,		Weight	2.75 kg		
AC 100~240V @50~60 Hz Approvals and Compliance Approvals Approva	Power	Type/Watts	60W Power Adapter		
Approvals and Compliance RoHS, CE/FCC CLASS B, UL, VCCI, RCM, NBTC, EAC, BIS,		Input	AC 100~240V @50~60 Hz		
	Approvals and Compliance		ROHS, CE/FCC CLASS B, UL, VCCI, RCM, NBTC, EAC, BIS,		

Front Panel



No.	Description		
F1	SIM Card Slot	SIM Card Slot Cover	
F2	LED Indicators	SFP1 LOM SPEED O 1 LINK/ACT O 1 LOM O - System Power System Status O - HDD Activity LAN 3~8 SFP2	
F3	Antenna Port	SMA connector for the Wi-Fi (Optional)	

Rear Panel



No.		Description
R1	Antenna Port	SMA connector for the Wi-Fi and LTE module (Optional)
R2	Reset Button	Press to perform a reset
R3	DC-Jack	Power Supply
R4	Power Button	Press to power on/off the system
R5	LOM Port	1x dedicated management channel for device maintenance Please refer to Remote Server Management for the introduction of IPMI interface remote management through this port.
R6	Console Port	1x GbE RJ45 Console Port
R7	USB Ports	2x Type A USB 2.0 Ports
R8	SFP Port	2x 1G SFP Ports
R9	GbE Ports	6x GbE RJ45 Ports

CHAPTER 2: MOTHERBOARD INFORMATION

Block Diagram

The block diagram indicates how data flows among components on the motherboard. Please refer to the following figure for your motherboard's layout design.



Motherboard Layout

The motherboard layout shows the connectors and jumpers on the board. Refer to the following picture as a reference of the pin assignments and the internal connectors.



Jumper Setting and Pin Assignment

JRTC1 default (1-2)

PIN NO.	DESCRIPTION	
1	Vrtc	
2	SOC_SRTCRST_N	
3	GND	

JRTC2 default (1-2)

PIN NO.	DESCRIPTION	
1	Vrtc	
2	SOC_RTEST_N	
3	GND	

RJ2

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	5V	2	USB_DN
3	USB_DP	4	GND
5	5V	6	USB_DN
7	USB_DP	8	GND
9	RTS	10	DTR
11	ТХ	12	GND
13	GND	14	RXD
15	DSR	16	CTS

M2_1 (B Key)

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	2	3.3V
3	GND	4	3.3V
5	N/A	6	N/A
7	N/A	8	N/A
9	N/A	10	N/A
11	GND	12	N/A
13	N/A	14	N/A
15	N/A	16	N/A
17	N/A	18	N/A
19	N/A	20	N/A
21	GND	22	N/A
23	N/A	24	N/A
25	N/A	26	N/A
27	GND	28	N/A
29	N/A	30	N/A
31	N/A	32	N/A
33	GND	34	N/A
35	N/A	36	N/A
37	N/A	38	N/A
39	GND	40	N/A
41	SATA_RX_P	42	N/A
43	SATA_RX_N	44	N/A
45	GND	46	N/A
47	SATA_TX_N	48	N/A

49	SATA_TX_P	50	N/A
51	GND	52	N/A
53	N/A	54	N/A
55	N/A	56	N/A
57	GND	58	N/A
59	N/A	60	N/A
61	N/A	62	N/A
63	N/A	64	N/A
65	N/A	66	N/A
67	N/A	68	N/A
69	GND	70	3.3V
71	GND	72	3.3V
73	GND	74	3.3V
75	GND		

M2_2 (B Key)

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	N/A	2	3.3V
3	GND	4	3.3V
5	GND	6	N/A
7	USB P	8	N/A
9	USB N	10	N/A
11	GND	12	N/A
13	N/A	14	N/A
15	N/A	16	N/A
17	N/A	18	N/A
19	N/A	20	N/A
21	N/A	22	N/A
23	N/A	24	N/A
25	N/A	26	N/A
27	GND	28	SIM1 VPP
29	USB3 TX N	30	SIM1 RST
31	USB3 TX P	32	SIM1 CLK
33	GND	34	SIM1 DAT
35	USB3 RX N	36	SIM1 PWR
37	USB3 RX P	38	N/A
39	GND	40	N/A
41	N/A	42	SIM2 DAT
43	N/A	44	SIM2 CLK
45	GND	46	SIM2 RST
47	N/A	48	SIM2 PWR
49	N/A	50	RESET
51	GND	52	N/A
53	N/A	54	N/A
55	N/A	56	N/A
57	GND	58	N/A
59	N/A	60	N/A
61	N/A	62	N/A
63	N/A	64	N/A
65	N/A	66	N/A
67	N/A	68	N/A
69	N/A	70	3.3V

71	GND	72	3.3V
73	GND	74	3.3V
75	N/A		

MPCIE1

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	N/A	2	3.3V
3	N/A	4	GND
5	N/A	6	1.5V
7	CLKREQ	8	N/A
9	GND	10	N/A
11	CLK_N	12	N/A
13	CLK_P	14	N/A
15	GND	16	N/A
17	N/A	18	GND
19	N/A	20	3.3V
21	GND	22	RESET
23	PCIE RX N	24	3.3V
25	PCIE RX P	26	GND
27	GND	28	1.5V
29	GND	30	N/A
31	PCIE TX N	32	N/A
33	PCIE TX P	34	GND
35	GND	36	USB N
37	GND	38	USB P
39	3.3V	40	GND
41	3.3V	42	N/A
43	GND	44	N/A
45	N/A	46	N/A
47	N/A	48	1.5V
49	N/A	50	GND
51	N/A	52	3.3V

MPCIE2

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	N/A	2	3.3V
3	N/A	4	GND
5	N/A	6	1.5V
7	CLKREQ	8	SIM PWR
9	GND	10	SIM DAT
11	CLK_N	12	SIM CLK
13	CLK_P	14	SIM RST
15	GND	16	N/A
17	N/A	18	GND
19	N/A	20	3.3V
21	GND	22	RESET
23	PCIE RX N	24	3.3V
25	PCIE RX P	26	GND
27	GND	28	1.5V
29	GND	30	N/A
31	PCIE TX N	32	N/A
33	PCIE TX P	34	GND

35	GND	36	USB N
37	GND	38	USB P
39	3.3V	40	GND
41	3.3V	42	N/A
43	GND	44	N/A
45	N/A	46	N/A
47	N/A	48	1.5V
49	N/A	50	GND
51	N/A	52	3.3V

J15: LOM

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	IPMI DETECT	2	GND
3	N/A	4	N/A
5	GND	6	GND
7	LPC LAD0	8	LPC LAD1
9	LPC LAD2	10	LPC LAD3
11	LPC FRAME	12	LPC CLK
13	SERIRQ	14	N/A
15	GND	16	SMB CLK
17	SMB DAT	18	N/A
19	N/A	20	N/A
21	N/A	22	GND
23	COREPWROK	24	N/A
25	N/A	26	SLP S5
27	N/A	28	N/A
29	SMI	30	RSMRST
31	RESET	32	N/A
33	N/A	34	N/A
35	N/A	36	N/A
37	N/A	38	GND
39	UART RX	40	UART TX
41	N/A	42	LAN ACT#
43	GND	44	LAN MDIO P
45	LAN MDIO N	46	GND
47	LAN MDI2 P	48	LAN MDI2 N
49	GND	50	GND
51	GND	52	GND
53	USB P	54	USB N
55	GND	56	GND
57	PCIE TX P	58	PCIE TX N
59	GND	60	GND
61	PCIE RX P	62	PCIE RX N
63	GND	64	GND
65	CLK P	66	CLK N
67	GND	68	GND
69	N/A	70	N/A
71	GPIO 123	72	NMI
73	N/A	74	PWRBTN
75	RESET	76	SLP_S3
77	N/A	78	N/A
79	N/A	80	N/A

81	N/A	82	N/A
83	N/A	84	GND
85	UART_CTS	86	UART_DSR
87	UART_RX	88	UART_TX
89	UART_DTR	90	UART_RTS
91	LAN_100	92	LAN_1G
93	GND	94	LAN MDI1 P
95	LAN MDI1 N	96	GND
97	LAN MDI3 P	98	LAN MDI3 N
99	GND	100	GND
P1	GND	P2	GND
P3	3.3V	P4	5V
T1	GND	T2	GND
Т3	GND	T4	GND

RJ1, RJ3-RJ8: RJ-45 with LED

Din No	Description		
FILLINO.	Fast E-Net	Giga Net	
1	TX+	MD0+	
2	TX-	MD0-	
3	RX+	MD1+	
4	T45	MD2+	
5	T45	MD2-	
6	RX-	MD1-	
7	T78	MD3+	
8	T78	MD3-	
9	10-/100-/1000+		
10	10+/100+/1000-		
11	Link+/ACT-		
12	Link-/ACT+		

COMB2: UART 2

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	DCD	2	DSR
3	RX	4	RTS
5	ТХ	6	CTS
7	DTR	8	RI
9	GND		

SATA1: SATA CONNECTOR

PIN NO.	DESCRIPTION	
1	GND	
2	TX+	
3	TX-	
4	GND	
5	RX-	
6	RX+	
7	GND	



CON1: SATA HDD POWER CONNECTOR

PIN NO.	DESCRIPTION		
1	+12V		
2	GND		
3 GND			
4	+5V		

J80PORT1: 80PORT0

PIN	DESCRIPTION	PIN	DESCRIPTION
1	CLK	2	LAD1
3	RST-	4	LAD0
5	LRAME-	6	POWER
7	LAD3	8	KEY
9	LAD2	10	GND



JSPIROM1: SPI ROM FLASH

PIN	DESCRIPTION	PIN	DESCRIPTION
1	KEY	2	KEY
3	CS0-	4	POWER
5	MIS0	6	HPLD-
7	KEY	8	CLK
9	GND	10	MOSI



GPIO1: DIO

PIN	DESCRIPTION	PIN	DESCRIPTION
1	GPO	2	GPI
3	GPO	4	GPI
5	GPO	6	GPI
7	GPO	8	GPI
9	GND	10	GND

CONN2: Power Button

PIN	DESCRIPTION
1	GND
2	PSIN

JRESET1: Reset Setting

FUNCTION DESCRIPTION	SELECTED PIN
H/W Reset	1-2
software	2-3

FAN1~FAN2 PIN

PIN	DESCRIPTION
1	GND
2	P12V
3	FANIN
4	NC
5	FANOUT



CHAPTER 3 HARDWARE INSTALLATION

To reduce the risk of personal injury, electric shock, or damage to the system, please remove all power connections to shut down the device completely. Also, please wear ESD protection gloves when conducting the steps in this chapter.

Opening the Chassis

- 1. Unscrew the <u>eight</u> (8) screws which secure the chassis on the system's front, side panels and the bottom panel.
- **2.** Flip over the system, pull open the chassis and lift it up to remove.





Installing Hard Disk

This system supports one 2.5" HDD/SSD with a disk tray. The following will discuss disk drive installation procedures based on their designs.



 Insert the four rubber washers into the four notches of the tray.



 Mount the disk onto the tray and secure it with the provided disk screws. Make sure the SATA connector faces outward as shown in the picture.



3. Secure the tray on the motherboard with <u>three</u> (3) provided screws.







Installing M.2 Storage (Optional)

The motherboard supports one M.2 storage slot for memory storage expansion. Please follow the steps for installation.

1. Locate the M2_1 slot.



 Align the notches of the module with the socket keys in the slot, and insert it at 30 degrees into the socket until it is fully seated in the connector.



3. Push down the module and secure it with the screw that comes with it.



Installing Nano SIM Card (Optional)

The SIM slot on the front panel supports an LTE module (Optional), and SIM cards are not included. The primary SIM socket is on the left and the secondary SIM socket on the right. The SIM sockets support push-push mechanism, allowing inserting and ejecting the SIM card to be as easy as one push.



1. Locate the SIM card slot cover on the front panel. Loosen the two screws that secure the SIM slot cover and remove the slot cover. With the gold contacts on the SIM card facing downwards and the cut edge of the SIM card on the left side, push the SIM card all the way in until it clicks into place.





2. To remove the SIM card, use your fingertip to push it a little to have the card automatically ejected.



Wireless Connection Configuration (Optional)

This system supports multiple wireless connectivity methods with two MPCIE slots (Optional) and an M.2 slot (Optional).

Based on your application and modules used, install modules in the corresponding slots, and configure the jumpers indicated in the picture for the appropriate setting.



	Jumper Setting for LTE/ 4G Module		SIM Slot	
	J13	J14	SIM2	SIM3
Single SIM Mode	Pin3+Pin1 Pin4+Pin2	Pin3+Pin1 Pin4+Pin2	to LTE/ 4G Module on M.2_2 Slot	to LTE/ 4G Module on MPCIE2 Slot
Dual SIM Mode	Pin5+Pin3 Pin6+Pin4	Pin5+Pin3 Pin6+Pin4	to LTE/4G Mode	ule on M.2_2 Slot

	Jumper Setting for
	LTE/4G on MPCIE2
	SDT1
PCIE Interface	Pin1+Pin2
USB 3.0 Interface	Pin2+Pin3

Mounting an SMA-Mount Antenna Cable Assembly (Optional)

To mount the Wi-Fi/LTE antennas:

1. Take out the antenna pigtail cable from the Antenna Kit. From inside the chassis, insert the SMA Female Bulkhead through the antenna hole on the panel.



2. From outside the panel, attach the Washer and Nut, and tighten the Nut using an SMA Torque Wrench.





Warning: Do not use any tool other than an SMA Torque Wrench to fasten the Nut. For example, general pliers or tweezers without limited twisting force are very likely to cause the distortion of SMA connector.

Rack-mounting the System (Optional)

With the rack mount Kit, this system can be fixed onto rack posts. Please contact Lanner's sales representative for purchasing this kit.

What's in the Rack-mount Kit

Check the kit for the following items:

- 2x Ear Bracket
- 1x Adapter Bracket
- 1x Adapter Holder
- Screws for the Bracket and the Holder fixture
- Rack-mounting Screws





Adapter Bracket



Adapter Holder

Screws



Attaching the Assembly to the Chassis

- 1. On one side of the system, align the ear bracket to the screw holes on the side panel and fix it using three (3) screws.
- 2. Secure the other ear bracket to the other side of the system.



Chapter 3 Hardware Installation

 Fix the adapter holder to the left side panel using <u>two</u> (2) screws.



- 4. The adapter holder assembly is designed to secure a 5V adapter. Secure the adapter onto the holder with the adapter bracket and <u>two</u> (2) provided screws. Make sure the way you place the bracket is as shown in the picture.
- 5. Attach the power adapter's connector to the power supply jack on the system's rear panel.
- 6. Secure the adapter's cable onto the adapter holder.





Installing the System to the Rack

1. In the rack, install a shelf to support the system (recommended). Hold the system with its front facing you, lift and carefully insert the system into the rack. Attach the brackets to the rail rack using rack-mounting screws and/or retainer nuts.



Wall-mounting the System (Optional)

With the Wall-mount Kit, this system can be fixed on the wall surface. Please contact Lanner's sales representative for purchasing this kit.

What's in the Wall-mount Kit?

Check the kit contents for the following items:

▶ 1x pair of Wall Brackets



Wall Brackets



Screws

- ▶ 1x Screw Pack
- Flip over the system; fix both wall brackets onto the bottom with four screws as shown in the picture.



(The demonstrated screw type can fit in general drywall or shelves. Please identify the wall type and select the suitable fixing approach to fix this system to the wall, and consult a qualified trained person if you are unsure.)

- On the wall, measure the exact place where you want to hang the system and drill four holes.
- **3.** Insert the wall plugs into the holes, and then insert the long screws into the wall screws.

4. Align the four screw holes on the system's wall brackets with the four long screws you just installed on the wall.



Engage the four screws in the bracket holes, and push the system downwards to lock the screws into position.

Make sure you make enough room for airflow ventilation of the system's intake and exhaust openings by removing as many obstructions as possible or through proper cable management.



CHAPTER 4 SOFTWARE SETUP

Remote Server Management

Overview

This chapter will introduce the features of Lanner's BMC firmware and how to perform server remote management through it.

Lanner has implements IPMI 2.0 based on ASPEED service processor, performing all the BMC defined by IPMI 2.0. In addition, Lanner's BMC firmware runs an embedded web-server for full configuration using Web UI, which has a low learning curve.

BMC Main Features

Feature		Description	
	System Interface support	KCS (System Interface Support)LAN (RMCP+)	
	IPMI 2.0 based Management	• BMC stack with an IPMI 2.0 implementation	
IPMI 2.0 Standard Foaturos	System Management	System power managementWatchdog timer	
Fivil 2.0 Standard reatures	Event Log	• System Event Log (SEL)	
	Text Console Redirection: SOL	 Support in IPMI stack for SOL to remotely access BIOS and text console before OS booting 	
	User Management	IPMI based user managementMultiple user permission level	
	Web User Interfaces	BMC management via web user interfaceIntegrated KVM and Virtual Media	
	User authorization	 RADIUS support LDAP support	
Non-IPMI functions	Security	SSL and HTTPS support	
	Maintenance	 Auto-sync time with NTP server Remote firmware update by Web UI or Linux tool 	

Firmware Functional Description

System Power Management

The BMC implements chassis power and resets functions for system administrators to control and manage the system power behavior. These functions can be activated by sending the IPMI 2.0 compatible chassis commands to the BMC over messaging interfaces. The following list summaries the supported functions.

- Chassis power on
- Chassis power off
- Chassis power cycle
- Chassis power reset
- Chassis power soft
- Server's power status report

Watchdog Timer

The BMC provides an IPMI 2.0 compatible watchdog timer which can prevent the system from system hanging.

System Event Log (SEL)

A non-volatile storage space is allocated to store system events for system status tracking.

Serial over LAN (SOL)

IPMI 2.0 SOL is implemented to redirect the system serial controller traffic over an IPMI session. System administrators are able to establish an SOL connection with a standard IPMI client, like IPMITOOL, to remotely interact with serial text-based interfaces such as OS command-line and serial redirected BIOS interfaces.

User Management

The BMC supports 9 IDs for IPMI user accounts. The maximum length of the username and password are 16 and 20 respectively, and the possible privilege levels are Callback, User, Operator, and Administrator. Moreover, the account creator is allowed to enable/disable the user account at any time. If not specified, the default user accounts are listed follows:

User Name	Password	User Access	Characteristics
admin	admin	Enabled	Password can be changed

Keyboard, Video, Mouse (KVM) Redirection

- The BMC provides keyboard, video, and mouse (KVM) redirection over LAN. This application is available remotely from the embedded web server.
- Support video recording, recorded videos to be downloaded & playable.

Virtual Media Redirection

- The BMC provides remote virtual CD, HD and FD redirection. CD image could be mounted directly in the KVM window. HD, FD could be mounted by NFS and SAMBA.
- Efficient USB 2.0 based CD/DVD redirection with a typical speed of 20XCD.
- Completely secured transmission.

IPMI Commands Support List

COMMANDS	NETFN	CMD
IPM Device "Global" Commands		
Get Device ID	APP (06h)	00h
Cold Reset	APP (06h)	02h
Warm Reset	APP (06h)	03h
Get Device GUID	APP (06h)	08h
BMC Watchdog Timer Commands		
Reset Watchdog Timer	APP (06h)	22h
Set Watchdog Timer	APP (06h)	24h
Get Watchdog Timer	APP (06h)	25h
BMC Device and Messaging Commands		
Get System GUID	APP (06h)	37h
Get Channel Info	APP (06h)	42h
Set User Access	APP (06h)	43h
Get User Access	APP (06h)	44h
Set User Name	APP (06h)	45h
Get User Name	APP (06h)	46h
Set User Password	APP (06h)	47h
Chassis Device Commands		
Get Chassis Capabilities	Chassis (00h)	00h
Get Chassis Status	Chassis (00h)	01h
Chassis Control	Chassis (00h)	02h
Chassis Reset	Chassis (00h)	03h
SEL Device Commands		
Get SEL Info	Storage (0Ah)	40h
Get SEL Allocation Info	Storage (0Ah)	41h
Get SEL Entry	Storage (0Ah)	43h
Delete SEL Entry	Storage (0Ah)	46h
Clear SEL	Storage (0Ah)	47h
Get SEL Time	Storage (0Ah)	48h
Set SEL Time	Storage (0Ah)	49h
Get SEL Time UTC Offset	Storage (0Ah)	5Ch
Set SEL Time UTC Offset	Storage (0Ah)	5Dh
LAN Device Commands	I	
Set LAN Configuration Parameters	Transport (0Ch)	01h
Get LAN Configuration Parameters	Transport (0Ch)	02h
Serial/Modem Device Commands	I	
Set User Callback Options	Transport (0Ch)	1Ah
Get User Callback Options	Transport (0Ch)	1Bh
SOL Activating	Transport (0Ch)	20h
Set SOL Configuration Parameters	Transport (0Ch)	21h
Get SOL Configuration Parameters	Transport (0Ch)	22h
Using BMC Web UI

In the address bar of your Internet browser, input the IP address of the remote server to access the BMC interface of that server.



Initial access of BMC prompts you to enter username and password. A screenshot of the login screen is given below:

Engineering Sample			
Username			
Password			
Sign in			

Login Page

- **Username**: Enter your username in this field.
- **Password**: Enter your password in this field.
- **Sign me in**: After entering the required credentials, click the **Sign me in** to log in to Web UI.



Note: (1) If not specified, the default IP to access BMC is <u>https://192.168.0.100</u>.(2) Please use **https** to access Web UI.

Default User Name and Password

- **Username:** admin
- Password: admin

The default username and password are in lower-case characters. When you log in using the default username and password, you will get full administrative rights, and it will ask you to change the default password once you log in. The dialog is shown below:

You haven't changed default password. Please change it first.
ОК

Change the default password - Dialog

Clicking **OK** will take you to the User Management Configuration page to set a password.

ser Management	Configuratio	n		
Username				
admin				
Password Size				
16 bytes				•
Password				
Confirm Password				
				🖹 Save

Change the default password – Set password

Note: Duplicate usernames shouldn't exist across various authentication methods like LDAP, RADIUS or IPMI since the privilege of one Authentication method is overwritten by another authentication method during logging in, and hence the correct privilege cannot be returned properly.

First Time Wizard

After the first time login, you will see first time wizard welcome page as the following picture. Please press the "Next" button and configure your BMC step by step.

Welcome to BMC first time wizard	
The wizard will guide you through the first setup task	
	Next

In the "Configure Network" page, you could specify the hostname and network settings of BMC.

Configure N	etwork
Host Name : O DHCP IP Setting IP Address (IPv4) : NetMask : Gateway : DNS Server :	
Back	Next

In the "Configure Service" page, you could specify allowed IP region which could access KVM and Vmedia web pages.

	Configuro Sorvico
	configure service
KVM	
Only to subnet	(Seperate multiple subnets with semicolon)
●To all	
ODisabled	
Virutal Media	
Only to subnet	(Seperate multiple subnets with semicolon)
●To all	
ODisabled	
Back	Next

In the final page, please press "Finish" button to complete the first time wizard. BMC will be rebooted and apply new settings. You could reconnect to the Web UI after a few minutes.

Click Finish to apply changes. This might take a few minutes
(Click Finish, BMC will be rebooted and apply new network settings)
Back Finish

Web UI Layout

The BMC Web UI consists of various menu items:

Menu Bar

The menu bar displays the following:

- Dashboard
- Event Log
- Settings
- Remote Control
- Image Redirection
- Power Control
- Maintenance
- ► Sign out

A screenshot of the menu bar is shown below:





Quick Button and Logged-in User

The user information and quick buttons are located at the top right of the Web UI.



Logged-in user information: Click the icon **1** admin - to view the logged-in user information.

A screenshot of the logged-in user information is shown below:



Logged-in User Information

The logged-in user information shows the logged-in user's username, privilege, with the quick buttons allowing you to perform the following functions:

- Notification: Click the icon SM to view the notification messages.
- ▶ **Refresh**: Click the icon **C** Refresh to reload the current page.
- Sign out: Click the icon Sign out to log out of the Web UI.

Logged-in user and its privilege level

This option shows the logged-in username and privilege. There are four kinds of privileges:

- **User**: Only valid commands are allowed.
- Operator: All BMC commands are allowed except for the configuration commands that can change the behavior of the out-of-hand interfaces.
- **Administrator**: All BMC commands are allowed.
- **No Access:** Login access denied.

Help

Help: The **Help** icon ⁽²⁾ is located at the top right of each page in Web UI. Click this help icon to view more detailed field descriptions.

BIOS Setup

To enter the BIOS setup utility, simply follow the steps below:

- **1.** Boot up the system.
- The system has AMI BIOS built-in, with a SETUP utility that allows users to configure required settings or to activate certain system features. Pressing the <Tab> or key immediately allows you to enter the Setup utility.

Control Keys	Description		
→←	select a setup screen, for instance, [Main], [Advanced],[IntelRCSetup], [Security],		
	[Boot], and [Save & Exit]		
$\uparrow \downarrow$	select an item/option on a setup screen		
<enter></enter>	select an item/option or enter a sub-menu		
+/-	to adjust values for the selected setup item/option		
F1	to display General Help screen		
F2	to retrieve previous values, such as the parameters configured the last time you		
F2	had entered BIOS.		
F3	to load optimized default values		
F4	to save configurations and exit BIOS		
<esc></esc>	to exit the current screen		

Main Menu

Setup main page contains BIOS information and project version information.

Aptio Setup Utility – Copyright (C) 2018 American Megatrends, Inc. Main Advanced IntelRCSetup Security Boot Save & Exit				
BIOS Information BIOS Vendor Core Version Compliancy Project Version Build Date and Time Access Level	American Megatrends 5.13 0.36 x64 UEFI 2.6; PI 1.4 FNCA1515A00006T005 09/05/2018 15:48:02 Administrator	Set the Date. Use Tab to switch between Date elements. Default Ranges: Year: 2005–2099 Months: 1–12 Days: dependent on month		
System Date System Time	[Sat 09/08/2018] [12:42:51]	<pre>→+: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>		

Version 2.19.1266. Copyright (C) 2018 American Megatrends, Inc.

Feature	Description		
BIOS Information	BIOS Vendor: American Megatrends		
	Core Version: AMI Kernel version, CRB code base, X64		
	Compliancy: UEFI version, PI version		
	Project Version: BIOS release version		
	Build Date and Time: MM/DD/YYYY		
	Access Level: Administrator / User		
	To set the Date, use <tab></tab> to switch between Date elements. Default		
System Date	Range of Year: 2005-2099		
	Default Range of Month: 1-12		
	Days: dependent on Month.		
System Time	To set the Date, use <tab></tab> to switch between Date elements.		

Advanced Menu

Select the **Advanced** menu item from the BIOS setup screen to enter the "Advanced" setup screen. Users can select any of the items in the left frame of the screen.

Aptio Setup Utility – Copyright (C) Main Advanced IntelRCSetup Security	2018 American Megatrends, Inc. Boot Save & Exit
 Trusted Computing Super IO Configuration H/W Monitor Watch Dog Timer Configuration Digital I/O Configuration Serial Port Console Redirection PCI Subsystem Settings Network Stack Configuration CSM Configuration 	Trusted Computing Settings
 USB Configuration Control Legacy PXE Boot NVMe Configuration 	++: Select Screen f↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.19.1266. Copyright (C) 20	D18 American Megatrends, I <u>n</u> c.

Trusted Computing

Aptio Setup Utility Advanced	– Copyright (C) 201	7 Americ	an Megatrends, Inc.
TPM20 Device Found Vendor: NTC Firmware Version: 1.3		Â	Enables or Disables BIOS support for security device. O.S. will not show Security Device ICG FEI
Security Device Support Active PCR banks Available PCR banks	[Enable] SHA–1,SHA256 SHA–1,SHA256		protocol and INT1A interface will not be available.
SHA-1 PCR Bank SHA256 PCR Bank	[Enabled] [Enabled]		↔: Select Screen †↓: Select Item Enter: Select
Pending operation Platform Hierarchy Storage Hierarchy Endorsement Hierarchy	[None] [Enabled] [Enabled] [Enabled]	×	+/−: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.19.1268.	Copyright (C) 2017	American	Megatrends, Inc.
Aptio Setup Utility Advanced	– Copyright (C) 20:	l7 Americ	can Megatrends, Inc.
Active PCR banks Available PCR banks	SHA-1,SHA256 SHA-1,SHA256		TPM 1.2 will restrict support to TPM 1.2 devices TPM 2.0 will
SHA-1 PCR Bank SHA256 PCR Bank	[Enabled] [Enabled]		restrict support to TPM 2.0 devices, Auto will support both with the
Pending operation Platform Hierarchy Storage Hierarchy Endorsement	[None] [Enabled] [Enabled] [Enabled]		default set to TPM 2.0 devices if not found,
Hierarchy TPM2.0 UEFI Spec Version	[TCG_2]		<pre>++: Select Screen f↓: Select Item Enter: Select</pre>
Physical Presence Spec Version TPM 20	[1.3] [TIS]		+/-: Change Opt. F1: General Help F2: Previous Values
Device Select	[Auto]	T	F3: Uptimized Defaults F4: Save & Exit ESC: Exit
Version 2.19.1268.	Copyright (C) 2017	Americar	Megatrends, Inc.

Feature	Options	Description	
		Enables or disables BIOS support for a security device.	
Security Device	Enabled	By disabling this function, OS will not show Security	
Support	Disabled	Device. TCG EFI protocol and INT1A interface will not	
		be available.	
SUA 1 DCD Bank	Enabled	Enchlas er dischlas SUA 1 DCD Bank	
SHA-TPCK Bank	Disabled	Enables of disables SHA-1 PCR bank.	
SUA2EC DCD Bank	Enabled		
SHA250 PCR Bank	Disabled	Enables of disables SHA250 PCK bank.	
Donding	Nono	Schedules an Operation for the Security Device.	
operation		NOTE: Your computer will reboot during restart in	
operation		order to change State of Security Device.	
Platform	Enabled	Enables or disables Platform Hierarchy	
Hierarchy	Disabled		
Storage Hierarchy	Enabled	Enables or disables Storage Hierarchy	
	Disabled		
Endorsement	Enabled	Enables or disables Endorsement Hierarchy	
Hierarchy	Disabled		
		Select the TCG2 Spec Version,	
TPM2 0 LIFEL Spec	TCG_1_2 TCG_2	TCG_1_2 : Supports the Compatible mode for	
Version		Win8/Win10	
Version		TCG_2 : Supports new TCG2 protocol and event format	
		for Win10 or later.	
Physical Presence	1.2	Select to tell OS to support PPI Spec Version 1.2 or 1.3.	
Spec Version	1.3	NOTE: Some HCK tests might not support 1.3.	
TPM 20	тіс	Select TPM 20 Device for the Communication	
InterfaceType	115	Interface.	
Device Select		TPM 1.2 will restrict support to TPM 1.2 devices; while	
	TPM 1.2	TPM 2.0 will restrict support to TPM 2.0 devices; Auto	
	TPM 2.0	will support both with the default set to TPM 2.0	
	Auto	devices. If not found, TPM 1.2 devices will be	
		enumerated.	

Super IO Configuration

Aptio Setup Utility – Copyright (C) 2017 Am Advanced	erican Megatrends, Inc.
Super IO Configuration	Set Parameters of Serial Port 1 (COMA)
 Serial Port 1 Configuration Serial Port 2 Configuration 	
	<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 2.19.1268. Copyright (C) 2017 Amer	ican Megatrends, Inc.

Serial port 1 Configuration

Aptio setup otiiit Advanced	y – copyright (c) 2018 Ame	rican Megatrends, inc.
Serial Port 1 Configur	ation	Enable or Disable Serial Port (COM)
Serial Port Device Settings	[Enabled] IO=3F8h; IRQ=4;	
		<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 2.19.1266	. Copyright (C) 2018 Ameri	can Megatrends, Inc.

Feature	Options	Description	
Serial Port	Enabled	Enchlas or dischlas Social Dart 1	
	Disabled	Enables of disables Serial Port 1.	
Device Settings	NA	IO=3F8h; IRQ = 4	



Serial port 2 Configuration

Aptio Setup Utili Advanced	ty – Copyright (C) 2018 Amer	ican Megatrends, Inc.
Serial Port 2 Configu	ration	Enable or Disable Serial Port (COM)
Serial Port Device Settings	[Enabled] IO=2F8h; IRQ=3;	
		<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 2.19.126	5. Copyright (C) 2018 Americ	an Megatrends, Inc.

Feature	Options	Description	
Serial Port	Enabled	Enable or Disable Social Port 2	
	Disabled	Enable of Disable Serial Port 2.	
Device Settings	NA	IO=2F8h; IRQ = 3	

Please refer to Motherboard Layout for **Serial Port 2** (**COMB2**) location.



H/W Monitor

Aptio Setup Utility Advanced	– Copyright (C) 2018 Ameri	can Megatrends, Inc.
Pc Health Status ▶ Smart Fan Control		Smart Fan Parameters
SYSTEM_DT Temp SYSTEM_1U Temp CPU Temp FAN1 Speed FAN2 Speed VCORE	: +38 C : +35 C : +44 C : N/A : N/A : +1.112 V : +12 402 V	
5V VDDR 3.3V VBAT	: +12.192 V : +5.040 V : +1.200 V : +3.264 V : +3.072 V	 ↔: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.19.1266.	Copyright (C) 2018 America	n Megatrends, Inc.

Watch Dog Timer Configuration

Aptio Se Advan	etup Utility – Copyright (C) wood	2017 American Megatrends, Inc.
Watch Dog Ti	mer Configuration	Enabled or Disabled Watch Dog Timer function
Watch Dog Ti	mer [Disabled]	++: Select Screen
		T: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

Feature	Options	Description
Watch Dog Timer	Enabled	Enables or disables Watch Dog Timer
	Disabled	function

Digital I/O Configuration

Aptio Setup Utility Advanced	– Copyright (C) 2018 Americ	an Megatrends, Inc.
Digital I/O Configuratio	n	Configure Digital I/O Pin 1.
Digital I/O Pin 1 Digital I/O Pin 3 Digital I/O Pin 5 Digital I/O Pin 7	[Output Low] [Output Low] [Output Low] [Output Low]	
		<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 2.19.1266. Copyright (C) 2018 American Megatrends, Inc.

Feature	Options	Description	
Digital 1/0 Output 1	Output Low	Configure Digital I/O Din1	
	Output High	Configure Digital 1/O Pin I	
Divital 1/0 Output 2	Output Low	Configure Divital 1/0 Div	
Digital I/O Output 3	Output High	Configure Digital 1/O Pins	
Digital I/O Output 5	Output Low	Configure Digital I/O Pin5	
	Output High		
	Output Low	Configure Divital 1/0 Div 7	
	Output High		

Status LED Configuration

Aptio Setu Advance	p Utility – Co d	pyright (C) 2017 American Megatrends, Inc.
Status LED Con	figuration	Configure Status LED.
Status LED	[OF	F] ++: Select Screen fl: Select Item
		Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.19.1269. Copyright (C) 2017 American Megatrends, Inc.		
Feature	Options	Description
	OFF	
Status LED	GREEN	Configures Status LED color

RED

Serial Port Console Redirection

Aptio Setu Advance	p Utility – Co d	pyright (C) 2017 American Megatrends, Inc.
COMO Console Redire Console Redire Legacy Console Legacy Console	ction [En ction Settings Redirection Redirection S	abled]
		<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	.19.1269. Copy	right (C) 2017 American Megatrends, Inc.
Feature	Options	Description
COM0 Console	Enabled	Enables or disables Console Redirection

Disabled

Redirection

Console Redirection Settings

Aptio Setup Utili Advanced	ty – Copyright (C) 2017 Ame	rican Megatrends, Inc.
Console Redirection S	ettings	Emulation: ANSI: Extended ASCII char
Terminal Type Bits per second Data Bits Parity Stop Bits Flow Control VT-UTF8 Combo Key	[VT100+] [115200] [8] [None] [1] [None] [Enabled]	set. VT100: ASCII char set. VT100+: Extends VT100 to support color, function keys, etc. VT-UTF8: Uses UTF8 encoding to map Unicode
Support Recorder Mode Putty KeyPad	[Disabled] [VT100]	<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>

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Feature	Options	Description
		VT100: ASCII char set
	VT100	VT100 +:Extends VT100 to support color, function
	VT100+	keys, etc.
Terminal Type	VT-UTF8	VT-UTF8: Uses UTF8 encoding to map Unicode
	ANSI	chars onto 1 or more bytes
		ANSI: Extended ASCII char set
	9600	
	19200	Selects serial port transmission speed. The speed
Bits per second	38400	must be matched on the other side. Long or noisy
	57600	lines may require lower speeds.
	115200	
Data Pite	7	Data Rite
	8	
	None	
	Even	A parity hit can be sent with the data hits to detect
Parity	Odd	some transmission errors
	Mark	
	Space	
	1	
Stop Bits	2	Indicates the end of a serial data packet.
Flow Control	None	Flow Control can prevent data loss from buffer

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	Hardware	overflow.	
	RTS/CTS		
VT-UTF8 Combo Key	Disabled	Enables VT-UTF8 Combination Key Support for	
Support	Enabled	ANSI/VT100 terminals	
Decordor Mode	Disabled	With this mode enabled, only text will be sent. This	
Recorder Mode	Enabled	is to capture Terminal data.	
Putty KeyPad	VT100		
	LINUX		
	XTERM86	Calente Function Key and Key Dad an Dutty	
	SCO	Selects Functionkey and keyPad on Putty.	
	ESCN		
	VT400		

Console Redirection Settings

Aptio Setup Utility Advanced	– Copyright (C) 2017 Amer	ican Megatrends, Inc.
Legacy Console Redirect:	Select a COM port to display redirection of	
Redirection COM Port Resolution Redirect After POST	[COMO] [80x24] [Always Enable]	Legacy OS and Legacy OPROM Messages
		<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 2.19.1269. Copyright (C) 2017 American Megatrends, Inc.

Feature	Options	Description	
Redirection COM	COM0	Select a COM port to display redirection of Legacy	
Port		OS and Legacy OPROM Messages.	
Decolution	80x24	On Legacy OS, the Number of Rows and Columns	
Resolution	80x25	supported redirection.	
		When Bootloader is selected, Legacy Console	
		Redirection is disabled before booting to legacy	
Redirection After	Always Enable	OS. When Always Enable is selected, then Legacy	
BIOS POST	BootLoader	Console Redirection is enabled for legacy OS.	
		Default setting for this option is set to Always	
		Enable.	



PCI Subsystem Settings

Version	H3.01.12	64bit capable Devices to be Decoded in Above
PCI Devices Common Se	ttings:	4G Address Space (Only
Above 4G Decoding	[Disabled]	if System Supports 64
SR-IOV Support	[Disabled]	bit PCI Decoding).
		14: Select Item
		↑↓: Select Item
		+/-: Change Opt.
		F1: General Help
		F2: Previous Values
		F3: Optimized Defaults
		F4: Save & Exit

Feature	Options	Description
Above 4G Decoding	Disabled Enabled	Enable or Disables 64bit capable Devices to be Decoded in Above 4G Address Space (Only if System Supports 64 bit PCI Decoding).
SR-IOV Support	Disabled Enabled	If the system has SR-IOV capable PCIe Devices, this option enables or disables Single Root IO Virtualization Support.

Aptio Setup Uti: Advanced	lity – Copyright (C) 201	7 American Megatrends, Inc.
Network Stack	[Disabled]	Enable∕Disable UEFI Network Stack
		<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>

Network Stack Configuration

Feature	Options	Description
Network Stack	Disabled Enabled	Enables or disables UEFI Network Stack
lpv4 PXE Support	Disabled Enabled	Enables Ipv4 PXE Boot Support. If IPV4 is disabled, PXE boot option will not be created.
Ipv4 HTTP Support	Disabled Enabled	Enables Ipv4 HTTP Boot Support. If IPV4 is disabled, HTTP boot option will not be created.
Ipv6 PXE Support	Disabled Enabled	Enables Ipv6 PXE Boot Support. If IPV6 is disabled, PXE boot option will not be created.
Ipv6 HTTP Support	Disabled Enabled	Enables Ipv6 HTTP Boot Support. If IPV6 is disabled, HTTP boot option will not be created.
PXE boot wait time	0	Wait time to press <esc></esc> key to abort the PXE boot
Media detect count	1	Number of times the presence of media will be checked

CSM Configuration

Aptio Setup Utility – Copyright (C) 2018 American Megatrends, Inc. Advanced				
Compatibility Support (Nodule Configuration	Enable/Disable CSM		
CSM Support	[Enabled]			
CSM16 Module Version	07.81			
Option ROM execution				
Network Storage Video Other PCI devices	(Legacy) (Legacy) (Legacy) (Legacy)	<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 2,19,1266	. Copyright (C) 2018 America	n Megatrends, Inc.		

Feature	Options	Description
CSM Support	Disabled Enabled	Enables or disables CSM Support
Network	Do Not Launch UEFI Legacy	Controls the execution of UEFI and Legacy PXE OpROM
Storage	Do Not Launch UEFI Legacy	Controls the execution of UEFI and Legacy Storage OpROM
Video	Do Not Launch UEFI Legacy	Controls the execution of UEFI and Legacy Video OpROM
Other PCI device	Do Not Launch UEFI <mark>Legacy</mark>	Determines OpROM execution policy for devices other than Network, Storage, or Video

SDIO Configuration

Aptio Setup Advanced	o Utility – Copyr 1	ight (C) 2018 American Megatrends, Inc.		
SDIO Configurat	tion	Auto Option: Access SD		
SDIO Access Mod	de [Auto]	controller supports		
Mass Storage De	evices:	mode.DMA Option: Access		
Sdio Device 1 Details:		mode.PIO Option: Access SD device in PIO mode.		
Bus 0 Dev 1c Fu MMC - M32508(7.	unc 0 .8GB) [Auto]	<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 2.19.1266. Copyright (C) 2018 American Megatrends, Inc.				
Feature	Options	Description		
	Auto	Auto Option: Access SD device in DMA mode if		
SDIO Access	ADMA	controller supports it, otherwise in PIO mode.DMA		
Mode	SDMA	Option: Access SD device in DMA mode.PIO Option:		
	PIO	Access SD device in PIO mode		

USB Configuration

Aptio Setup Utility Advanced	y – Copyright (C) 2017 Ameri	ican Megatrends, Inc.
USB Configuration		Enables Legacy USB
USB Module Version	19	disables legacy support if no USB devices are
USB Controllers: 1 XHCI		connected. DISABLE option will keep USB
USB Devices: 4 Drives, 2 Keybo	pards, 2 Mice, 2 Hubs	devices available only for EFI applications.
Legacy USB Support	[Enabled]	
XHCI Hand-off	[Enabled]	↔+: Select Screen
USB Mass Storage Driver Support	[Enabled]	I∔: Select Item Enter: Select
Port 60/64 Emulation	[Enabled]	+/-: Change Opt.
USB hardware delays and time–outs:		F2: Previous Values F3: Optimized Defaults
USB transfer time-out	[20 sec]	F4: Save & Exit ESC: Exit
Vension 0 40 4000	Comminist (C) 0017 America	

Feature	Options	Description
Legacy USB Support	<mark>Enabled</mark> Disabled Auto	Enables Legacy USB support. Auto option disables legacy support if no USB devices are connected; Disabled option will keep USB devices available only for EFI applications.
XHCI Hand-off	Enabled Disabled	This is a workaround for OSes without XHCI hand-off support. The XHCI ownership change should be claimed by XHCI driver.
USB Mass Storage Driver Support	Enabled Disabled	Enables or disables USB Mass Storage Driver Support.
USB transfer time-out	1 sec 5 sec 10 sec <mark>20 sec</mark>	The time-out value for Control, Bulk, and Interrupt transfers
Device reset time-out	1 sec 5 sec 10 sec <mark>20 sec</mark>	USB mass storage device Start Unit command time-out

Device power-up delay	<mark>Auto</mark> Manual	Maximum time the device will take before it properly reports itself to the Host Controller. Auto uses default value: for a Root port, it is 100 ms, for a Hub port the delay is taken from Hub descriptor.
--------------------------	-----------------------------	--

Control Legacy PXE Boot

Aptio Setup Utility – Advanced	Copyright (C) 2017 Americ	can Megatrends, Inc.
Control Legacy PXE Boot		Control Legacy PXE Boot from which Lan
Control Legacy PXE [[Boot from	Disabled]	
		<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 2.19.1266. Co	opyright (C) 2017 Americar	n Megatrends, Inc.

Feature	Options	Description
Control Legacy PXE	Disabled	Control Legacy PXE Boot from which
Boot From	MGMT LAN	LAN.



NVME Configuration

Aptio Setup Utility – Copyright (C) 201 Advanced	L8 American Megatrends, Inc.
NVMe Configuration	
No NVME Device Found	
	++: Select Screen
	Enter: Select +/-: Change Opt.
	F1: General Help F2: Previous Values F3: Optimized Defaults
	ESC: Exit
Version 2.19.1266. Copyright (C) 2018	American Megatrends, Inc.

IntelRCSetup Menu

Select the IntelRCSetup menu item from the BIOS setup screen to enter the Platform Setup screen. Users can select any of the items in the left frame of the screen.

Aptio Setup Utility – Copyright (C) 2018 American Megatrends, Inc. Main Advanced <mark>IntelRCSetup</mark> Security Boot Save & Exit		
Relax Security [Disabled] Configuration Processor Configuration Server ME Configuration North Bridge Chipset Configuration South Bridge Chipset Configuration System Event Log Restore On Power Loss [Last State]	Displays and provides option to change the Processor Settings	

Version 2.19.1266. Copyright (C) 2018 American Megatrends, Inc.

Feature	Options	Description
Relax Security	Disable	Relaxes the security configuration to be
Configuration	Enabled	able to use BIOS update tool.
	Power On	Specify what state to go to when power is
Restore On Power Loss	Power Off	
	Last State	re-applied after a power failure (G3 state).

Processor Configuration

Aptio Setup Uti. In	lity – Copyright (C) telRCSetup	2018 American Megatrends, Inc.
Processor Version	Intel(R) Atom(T C3958 @ 2.00GHz	4) CPU ▲ Enable/disable AES-NI support
EIST (GV3) Turbo CPU C State Package C State lim. Max Core C-State Enhanced Halt State (C1E) Monitor/Mwait L1 Prefetcher L2 Prefetcher Fast String Machine Check Execute Disable Bit VMX AFS-NT	[Disable] [Enable] [Disable] it [No Limit] [C6] [Enable] [Enable] [Enable] [Enable] [Enable] [Enable] [Enable] [Enable] [Enable] [Enable]	++: Select Screen f4: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit
HE3-N1	[Elianie]	ESC: Exit
Version 2.19.1	266. Copyright (C) 20	018 American Megatrends, Inc.
Feature	Options	Description
EIST (GV3)	Disable Enable	Enables/Disable EIST. GV3 must be enable for Turbo
		Enable or Disable CPU Turbo capability.
Turbo	Enable Disable	This option only applies to ES2 and above.
Turbo CPU C State	Enable Disable Disable Enable	This option only applies to ES2 and above. Enable the Enhanced Cx state of the CPU, takes effect after reboot.
Turbo CPU C State Package C state limit	Enable Disable Enable No Pkg C-state No S0lx No limit	This option only applies to ES2 and above. Enable the Enhanced Cx state of the CPU, takes effect after reboot. Package C state limit.
Turbo CPU C State Package C state limit Max core C-state	Enable Disable Enable No Pkg C-state No S0lx No limit C1 C1 C6	This option only applies to ES2 and above. Enable the Enhanced Cx state of the CPU, takes effect after reboot. Package C state limit. Options are:C1 and C6.

L1 Prefetcher	Enable Disable	Enable/Disable L1 Prefetch.	
12 Profetcher	Enable	Enable/Disable L2 Prefetch	
	Disable		
East String	Disable	When enables, enable fast strings for REP	
Fast String	Enable	MOVS/STOS.	
Marking Charle	Disable	Enable or Disable the Machine Check.	
	Enable		
Execute Disable Bit	Disable	When disabled, forces the XD feature flag	
	Enable	to always return 0.	
VMS	Disable	Enables Vanderpool Technology, takes	
	Enable	effect after reboot.	
AES-NI	Disable	Enable/dicable AES-NI support	
	Enable		

Server ME Configuration

Aptio Setup Utility IntelR) – Copyright (C) 2018 Ame CSetup	erican Megatrends, Inc.
General ME Configuratio Operational Firmware Version ME Firmware Type Recovery Firmware Version ME Firmware Status #1 ME Firmware Status #2 Current State Error Code	n OB:4.0.4.177 SPS OB:4.0.4.177 Ox000F0345 Ox8811A020 Operational No Error	<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 2.19.1266.	Copyright (C) 2018 Amer:	ican Megatrends, Inc.

North Bridge Chipset Configuration

Aptio Setup Utility – Copyright (C) 2018 American Megatrends, Inc. IntelRCSetup					
North Bridge CH Memory Informat MRC Version Total Memory Memory Frequenc	nipset Configurat tion 0.149.4 32768 M Cy DDR4 –	ion .43 B 2133 MHz	Enables/Disables fast boot which skips memory training and attempts to boot using last known good configuration.		
Fast Boot Memory Frequend VT-d	[Enable :y [DDR-24 [Enable	:d] :00] :d]	<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 2.19.1266. Copyright (C) 2018 American Megatrends, Inc.					
Feature	Options	D	escription		
Fast Boot	Disabled Enabled	Enables/Disables fast training and attempts configuration.	: boot which skips memory to boot using fast known good		
 	DDR-1600	DDR memory frequen	су:		

DDR4 up to DDR-2666

DDR3 up to DDR-1867.

Option to enable /Disable VT-d.

Memory

Frequency

VT-d

DDR-1867

DDR-2133

DDR-2400 Disable

Enable

South Bridge Chipset Configuration

Aptio Setup Utility – Copyright (C) 2017 Amer IntelRCSetup	ican Megatrends, Inc.
 SATA Configuration PCIE IP Configuration IQAT Configuration 	Configuration of SATA Controller
	++: Select Screen fl: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.19.1266. Copyright (C) 2017 Americ	an Megatrends, Inc.
SATA Configuration

Aptio Setup Utility – Copyright (C) 2018 American Megatrends, Inc. IntelRCSetup		
SATA 1 Enable controller LPM ALPM Speed limit ▶ SATA1 ▶ M2SATA	[Enabled] [Disabled] [Disabled] [Gen 3]	Enables/Disables SATA Controller if supported by current cpu SKU.
		<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 2.19.12	66. Copyright (C) 2018	3 American Megatrends, Inc.

Feature	Options	Description
-	Enabled	Enables/Disables SATA Controller if supported by
Enable controller	Disabled	current CPU sku
LPM	Enabled	Enchles (Dischles Link Dower Management
	Disabled	Enables/Disables Link Power Management
ALPM	Enabled	Enable (Disables Agresive Link Dower Managemen
	Disabled	Enable/Disables Agresive Link Power Management
Speed Limit	Gen 1	Indicates the highest allowable speed of the
	Gen 2	indicates the highest allowable speed of the
	Gen 3	

SATA1 Configuration

Aptio Setup Utility – Copyright (C) 2018 American Megatrends, Inc. IntelRCSetup		
SATA 1 Port 4 Device Information: Device Size: Enable/disable port Hot plug Spin up	[Not Installed] [Unknown] [Enabled] [Enabled] [Disabled]	Enables/Disables SATA Controller port if supported by current cpu SKU.
Version 2.19.1266. Copyright (C) 2018 American Megatrends, Inc.		

Feature	Options	Description
Enable/disable port	Enabled	Enables/Disables SATA Controller port
	Disabled	if supported by current cpu SKU.
Hot plug	Enabled	Hot plug
	Disabled	
Spin up	Enabled	
	Disabled	spin up

M2SATA1 Configuration

Aptio setup utility – copyright (C/ 2018 American Megatrends, Inc. IntelRCSetup		
SATA 1 Port 5 Device Information: Device Size: Enable/disable port Hot plug Spin up	[Not Installed] [Unknown] [Enabled] [Enabled] [Disabled]	Enables/Disables SATA Controller port if supported by current cpu SKU.
		<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>

Feature	Options	Description
Enable/disable port	Enabled Disabled	Enables/Disables SATA Controller port if supported by current CPU SKU.
Hot plug	Enabled Disabled	Hot plug
Spin up	Enabled Disabled	Spin up

PCIE IP Configuration

Aptio Setup Utility — Copyright (C) 2018 American Megatrends, Inc. IntelRCSetup		
Bifurcation PCIE0 Bifurcation PCIE1	[x4x2x2] [x2x2x2x2]	Select and force Root Complex Bifurcation Configuration regardless board or trident detection ++: Select Screen fl: Select Item Enter: Select
		+/-: Change Upt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.19.12	56. Copyright (C)	2018 American Megatrends, Inc.

Feature	Options	Description
	Auto	
	X8	Salast and force Root Complex Rifurcation
Pifurcation DCIE0	X4x4	Configuration regardless board or trident
Bilurcation PCIEU	X4x2x2	detection
	X2x2x4	
	X2x2x2x2	
	Auto	
	X8	Select and force Poot Complex Pifurcation
Bifurcation PCIE1	X4x4	Configuration regardless heard or trident
	X4x2x2	detection
	X2x2x4	
	X2x2x2x2	

IQAT Configuration

Aptio Setup Uti In	lity – Copyright (C) 20: telRCSetup	17 American Megatrends, Inc.
IQAT Set IQAT FUSECTL Set 64B MRR/MPL	[Enabled] [Disabled] [Enabled]	Hides IQAT device from an OS
		<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 2.19.1	266. Copyright (C) 2017	American Megatrends, Inc.

Feature	Options	Description
	Enabled	Hides IQAT device from and OS.
IQAT	Disabled	

System Event Log

Aptio Setup Utility – Copyright (C) 2018 American Megatrends, Inc. IntelRCSetup		
System Event Log 		System Error Enable/Disable/ Auto setup options. If Auto is selected the
System Errors Memory Event Log PCIe Event Log Whea Settings	[Enable]	<pre>is selected the enabling or disbling of errors in the driver is skipped. ++: 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 2.19.1266. Copyright (C) 2018 American Megatrends, Inc.

Feature	Options	Description
	Disable	System Error enabling and logging setup
System Errors	Enable	ontion
	Auto	
Momony Flog Support	Disable	Enable/Disable Memory Error logging support
Memory Elog Support	Enable	Enable/Disable Memory Error logging support
Darity Charle	Enable	Enable (Disable Darity Check
Parity Check	Disable	
Log Correctable	Enable	Enable/Disable Correctable Memory Error
	Disable	logging support
Log Un Correctable	Enable	Enable/Disable Un-correctable Memory Error
Log on-correctable	Disable	logging support
Enable/Disable Error	Disable	Error Cleaking Feature to hide CE Fronte OS
Cloaking	Enable	error cloaking realure to hide CE error to OS
DCIE Elag Support	Disable	Frable (Disable DCIa Firmy longing support
PCIE Elog Support	Enable	Enable/Disable PCIe Error logging support
Log Fatal Error	Disable	
	Enable	Send system event Signal on Fatal error

Log Non Fatal Error	Disable	Sand austern avent Signal on Non Fotal error	
LOG NON-FALAI ENO	Enable	Send system event signal on Non-ratal error.	
Log Correctable Error	Disable	Sand system event Signal on Correctable error	
LOG CONECTABLE ENO	Enable	Send system event signal on correctable error.	
DCIa System Error	Disable	Enable System Error reporting on all	
PCIE System Enor	Enable	enumerated Root ports, bridges and devices.	
DClo Darity Error	Disable	Enable Parity Error reporting on all enumerated	
PCIE Parity Error	Enable	Root ports, bridges and devices.	
	Disable	Enable/Disable WHEA ACPI support.	
WHEA Support	Enable		
WHEA Error Injection	Disable	When EINJ ACPI 5.0 support for set error type	
5.0 Extension	Enable	with address and vendor extensions.	
Whea Logging	Disable	Freehle (Dischle Wilson le primer of orman	
	Enable	Enable/Disable whea logging of errors.	
WHEA PCIe Error	Disable	Enchle (Dischle MULEA DCIe Euron Inightier	
Injection	Enable	Enable/Disable WHEA PCIE Error Injection.	

Security Menu

Select the Security menu item from the BIOS setup screen to enter the Security Setup screen. Users can select any of the items in the left frame of the screen.

	Aptio Setup Utility Main Advanced Platfor	– Copyright (C) 2017 Americ rm Socket Security Boot	can Megatrends, Inc. Save & Exit
	Password Description If ONLY the Administrato then this only limits ac only asked for when ente If ONLY the User's pass is a power on password a boot or enter Setup. In have Administrator right	or's password is set, ccess to Setup and is ering Setup. word is set, then this and must be entered to Setup the User will ts.	Set Administrator Password
	in the following range:		↔: Select Screen
	Minimum length	3	↓: Select Item
	Maximum length	20	Enter: Select
			+/-: Change Opt.
	Administrator Password		F1: General Help
	User Password		F2: Previous Values
			F3: Optimized Defaults
Þ	Secure Boot		F4: Save & Exit
			ESC: Exit
	Unna ion 0 40 4000	Denumintet (D) 0017 American	
	VENSION 2.13.1268.	-copyright (c) 2017 American	i Megathenus, Inc.

Feature	Description
	If ONLY the Administrator's password is set, it only limits
Administrator Password	access to Setup and is only asked for when entering
	Setup.
	If ONLY the User's password is set, it serves as a power-
User Password	on password and must be entered to boot or enter
	Setup. In Setup, the User will have Administrator rights.

Secure Boot

Aptio Setup Utility – Copyright (C) 2017 American Megatrends, Inc. Security			
System Mode Secure Boot Vendor Keys Attempt Secure Boot Secure Boot Mode ▶ Key Management	Setup Not Active Active [Disable] [Custom]	Secure Boot activated when Platform Key(PK) is enrolled, System mode is User/Deployed, and CSM function is disabled ++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit	
Vension 0 40 4060	Conuniabt (C) 2017 Amonios	. Nevetnende Tre	

Feature	Options	Description
Secure Boot Enable	Disabled Enabled	Secure Boot is activated when Platform Key(PK) is enrolled, System mode is User/Deployed, and CSM function is disabled.
Secure Boot Mode	Standard Custom	Customizable Secure Boot mode: In Custom mode, Secure Boot Policy variables can be configured by a physically present user without full authentication.

Key Management

Aptio Setup Utility	J — Сору	right S((C) ecur	2017 Ame rity	rican Megatrends, Inc.
Provision Factory Defaults	[Disab	1e]			Allow to provision factory default Secure Boot keys when System
 Install Factory Default Enroll Efi Image 	t keys				is in Setup Mode
▶ Save all Secure Boot va	ariables				
Secure Boot variable	Size	Keys#	Кеу	y Source	
▶ Platform Key(PK)	0	0	No	Кеу	
▶ Key Exchange Keys	0	0	No	Кеу	
▶ Authorized Signatures	0	0	No	Кеу	++: Select Screen
▶ Forbidden Signatures	0	0	No	Кеу	↑↓: Select Item
Authorized TimeStamps	0	0	No	Кеу	Enter: Select
▶ OsRecovery Signatures	0	0	No	Кеу	+/-: Change Opt.
					F1: General Help
					F2: Previous Values
					F3: Optimized Defaults
					F4: Save & Exit
					ESC: Exit
Version 2 19 1268	Conuri	øht (C	1 20	117 Ameri	can Megatrends Inc

Feature	Options	Description
Factory Key	Disabled	Provision factory default keys on next re-boot only
Provision	Enabled	when System in Setup Mode.
Restore Factory keys		Force System to User Mode. Configure NVRAM to
	None	contain OEM-defined factory default Secure Boot
		keys.
		Allows the image to run in Secure Boot mode. Enroll
Enroll Efi Image	None	SHA256 hash of the binary into Authorized
		Signature Database (db)

Boot Menu

Select the Boot menu item from the BIOS setup screen to enter the Boot Setup screen. Users can select any of the items in the left frame of the screen.

Aptio Setup Utility Main Advanced Platfo	ı <mark>– Copyright (C) 2018 Ameri</mark> rm Socket Server Mgmt Se	can Megatrends, Inc. curity <mark>Boot</mark>
Boot Configuration Setup Prompt Timeout Bootup NumLock State Quiet Boot	<mark>5</mark> [On] [Disabled]	Number of seconds to wait for setup activation key. 65535(0xFFFF) means
Boot mode select	[LEGACY]	inderinite waiting.
FIXED BOOT ORDER Priori Boot Option #1 Boot Option #2	ties [Hard Disk] [USB Device:LEI Virtual	
Boot Option #3 Boot Option #4	CDROMO 1.00] [CD/DVD] [Network]	<pre>++: Select Screen f↓: Select Item Enter: Select </pre>
▶ USB Drive BBS Prioritie	S	F7-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.19.1268.	Copyright (C) 2018 America	n Megatrends, Inc.

Feature	Options	Description
		The number of seconds to wait for setup
Setup Prompt Timeout	5	activation key.
		65535 means indefinite waiting.
Pootup Numl ock State	On	Select the keyboard Number's state
BOOTUP NUMLOCK State	Off	Select the Reyboard Numbock state
Ouist Bast	Disabled	Fuching on disching Quict Dept. ontion
Quiet Boot	Enabled	Enables of disables Quiet Boot option.
	LEGACY	
Boot mode select	UEFI	Select boot mode for LEGACY or UEFI.
	DUAL	

- Choose boot priority from boot option group.
- Please specify boot device priority sequence from available Group device.

Save and Exit Menu

Select the Save and Exit menu item from the BIOS setup screen to enter the Save and Exit Setup screen. Users can select any of the items in the left frame of the screen.

Aptio Setup Utility – Copyright (C) 2017 Ame Main Advanced Platform Socket Security Boc	rrican Megatrends, Inc. nt Save & Exit
Save Options Discard Changes and Exit Save Changes and Reset Default Options Restore Defaults Boot Override UEFI: JetFlashTranscend 16GB 1100, Partition 1	Exit system setup without saving any changes.
LentUS Linux Launch EFI Shell from filesystem device	<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>

Save Changes and Reset

When Users have completed the system configuration changes, select this option to save the changes and exit from BIOS Setup in order for the new system configuration parameters to take effect. The following window will appear after selecting the "**Save Changes and Exit**" option is selected. Select "**Yes**" to Save Changes and Exit Setup.



Discard Changes and Exit

Select this option to quit Setup without saving any modifications to the system configuration. The following window will appear after the "**Discard Changes and Exit**" option is selected. Select "**Yes**" to Discard changes and Exit Setup.



Restore Defaults

Restore default values for all setup options. Select "Yes" to load Optimized defaults.



PS: The items under Boot Override will depend on devices connected on the system.

APPENDIX A: LED INDICATOR EXPLANATIONS

The status explanations of LED indicators on Front Panel are as follows:



System Power

Solid Green	The system is powered on
Off	The system is powered off

System Status

This LED indicator is programmable. You could program it to display the operating status of the

behaviors described below:

Solid Green	Defined by GPIO
Solid Red	Defined by GPIO
Off	Defined by GPIO

HDD Activity Status

Blinking Amber	Data access activities	
Off	No data access activities	

RJ45 LAN Status



Upper LED (Speed)	Solid Green	Operating as a 100 Mbps connection
	Solid Amber	Operating as a Gigabit connection (1000 Mbps)
	Off	No link has been established
Lower LED (Link Status)	Solid Amber	Link has been established and there is no activity on this port
	Blinking Amber	Link has been established and there is activity on this port
	Off	No link has been established

SFP Port

Solid Amber	Link has been established and there is no activity on this port	- -
Blinking Amber	Link has been established and there is activity on this port	
Off	No link has been established	
		- 2

APPENDIX B: TERMS AND CONDITIONS

Warranty Policy

- **1.** All products are under warranty against defects in materials and workmanship for a period of one year from the date of purchase.
- **2.** The buyer will bear the return freight charges for goods returned for repair within the warranty period; whereas the manufacturer will bear the after service freight charges for goods returned to the user.
- **3.** The buyer will pay for the repair (for replaced components plus service time) and transportation charges (both ways) for items after the expiration of the warranty period.
- **4.** If the RMA Service Request Form does not meet the stated requirement as listed on "RMA Service," RMA goods will be returned at customer's expense.
- 5. The following conditions are excluded from this warranty:
 - Improper or inadequate maintenance by the customer
 - ► Unauthorized modification, misuse, or reversed engineering of the product
 - Operation outside of the environmental specifications for the product.

RMA Service

Requesting an RMA#

- 1. To obtain an RMA number, simply fill out and fax the "RMA Request Form" to your supplier.
- **2.** The customer is required to fill out the problem code as listed. If your problem is not among the codes listed, please write the symptom description in the remarks box.
- 3. Ship the defective unit(s) on freight prepaid terms. Use the original packing materials when possible.
- 4. Mark the RMA# clearly on the box.



Note: Customer is responsible for shipping damage(s) resulting from inadequate/loose packing of the defective unit(s). All RMA# are valid for 30 days only; RMA goods received after the effective RMA# period will be rejected.

RMA Service Request Form

When requesting RMA service, please fill out the following form. Without this form enclosed, your RMA cannot be processed.

RMA N	0:	Reasons to Returns	rn: □ Repair(Please include failure details)
Compa	any:	Contact Person:	
Phone	No.	Purchased Date:	:
Fax No	o.:	Applied Date:	
Return	Shipping Addr	ess:	
Shippi D Othe	ng by: 🗆 Air Fre ers:	ight □Sea □Express 	
Item	Model Name	Serial Number	Configuration

Item	Problem Code	Failure Status

*Problem Coae. 01:D.O.A. 02: Second Time *Problem Code: R.M.A. 04: FDC Fail 05: HDC Fail 06: Bad Slot

07: BIOS Problem 08: Keyboard Controller Fail 09: Cache RMA Problem 03: CMOS Data Lost 10: Memory Socket Bad 11: Hang Up Software 12: Out Look Damage

13: SCSI 19: DIO 14: LPT Port 20: Buzzer 15: PS2 21: Shut Down 16: LAN 22: Panel Fail 17: COM Port 23: CRT Fail 18: Watchdog Timer 24: Others (Pls specify)

Request Party

Confirmed By Supplier

Authorized Signature / Date

Authorized Signature / Date