FWA-1010VC Network system with Intel® Atom® C2000 Processor Platform

Packing List

Before you begin installing your card, please make sure that the following items have been shipped:

- One FWA-1010VC System
- One space of accessories
- One warranty certificate

If any of these items are missing or damaged, please contact your distributor or sales representative immediately.

Note 1: Acrobat Reader is required to view any PDF file.Acrobat Reader can be downloaded at: www.adobe.com/Products/acrobat/readstep2.html (Acrobat is a trademark of Adobe)

Specifications

Main Board Functions

- **CPU:**
  Dual Intel® C2000, L2 Catch: 2MB/4MB (by CPU SKU)
- **Memory:**
  Supports two DDR3/DDR3L Memory DIMMs up to 1600 MHz, depending on CPU SKU
- **Storage:**
  Up to 1 x 2.5" SSD bracket(by product sku), 1x M.2 2280 SSD slot
- **Dimensions:**
  250 x 44 x 190.4mm (W x H x D)
- **Power Supply:**
  60W, 100 V ~ 240 V @ 50 ~ 60 Hz, full range

For more information on this and other Advantech products, please visit our website at:
http://www.advantech.com.tw/support
http://www.advantech.com
For technical support and service, please visit our support website at:
http://www.advantech.com/support
This manual is for the CGS6000 series Rev. A
Part No. TBA
Print in China
Draft Edition,

1. FEDERAL COMMUNICATIONS COMMISSION (FCC) STATEMENT:

15.21
You are cautioned that changes or modifications not expressly approved by the part responsible for compliance could void the user's authority to operate the equipment.

15.105(b)
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 or more 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.

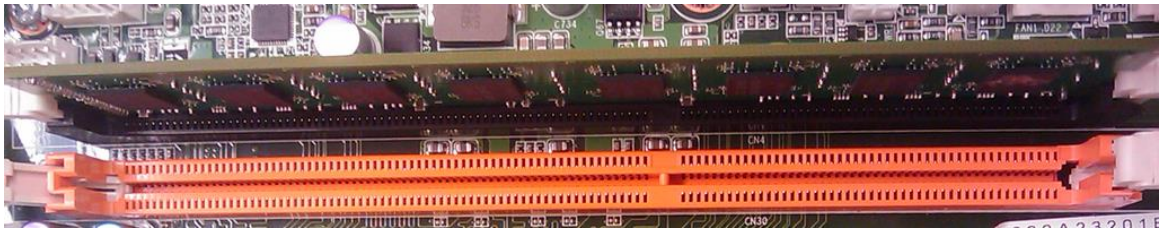
This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
1) this device may not cause harmful interference and
2) this device must accept any interference received, including interference that may cause undesired operation of the device.

FCC RF Radiation Exposure Statement:
1. This Transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.
2. This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body

2. HARDWARE INSTALLATION INTRODUCTION

2.1 MEMORY INSTALLATION

2.1.1 Open the top cover and insert DDR3 UDIMM module into the socket, insert RAM module into black socket first then insert RAM module in orange socket

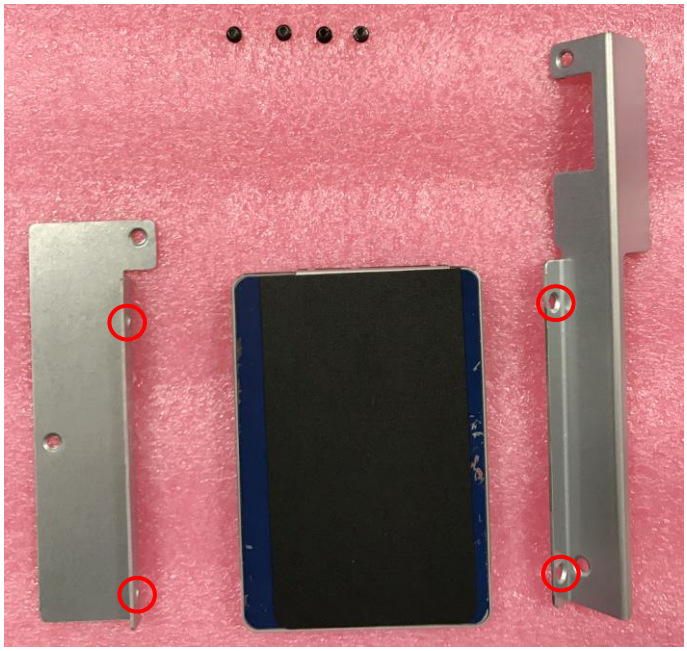


2.2 2.5” SSD BRACKET INSTALLATION=>

2.2.1 Get 4 pcs M3*4.0L screws & SSD bracket from accessory box

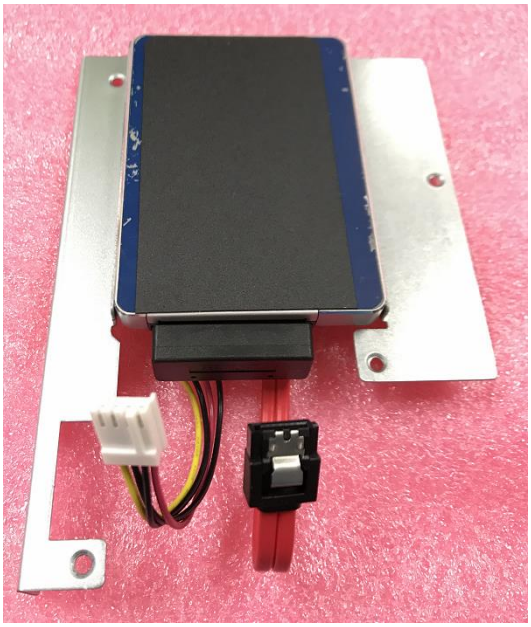
M3*4.0L screw

2.2.2 Use screwdriver locking 4 screws to fix 2.5” SSD in SSD bracket.

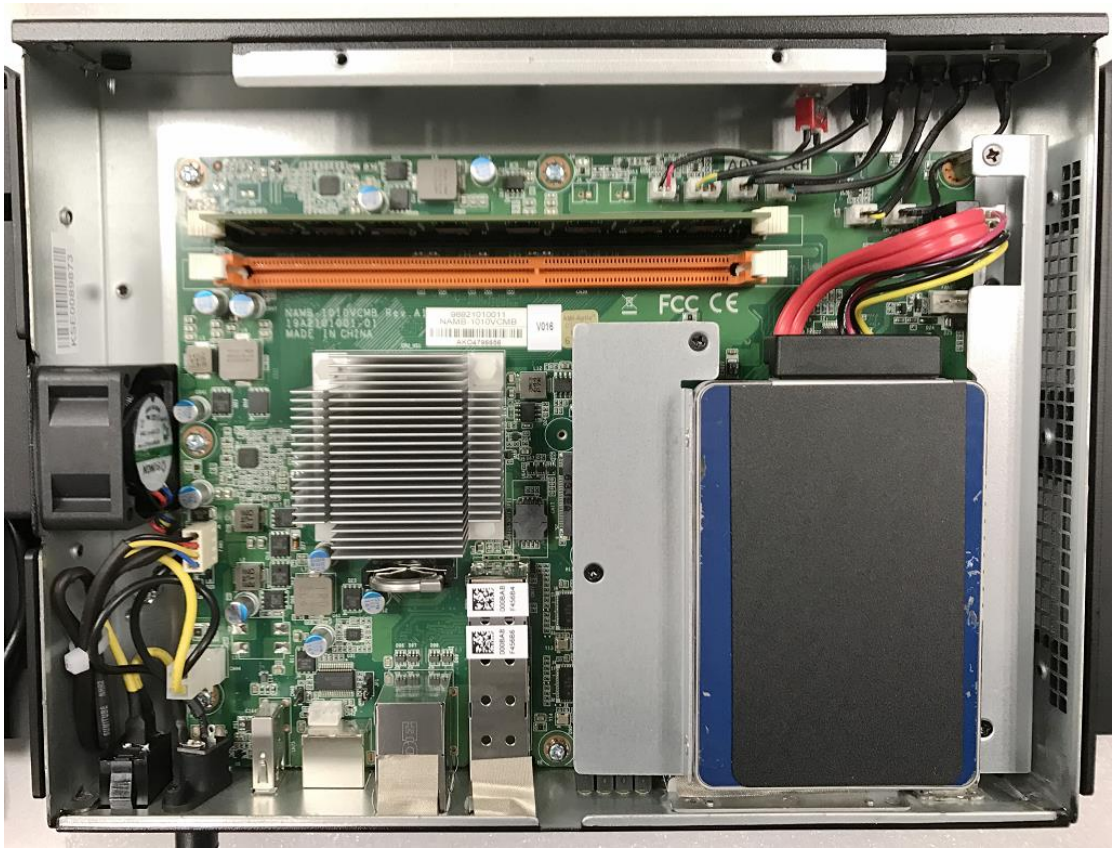


2.2.3 Get 4 pcs M3*4L screws from accessory box

M3*4 screw



2.2.4 Use screwdriver locking 4 screws to fix SSD bracket on FWA-1010VC, SSD SATA & power connector side needs face from chassis side.

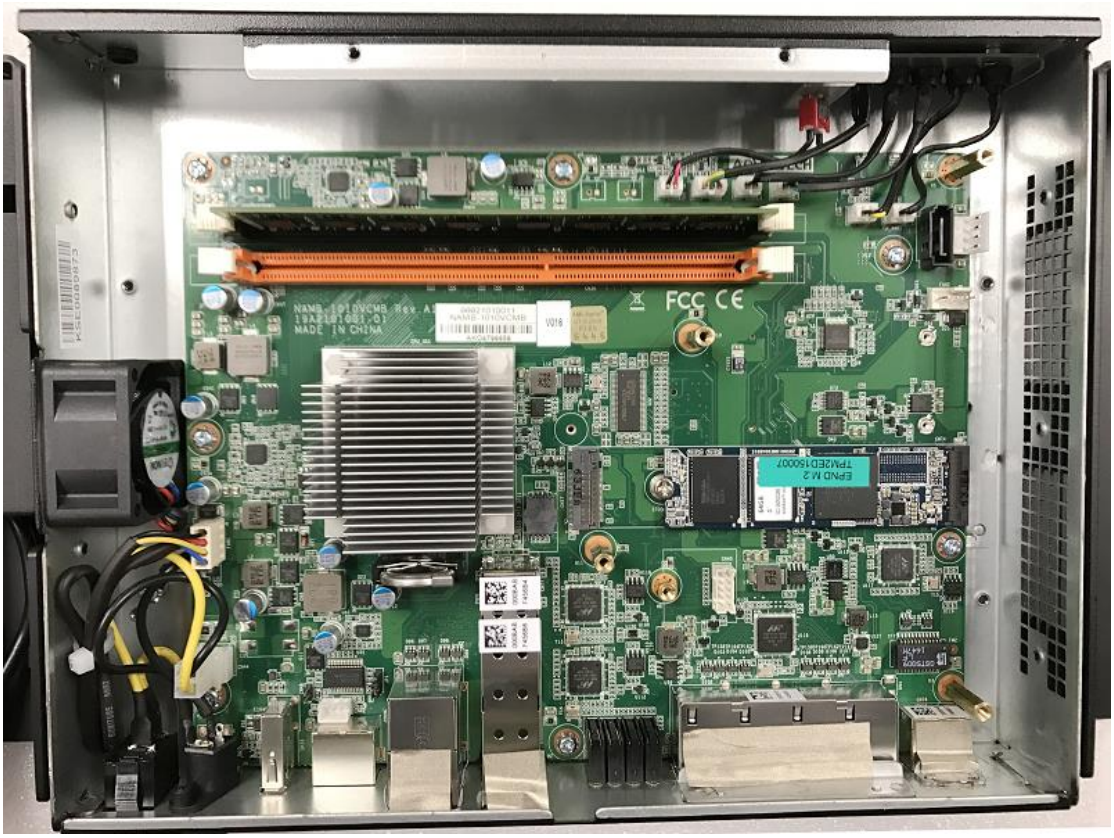


2.2.5 Please connect SATA & Power cable to SSD connectors.

2.3 M.2 SSD INSTALLATION

2.3.1 Get M.2 module & Screw M3*3.5 (P/N: 1930006888-01)

2.3.2 Use screwdriver locking a screw to fix M.2 module and FWA-1010VC M/B.



2.4 WallMount Kit Installation

Get 6 pcs M3*4L screws from accessory box

Use screwdriver locking 6 screws to fix WallMount Kit bracket on FWA-1010VC

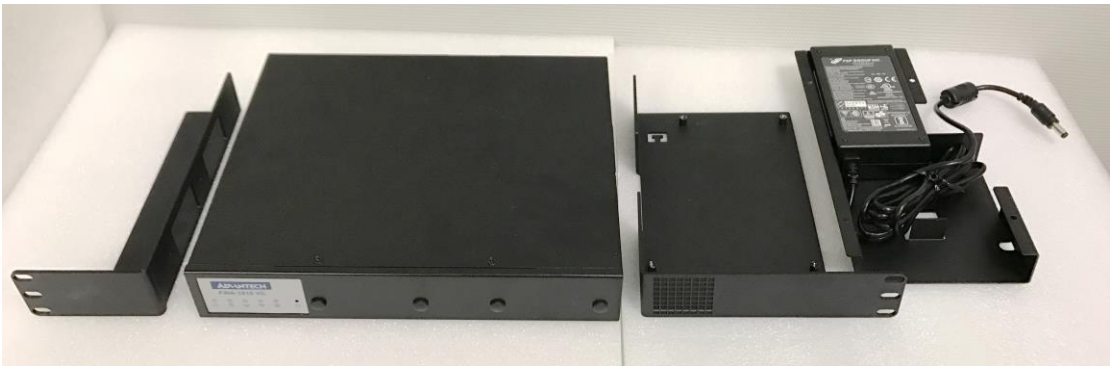
2.5 RackMount Kit Installation

Get 6 pcs M3*4L screws from accessory box

Plug in Power Adaptor into power Adaptor bracket

Revert power adaptor bracket into rack-mounting bracket

Please use screwdriver locking 6 screws to fix RackMount Kit bracket on FWA-1010VC



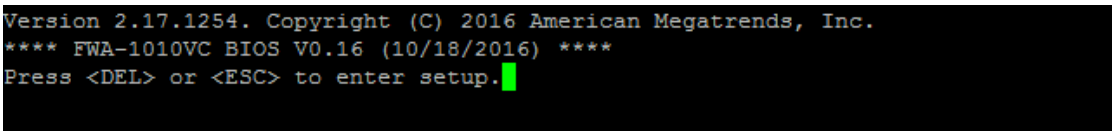

ADVANTECH
FWA-1010 VC

3. BIOS CONSOLE REDIRECTION SETTING

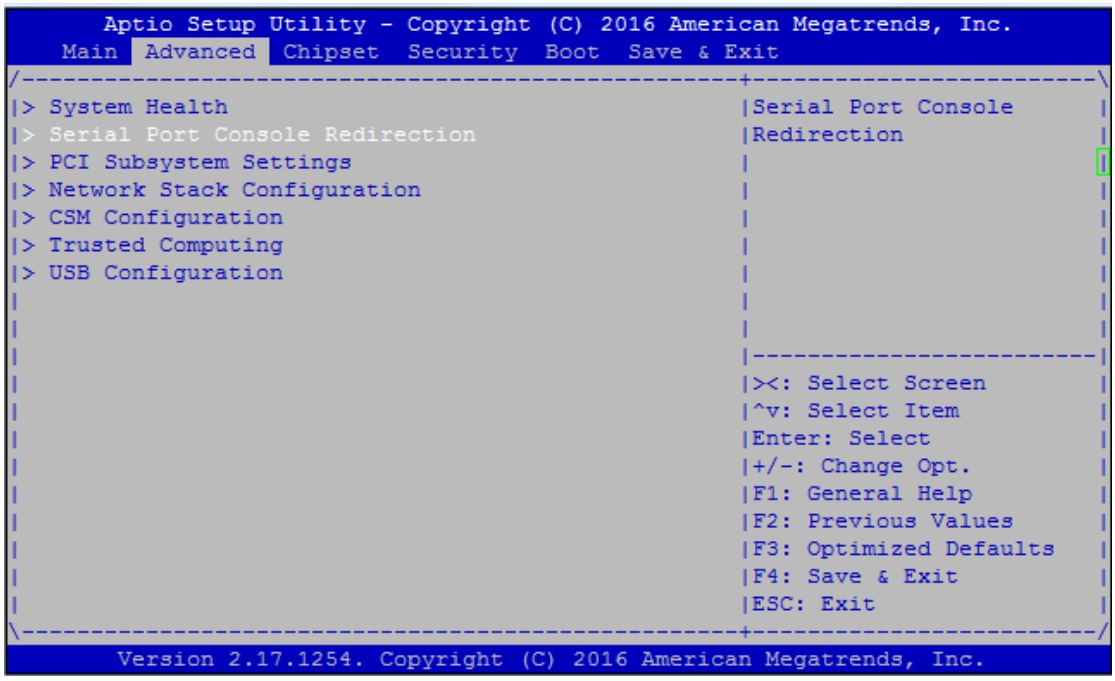
3.1 CONSOLE REDIRECTION FUNCTION INSTALL &SETTING

3.1.1 FWA-1010VC doesn't have a VGA function; user needs to use console-redirection cable(please contact your Advantech contact window to order this cable) to control FWA-1010VC function,

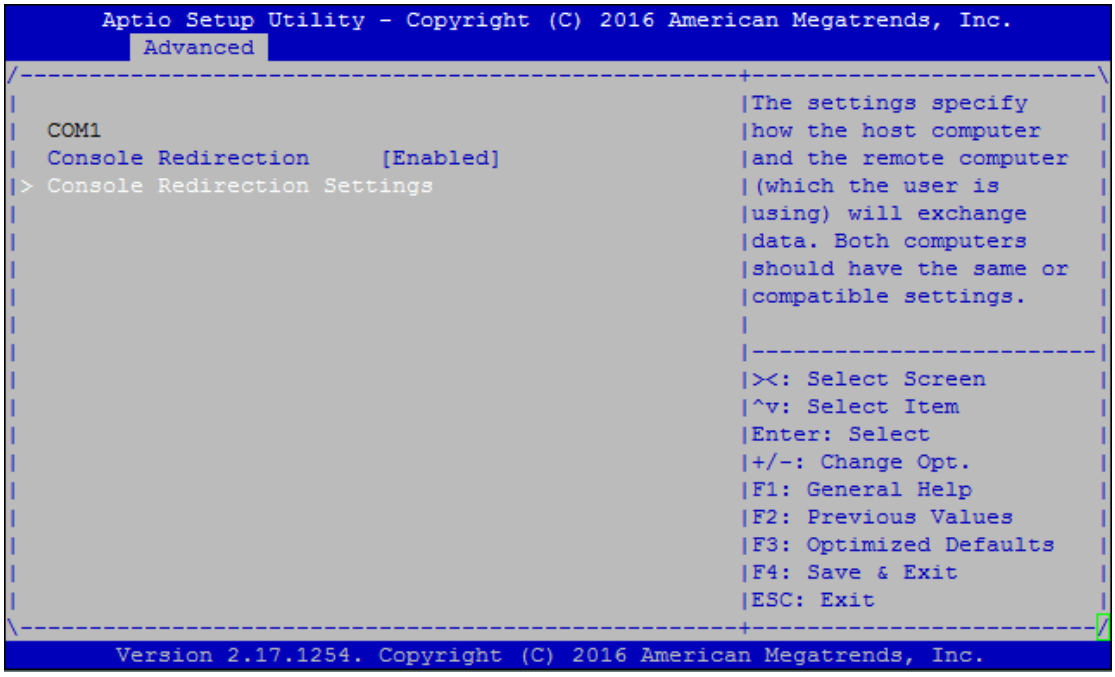
3.1.2 Please use RJ45 to console cable to connect FWA-1010VC's Console port and Test PC's RS232 COM port, user may press "DEL" or "ESC" key into BIOS by console-redirection utility



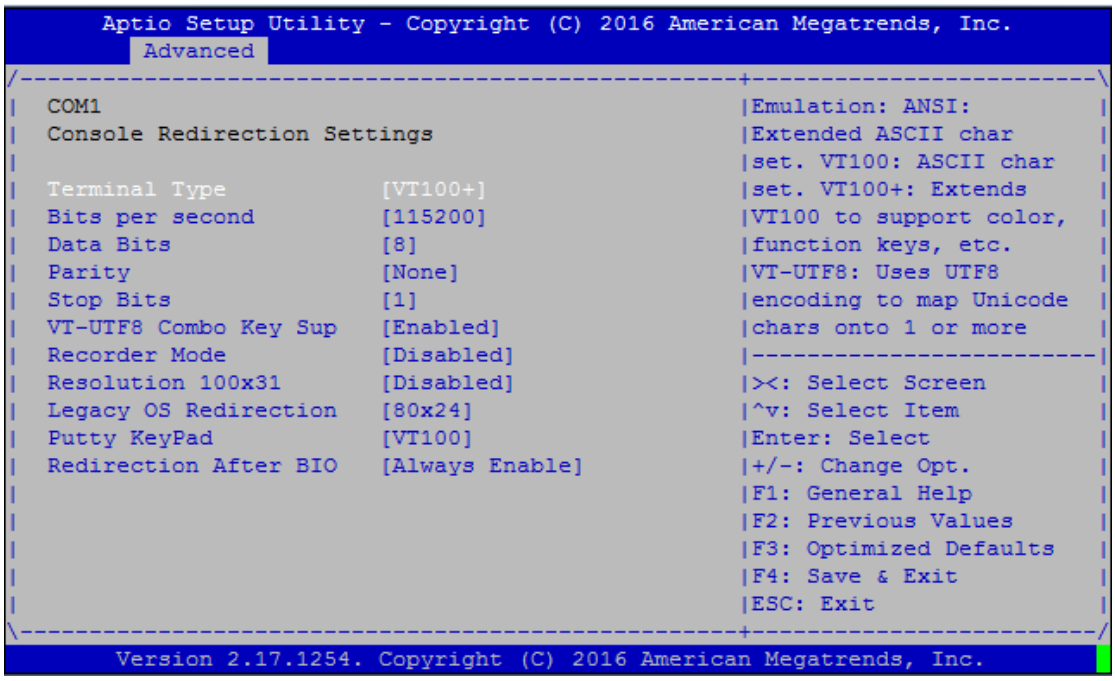
3.1.3 Choose “Advanced”→ “Serial Port Console Redirection” item.



3.1.4 Default console redirection setting of FWA-1010VC BIOS is **COM1**



3.1.5 Baud rate setting is **115200,8,n1**, and “Redirection after BIOS POST” is **Always**.



4. FWA-1010VC QUICK START IMAGE INSTALLATION AND SETTING

Advantech provided FWA-1010VC Quick Start Linux image which is based on Ubuntu Linux distribution and is configured to run on FWA-1010VC for vE-CPE and SD-WAN applications. Useful software utilities and tools which are either Advantech proprietary or are under opens source license are integrated into the image to provide customers with a quick and easy approach for platform evaluation.

Please contact your Advantech representative for getting FWA-1010VC Quick Start Linux image and Getting Started Guide.

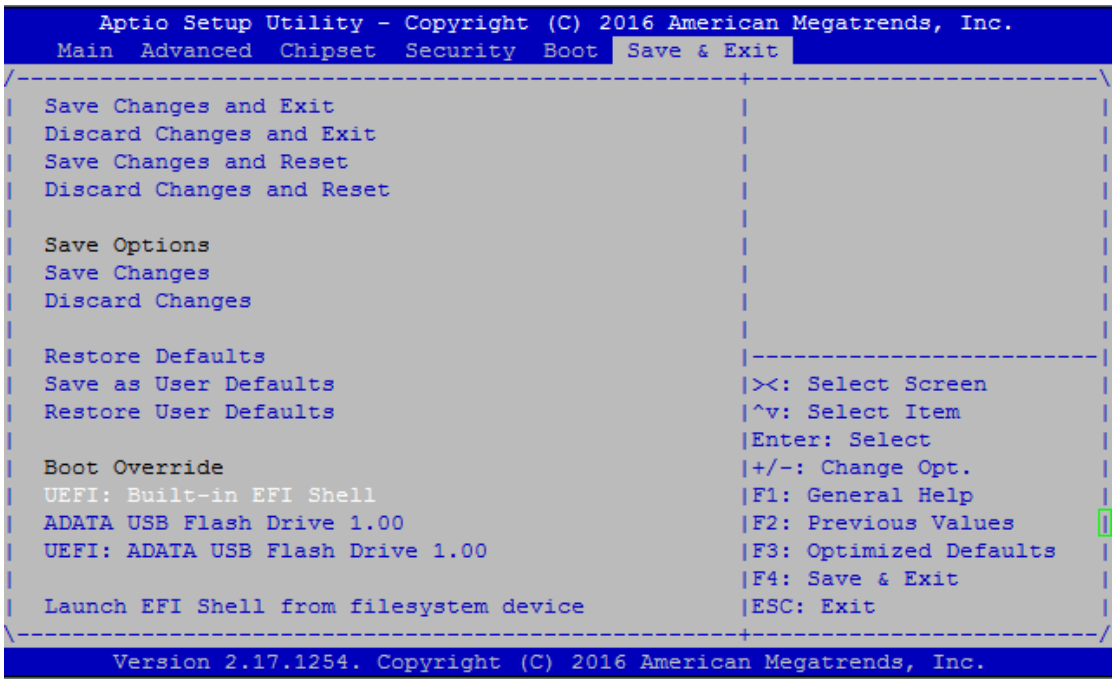
5. FWA-1010VC BIOS FLASH STEP

5.1 FWA--1010VC BIOS flash step.

FWA-1010VC BIOS V016 or latest version are support flash BIOS by UEFI shell, when user needs flash er below step to flash FWA-1010VC BIOS.

5.1.1 Please copy BIOS & flash tool (ex: fpt.efi) in USB flash, and insert USB flash to FWA-1010VC.

5.1.2 Kindly power up system, and choose “Save & Exit”→ “Boot Overider”→ “UFEI: Bulit-in EFI Shell”

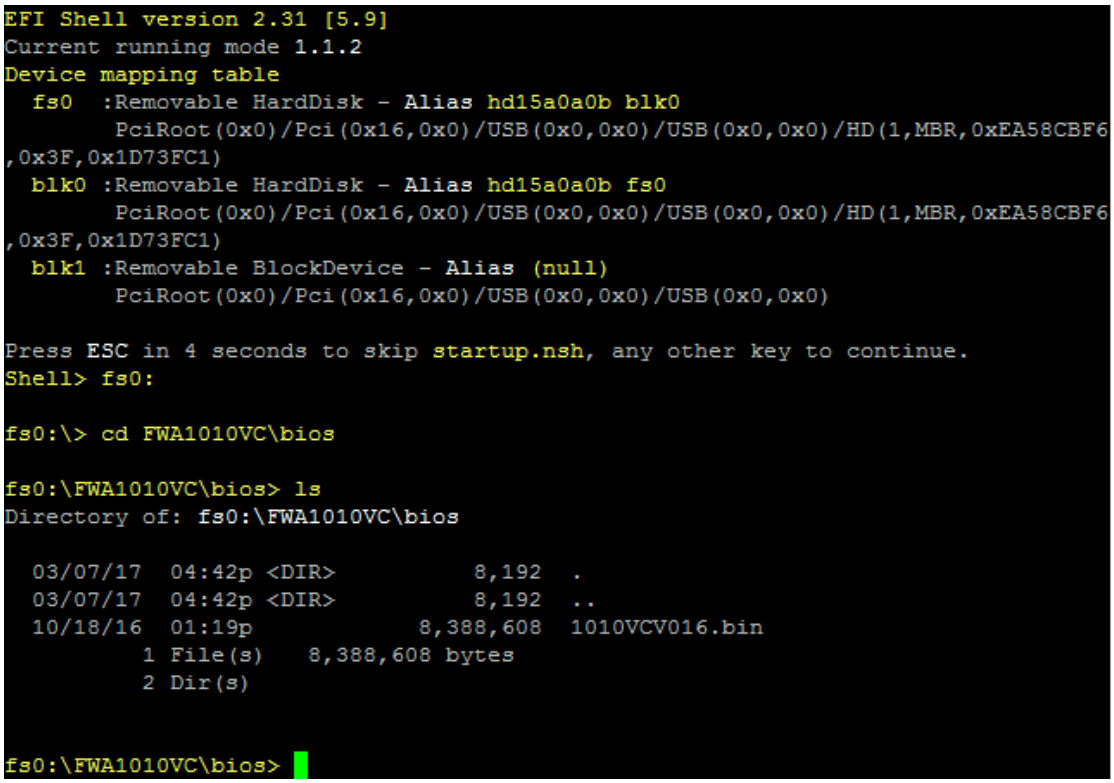


5.1.3 Please press “ESC” to skip startup.nsh, it will show “Shell >” message

5.1.4 When system only install a USB flash, EFI shell will detect USB flash as “fs0”, if system install 2 USB flash , EFI shell will detect USB flash as “fs0” and “fs1”.

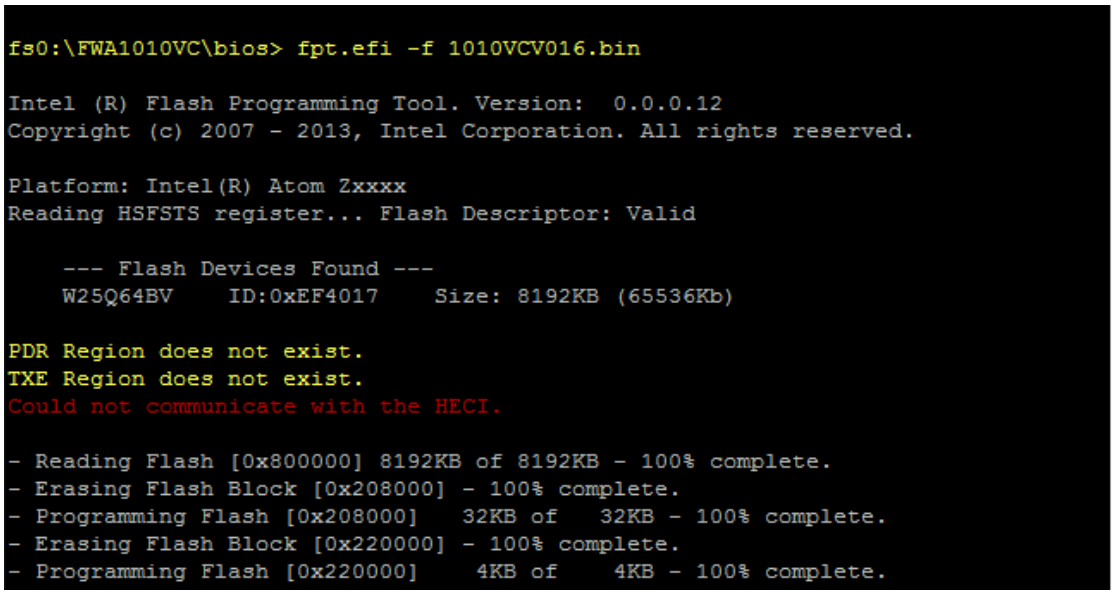
5.1.5 Kindly key-in “USB ID” whether BIOS file is located. (Example: the system only install a USB flash, it needs key-in “fs0” into USB flash)

5.1.6 Kindly key-in sub-directories whether BIOS file is located. (Example: the BIOS file put in /FWA1010VC/BIOS)



5.1.7 Kindly key-in “fpt.efi 0f “BIOS file” to flash FWA-1010VC BIOS, and **please don’t power off system during the flash BIOS**.

5.1.8 When BIOS flash finish. Please power off and re-power on system, the system BIOS will flash to new version.



6. SYSTEM PLATFORM SKUS

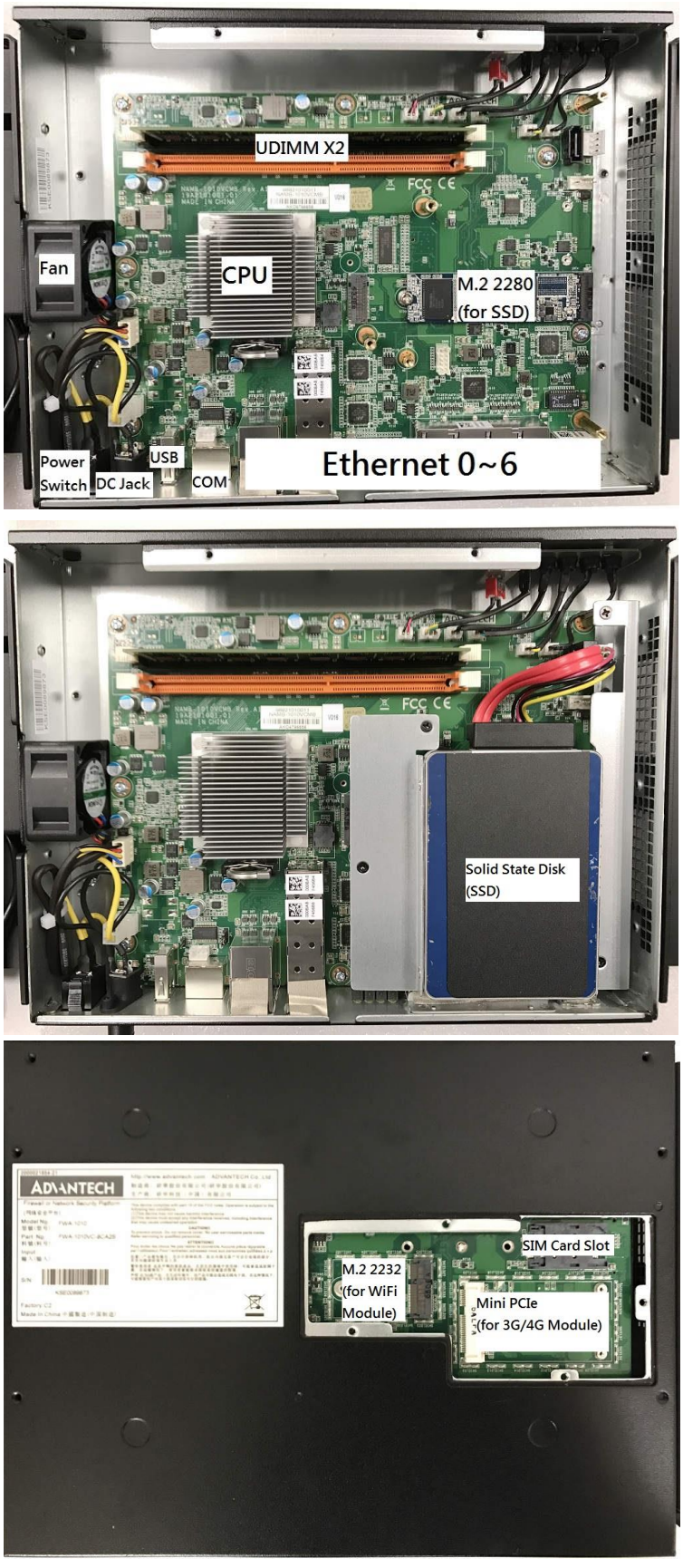
FWA-1010VC-4CA2S:

- Tabletop
- 1x 60W Power Adaptor, CPU 4Core C2558 1x M.2 2280 SSD slot, 7x 1GbE Ethernet port, 2x 1GbE SFP port and 4x 1GbE switched Ethernet port with 1GbE uplink to CPU

FWA-1010VC-8CA2S:

- Tabletop
- 1x 60W Power Adaptor, CPU 8Core C2758, 1x 2.5” SSD bracket, 1x M.2 2280 SSD slot, 7x 1GbE Ethernet port, 2x 1GbE SFP port and 4x 1GbE switched Ethernet port with 1GbE uplink to CPU

6.1 System Architecture

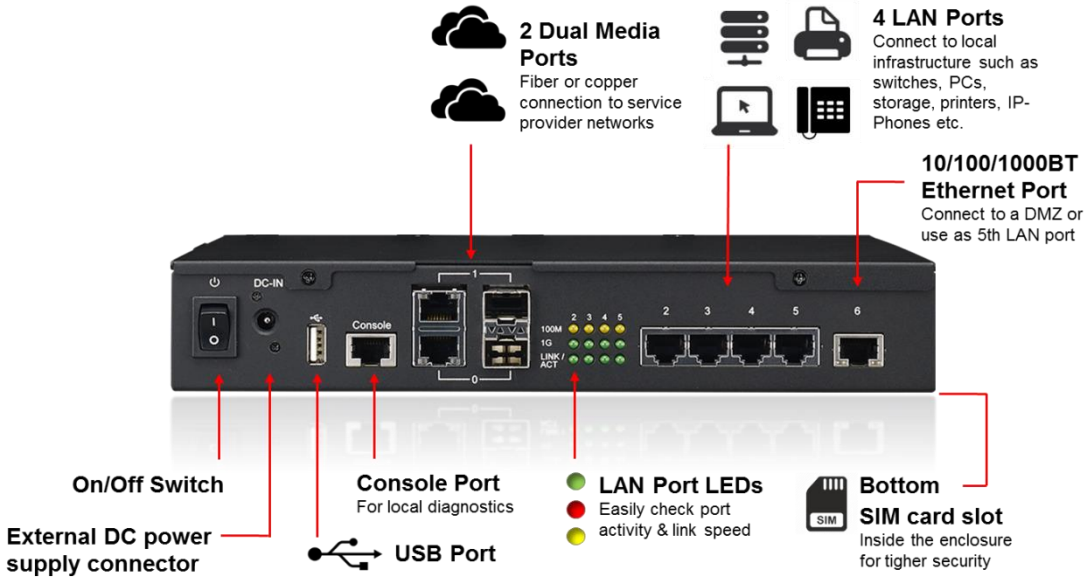


FWA-1010VC System Architecture

6.1.1 Front Side

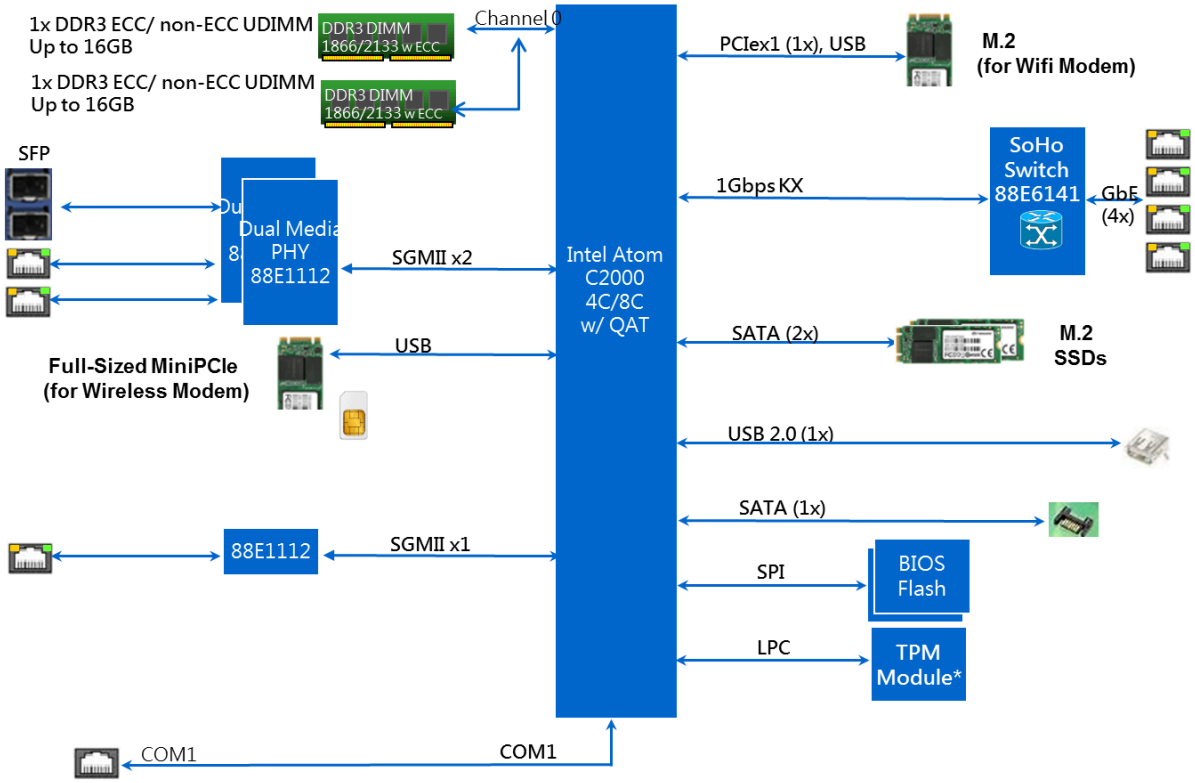
FWA-1010VC System Front View

6.1.2 Rear Side



FWA-1010VC System Rear View

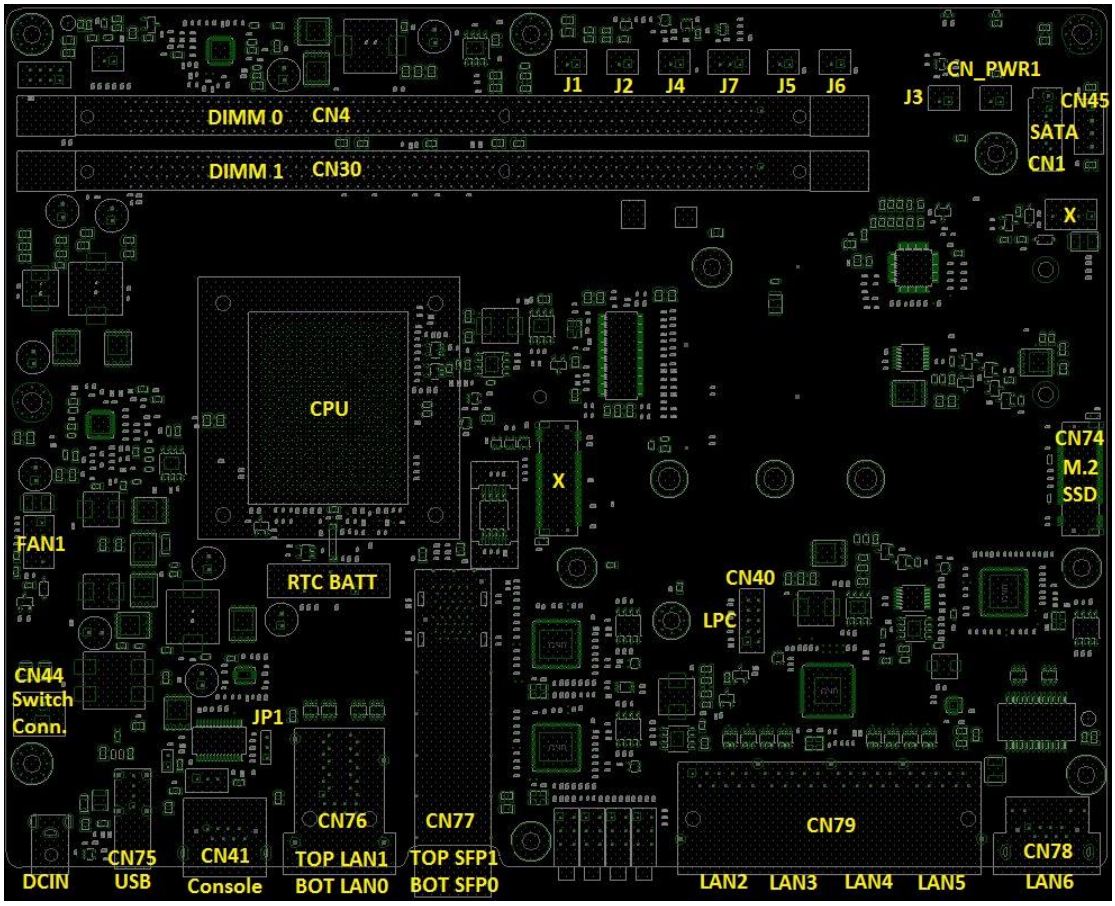
6.2 System Block Diagram



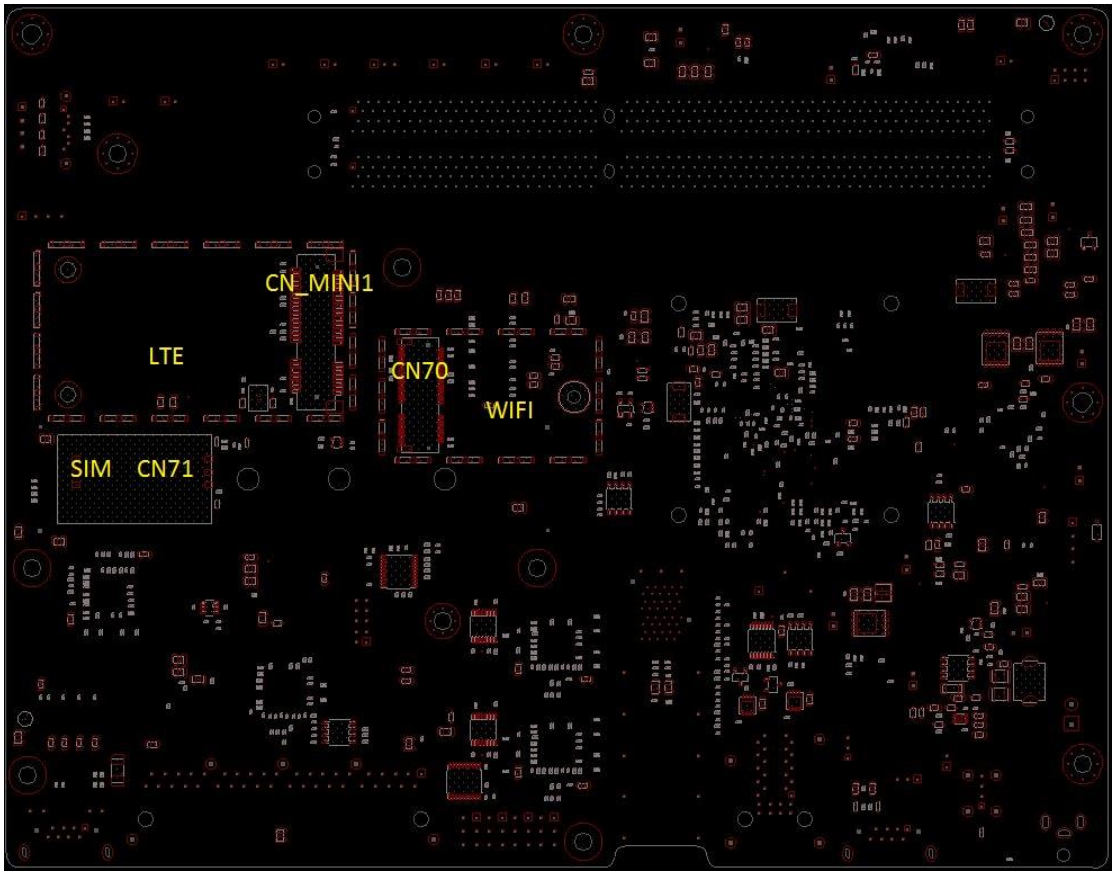
FWA-1010VC System Block Diagram

7. NAMB-1010VCMB JUMPER SETTING AND CONNECTOR LIST

7.1 Connector



NAMB-1010VCMB Top side Connector Placement



NAMB-1010VCMB Bot side Connector Placement

Location	Description	Comment
DC_JACK1	DC POWER JACK 4P 90D(M) DIP 2DC-0006-B01	DC12V Power Input.
CN75	USB Conn 4P 90D(F) DIP USB-1F0401-2W	For USB Function.
CN41	PHONE JACK RJ45 8P 1.02mm 90D(F) DIP C20GY0-500	For Console.
CN76	PHONE JACK RJ45 28P 2.54mm 90D(F) DIP RM3-1TJA9V	For 2x1 LAN w/ Combo Media.
CN77	SFP+ 1x2 Cage 90D(M) 3S1020F7-AJ4-4F	For 2x1 SFP w/ Combo Media.
CN79	RJ45_40P_RB4-109D9F1D	For 1x4 LAN w/ 88E6141 switch.
CN78	PHONE JACK RJ45 12P 1.02mm 90D(F) DIP C23GY0-590	For single LAN function.
JP1	PIN HEADER 3x1P 2.0mm 180D(M) DIP 2000-13 WS	For CPU CMOS Clean w/ Jumper.

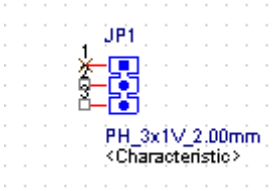
Location	Description	Comment
CN44	WAFER BOX 2P 3.96mm 180D(M) DIP 3961-WS-2-LF	For Power Switch Cable.
FAN1	WAFER 2.54 1*4P 180D(M) DIP 744-81-04TW30	For system cooler use.
SPI1	IC SKT 8P SMD 8P SMD ACA-SPI-004-K01	For CPU BIOS EEPROM.
CN40	WAFER BOX 2x5P 2.00mm 180D(M) DIP 24W2140-10S10	For TPM and LPC function.
CN74	PCI-E MKEY NGFF_75P_AS0BC21-S40BM-7H	For SATA3 6G SSD Card.
CN45	WAFER 4P 2.5mm 180D(M) DIP 24W1161-04S10-01T	For SATA3 6G HDD Power.
CN1	Serial ATA 7P 1.27mm 180D(M) DIP WATM-07DBN4A3B8	For SATA3 6G function.
CN30	DIMM DDR3 240P orange DIP 15u inch ATH4017-P3E-4F	For DDR DIMM A2 (Second)
CN4	DIMM DDR3 240P orange DIP 15u inch ATH4017-P3E-4F	For DDR DIMM A0 (Main)
CN_PWR1	WAFER BOX 2P 2.0mm 180D(M) DIP A2001WV2-2P	For system power LED.
J3	WAFER BOX 2P 2.0mm 180D(M) DIP A2001WV2-2P	For System HDD LED.
J6	WAFER BOX 2P 2.0mm 180D(M) DIP A2001WV2-2P	For System LTE LED.
J5	WAFER BOX 2P 2.0mm 180D(M) DIP A2001WV2-2P	For System WIFI LED.
J7	WAFER BOX 3P 2.0mm 180D(M) DIP 2001-WS-3	For Software Define LED
J4	WAFER BOX 2P 2.0mm 180D(M) DIP A2001WV2-2P	For Software Define button
CN_MINI1	MINI PCI 52P 0.8mm 90D(F) SMD AS0B226-S40Q-7H	For LTE Module.
CN71	SIM card conn. 6p 2.54mm 90D(F) SMD 5210622	For SIM Card.
CN70	NGFF_75P_AS0BC21-S40BE-7H	For Wifi Module.

7.2 Jumper Setting

■ Clear CMOS Header (JP1)

Use a three pin header. For Clear CMOS data

Clear CMOS Jumper Definition



Pitch: 2.00mm

Jumper	Circuit	Comme
1-2 Installed	Pull up	Pull up to +VBAT 3.3V, Normal status (Default)
2-3 Installed	Pull down	Pull to ground to clear CMOS

JP1 Symbol (NAMB-1010VCMB)

■ Fan Header

Locations of the fan headers shall accommodate circulation of fresh air from the front of the chassis.

FAN Header 4 Pin (FAN1).

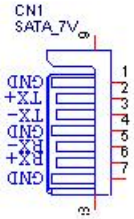
Pin No.	Pin Define.	Pin No.	Pin Define.
1	Ground	2	12V Power
3	FANTACH	4	FANPWM

FAN1 Symbol (NAMB-1010VCMB)

■ SATA CONNECTOR

SATA Connector (CN1) SATA3 6G

Pin No.	Pin Define.	Pin No.	Pin Define.
1	GND	2	TX+
3	TX-	4	GND
5	RX-	6	RX+
7	Ground	8	GND
9	GND		



CN1 Symbol (NAMB-1010VCMB)

■ SATA Power CONNECTOR

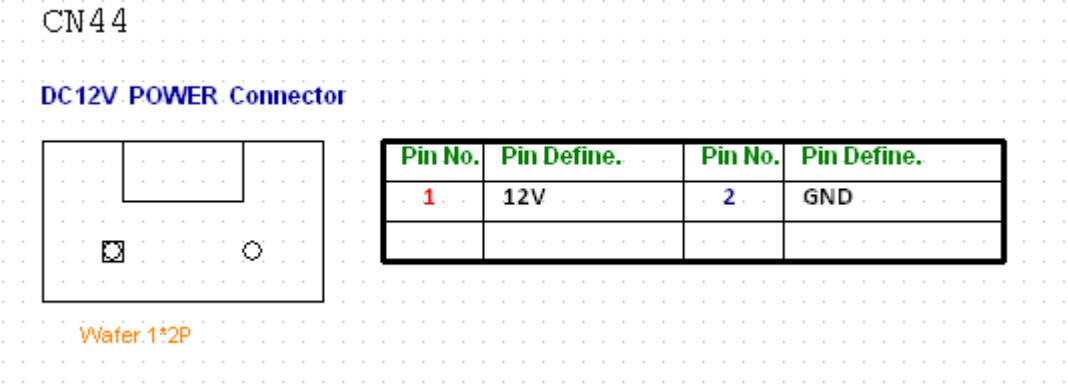
SATA Power Connector (CN45)

Pin No.	Pin Define.	Pin No.	Pin Define.
1	5V Power	2	Ground
3	Ground	4	12V Power

CN45 Symbol (NAMB-1010VCMB)

■ DC12V Power CONNECTOR

Power Switch Connector(CN44)

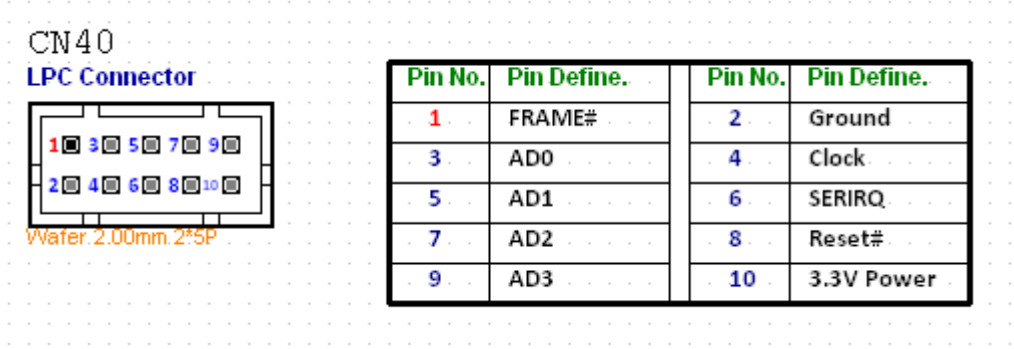


Pin No.	Pin Define.	Pin No.	Pin Define.
1	12V	2	GND

CN44 Symbol (NAMB-1010VCMB)

■ LPC CONNECTOR

LPC Connector(CN40)



Pin No.	Pin Define.	Pin No.	Pin Define.
1	FRAME#	2	Ground
3	AD0	4	Clock
5	AD1	6	SERIRQ
7	AD2	8	Reset#
9	AD3	10	3.3V Power

CN40 Symbol (NAMB-1010VCMB)