



# VC70B-KU

**User's Manual** 

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## FCC and DOC Statement on Class A

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, 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 the 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.

#### **Notice:**

- 1. The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
- 2. Shielded interface cables must be used in order to comply with the emission limits.

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## **About this Manual**

An electronic file of this manual can be obtained from the DFI website at www.dfi.com. To download the user's manual from our website, please go to "Support" > "Download Center." On the Download Center page, select your product or type the model name and click "Search" to find all technical documents including the user's manual for a specific product.

### Warranty

- 1. Warranty does not cover damages or failures that arised from misuse of the product, inability to use the product, unauthorized replacement or alteration of components and product specifications.
- 2. The warranty is void if the product has been subjected to physical abuse, improper installation, modification, accidents or unauthorized repair of the product.
- 3. Unless otherwise instructed in this user's manual, the user may not, under any circumstances, attempt to perform service, adjustments or repairs on the product, whether in or out of warranty. It must be returned to the purchase point, factory or authorized service agency for all such work.
- 4. We will not be liable for any indirect, special, incidental or damages to the product that has been modified or altered.

## **Static Electricity Precautions**

It is quite easy to inadvertently damage your PC, system board, components or devices even before installing them in your system unit. Static electrical discharge can damage computer components without causing any signs of physical damage. You must take extra care in handling them to ensure against electrostatic build-up.

- 1. To prevent electrostatic build-up, leave the system board in its anti-static bag until you are ready to install it.
- 2. Wear an antistatic wrist strap.
- 3. Do all preparation work on a static-free surface.
- 4. Hold the device only by its edges. Be careful not to touch any of the components, contacts or connections.
- 5. Avoid touching the pins or contacts on all modules and connectors. Hold modules or connectors by their ends.

<b>^</b>	Important:

Electrostatic discharge (ESD) can damage your processor, disk drive and other components. Perform the upgrade instruction procedures described at an ESD workstation only. If such a station is not available, you can provide some ESD protection by wearing an antistatic wrist strap and attaching it to a metal part of the system chassis. If a wrist strap is unavailable, establish and maintain contact with the system chassis throughout any procedures requiring ESD protection.

## **Safety Measures**

To avoid damage to the system:

• Use the correct AC input voltage range.

To reduce the risk of electric shock:

• Unplug the power cord before removing the system chassis cover for installation or servicing. After installation or servicing, cover the system chassis before plugging the power cord.

#### Battery:

- Danger of explosion if battery incorrectly replaced.
- Replace only with the same or equivalent type recommend by the manufacturer.
- Dispose of used batteries according to local ordinance.

## **Safety Precautions**

- Use the correct DC input voltage range.
- Unplug the power cord before removing the system chassis cover for installation or servicing. After installation or servicing, cover the system chassis before plugging the power cord.
- Danger of explosion if battery incorrectly replaced.
- Replace only with the same or equivalent type recommend by the manufacturer.
- Dispose of used batteries according to local ordinance.
- Keep this system away from humidity.
- Place the system on a stable surface. Dropping it or letting it fall may cause damage.
- The openings on the system are for air ventilation to protect the system from overheating. DO NOT COVER THE OPENINGS.
- Place the power cord in such a way that it will not be stepped on. Do not place anything on top of the power cord. Use a power cord that has been approved for use with the system and that it matches the voltage and current marked on the system's electrical range label.
- If the system will not be used for a long time, disconnect it from the power source to avoid damage by transient overvoltage.
- If one of the following occurs, consult a service personnel:
  - The power cord or plug is damaged.
  - Liquid has penetrated the system.
  - The system has been exposed to moisture.
  - The system is not working properly.
  - The system dropped or is damaged.
  - The system has obvious signs of breakage.
- The unit uses a three-wire ground cable which is equipped with a third pin to ground the unit and prevent electric shock. Do not defeat the purpose of this pin. If your outlet does not support this kind of plug, contact your electrician to replace the outlet.
- Disconnect the system from the DC outlet before cleaning. Use a damp cloth. Do not use liquid or spray detergents for cleaning.

### **About the Package**

The package contains the following items. If any of these items are missing or damaged, please contact your dealer or sales representative for assistance.

- 1 VC70B-KU system unit
- 4 Mounting screws for Mini PCIe module
- 1 Power Connector

### **Optional Items**

- Wall Mount kit
- Power Cord
- Power Adapter: 120W, 19V/6.31A or 60W, 19V/3.15A

The board and accessories in the package may not come similar to the information listed above. This may differ in accordance to the sales region or models in which it was sold. For more information about the standard package in your region, please contact your dealer or sales representative.

## **Chapter 1 - Introduction**

### **Overview**



**Front View** 

### **Key Features**

Model Name	VC70B-KU
Processor	7th Generation Intel <sup>®</sup> Core <sup>™</sup> processors, BGA 1356
LAN	Two LAN ports
СОМ	Six COM ports
Display	VGA & HDMI
Audio	Microphone and Line-out
USB	Four USB 3.0 & two USB 2.0 Type A ports
Power	9~36V DC-in
DIO/CAN bus	8-bit DIO or CAN bus with a DB9 connector (selection via jumper settings)
Power Switch	Power-on button



**Rear View** 

## Specifications

Processor	7th Generation Intel <sup>®</sup> Core <sup>™</sup> Processors, BGA 1356 Intel <sup>®</sup> Core <sup>™</sup> i7-7600U Processor, Dual Core, 4M Cache, 2.8 GHz, 15W Intel <sup>®</sup> Core <sup>™</sup> i5-7300U Processor, Dual Core, 3M Cache, 2.6 GHz, 15W Intel <sup>®</sup> Core <sup>™</sup> i3-7100U Processor, Dual Core, 3M Cache, 2.4 GHz, 15W
Memory	<ul> <li>Supports dual-channel DDR4 2133MHz</li> <li>Supports 4GB/8GB memory onboard</li> </ul>
Graphics	Intel <sup>®</sup> HD Graphics GT Series OpenGL 5.0, DirectX 12, OpenCL 2.1 • Supports these codecs: HW Decode: AVC/H.264, MPEG2, VC1/WMV9, JPEG/MJPEG, HEVC/H265, VP8, VP9 HW Encode: AVC/H.264, MPEG2, JPEG, HEVC/H265, VP8, VP9 • Output displays:
	VGA: resolution up to 1920x1200 @ 60Hz HDMI: resolution up to 4096x2160 @ 24Hz
	• Dual display: VGA + HDMI
Audio	Realtek ALC888 5.1-channel     Audio ports:     Mic-in and Line-out
Storage	<ul><li>Full-size Mini PCIe (PCIe/USB)</li><li>Half-size Mini PCIe (PCIe/USB/SATA)</li></ul>
Ethernet	$1 \times Intel^{\circledast}$ I210IT PCIe (10/100/1000Mbps) $1 \times Intel^{\circledast}$ I219LM with iAMT11.0 PCIe (10/100/1000Mbps) (only Core i7/i5 supports iAMT)
Expansion	One full-size Mini PCIe (PCIe/USB) One half-size Mini PCIe (PCIe/USB/SATA)
Front Panel I/O Ports	<ul> <li>Front Panel</li> <li>Power button with LED</li> <li>Reset button</li> <li>Status LED</li> <li>HDD LED</li> <li>VGA Port</li> <li>Five (two support RS232/422/485; two support only RS232; one supports RS232 or 8-bit DIO or CAN bus)</li> </ul>

Rear Panel I/O Ports	<ul> <li>Rear Panel</li> <li>One RS-232 (DB-9)</li> <li>Line-out and Mic-in ports</li> <li>One HDMI port</li> <li>Four USB 3.0 Type A ports</li> <li>Two USB 2.0 Type A ports</li> <li>Two RJ45 LAN ports</li> <li>One 9~36V terminal block</li> <li>Five wireless module antenna holes</li> </ul>
Power	• Power input voltage: 9~36V DC-in (terminal block with ignition control)
Cooling System	Fanless with heatsink
Environment	<ul> <li>Operating Temperature: -20 to 60°C (wide temperature SSD or mSATA mini)</li> <li>Storage Temperature: -20 to 85°C</li> <li>Relative Humidity: 5 to 95% RH (non-condensing)</li> </ul>
Construction	Aluminum + Sheet Metal
Mounting	Wall/VESA/DIN-rail Mount
Dimensions	• 184mm x 82mm x 118.4mm (W x H x D)
Weight	• 1.6 Kg
OS Support	<ul> <li>Windows 10 (64-bit)</li> <li>Windows 10 IoT Enterprise (64-bit)</li> <li>Ubuntu 16.04 LTS</li> </ul>
Other Features	System Reset, Programmable via Software from 1 to 255 Seconds
Standards and Certifications	Shock: MIL-STD 810G 516.6 Operating: 10G, 11ms Non-Operating: 40G, 11ms Vibration: MIL-STD 810G 514.6C-3 Certifications: CE, FCC Class A, RoHS

### Getting to Know the VC70B-KU

#### **Front View**



#### Power button with LED (Green)

Press to power on or power off the system.

#### Status LED (Blue)

Indicates system status.

Status LED					
Suspend Mode	<b>S0</b>	Sleep	S4, S5		
LED Behavior	ON	Blinks	Off		

#### **Reset Button**

Press to reset the system.

#### **COM Ports**

Connect serial devices. COM 1 and COM 2 support RS232/422/485; COM 4 can be selected among RS232, 8-bit digital IO and CAN bus port via jumper settings; COM 5 and COM 6 support only RS232.

#### VGA

Connects the VGA connector of a monitor.

#### HDD LED (Blue)

Indicates the status of the hard drive.

HDD LED					
HDD State Disk access activity		HDD present or HDD not present			
LED Behavior	Blink	Off			



#### COM Port

Connects serial devices; COM 3 supports only RS232.

#### Microphone/Line-out Ports

Connect audio devices such as microphones and speakers.

#### HDMI\*

Connects the HDMI connector of an LCD monitor.

#### USB 3.0/2.0 Ports

Connect USB 3.0 and 2.0 devices as well as devices based on previous USB versions.

#### **Gigabit LAN Ports**

Connect the system to a local area network.

#### DC-in

DC 9~36V power input via a DC-in jack.

#### **Antenna Holes**

Connect a wireless module's antennas.



The HDMI is a DP++/HDMI combo port but can only transmit HDMI signals (unless wired as a DP++ port). Please plug in an HDMI cable with the right orientation and alignment to avoid damage to the connector. You should feel resistance (due to a pin on the right) if the cable is not inserted correctly. Please see a video at https://youtu.be/SUj07rfN5l8 for detailed instructions.

Aligning side	Angled-corner	Angled-corner (up)	1997	Align this edge with the left side of the connector
---------------	---------------	-----------------------	------	---

**Mechanical Dimensions** 

**Chassis Dimensions** 

**Motherboard Dimensions** 



Left View



**Right View** 



## **Chapter 2 - Getting Started**

### **Preparing the System**

Before you start using the system, you need the following items:

- SATA hard drive
- AC power adapter and other means of power supply
- CD-ROM drive (for installing software/drivers)

### **Installing Devices**

The following devices can be installed in the system.

- SATA drives
- Mini PCIe card
- mSATA card

### **Configuring the BIOS**

To get you started, you may need to change configurations such as the date, time and the type of hard disk drive.

- 1. Power on the system.
- 2. After the memory test, the message "Press DEL to run setup" will appear on the screen. Press the Delete key to enter the BIOS setup utility.

### **Installing a Operating System**

Most operating system software can be installed using a DVD (and DVD burner) or bootable USB drive.

Please refer to your operating system manual for instructions on installing an operating system.

### **Installing the Drivers**

The system requires you to install drivers for some devices to operate properly. Refer to the Supported Software chapter for instructions on installing the drivers.

### **Chapter 3 - Installing the Devices** Removing the Chassis Cover

Please observe the following guidelines and follow the procedure to open the system.

- 1. Make sure the system and all other peripheral devices connected to it have been powered off.
- 2. Disconnect all power cords and cables.
- 3. The 2 mounting screws on the bottom side of the system are used to secure the cover to the chassis. Remove these screws and put them in a safe place for later use.



4. After removing the chassis screws, lift the bottom chassis cover to open the system. The HDD mounting posts are accessible after removing the bottom cover. To access the main board, please remove the power board first.



### **Installing a SATA Drive**

The system can accommodate one SATA drive installation.

1. Use the SATA HDD brackets included in the product package to install a SATA HDD in the system.





Please connect the SATA cable first before installing the HDD on the HDD bracket. The HDD bracket might block the access to the SATA connectors on the HDD.

2. Place the SATA drive bay with the installed HDD back to the system and connect the SATA cable to the SATA connectors on the system board.



### **Installing a Mini PCIe Card**

The system board is equipped with 2 Mini PCIe slots: one full-size and one half-size slot. Here we will demonstrate the installation of a full-size Mini PCIe card.

The Mini PCIe sockets are located on the main board; to access the main board, detach the power board on top of it. Remove the screws that affix the rear bezel as shown in the following picture to access the power board and uninstall it from the system.

- 1. Grasp the Mini PCIe card by its edges and align the notch of the PCIe card with the key in the connector on the system board.
- 2. Push the Mini PCIe card down and use the provided mounting screw to secure the card on the system board.



Use a wrench or a screwdriver with a socket end to remove the fasteners used on DB-9 connectors.





Screw

Remove these screws to detach the power board from the main board

Screw

1.

#### Notes:

- The system also has a half-size Mini PCIe slot that can accommodate either a Mini PCIe or an mSATA card. Refer to jumper settings for signal selection for this slot.
- 2. The power board connects to the mainboard with a 4-pin power cable, please reconnect this cable if it is removed during installation.

#### Installing a CANbus card in the Mini PCIe slot

To install a CANbus card, connect the cable between the card the pin headers (JP1 and JP2), then you can use COM 4 as a CANbus port. For pin assignments of this port, refer to Chapter 5 – Ports and Connectors. To switch signals for COM 4, refer to Chapter 4 – Jumper Settings.



## **Chapter 4 - Jumper Settings**

### **Clear CMOS Data**



**Auto Power-on Select** 



You can reconfigure the system with the default values stored in the ROM BIOS if you encounter the following situations:

- a) CMOS data becomes corrupted.
- b) You forgot the supervisor or user password.

To load the default values stored in the ROM BIOS, please follow these steps below.

- 1. Power off the system and unplug the power cord.
- 2. Set jumper pins 2 and 3 to On. Wait for a few seconds and set the jumper back to its default setting, pins 1 and 2 On.
- 3. Now plug the power cord and power on the system.

JP7 is used to select the method of powering on the system. If you want the system to power on whenever ignition signal comes in, set JP7 pins 2 and 3 to On. If you want to use the power button, set pins 1 and 2 to On.

When using the JP7 "Power On" feature to power the system back on after a power failure occurs, the system may not power on if the power lost is resumed within 5 seconds (power flicker).

### Mini PCIe/SATA Signal Select



JP3 is used to select the signal for the half-size Mini PCIe slot: PCIe or mSATA (default).

### **COM4/DIO Select**



The system board uses JP1 and JP2 to select between RS232 serial communication or 8-bit digital I/O for the DB-9 connector (COM 4) on the front panel.



Important:

You cannot use COM 4 and DIO at the same time. Please set JP1 and JP2 together.

## **Chapter 5 - Ports and Connectors**

### Front Panel I/O Ports



Rear Panel I/O Ports



The front panel I/O consists of the following ports:

- Power button with LED (green)
- Reset button
- Status and HDD LEDs (blue)
- VGA port
- Five RS232 serial COM ports:
- COM 1 & COM 2 are RS232/422/485 ports
- COM 4 can be an RS232, an 8-bit DIO or a CANbus port
- COM 5 & COM 6 are RS232 ports

The rear panel I/O consists of the following ports:

- 3-pole DC-in connector
- Line-out and mic-in ports
- Two Ethernet ports
- Four USB 3.0 ports
- Two USB 2.0 ports
- One HDMI port
- One serial COM port:
- COM 3 is an RS232 port

### **Display Interfaces**

The display ports consist of the following:

- 1 HDMI
- 1 VGA



#### VGA Port

The VGA port is used for connecting a VGA monitor. Connect the monitor's 15-pin D-shell cable connector to the VGA port. After you plug the monitor's cable connector into the VGA port, gently tighten the cable screws to hold the connector in place.

#### **HDMI Port**

The HDMI port, which carries both digital audio and video signals, is used to connect the HDMI port of an LCD monitor or a digital TV.

#### **BIOS Setting**

Configure the display devices in the Advanced menu ("Video Configuration" submenu) of the BIOS. Refer to Chapter 7 for more information.

#### **Driver Installation**

Install the graphics driver. Refer to Chapter 8 for more information.

### **USB Ports**



The system board is equipped with four onboard USB 3.0 ports (USB 1-4). USB devices allow data exchange between your computer and a wide range of simultaneously accessible external Plug and Play peripherals.

#### **BIOS Setting**

Configure the onboard USB in the Advanced menu ("USB Configuration" submenu) of the BIOS. Refer to Chapter 7 for more information.

#### **Driver Installation**

You may need to install the proper drivers in your operating system to use USB devices. Refer to Chapter 8 for more information.

### **COM (Serial) Ports**

![](_page_18_Figure_2.jpeg)

COM 1 and COM 2 can be selected among RS232, RS422 and RS485 whereas COM 3 and COM 4 are fixed at RS232. Use the BIOS configuration utility to select the communication mode for COM 1 and COM 2.

#### **BIOS Setting**

Configure the serial ports including the communication mode in the "Advanced" menu (Super I/O submenu) of the BIOS. Refer to Chapter 7 for more information.

![](_page_18_Figure_6.jpeg)

#### COM 4 (Serial) Port

This DB-9 serial port can be configured as an RS232 serial port or as an 8-bit DIO connector via jumper settings. Refer to "COM4/DIO Select" in Chapter 4 for its respective configuration.

#### 8-bit Digital IO/CANbus

The 8-bit Digital I/O connector provides monitoring and control functions to the connected external devices. We have built support software called EAPI that enables the functionality of hardware components. Please contact our tech support or sales representatives for the support software package. In addition, you can configure this port to be CANbus compatible; please refer to "Installing a CANbus card in the Mini PCIe slot" in Chapter 3.

Pins	COM 4 Function				
	RS232	DIO	CANbus		
1	DCD	DIO0	CAN1-L		
2	RXD	DIO1	CAN1-H		
3	TXD	DIO2	CAN2-L		
4	DTR	DIO3	CAN2-H		
5	GND	GND	GND		
6	DSR	DIO4	J1708-L		
7	RTS	DIO5	J1708-H		
8	CTS	DIO6	N/C		
9	RI	DIO7	N/C		

![](_page_19_Figure_1.jpeg)

#### LAN Ports

- LAN 1 is built on the Intel® I219LM PCI Express Gigabit Ethernet controller with iAMT11.0 PCIe (10/100/1000Mbps) (only Core i7/i5 supports iAMT)
- LAN 2 is built on the Intel® I210IT PCI Express Gigabit Ethernet controller

The LAN ports allow the system board to connect to a local area network with a network hub and the their LED indication is as follows:

Activity/Link LED		Speed LED	
LED Behavior	Description	LED Behavior	Description
Off	No link	Off	10Mbps connection
Blinking	Data Activity	Green	100Mbps connection
On	Link	Orange	1Gbps connection

#### **Driver Installation**

Install the LAN drivers. Refer to Chapter 8 for more information.

**Audio** 

![](_page_19_Figure_10.jpeg)

#### **Audio Ports**

The system board is equipped with 2 audio jacks. A jack is a one-hole connecting interface for inserting a plug.

- Line-out Jack This jack is used to connect a headphone or external speakers.
- Mic-in Jack This jack is used to connect an external microphone.

#### **Driver Installation**

Install the audio driver. Refer to the Chapter 8 for more information.

### **I/O Connectors**

### Serial ATA Connector & Serial ATA Power Connector

![](_page_20_Figure_3.jpeg)

### **Expansion Slots**

![](_page_20_Figure_5.jpeg)

#### Features

- 1 Serial ATA 3.0 port with data transfer rate up to 6Gb/s
- Integrated Advanced Host Controller Interface (AHCI) controller

The Serial ATA connector is used to connect the Serial ATA device. Connect one end of the Serial ATA data cable to a SATA connector and the other end to your Serial ATA device.

The SATA power connector supplies power to the SATA drive. Connect one end of the provided power cable to the SATA power connector and the other end to your storage device.

#### **BIOS Setting**

Configure the Serial ATA drives in the Advanced menu ("SATA Configuration" submenu) of the BIOS. Refer to Chapter 7 for more information.

#### Mini PCI Express Slots

The Mini PCI Express slots on the system board are used to install one half-size and full-size Mini PCIe card. The half-size Mini PCIe slot can be inserted with either an mSATA card or a Mini PCIe card; please refer to "Mini PCIe/SATA Signal Select" in Chapter 4 for more information on jumper settings for signal selection and Chapter 7 for the designated SATA port of this slot.

### **Front Panel Connector**

![](_page_21_Figure_2.jpeg)

	Pin	Pin Assignment		Pin	Pin Assignment
	6	HDD Power	PWR_BTN	1	Power Button
HDD_LED	3	Ground		3	Ground
RESET_BTN	3	Ground	PWR_LED	2	Power LED
	5	RST Signal		3	Ground
			3	Ground	
		SUS_LED	4	SUS LED	

#### HDD LED (HDD\_LED)

This LED will be lit when the hard drive is being accessed.

#### Reset Button (RESET\_BTN)

This switch allows you to reboot without having to power off the system.

#### Power Button (PWR\_BTN)

This switch is used to power on or off the system.

#### Status LED (SUS\_LED)

When the system's power is on, this LED will be lit. When the system is in the S1 (POS - Power On Suspend) state, it will blink every second. When the system is in the S3 (STR - Suspend To RAM) state, it will blink every 4 seconds.

#### Power/Standby LED (PWR\_LED)

This LED will blink when the system is in the standby mode. It indicates that there is power on the system board.

### **Standby Power LED**

![](_page_22_Figure_2.jpeg)

### **Battery**

![](_page_22_Figure_4.jpeg)

This LED will blink when the system is in the standby mode. It indicates that there is power on the system board. Power off the PC and then unplug the power cord prior to installing any devices. Failure to do so will cause severe damage to the motherboard and components.

The lithium ion battery powers the real-time clock and CMOS memory. It is an auxiliary source of power when the main power is shut off.

#### Safety Measures

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- Danger of explosion if battery incorrectly replaced.
- Replace only with the same or equivalent type recommend by the manufacturer.
- Dispose of used batteries according to local ordinance.

**Power Connector (power board)** 

![](_page_23_Figure_2.jpeg)

The 3-pole power connector connects to a car battery for power supply. Note that the system accepts a wide power range of 9 to 36V with in-vehicle power management that includes ignition on/off and system on/off delay time control; please refer to the table on the right for more information.

### System-on/off Delay Switch

The DIP switch (SW1) on the **power board** (*X103- DC36*) can be used to turn on or off the system at a specific on/off delay time via car ignition. Note that this table shows that same information as the one in Chapter 4 - Jumper Settings.

![](_page_23_Figure_6.jpeg)

#### Note:

The OS will start the shut-down procedure after the car ignition switches off and will complete the shutdown procedure within the specified system-off delay time. Please make sure that system-off delay time is sufficient to allow the OS to shut down completely.

## **Chapter 6 - Mounting Options**

### Wall Mount

The wall mount kit includes the following:

- 2 Wall mount brackets
- Bracket screws

![](_page_24_Picture_6.jpeg)

1. Remove the rubber feet from the bottom cover chassis. Or if the rubber feet are not attached to the chassis, use these screw holes to mount wall brackets.

![](_page_24_Picture_8.jpeg)

2. Use the provided mounting screws to attach the wall mount brackets to both sides on the bottom of the system.

![](_page_24_Picture_10.jpeg)

The following diagrams show the location and dimension of the wall moutning holes.

![](_page_24_Figure_12.jpeg)

### **VESA Mount**

![](_page_25_Picture_2.jpeg)

Note: The system unit used in the following illustrations may not resemble the actual one. These illustrations are for reference only.

The vesa mount kit includes the following:

- 1 VESA mount bracket A ٠
- 2 VESA mount bracket B
- Bracket screws .

![](_page_25_Picture_8.jpeg)

![](_page_25_Picture_9.jpeg)

1. Attach the VESA mount bracket B to the left and right sides on the bottom of the system.

2. Attach the VESA mount bracket A to the back of your display using four screws as shown in the picture below.

![](_page_25_Picture_12.jpeg)

3. Align VESA bracket A with VESA bracket B, and then use the provided mounting screws to attach both brackets to secure the system in place.

![](_page_25_Picture_14.jpeg)

Ø5.00

6

![](_page_25_Picture_15.jpeg)

Mounting screw

### **DIN Rail Mount**

![](_page_26_Picture_2.jpeg)

**Note:** The system unit used in the following illustrations may not resemble the actual one. These illustrations are for reference only.

The DIN Rail mount kit includes the following:

- 1 DIN-rail mount clip
- 1 bracket
- Bracket screws

![](_page_26_Picture_8.jpeg)

1. Locate the mounting screws for mounting the din-rail bracket on the chassis cover. Remove these screws and put them in a safe place for later use.

![](_page_26_Picture_10.jpeg)

![](_page_26_Picture_11.jpeg)

- 2. Align the mounting holes on the system and the mounting holes on the bracket, and then use the screws removed in step 1 to secure the bracket in place.
- 3. The 3 mounting holes on the bracket are used to affix the DIN-rail mount clip to the bracket.

![](_page_26_Picture_14.jpeg)

## Chapter 7 - BIOS Setup

### **Overview**

The BIOS is a program that takes care of the basic level of communication between the CPU and peripherals. It contains codes for various advanced features found in this system board. The BIOS allows you to configure the system and save the configuration in a battery-backed CMOS so that the data retains even when the power is off. In general, the information stored in the CMOS RAM of the EEPROM will stay unchanged unless a configuration change has been made such as a hard drive replaced or a device added.

It is possible that the CMOS battery will fail causing CMOS data loss. If this happens, you need to install a new CMOS battery and reconfigure the BIOS settings.

![](_page_27_Picture_5.jpeg)

The BIOS is constantly updated to improve the performance of the system board; therefore the BIOS screens in this chapter may not appear the same as the actual one. These screens are for reference purpose only.

### **Default Configuration**

Most of the configuration settings are either predefined according to the Load Optimal Defaults settings which are stored in the BIOS or are automatically detected and configured without requiring any actions. There are a few settings that you may need to change depending on your system configuration.

### **Entering the BIOS Setup Utility**

The BIOS Setup Utility can only be operated from the keyboard and all commands are keyboard commands. The commands are available at the right side of each setup screen.

The BIOS Setup Utility does not require an operating system to run. After you power up the system, the BIOS message appears on the screen and the memory count begins. After the memory test, the message "Press DEL to run setup" will appear on the screen. If the message disappears before you respond, restart the system or press the "Reset" button. You may also restart the system by pressing the <Ctrl> <Alt> and <Del> keys simultaneously.

### Legends

Keys	Function			
Right and Left arrows	Moves the highlight left or right to select a menu.			
Up and Down arrows	Moves the hightlight up or down between submenu or fields.			
<esc></esc>	Exit to the BIOS Setup Utility.			
<f1></f1>	Help			
<f5></f5>	Change values			
<f6></f6>	Change values			
<f9></f9>	Setup Defaults			
<f10></f10>	Save and Exit			
<enter></enter>	Press <enter> to enter the highlighted submenu.</enter>			

### **Scroll Bar**

When a scroll bar appears to the right of the setup screen, it indicates that there are more available fields not shown on the screen. Use the up and down arrow keys to scroll through all the available fields.

### Submenu

When " $\blacktriangleright$ " appears on the left of a particular field, it indicates that a submenu which contains additional options are available for that field. To display the submenu, move the highlight to that field and press <Enter>.

## **Insyde BIOS Setup Utility**

### Main

The Main menu is the first screen that you will see when you enter the BIOS Setup Utility.

Hain Advanced Security	Poot Evit	In	sydeH20 Setup Utility	Rev. 5.(
Ham Huyanceu Security	DUUT EXTL			
Project Name		VC70B-КU		This is the help for the hour, minute,
BIOS Version		B196.25B		second field. Valid range is from 0 to 23, 0 to 59, 0 to 59. INCREASE/REDUCE :
Processor Type		Intel(R) Con	re(TM) i3-7100U CPU 0 2.40GHz	+/
CPUID		0x806E9 (KAI	BYLAKE ULT ULX)	
CPU Speed		2400 MHz		
CPU Stepping		09 (KBL H0/.	JO Stepping)	and the second
L1 Data Cache		32 KB		
L1 Instruction Cache		32 KB		
L2 Cache		256 KB		
L3 Cache		3072 KB		
Number Of Processors		2 Core(s) /	4 Thread(s)	
Microcode Rev		000000B4		
Total Memory		4096 MB		
System Memory Speed		2133 HHz		
SODIMH 0		2048 MB		
SOD IMM 1		2048 MB		
PCH Rev / SKU		21 (C1 Stepp	aing) / SKL PCH-LP (U) iHDCP	
		2.2 Premium		
Intel ME Version / SKU		11.8.50.3434	4 / CORPORATE	
System Time		[15:27:01]		
System Date		[08/26/2019]	]	
F1 Help	t/4 Select	Item	F5/F6 Change Values	F9 Setup Defaults
Esc Exit	+/+ Select	Item	Enter Select 🕨 SubHen	u F10 Save and Exit

#### **System Time**

The time format is <hour>, <minute>, <second>. The time is based on the 24-hour military-time clock. For example, 1 p.m. is 13:00:00. Hour displays hours from 00 to 23. Minute displays minutes from 00 to 59. Second displays seconds from 00 to 59.

#### System Date

The date format is <month>, <date>, <year>. Month displays the month, from January to December. Date displays the date, from 1 to 31. Year displays the year, from 1980 to 2099.

### **Advanced**

The Advanced menu allows you to configure your system for basic operation. Some entries are defaults required by the system board, while others, if enabled, will improve the performance of your system or let you set some features according to your preference.

![](_page_28_Picture_11.jpeg)

InsydeH2O Setup Utility				
Hain Advanced Securit	ty Boot Exit			
CPU Configuration Proceedings of the second Proceeding of the second	ton nology Support	ACP	1 Configuration Setting	
F1 Help Esc Exit	1/4 Select Item	F5/F6 Change Values	F9 Setup Defaults	

#### **CPU Configuration**

#### This section configures the CPU.

	Ch	nsydeH20 Setup Utility	Rev. 5.(
Advanced			
CPU Configuration			Allows more than two frequency ranges to be supported.
Intel Speed Step	<enab led=""></enab>		
CPU C States	<enabled></enabled>		
		Intel Speed Step Disabled Enabled	
F1 Help	t/1 Select Item	F5/F6 Change Values	F9 Setup Defaults
ESC Exit	+/+ Select Item	Enter Select 🕨 SubMenu	FIU Save and Exit

#### Intel<sup>®</sup> SpeedStep<sup>™</sup>

Enable or disable the Enhanced Intel SpeedStep<sup>®</sup> Technology, which helps optimize the balance between system's power consumption and performance. After it is enabled in the BIOS, you can enable the EIST feature using the operating system's power management feature.

#### **CPU C States**

Enable or disable CPU Power Management. It allows the CPU to go to C states when it's not 100% utilized.

#### **Hyper-Threading**

Enable Intel<sup>®</sup> Hyper-Threading Technology (HT) on the processor to improve performance of operating systems and software that are optimized for hyper-threading technology. Please check the software specifications to determine if enabling HT can be advantageous to the overall system performance.

#### **Video Configuration**

This section configures the video settings. Note that the configuration options may vary depending on the "Boot type" selected in the "Boot" menu.

InsydeH20 Setup Utility			Rev. 5.	
Advanced Video Configuration Primary Display Internal Graphics Device Boot display	<auto> ¢Auto&gt; ≪HDHT+VGA&gt;</auto>		Initial priority : AUTO: PEG->PCle->PCI->IGFX IGFX: IGFX-PFG->PCle->PCI PEG: PEG->PCI->PCI->IGFX PCI: PCI->PCle->PEG->IGFX	
		Prinary Display Auto IGFX PEG PC1		
F1 Help	1/4 Select Item	F5/F6 Change Values	F9 Setup Defaults	

#### **Primary Display**

Note that this configuration is only shown if the "Boot Type" is set to "Dual" or "UEFI". Select the primary display for the system from the following options:

Auto mode: Automatic selection

PCI: PCI graphics devices IGFX: IGFX (internal graphics) devices PEG: PCIe graphics device

#### **Internal Graphics Device**

Enable, disable or automatically detect the internal graphics device.

#### **Boot Display**

Note that this configuration is only shown when the "Boot Type" is set to "Legacy Boot Type" or "Dual". Select the combination of the display at boot: Auto, HDMI+VGA or VGA+HDMI.

#### Audio Configuration

This section configures the audio settings.

Advanced	msyu		RCY. 0.0
Audio Configuration			Control Detection of the HD-Audio device.
HD Audio			Disabled = HDA will be unconditionally disabled
			Enabled = HDA will be unconditionally enabled
			Auto = HDA will be enabled if present, disabled otherwise.
F1 Help Esc Exit	1/1 Select Item +/+ Select Item	F5/F6 Change Values Enter Select ► SubMenu	F9 Setup Defaults F10 Save and Exit

#### **HD** Audio

Control the detection of the high-definition audio devices.

#### Disabled

High-definition audio devices will be unconditionally disabled.

#### Enabled

High-definition audio devices will be unconditionally enabled.

#### Auto

High-definition audio devices will be enabled if present and disabled otherwise.

#### SATA Configuration

This section configures the SATA controllers and hard disks.

SATA Configuration       SATA Configuration         SATA Controller(s)       Senabled>       SATA Speed       Sata Speed	Advanced	Ins	sydeH2O Setup Utility	Rev.
	Advanced SATA Configuration SATA Controller(s) SATA Speed SATA Hode Selection Serial ATA Port 0 Hot Plug Serial ATA Port 1 Hot Plug Serial ATA Port 2 Port 2 Hot Plug	<pre>{Enabled&gt;</pre>	SATA Speed Auto Gen1 Gen2 Gen3	Rev.
F1 Help T/1 Select item F5/F6 Change Values F9 Setup Defaults	F1 Help	1/1 Select Item	F5/F6 Change Values	F9 Setup Defaults

#### SATA Controller(s)

Enable or disable Serial ATA controllers.

#### SATA Speed

Select Serial ATA device speed: Gen1 (1.5 Gbit/s), Gen2 (3 Gbit/s), Gen 3 (6 Gbit/s) or auto.

	Insy	deH20 Setup Utility	Rev. 5.
Advanced			
SATA Configuration			Determines how SATA controller(s) operate.
SATA Controller(s)	<enabled></enabled>		
SATA Speed	<auto></auto>		
SATA Mode Selection	<ahc1></ahc1>		
Serial ATA Port O	Empty		
Port O	<enabled></enabled>		
Hot Plug	<d i="" led="" sab=""></d>		
Serial ATA Port 1	Enpty		
Port 1	<enabled></enabled>		
Hot Plug	<disabled></disabled>		
Serial ATA Port 2	Enpty		
Port 2	<enabled></enabled>		
	AHCI Intel RST Prenium W	ith Intel Optane System Acceler	ration
El Help	t/l Salact Itam	E5/E6 Change Values	EQ Satur Dafaulte
For Evit	s/a Select Item	Enter Select  SubMenu	F10 Save and Evit
ESC EATE	Serect Item	anter se let t • subhenu	FID SAVE and EXIL

#### SATA Mode

The mode option shows how the SATA controller(s) operates.

#### AHCI Mode

This allows the Serial ATA devices to operate in the AHCI (Advanced Host Controller Interface) mode.

#### Serial ATA Port 0 and 1 and Hot Plug

Enable or disable each serial ATA port and its hot plug function.

SATA Port 0: Controls the SATA signal of the SATA port on the system board.

SATA Port 1: Controls the SATA signal of the half-size mini PCIe slot.

#### **USB** Configuration

This section configures the parameters of the USB devices.

![](_page_31_Picture_12.jpeg)

#### Legacy USB Support

#### Disabled

Disable USB keyboard/mouse/storage support.

#### Enabled

Enable USB keyboard/mouse/storage support under UEFI and DOS environment.

#### **UEFI Only**

Enable USB keyboard/mouse/storage support only under the UEFI environment.

#### **XHCI Hand-off**

Enable this function for operating systems that do not support xHCI Hand-off. The XHCI ownership change will be claimed by the XHCI driver.

![](_page_32_Picture_0.jpeg)

#### **PCI Express Configuration**

This section configures the settings of PCI Express root ports.

![](_page_32_Picture_3.jpeg)

![](_page_32_Picture_4.jpeg)

#### Intel I210AT/I219LM

Controls the PCIe signal of the Intel I210AT/I219LM controllers.

#### Mini PCIe Slot-1 (Full)

Controls the PCIe signal of the full-size Mini PCIe slot.

#### Mini PCIe Slot-2 (half)

Controls the PCIe signal of the half-size Mini PCIe slot.

#### **PCI Express Root Port**

Enable or disable each PCI Express root port.

#### **PCIe Speed**

Select the speed of the PCI Express Root Port: Auto, Gen1 (2.5 GT/s), Gen2 (5 GT/s) or Gen3 (8 GT/s).

#### Hot Plug

Enable or disable the hot plug function of each serial ATA port.

#### **ME Configuration**

This section configures flashing of the Intel<sup>®</sup> Management Engine.

	Insy	deH20 Setup Utility	Rev. 5.0
Advanced			
ME Configuration		En	able/disable to flash ME region
He Fw lwage Re−Flash	<disabled> ₽ ₽ ₽ ₽ ₽ ₽ ₽ ₽</disabled>	Fv Inage Re-Flash sabled abled	
F1 Help	1/1 Select Item	F5/F6 Change Values	F9 Setup Defaults

#### Me Fw Image Re-Flash

Enable or disable flashing of the Intel® Management Engine (ME) region.

#### Active Management Technology Support

The section allows you to enable or disable the Intel<sup>®</sup> Active Management Technology (Intel<sup>®</sup> AMT) BIOS extension. Refer to Chapter 9 - Intel AMT Settings for more information.

Advanced	InsydeH	20 Setup Utility	Rev. 5.
Advanced Active Management Technology Support Intel AMT Support Un-Configure HE	<enabled> <disabled> Inte Disa Enab</disabled></enabled>	When disabled AMT BIOS Feat longer supported and user i able to access MEBx Setup. Note: This option does not disabl Manageability Features in F bled	ures are no s no longer e w.
El Heln 1/4 S	elect iten	E5/F6 Change Values E9. Setup Defaults	

#### Intel AMT Support

Enable or disable Intel<sup>®</sup> Active Management Technology BIOS extension.

#### **Un-Configure ME**

Clears all ME related configurations without requiring a password on the next boot.

#### **Debug Configuration**

This section configures the debug function.

	InsydeH	20 Setup Utility		Rev. 5.0
Advanced				
Debug Configuration			Enable it to output debug message COM nort.	from
Dymamic EFI DEBUG EFI debug print level EFI debug serial port EFI debug baud rate	c0n> [0x3000004F] [0x378] [115200]		COH port.	
Esc Exit	+/+ Select Item	Enter Select  SubMenu	F9 Setup Defaults F10 Save and Exit	

#### **UEFI Device Manager**

This Device Manager menu is used to configure UEFI network settings when the "Network Stack" is enabled in the "Dual" or "UEFI" boot mode. Refer to the "Boot" section in this chapter. When this function is selected, the screen will warn you that you are going to exit the BIOS setup utility.

InsydeH20 Setup Utility				
UEFI Device Manager		Device Manager Setting		
UEFI Device Manager				
F1 Help	1/1 Select Item	F5/F6 Change Values F9 Setup Defa	ults	

#### Dynamic EFI Debug

Enable or disable output of the debugging messages through a serial port.

#### **Network Device List**

The "Device Manager" screen is displayed. And if the "Network Stack" or the "PXE Boot to LAN" option is enabled from the "Boot" menu, the "Network Device List" should be shown in the "Device list". Select "Network Device List" to view all of the detected network devices. For each network device, you can select to view and configure its settings. In addition, you can select either the IPv4 or IPv6 network settings for UEFI network configuration.

Devi	ice Manager
Devices List Hetwork Device List Driver Health ▶ The platform is healthy	Select the network device according the M&C address
F1 Help Esc Exit	t/4 Select  tem Enter Select ⊨ SubHenu

![](_page_35_Picture_4.jpeg)

#### **NIC Configuration Menu**

This screen shows hardware information for the Ethernet controllers and configures their operation.

▶NIC Configuration		Click to configure the network device
		port.
Blink LEDs	[0]	
UEF1 Driver	Intel(R) PR0/1000 6.9.07 PCI-E	
Adapter PBA	000300-000	
Device Nane	Intel(R) 1210 Gigabit Network Connection	1
Chip Type	Intel i210	
PCI Device ID	1533	
PCI Address	01:00:00	
Link Status	<d i="" sconnec="" ted=""></d>	
MAC Address	00:01:29:61:45:DA	
Virtual MAC Address	00:00:00:00:00:00	

#### **Blink LEDs**

Enter the duration (seconds) for the Ethernet's speed LED to blink to indicate its presence.

#### **NIC Configuration**

This screen configures the Ethernet controller. Select the link speed from the following options: Auto Negotiated, 10Mbps Half, 10Mbps Full, 100Mbps Half, and 100Mbps Full.

#### **IPv4 Network Configuration**

This screen configures the IP addressing method (DHCP or static IP). For static IP addressing, configure the following:

Local IP address and subnet mask: Enter the IP address in the IPv4 format:

x . x . x . x (x must be a decimal value between 0 and 255).

Local Gateway: Enter the gateway address in the IPv4 format.

Local DNS (Domain Name System) Servers: Enter DNS (Domain Name System) server IP addresses in the IPv4 format.

![](_page_36_Picture_11.jpeg)

#### **IPv6 Network Configuration**

If you select to use IPv6 network settings, enter the Interface ID (64 bit). Policy: Select either automatic or manual. And select "Advanced Configuration" to configure IPv6 network address manually if the manual option is selected.

New IPv6 address: Enter the IP address in the IPv6 format:

x : x : x : x : x : x : x : x : x (x can be any hexadecimal value between 0 and FFFF). Place a space to separate each IP address to enter more than one address.

New Gateway addresses: Enter gateway addresses in the IPv6 format.

New DNS addresses: Enter DNS (Domain Name System) server IP addresses in the IPv6 format.

#### SIO NUVOTON6106D

This section configures the system super I/O chip parameters.

InsydeH20 Setup Utility			
Advanced			
CPU Smart Fan Control	<enable></enable>	E	nable/Disable Smart Fan
Boundary 1	[30]		
Boundary 2	[40]		
Boundary 3	[50]		
Boundary 4	[60]		
Fan Speed Count 1	[30]		
Fan Speed Count 2	[40]		
Fan Speed Count 3	[50]		
Fan Speed Count 4	[75]		
COM Port 1	<enable></enable>		
Base 1/0 Address	<3F8>		
Interrupt	<1RQ4>		
Туре	<r\$232></r\$232>		
COM Port 2	<enable></enable>		
Base 1/0 Address	<2F8>		
Interrupt	<1RQ3>		
Туре	<r\$232></r\$232>		
COM Port 3	<enable></enable>		
Base 1/0 Address	<3E8>		
Interrupt	<1RQ4>		
COM Port 4	<enable></enable>		
Base 1/0 Address	<2E8>		
Interrupt	<1RQ3>		
COM Port 5	<enable></enable>		
Base 1/0 Address	<2F0>		
Interrupt	<1RQ4>		
COM Port 6	<enable></enable>		
Base 1/0 Address	<2E0>		
Interrupt	<1RQ3>		
WD T	<disable></disable>		
Case Open	<disable></disable>		
▶PC Health Status			
F1 Help	t/1 Select Item	F5/F6 Change Values	F9 Setup Defaults
Esc Exit	+/+ Select Item	Enter Select 🕨 Sublienu	F10 Save and Exit

Advanced		Insyd	InsydeH20 Setup Utility		
CPU Smart Fan Control		<enable></enable>		Enable/Disable Smart Fan	
Boundary 1		[30]			
Boundary 2		[40]			
Boundary 3		[50]			
Boundary 4		[60]			
Fan Speed Count 1		[30]			
Fan Speed Count 2		[40]			
Fan Speed Count 3		[50]			
Fan Speed Count 4		[75]			
COM Port 1		<enable></enable>			
Base 1/0 Address		<3F8>			
Interrupt		<1RQ4>			
Туре		<rs232></rs232>			
COM Port 2		<enable></enable>			
Base 1/0 Address		<2F8>			
Interrupt		<1RQ3>			
Туре		<r\$232></r\$232>			
COM Port 3		<enable></enable>			
Base 1/0 Address		<3E8>			
Interrupt		<1RQ4>			
COM Port 4		<enable></enable>			
Base 1/0 Address		<2E8>			
Interrupt		<1RQ3>			
COM Port 5		<enable></enable>			
Base 1/0 Address		<2F0>			
Interrupt		<1RQ4>			
COM Port 6		<enable></enable>			
Base 1/0 Address		<2E0>			
Interrupt		<1RQ3>			
WDT		<disable></disable>			
Case Open		<disable></disable>			
▶PC Health Status					
F1 Help	t/1 Select	Item	F5/F6 Change Values	F9 Setup Defaults	
Esc Exit	+/+ Select	Item	Enter Select ► SubMenu	F10 Save and Exit	

#### **CPU Smart Fan Control**

Enable or disable the system or CPU smart fan.

#### **Boundary 1 to Boundary 4**

Set the boundary temperatures that determine the operation of the fan with different fan speeds accordingly. For example, when the system or the CPU temperature reaches boundary temperature 1, the system or CPU fan should be turned on and operate at the designated speed. The range of the temperature is from 0 to 127°C.

#### Fan Speed Count 1 to Fan Speed Count 4

Set the fan speed. The range is from 1 (lowest speed)-100% (full speed).

and the second	Ins	ydeH20 Setup Utility	Rev. 5.
Advanced			
CPU Smart Fan Control		Ena	ble/Disable Smart Fan
Boundary 1	[30]		
Boundary 2	[40]		
Boundary 3	[50]		
Boundary 4	[60]		
Fan Speed Count 1	[30]		
Fan Speed Count 2	[40]		
Fan Speed Count 3	[50]		
Fan Speed Count 4	[75]		
COM Port 1	<enable></enable>		
Base I/O Address	<3F8>		
Interrupt	<1RQ4>		
Туре	<r\$232></r\$232>		
COM Port 2	<enable></enable>		
Base 1/0 Address	<2F8>		
Interrupt	<1RQ3>		
Туре	<r\$232></r\$232>		
COM Port 3	<enable></enable>		
Base 1/0 Address	<3E8>		
Interrupt	<1RQ4>		
COM Port 4	<enable></enable>		
Base 1/0 Address	<2E8>		
Interrupt	<1RQ3>		
COM Port 5	<enable></enable>		
Base 1/0 Address	<2F0>		
Interrupt	<1RQ4>		
COM Port 6	<enable></enable>		
Base 1/0 Address	<2E0>		
Interrupt	<1RQ3>		
<b>I</b> DT	<disable></disable>		
Case Open	<disable></disable>		
PC Health Status			
F1 Help	t/1 Select Item	F5/F6 Change Values	F9 Setup Defaults
Esc Exit	€/→ Select Item	Enter Select 🕨 SubMenu	FIU Save and Exit

#### PC Health Status

This section displays PC health status.

and a second second second	Insyd	eH20 Setup Utility	Rev. 5
Advanced			
PC Health Status			
Voltago			
VRAT	3 024 V		
VCORE	0.832 V		
VDDQ	1.184 V		
5V	4.939 V		
+12V	11.880 V		
Temperature			
System (°C/°F)	40.5 C/ 104.	9 F	
CPU (°C/°F)	41.0 C/ 105.	8 F	
Fan Speed			
CPU FAN	0 RPH		
F1 Help For First	1/1 Select Item	F5/F6 Change Values	F9 Setup Defaults
	DE DE LEST TIEN		Save and Extl

#### WDT

Enable or disable the watchdog function. A counter will appear if you select to enable WDT. Input any value between 1 and 255.

#### Case Open

Enable or disable the case open function.

#### **Console Redirection**

Console redirection lets you monitor and control the system from a remote station by re-directing the host screen output through a serial port.

![](_page_39_Picture_3.jpeg)

#### **Console Serial Redirect**

Enable or disable the console redirection function. (The default is disabled.) If you select to enable it, please configure the following parameters for serial communication between the system and a remote station:

Terminal type: VT\_100, VT\_100+, VT\_UTF8, or PC\_ANSI.

Baud rate: 115200, 57600, 38400, 19200, 9600, 4800, 2400 or 1200.

Data bits: 8 bits or 7 bits.

Parity: None, Even or Odd.

Stop bits: 1 bit or 2 bits.

Flow control: None, RTS/CTS or XON/XOFF

This is the global setting for all of the designated serial ports for the console redirection function.

#### COM1 to COM6

Enable or disable the serial redirection function for each of the serial ports on the system. And configure the serial communication parameters to be used between the system and a remote station.

#### UseGlobalSetting

Choose to use the pre-configured global settings from the previous menu or configure a different setting for each serial port.

	1	nsydeH20 Setup Utility	Rev.
Advanced			
PortEnable UseGlobalSetting Terninal Type Baud Rate Data Bits Parity Stop Bits Flow Control	<pre><li><pre>diable:&gt;</pre></li></pre>		Set Console Redirection baud rate
		Baud Rate 115200 57600 38400 19200 9600 4800 2400 1200	
F1 Help For Evit	1/4 Select Item	F5/F6 Change Va	ilues F9 Setup Defaults Sublemu F10 Save and Fvit

## **Security**

This section configures the optional Trusted Platform Module (TPM) function and the HDD security.

A second s	InsydeH20	Setup Utility	Re	v. 5.0
Main Advanced Security Boot	Exit			
			When Hidden, don't exposes TPM to O	
Current TPM Device	<tph 2.0=""></tph>			
TPM State	Not Installed			
TPM Availability	<available></available>			
TPM Operation	<no operation=""></no>			
Clear TPM	[]			
Supervisor Password	Not Installed			
Set Supervisor Password				
Power on Password	<disabled></disabled>			
1				
F1 Help t/		CONTRACTOR OF CONTRACTOR		
	Select Item	F5/F6 Change Values	F9 Setup Defaults	

#### **TPM Availability**

Show or hide TPM availability and its configurations.

#### **TPM Operation**

Enable or disable the TPM function. It displays the following options:

- No Operation: No changes to the current state.
- Disable: Disable and deactivate TPM.
- Enable: Enable and activate TPM.

#### **Clear TPM**

Remove all TPM ownership contents.

![](_page_40_Picture_13.jpeg)

#### Set Supervisor Password

Set the administrative password for entering the BIOS utility or upon the entering of the power-on self-test (POST) process. The length of the password must be greater than 1 character and less than or equal to 10 characters.

#### **Power-on Password**

If you select to set the supervisor password, this option will be shown. Enable or disable the system to require password at boot.

### Boot

This section configures boot options.

![](_page_41_Picture_3.jpeg)

#### Numlock

Select the power-on state for the Numlock key.

#### **Boot Type**

Select the boot type. The options are Dual Boot Type, Legacy Boot Type or UEFI Boot Type.

#### **Network Stack**

This option is shown only when the boot type is set to Dual or UEFI. Enable or disable UEFI network stack. It supports the operation of these functions or software: Windows 8 BitLocker Network Unlock, UEFI IPv4/IPv6 PXE and legacy PXE option ROM.

#### PXE Boot to LAN (Legacy Boot Type)/PXE Boot Capability (Dual Boot Type)

Enable or disable Preboot eXecution Environment (PXE) boot to LAN.

#### **USB Boot**

Enable or disable booting to USB boot devices.

#### Quiet Boot

Enable or disable the quiet boot function to configure the screen's display between POST messages or the OEM logo at startup. Select "Disabled (default)" to display the POST messages and select Enabled to display the OEM logo.

#### **Boot Device Priority**

This section configures legacy boot order. This menu is shown only when the boot type is set to "Legacy" or "Dual".

	In	sydeH2O Setup Utility	Rev. 5.0
	Boot		
Boot Device Priority			Select Normal Boot Option Priority or Advance Boot Option Priority
Normal Boot Menu	<normal></normal>		
▶Boot Type Order		Normal Boot Menu Normal Advance	
F1 Help Esc Exit	1/↓ Select Item +/+ Select Item	F5/F6 Change Values Enter Select ► SubMenu	F9 Setup Defaults F10 Save and Exit

#### **Boot Menu**

#### Normal

For this option, determine the boot order for the devices within each category. Use + and - keys to arrange the priority of the boot devices in the list. The first device in the list has the highest boot priority.

#### Advance

For this option, determine the boot order for all bootable devices. Use + and - keys to arrange the priority of the detected boot devices in the list. The first device in the list has the highest boot priority.

## Exit

This section configures the parameters for exiting BIOS setup utility.

	In	sydeH20 Setup Utility	Rev.
Main Advanced Secu	rity Boot Exit		
		Evit	t eveten eaturn and eave your channes
Exit Saving Changes			c system setup and save your changes
.oad Optimal Defaults			
iscard Changes			
ave Setting to file			
			and the second se
1 Help	1/1 Select Item	F5/F6 Change Values	F9 Setup Defaults
sc Exit	+/+ Select Item	Enter Select 🕨 Subtlenu	E10 Save and Exit

#### **Exit Saving Changes**

Select this field and press <Enter> to exit BIOS setup and save your changes.

#### **Load Optimal Defaults**

Select this field and press <Enter> to load the optimal defaults.

#### **Discard Changes**

Select this field and press <Enter>to exit the BIOS setup without saving your changes.

#### Save Setting to file

Select this option to save BIOS configuration settings to a USB drive. The operation will fail if there aren't any USB devices detected on the system. The saved configuration will have the DSF file extension and can be used for restoration.

#### **Restore Setting from file**

Select this option to restore BIOS configuration settings from a USB drive. Note that this option will not be available if there aren't any USB devices detected on the system.

## **Updating the BIOS**

To update the BIOS, you will need the new BIOS file and a flash utility. Please contact technical support or your sales representative for the latest BIOS file and the firmware update utility. For instructions on how to update BIOS with the flash utility, please see <u>https://www.dfi.com/</u> <u>Knowledge/Video/31</u> from the Knowledge Base of the DFI website.

Read file succes	ssfully. (pa	ath= "platform	m.ini")			
Information Please do not remove the AC power						
CAVC70B-KU>_	Insyde F Copyright Curr New Curr New 0%	120FFT (Flash (c) 2012 - 2010 Initializing ent BIOS Model BIOS Model ent BIOS version: BIOS version: Updating E 25%	Firmware Tool) Ve 5, Insyde Software el name: VC70B-KL name: VC70B-KL on: 65.05A 65.05A 8lock at FFFFF000 50%	ersion (SEG) 1 Corp. All Rig LU J h 75%	00.00.08.10 hts Reserved. 100% 100%	

## **Notice: BIOS SPI ROM**

- 1. The Intel® Management Engine has already been integrated into this system board. Due to safety concerns, the BIOS (SPI ROM) chip cannot be removed from this system board and used on another system board of the same model.
- 2. The BIOS (SPI ROM) on this system board must be the original equipment from the factory and cannot be used to replace one which has been utilized on other system boards.
- 3. If you do not follow the methods above, the Intel® Management Engine will not be updated and will cease to be effective.

![](_page_43_Picture_8.jpeg)

- a. You can take advantage of flash tools to update the default configuration of the BIOS (SPI ROM) to the latest version anytime.
- b. When the BIOS IC needs to be replaced, you have to populate it properly onto the system board after the EEPROM programmer has been burned and follow the technical person's instructions to confirm that the MAC address should be burned or not.

## **Chapter 8 - Supported Software**

The system requires you to install drivers for some devices to operate properly. To download the latest driver, please go to the DFI Download Center:

#### http://www.dfi.com/DownloadCenter

Once you are in the Download Center page, select your product or type the model name and click "Search" to find product-related resources such as documentation and drivers.

Drivers are available for the following devices in Windows 10:

- Intel<sup>®</sup> Chipset Device Software
- Intel<sup>®</sup> Graphics Driver
- Intel<sup>®</sup> LAN Driver
- Intel<sup>®</sup> ME Driver
- Audio Driver
- Intel<sup>®</sup> Serial IO Driver

3. Go through the readme

document for system re-

quirements and installation

tips, and then click "Next".

Please wait while the installation is in progress.

Intel(R) Chipset Device Software

NOTE:

View Log Files

\* Product: Intel(R) Chipset Device Software
\* Version: 10.1.1
\* Target PcH/chipset: Client Platforms
\* Date: 2015-06-03

(intel)

Install Cancel

Cancel

Restart Now Restart Later

### **Intel Chipset Device Software**

The Intel® Chipset Device Software is used for updating Windows® INF files so that the Intel chipset can be recognized and configured properly in the system.

To install the utility, follow these steps:

<ol> <li>Setup is ready to install the utility. Click "Next".</li> </ol>	Intel(R) Chipset Device Software         Intel(R)           Veloare         Va are about to install the following product:           Intel(R) Chipset Device Software         Its strongly recommended that you exit all programs before continuing.           Press Next to continue, or press Cancel to exit the setup program.         Next	4. Please wait while the instal- lation is in progress.	For the list of supported chipsets, please refer to the Release Notes • CONTENTS OF THIS DOCUMENT This document contains the following sections: 1. Overview 2. Some requirements 3. Contents of the Distribution Package 3. Public and MAC Configurations . Install Cance Back Install Cance Progress
2. Read the license agreement, and then click "Yes".	Intel(R) Chipset Device Software         License Agreement         INTEL SOFTWARE LICENSE AGREEMENT (OEM / IHV / ISV Distribution & Single         INPORTANT - READ BEFORE COPVING, INSTALLING OR USINC.         Do not use or load this software and any associated materials (collectively, the "Software") until you have carefully read the following terms and conditions. By loading or using the Software, you agree to the terms of this Agreement. If you do not install or use the Software.         Plasse Also Note:         "I you are an Original Equipment Manufacturer (OEM), Independent Hardware Vendor (ISV), this complete LICENSE AGREEMENT applies;         "I you are an end-User, then only Exhibit A, the INTEL SOFTWARE LICENSE AGREEMENT, applies;         Mack       Accept	5. Click "Restart Now" to allow the new software installa- tion to take effect.	Cance Intel(R) Chipset Device Software Completion You have successfully installed the following product: Intel(R) Chipset Device Software You must restart this computer for the changes to take effect.

### **Intel Graphics Driver**

To install this driver, follow these steps:

1. Setup is now ready to install the graphics driver. Click "Next".

![](_page_46_Picture_4.jpeg)

By default, the "Automatically run WinSAT and enable the Windows Aero desktop theme" is enabled. When this is enabled and after the system reboots, the screen will turn blank for 1 to 2 minutes (while WinSAT is running) before the Windows 7/ Windows 8.1/ Windows 10 desktop appears. The "blank screen" period is the time Windows is testing the graphics performance.

We recommend that you skip this process by disabling this function and then click "Next".

2. Read the license agreement, and then click "Yes".

![](_page_46_Picture_8.jpeg)

 Go through the readme document for system requirements and installation tips, and then click "Next".

![](_page_46_Picture_10.jpeg)

4. Setup is now installing the driver. Click "Next" to continue.

Intel® Installation Framework	
Intel® Graphics Driver	
Setup Progress	intel
Please wait while the following setup operations are performed:	
Instaling Driver: Intel(R) Display Audio Version: 10.22.01.97	
	Next >
	- Intel® Installation Framework

- 5. Click "Yes, I want to restart this computer now", and then click "Finish".
- Restarting the system will allow the new software installation to take effect.

![](_page_46_Picture_15.jpeg)

Intel LAN Driver		4. Click "Install" to begin the	늻 Intel(R) Network Connections Install Wizard X	
To install this driver, follow these steps:		installation.	Ready to Install the Program The wizard is ready to begin installation.	
<ol> <li>Setup is preparing to install the driver. Click "Next" to continue.</li> </ol>	Mete(R) Network Connections Install Wizard     Velcome to the install wizard for Intel(R)     Network Connections     Intel(R) Network Connections Setup is preparing the install     wizard which will guide you through the program setup     process. Please wait.	× • •	Click Install to begin the installation. If you want to review or change any of your installation settings, click Back. Click Cancel to exit the wizard.	
<ol> <li>Click "I accept the terms in the license agreement" if you accept the agreement, and then click "Next".</li> </ol>	< Bdd	complete, click "Finish".	Install wizard Completed To access new features, open Device Manager, and view the properties of the network adapters.	
<ol> <li>Select the program features you want to install, and then click "Next".</li> </ol>	Intel(R) Network Connections Install Wizard Setup Options Select the program features you want installed. Instal:  Instal:  Intel(R) RNOSet for Windows* Device Manager Intel(R) Network Services Intel(R) Network Connections SNMP Agent Feature Description  Reader Desc			

### **Intel ME Driver**

To install the Intel® Management Engine (Intel® ME) Driver, follow these steps:

- 1. You are about to install the driver. Click "Next" to continue.
- Setup
  Intel® Management Engine Components
  Wekcome
  You are about to install the following product:
  Intel® Management Engine Components
  It is strongly recommended that you exit all programs before continuing.
  Click Next to continue, or dick Cancel to exit the setup program.
  Intel Corporation
- 2. Read the license agreement, and then click "Next".

Setup	×
Intel® Management Engine Components License Agreement	(intel)
INTEL SOFTWARE LICENSE AGREEMENT (OEM / IHV / ISV Dis	tribution & Single User)
IMPORTANT - READ BEFORE COPYING, INSTALLING OR USIN Do not use or load this software and any associated material until you have carefully read the following terms and condition Software, you agree to the terms of this Agreement. If you or install or use the Software.	G. (collectively, the "Software") is. By loading or using the o not wish to so agree, do not
Please Also Note: * If you are an Original Equipment Manufacturer (OEM), Inde (IHV), or Independent Software Vendor (ISV), this complete I * If you are an End-User, then only Exhibit A, the INTEL SOF applies.	pendent Hardware Vendor ICENSE AGREEMENT applies; IWARE LICENSE AGREEMENT,
For OEMs, IHVs, and ISVs:	
LICENSE. This Software is licensed for use only in conjunction Use of the Software in conjunction with non-Intel component	with Intel component products. products is not licensed v
accept the terms in the License Agreement.	
Intel Corporation	< <u>B</u> ack Next > Cancel

 Setup is currently installing the driver. After the installation is complete, click "Next."

Intel® Management Engine Components Destination Folder	i (	ntel)
Click Next to install to the default folder, or click Chang	ge to choose another des	tination folde
C:\Program Files (x86)\Intel\Intel(R) Management En	igine Components	
		Chang
		-2

4. Please wait while the product is being installed.

![](_page_48_Picture_10.jpeg)

5. After the installation is complete, click "Finish".

![](_page_48_Picture_12.jpeg)

### **Audio Driver**

To install this driver, follow these steps:

- 1. Setup is now ready to install the audio driver. Click "Next".
- 2. Follow the steps of the on-screen instructions; click "Next" each time you finish a step.

![](_page_49_Picture_5.jpeg)

Serial IO Driver

To install this driver, follow these steps:

1. Setup is ready to install the driver. Click "Next" to continue.

![](_page_49_Picture_9.jpeg)

 Click "Yes, I want to restart my computer now", and then click "Finish".

Restart the system to allow the new software installation to take effect.

Realtek High Definition Audio Dri	ver Setup (4.54) R2.80
	InstallShield Wizard Complete The betallShield Wizard has accessfully installed Realbit High Definition Audo Driver, Before you can use the program, you must reclart your computer.
	Yes, I want to restart my computer now;     Ho, I will restart my computer later.  Remove any data from their drives, and then dub Fresh to complete setup.
InstallShield	< gedk Finish Cancel

#### 2. Read the license agreement carefully. Setup

Click "I accept the terms in the License Agreement" if you agree with the terms in the agreement and then click "Next".

License Agreement	(inter
INTEL SOFTWARE LICENSE AGREEMENT (OEM / IHV / IS	V Distribution & Single User)
IMPORTANT - READ BEFORE COPYING, INSTALLING OR Do not use or load this software and any associated mat until you have carefully read the following terms and cor Software, you agree to the terms of this Agreement. If install or use the Software.	USING. terials (collectively, the "Software") ditions. By loading or using the you do not wish to so agree, do not
Please Also Note: * If you are an Original Equipment Manufacturer (OEM), (IHV), or Independent Software Vendor (ISV), this comp * If you are an End-User, then only Exhibit A, the INTEL apples.	Independent Hardware Vendor lete LICENSE AGREEMENT applies; SOFTWARE LICENSE AGREEMENT,
For OEMs, IHVs, and ISVs:	
LICENSE. This Software is licensed for use only in conjun Use of the Software in conjunction with non-Intel compo	nction with Intel component products. nent products is not licensed
☑ accept the terms in the License Agreement.	
Intel Corneration	

Intel® Serial IO

- 3. Read the file information and then click "Next".
- Setup X
  Intel® Serial IO
  Readime File Information
  Production Version Release
  Microsoft Windows\* 10 64 bit
  Intel(R) Serial IO Driver
  June 2015
  NOTE: This document refers to systems containing the
  following Intel processors/chipsets:
  Skylake PCH Platfrom
  Installation Information
  This document makes references to products developed by
  Intel. There are some restrictions on how these products
  Intel Corporation
  Cancel
- 5. Setup is now installing the driver.

![](_page_50_Picture_4.jpeg)

4. Setup is ready to install the driver. Click "Next" to begin the installation.

Intel® Serial IO Confirmation	(intel)
You are about to install the following components: - Intel® Serial IO UART Driver - Intel® Serial IO I2C Driver	

6. Click "Finish" to exit the setup.

al IO	

## **Chapter 9 - Intel AMT Settings**

### **Overview**

Intel Active Management Technology (Intel<sup>®</sup> AMT) combines hardware and software solutions to provide maximum system defense and protection to networked systems.

The hardware and software information are stored in non-volatile memory. With its built-in manageability and the latest security applications, Intel® AMT provides the following functions.

#### • Discover

Allows remote access and management of networked systems even while PCs are powered off; significantly reducing desk-side visits.

#### • Repair

Remotely repair systems after OS failures. Alerting and event logging help detect problems quickly to reduce downtime.

#### • Protect

Intel AMT's System Defense capability remotely updates all systems with the latest security software. It protects the network from threats at the source by proactively blocking incoming threats, reactively containing infected clients before they impact the network, and proactively alerting when critical software agents are removed.

## **Enable Intel® AMT in the BIOS**

- 1. Power on the system then press <Del> to enter the main menu of the BIOS setup utility.
- 2. In the "Advanced" menu, select "Active Management Technology Support".

![](_page_51_Picture_14.jpeg)

 In the "Active Management Technology Support" menu, select "Enabled" for "Intel AMT Support".

![](_page_51_Picture_16.jpeg)

4. In the "Exit" menu, select "Exit Saving Changes" and then select "OK".

	Ins	ydeH20 Setup Utility	Rev. 5
Main Advanced Secur	ity Boot Exit		
Exit Saving Changes Load optimal Defaults Discard Changes Save Setting to file			Skit system setup and save your changes.
F1 Help Esc Exit	1/1 Select Item +/+ Select Item	F5/F6 Change Values Enter Select ► SubHenu	F9 Setup Defaults F10 Save and Exit

## Set up Intel<sup>®</sup> AMT using the Intel<sup>®</sup> Management **Engine BIOS Extension (MEBX)**

- 1. After the system reboots, press <Del> to enter the BIOS menu again.
- 2. In the "Advanced" menu, select "MEBX Configuration" to enter the Manageability Engine BIOS Extension (MEBx) Setup.
- 3. When the system reboots, you will be prompted for a password. The default password is "admin". Enter the default password in the space provided under Intel(R) ME Password, then press "Enter".

![](_page_52_Picture_7.jpeg)

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MAIN MENU

#### MEBx Login

Intel (R) ME General Settings Intel (R) AMT Configuration MEBx Exit

#### Intel(R) ME Password

 $\uparrow\uparrow\downarrow$  = Move Highlight [Enter] = Select Entry

[Esc]= Exit

- 4. Enter a password in the space provided under "Intel(R) ME Password" and then press "Enter". The password must include:
  - 8-32 characters
  - Strong 7-bit ASCII characters excluding : , and " characters
    At least one digit character (0, 1, ...9)

  - At least one 7-bit ASCII non alpha-numeric character, above 0x20, (e.g. !, \$, ;)
    Both lower case and upper case characters

Intel(R) Management Engine BIOS Extension v11.0.0.0008/Intel(R) ME v11.8.50.3399
Copyright(C) 2003-16 Intel Corporation. All Rights Reserved
MAIN MENU
MEBx Login > Intel (R) ME General Settings > Intel (R) AMT Configuration MEBx Exit Intel (R) ME Password
Intel(K) ME Password
$[\uparrow\downarrow] =$ Move Highlight [Enter] = Select Entry [Esc]= Exit

5. You will be asked to verify the password. Enter the same new password in the space provided under "Verify Password" and then press "Enter".

Intel(R) Management Engine BIOS Extension v11.0.0.0008/Intel(R) ME v11.8.50.3399
Copyrigni(C) 2003-16 Intel Corporation. All Rights Reserved
MAIN MENU
MEBx Login > Intel (R) ME General Settings > Intel (R) AMT Configuration MEBx Exit Verify Password
Intel(R) ME Password
$[\uparrow\downarrow] =$ Move Highlight [Enter] = Select Entry [Esc]= Exit

6. Select "Intel(R) ME General Settings" and then press "Enter".

Intel(R) Management Engine BIOS Extension v11.0.0.0008/Intel(R) ME v11.8.50.3399 Copyright(C) 2003-16 Intel Corporation. All Rights Reserved		
	MAIN MENU	
Intel (R) ME General Se Intel (R) AMT Configura MEBx Exit	ation	
$[\uparrow\downarrow] = Move Highlight$	[Enter] = Select Entry	[Esc]= Exit

7. Select "Change Intel(R) ME Password" and then press "Enter".

You will be prompted for a password. The default password is "admin". Enter the default password in the space provided under "Intel(R) ME New Password" and then press "Enter".

- 8-32 characters
- Strong 7-bit ASCII characters excluding : , and " characters
- At least one digit character (0, 1, ...9)
- At least one 7-bit ASCII non alpha-numeric character, above 0x20, (e.g. !, \$, ;)
  Both lower case and upper case characters

Intel(R) Management Engine BIOS Extension v11.0.0.0008/Intel(R) ME v11.8.50.3399 Copyright(C) 2003-16 Intel Corporation. All Rights Reserved		
INTEL (R) M	E PLATFORM CONFIC	JURATION
Change ME Password Local FW Update	<enabled></enabled>	
Intel (R) ME New Pas	sword	
[∱↓] = Move Highlight	[Enter] = Select Entry	[Esc]= Exit

Select "Local FW Update" and then press "Enter". Select "Enabled" or "Disabled" or 8. "Password Protected" and then press "Enter".

Intel(R) Management Engin Copyright(C) 20	te BIOS Extension v11.0.0.0008/Intel(R) ME v11.8.50.3399 103-16 Intel Corporation. All Rights Reserved
INTEL (R) Change ME Password Local FW Update	ME PLATFORM CONFIGURATION <a href="mailto:search"></a>
	Disabled Enabled Password Protected
$[\uparrow\downarrow] = Move Highlight$	[Enter] = Complete Entry [Esc]= Discard Changes

9. Select Previous Menu until you return to the "Main Menu". Select "Intel(R) AMT Configuration" and then press "Enter".

Intel(R) Management Engine BIOS Extension v11.0.0.0008/Intel(R) ME v11.8.50.3399 Copyright(C) 2003-16 Intel Corporation. All Rights Reserved			
INTEL (R)	AMT CONFIGURATION		
Manageability Feature Selec	tion < Enabled>		
> SOL/Storage Redirection/KV	√M		
> User Consent			
Password Policy	<anytime></anytime>		
> Network Setup			
Activate Network Access			
Unconfigure Network Access <pre><full unprovision=""></full></pre>			
> Remote Setup And Configur	> Remote Setup And Configuration		
> Power Control			

10. In the "Intel(R) AMT Configuration" menu, select "Manageability Feature Selection" and then press "Enter". Select "Enabled" or "Disabled" and then press "Enter".

![](_page_55_Figure_2.jpeg)

11. In the "Intel(R) AMT Configuration" menu, select "SOL/Storage Redirection/KVM" and then press "Enter".

Intel(R) Management Engine BIOS Extension v11.0.0.0008/Intel(R) ME v11.8.50.3399 Copyright(C) 2003-16 Intel Corporation. All Rights Reserved		
INTEL (R) AMT CONFIGURATION		
Manageability Feature Selection	< Enabled>	
> SOL/Storage Redirection/KVM		
> User Consent		
Password Policy	<anytime></anytime>	
> Network Setup		
Activate Netwok Access		
Unconfigure Network Access	<full td="" unprovi-<=""></full>	
sion>		
> Remote Setup And Configuration		
> Power Control		
$[\uparrow\downarrow] = Move Highlight [Enter] = Sele$	ct Entry [Esc]= Exit	

12. In the "SOL/Storage Redirection/KVM" menu, select "Username and Password" and then press "Enter". Select "Enabled" or "Disabled" and then press "Enter".

Intel(R) Management Engine BIOS Ex Copyright(C) 2003-16 Inte	xtension v11.0.0.0008/Intel(R) ME v11.8.50.3399 I Corporation. All Rights Reserved
SOL/Storag	ge Redirection/KVM
Username and Password	< Enabled>
SOL	<enabled></enabled>
Storage Redirection	<enabled></enabled>
KVM Feature Selection	<enabled></enabled>
	Disabled Enabled
$[\uparrow\downarrow] = Move Highlight [Enter] =$	= Complete Entry [Esc]= Discard Changes

13. In the "SOL/Storage Redirection/KVM" menu, select "SOL" and then press "Enter". Select "Enabled" or "Disabled" and then press "Enter".

Intel(R) Management Engine BIOS Exter Copyright(C) 2003-16 Intel C	nsion v11.0.0.0008/Intel(R) ME v11.8.50.3399 Corporation. All Rights Reserved
SOL/Storage	Redirection/KVM
Username and password SOL Storage Redirection KVM Feature Selection	< Enabled> <enabled> <enabled> <enabled></enabled></enabled></enabled>
	Disabled Enabled
$[\uparrow\downarrow] = Move Highlight [Enter] = 0$	Complete Entry [Esc]= Discard Changes

14. In the "SOL/Storage Redirection/KVM" menu, select "Storage Redirection" and then press "Enter". Select "Enabled" or "Disabled" and then press "Enter".

Intel(R) Management Engine BIOS Extension v11.0.0.0008/Intel(R) ME v11.8.50.3399 Copyright(C) 2003-16 Intel Corporation. All Rights Reserved		
SOL/Storage I	Redirection/KVM	
Username and password	< Enabled>	
SOL	<enabled></enabled>	
Storage Redirection <enabled></enabled>		
KVM Feature Selection <enabled></enabled>		
	Disabled Enabled	
$\uparrow\uparrow\downarrow$ ] = Move Highlight [Enter] = C	omplete Entry [Esc]= Discard Changes	

15. In the "SOL/IDER/KVM" menu, select "KVM Feature Selection" and then press "Enter". Select "Enabled" or "Disabled" and then press "Enter".

Intel(R) Management Engine BIOS Extension v11.0.0.0008/Intel(R) ME v11.8.50.3399 Copyright(C) 2003-16 Intel Corporation. All Rights Reserved	
SOL/Storage	Redirection/KVM
Username and password SOL Storage Redirection KVM Feature Selection	< Enabled> <enabled> <enabled> <enabled></enabled></enabled></enabled>
	Disabled Enabled
$[\uparrow\downarrow] = Move Highlight [Enter] =$	Complete Entry [Esc]= Discard Changes

16. Select Previous Menu until you return to the "Intel(R) AMT Configuration" menu. Select "User Consent" and then press "Enter".

![](_page_56_Picture_6.jpeg)

17. In the "User Consent" menu, select "User Opt-in" and then press "Enter". Select "None" or "KVM" or "ALL" and then press "Enter".

![](_page_56_Figure_8.jpeg)

 In the "User Consent" menu, select "Opt-in Configurable from Remote IT" and then press "Enter". Select "Enabled" or "Disable Remote Control of KVM Opt-in Policy" and then press "Enter".

![](_page_57_Figure_2.jpeg)

19. Select Previous Menu until you return to the "Intel(R) AMT Configuration" menu. Select "Password Policy" and then press "Enter".

You may choose to use a password only during setup and configuration or to use a password anytime the system is being accessed.

![](_page_57_Figure_5.jpeg)

20. In the "Intel(R) AMT Configuration" menu, select "Network Setup" and then press "Enter".

Intel(R) Management Engine BIOS Extension Copyright(C) 2003-16 Intel Corpor	v11.0.0.0008/Intel(R) ME v11.8.50.3399 ration. All Rights Reserved
INTEL (R) AMT CON	NFIGURATION
Manageability Feature Selection > SOL/Storage Redirection/KVM	< Enabled>
<ul> <li>&gt; User Consent</li> <li>Password Policy</li> <li>&gt; Network Setup</li> </ul>	<anytime></anytime>
Activate Network Access Unconfigure Network Access > Remote Setup And Configuration > Power Control	<full unprovision=""></full>
[1]] = Maya Hisblicht — Entarl = Sala	at Fatra - Frait

21. In the "Intel(R) ME Network Setup" menu, select "Intel(R) ME Network Name Settings" and then press "Enter".

Intel(R) Management Engine Copyright(C) 200	BIOS Extension v11.0.0.0008/Int 3-16 Intel Corporation. All Right	el(R) ME v11.8.50.3399 nts Reserved
INTE	EL (R) ME NETWORK SETU	Р
Intel (R) ME Network TCP/ IP Settings	Name Settings	
$[\uparrow\downarrow] = Move Highlight$	[Enter] = Select Entry	[Esc]= Exit

22. In the "Intel(R) ME Network Name Settings" menu, select "Host Name" and then press "Enter". Enter the computer's host name and then press "Enter".

Intel(R) Management Engine BIOS Extension v11.0.0.0008/Intel(R) ME v11.8.50.3399 Copyright(C) 2003-16 Intel Corporation. All Rights Reserved	
INTEL (R) ME NETWORK NAME SETTINGS	
Host Name Domain Name Shared/ Dedicated FQDN Dynamic DNS Update Computer Host Name	
[Enter] = Complete Entry [Esc]= Discard Change	

23. Select "Domain Name" and then press "Enter". Enter the computer's domain name and then press "Enter".

Intel(R) Management Engine Copyright(C) 200	e BIOS Extension v11.0.0.000 03-16 Intel Corporation. All	8/Intel(R) ME v11.8.50.3399 Rights Reserved
INTEL (R)	ME NETWORK NAME	SETTINGS
Host Name Domain Name Shared/ Dedicated FQDM Dynamic DNS Update	N <shared> <disabled></disabled></shared>	
Cor	nputer Domain Name	
]	Enter] = Complete Entry	[Esc]= Discard Changes

24. Select "Shared/Dedicated FQDN" and then press "Enter". Select "Shared" or "Dedicated" and then press "Enter".

Intel(R) Management Engine BIOS Exter Copyright(C) 2003-16 Intel (	nsion v11.0.0.0008/Intel(R) ME v11.8.50.3399 Corporation. All Rights Reserved
INTEL (R) ME NET	WORK NAME SETTINGS
Host Name Domain Name Shared/ Dedicated FQDN Dynamic DNS Update	- Shared> <disabled></disabled>
Dedicated	
$[\uparrow\downarrow] = Move Highlight [Enter] =$	Complete Entry [Esc]= Discard Changes

25. Select "Dynamic DNS Update" and then press "Enter". Select "Enabled" or "Disabled" and then press "Enter".

Intel(R) Management Engine BIOS Copyright(C) 2003-16 Ir	Extension v11.0.0.0008/Intel(R) ME v11.8.50.3399 ntel Corporation. All Rights Reserved
INTEL (R) ME N	ETWORK NAME SETTINGS
Host Name Domain Name Shared/ Dedicated FQDN Dynamic DNS Update	- <shared> <disabled></disabled></shared>
Disab Enable	led ed
$[\uparrow\downarrow] = Move Highlight [Enter]$	] = Complete Entry [Esc]= Discard Changes

26. Select Previous Menu until you return to the "Intel(R) ME Network Setup" menu. Select "TCP/IP Settings" and then press "Enter".

Intel(R) Management Engine Copyright(C) 2002	BIOS Extension v11.0.0.0008/In 3-16 Intel Corporation. All Rig	ntel(R) ME v11.8.50.3399 hts Reserved
	TCP/ IP SETTINGS	
> Wired LAN IPV4 Conf	iguration	
	FP - 1 - 0 1 - P -	
$[\uparrow\downarrow] = Move Highlight$	[Enter] = Select Entry	[Esc]= Exit

27. In the "TCP/IP Settings" menu, select "Wired LAN IPV4 Configuration" and then press "Enter".

Intel(R) Management Engin Copyright(C) 20	e BIOS Extension v11.0.0.0008/Intel(R) ME v11.8.50.3399 03-16 Intel Corporation. All Rights Reserved
WIRE	D LAN IPV4 CONFIGURATION
DHCP Mode	≤Enabled Disabled Enabled
$[\uparrow\downarrow] = Move Highlight$	[Enter] = Complete Entry [Esc]= Discard Changes

28. In the "Intel(R) AMT Configuration" menu, select "Activate Network Access" and then select "Yes/No" and press "Enter".

Intel(R) Management Engine BIOS Extension v11.0.0.0008/Intel(R) ME v11.8.50.339 Copyright(C) 2003-16 Intel Corporation. All Rights Reserved	
INTEL (R) AN	AT CONFIGURATION
Manageability Feature Selection > SOL/Storage Redirection/KVM	< Enabled>
<ul> <li>&gt; User Consent</li> <li>Password Policy</li> <li>&gt; Network Setup</li> </ul>	<anytime></anytime>
Activate Network Access Unconfigure Network Access	<full unprovision=""></full>
<ul> <li>Power Control</li> <li>Activate and ope Continue</li> </ul>	es the current network settings ns the ME network interface e: (Y/N)
$[\uparrow\downarrow] = Move Highlight [Enter] =$	= Select Entry [Esc]= Exit

29. In the "Intel(R) AMT Configuration" menu, select "Unconfigure Network Access" and then press "Enter".

![](_page_59_Figure_8.jpeg)

30. In the "Intel(R) AMT Configuration" menu, select "Remote Setup And Configuration" and then press "Enter".

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INTEL (R) AMT CONFIGURATION	
Manageability Feature Selection > SOL/Storage Redirection/KVM	< Enabled>
> User Consent Password Policy	<anytime></anytime>
> Network Setup Activate Network Access	
Unconfigure Network Access <full unprovision=""> Remote Setup And Configuration</full>	
> Power Control	
$\uparrow\uparrow\downarrow$ ] = Move Highlight [Enter] = Selection	ct Entry [Esc]= Exit

31. In the "Intel(R) Remote Setup And Configuration" menu, select "Current Provisioning Mode" and then press "Enter".

![](_page_60_Picture_4.jpeg)

32. In the "Intel(R) Remote Setup And Configuration" menu, select "Provisioning Record" and then press "Enter".

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INTEL (R) REMOTE SETUP AND CONFIGURATION
Current Provisioning Mode Provisioning Record Provisioning Server IPV4/IPV6 Provisioning Server FQDN > RCFG > TLS PKI Provision Record is not present
$[\uparrow\downarrow]$ = Move Highlight [Enter] = Select Entry [Esc]= Exit

33. In the "Intel(R) Remote Setup And Configuration" menu, select "Provisioning server IPV4/ IPV6", enter "Provisioning server address" and then press "Enter".

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INTEL (R) REMOTE SETUP AND CONFIGURATION	
Current Provisioning Mode Provisioning Record Provisioning Server IPV4/IPV6 Provisioning Server FQDN > RCFG > TLS PKI	
Provisioning server address	
$\uparrow \downarrow$ ] = Move Highlight [Enter] = Select Entry [Esc]= Exit	

34. In the "Intel(R) Remote Setup And Configuration" menu, select "Provisioning server FQDN", enter the FQDN of Provisioning server, and then press "Enter".

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INTEL (R) REMOTE SETUP AND CONFIGURATION
Current Provisioning Mode Provisioning Record Provisioning Server IPV4/IPV6 Provisioning Server FQDN > RCFG > TLS PKI
Enter FQDN of provisioning server
$[\uparrow\downarrow]$ = Move Highlight [Enter] = Select Entry [Esc]= Exit

35. In the "Intel(R) Remote Setup And Configuration" menu, select "RCFG" and press "Enter", and then select "Start Configuration Y/N" and press "enter".

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INTEL (R) REMOTE CONFIGURATION	
Start Configuration	
This will activate Remote Condigura	
tion. Continue: (Y/N)	
$[\uparrow\downarrow]$ = Move Highlight [Enter] = Select Entry [Esc]= Exit	

36. In the "Intel(R) Remote Setup And Configuration" menu, select "TLS PKI" and then press "Enter".

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INTEL (R) REMOTE SETUP AND CONFIGURATION	
Current Provisioning Mode Provisioning Record Provisioning Server IPV4/IPV6 Provisioning Server FQDN > RCFG > TLS PKI	
$[\uparrow\downarrow]$ = Move Highlight [Enter] = Select Entry [Esc]= Exit	

37. In the "Intel(R) Remote Configuration" menu, select "Remote Configuration\*\*" and press "Enter", and then select "Enabled" or "Disabled" and press "Enter".

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INTEL (R) REMOTE CONFIGURATION			
Remote Configuration <sup>*</sup> PKI DNS Suffix > Manage Hashes	** < Enabled> - Disabled Enabled		
[∱↓] = Move Highlight	[Enter] = Select Entry [Esc]= Exit		

38. Select "PKI DNS Suffix", enter the "PKI DNS Suffix", and then press "Enter".

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INTEL (R) REMOTE CONFIGURATION			
Remote Configuration* PKI DNS Suffix > Manage Hashes	** < Enabled>		
	Enter PKI DNS Suffix		
$[\uparrow\downarrow] = Move Highlight$	[Enter] = Select Entry [Esc]= Exit		

39. Select "Manage Hashes" and press "Enter", and then select one of the hash names.

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INTEL (R) REMOTE CONFIGURATION			
Remote Configuration PKI DNS Suffix > Manage Hashes	** < Enabled> -		
$[\uparrow\downarrow] = Move Highlight$	[Enter] = Select Entry [Esc]= Exit		

40. In the "Intel(R) AMT Configuration" menu, select Power Control, and then press "Enter".

Intel(R) Management Engine BIOS Extension v11.0.0.0008/Intel(R) ME v11.8.50.3399 Copyright(C) 2003-16 Intel Corporation. All Rights Reserved				
INTEL (R) REMOTE CONFIGURATION				
Hash Name	Active	Default	Algorithm	
VeriSign Class 3	Active: [*]	Default: [*]	SHA256	
VeriSign Class 3	Active: [*]	Default: [*]	SHA256	
Go Daddy Class 2	Active: [*]	Default: [*]	SHA256	
Comodo AAA CA	Active: [*]	Default: [*]	SHA256	
Starfield Class 2	Active: [*]	Default: [*]	SHA256	
VeriSign Class 3	Active: [*]	Default: [*]	SHA256	
VeriSign Class 3	Active: [*]	Default: [*]	SHA256	
VeriSign Class 3	Active: [*]	Default: [*]	SHA256	
GTE CyberTrust G1	Active: [*]	Default: [*]	SHA256	
Baltimore Cyber Tr	Active: [*]	Default: [*]	SHA256	
Cyber Trust Global	Active: [*]	Default: [*]	SHA256	
Verizon Global Ro	Active: [*]	Default: [*]	SHA256	
Entrust. net CA (2	Active: [*]	Default: [*]	SHA256	
Entrust Root CA	Active: [*]	Default: [*]	SHA256	
VeriSign Universa	Active: [*]	Default: [*]	SHA256	
Go Daddy Root CA	Active: [*]	Default: [*]	SHA256	
Entrust Root CA -	Active: [*]	Default: [*]	SHA256	
Startfield Root CA	Active: [*]	Default: [*]	SHA256	
[Ins]= Add New Hash [↑↓] =Move Highlight	[Delete] = Delete Hash [Enter] = View Hash	[+] = Activate [Esc]= Exit	Hash	

41. In the "Intel(R) AMT Power Control" menu, select "Intel(R) AMT ON in Host Sleep States" and then press "Enter". Select an option and then press "Enter".

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INTEL (R) AMT CONFIGURATION			
Manageability Feature Selection > SOL/Storage Redirection/KVM > User Consent	< Enabled>		
Password Policy > Network Setup Activate Network Access	<anytime></anytime>		
Unconfigure Network Access > Remote Setup And Configuration > Power Control	<full unprovision=""></full>		
$[\uparrow\downarrow] = Move Highlight [Enter] = Set$	lect Entry [Esc]= Exit		

42. In the "Intel(R) AMT Power Control" menu, select "Idle Timeout" and then press "Enter". Enter the timeout value (1-65535).

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INTEL (R) AMT POWER CONTROL		
These configurations are effective only after AMT provisioning has started		
Intel (R) AMT ON in Host Sleep States	<desktop: in="" on="" s0,<br="">ME Wake in S3, S4-5&gt;</desktop:>	
Idle Timeout	65535	
Desktop : ON in S0 Desktop : ON in S0, ME Wake in S3, S4-5		
$\uparrow\uparrow\downarrow$ = Move Highlight [Enter] = Complete Entry [Esc]= Discard Changes		

43. In the "Intel(R) AMT Power Control" menu, select "Idle Timeout" and then press "Enter". Enter the timeout value (1-65535).

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INTEL (R) AMT POWER CONTROL		
This configurations are effective only after AMT provisioning has started		
Intel (R) ME ON in Host Sleep States	<mobile: in="" on="" s0,<br="">ME Wake in S3, S4-5 (AC only)&gt;</mobile:>	
Idle Timeout	65535	
Timeout Value (1- 65535	65535)	
<enter> = Complete Ent</enter>	try [ESC]= Discard Changes	

44. Select Previous Menu until you return to the "Main Menu". Select "Exit" and then press "Enter". Type "Y" and then press "Enter".

![](_page_63_Picture_6.jpeg)