ACS-2702

Intel Atom N2600 IP67 Certified and IP69K Compliant Waterproof Box PC

User Manual

Release Date	Revision
Aug. 2015	V1.1

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Revision History

Reversion	Date	Description
1.0	2015/07/08	Official Version
1.1	2015/08/26	Modify IP Rating Spec.

Warning!_____

This equipment generates, uses and can radiate radio frequency energy and if not installed and used in accordance with the instructions manual, it may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

Electric Shock Hazard – Do not operate the machine with its back cover removed. There are dangerous high voltages inside.

Disclaimer

This information in this document is subject to change without notice. In no event shall Aplex Technology Inc. be liable for damages of any kind, whether incidental or consequential, arising from either the use or misuse of information in this document or in any related materials.

Packing List

Accessories (as ticked) included in this package are:
☐ Adaptor ☐ Driver & manual CD disc ☐ Other._____(please specify)

Safety Precautions

Follow the messages below to prevent your systems from damage:

- Avoid your system from static electricity on all occasions.
- Prevent electric shock. Don‘t touch any components of this card when the card is power-on. Always disconnect power when the system is not in use.
- Disconnect power when you change any hardware devices. For instance, when you connect a jumper or install any cards, a surge of power may damage the electronic components or the whole system.

Table of Contents

Chapter 1 Getting Started

1.1 Features

- Fanless design
- Intel Atom N2600 1.6GHz CPU built-in
- Onboard 2GB DDR III 800MHz
- Wide Range 9~36V DC Power Input
- IP67 Certified and IP69K Compliant

1.2 Specifications

System	
Processor	Intel Atom Processor N2600 1.6GHz CPU
System Chipset	Intel NM10 Express Chipset
System Memory	Onboard 2GB DDR III 800MHz
Outside I/O Ports	2 x USB 2.0 type A(by 1 x M12 8pin connector) 1 x GbE LAN by Realtek RTL8111E(M12 connector) 1 x RS-232 DB-9, COM2(M12 connector) 1 x RS-232/422/485 DB-9, COM1, Default RS-232 (M12 connector) 1 x VGA (M12 connector) 1 x DC Power (M12 connector)
Storage	1 x 2.5” SATA II HDD 1 x SD slot, up to 32GB
Expansion Slots	1 x Internal Mini-PCIe slot half size
OS Support	Windows embedded standard 7, Windows 7 Pro for embedded, Windows CE 6.0
Power	
Power Input	9~36V DC
Power Consumption	MAX: 10.1W
Mechanical	
Construction	Stainless Steel Chassis
Mounting	Wall Mount
IP Rating	IP67 Certified and IP69K Compliant
Dimension	200 x 250 x 53 mm
Net Weight	3.2Kg
Environmental	

Operating Temperature	-20~60 °C
Storage Temperature	-40~85 °C
Storage Temperature	10%~90%@ 40℃, non-condensing
Certificate	Meet CE / FCC

1.3 Dimensions

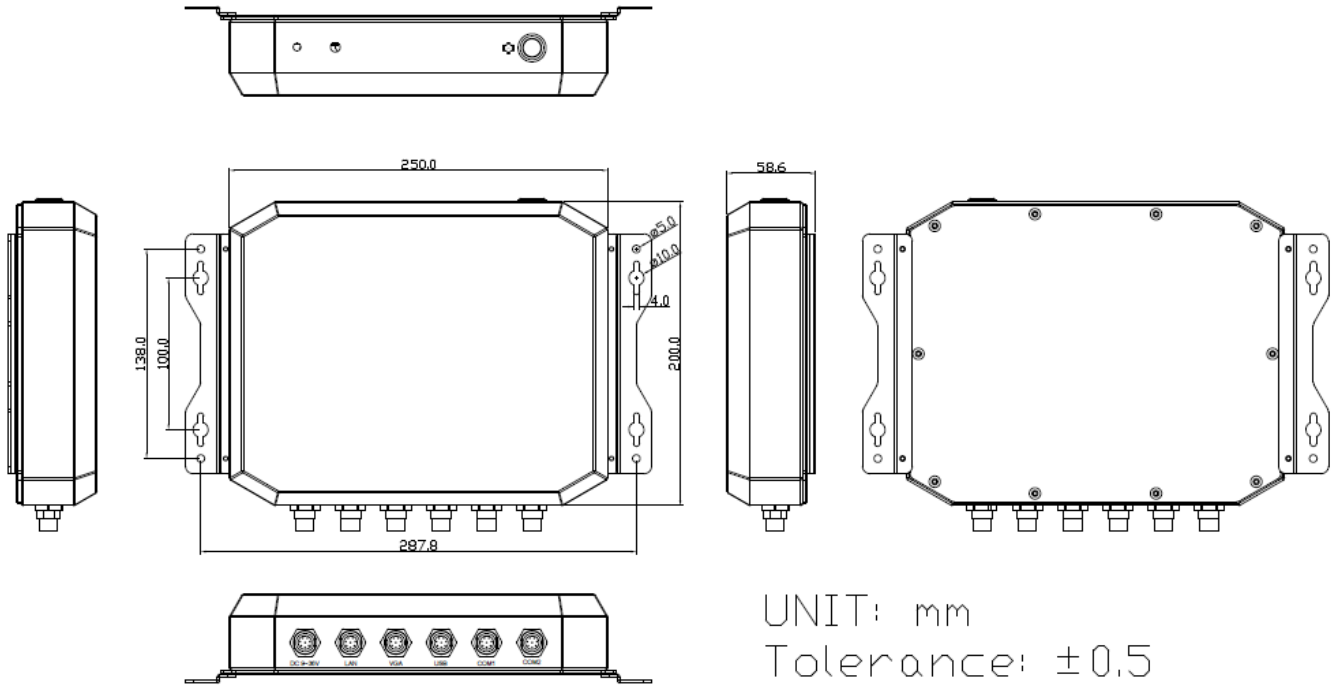


Figure 1.1: Dimensions of ACS-2702

1.4 Brief Description of ACS-2702

The ACS-2702 is a fanless high-efficiency thermal solution Box PC, powered by Intel Atom Processor N2600 1.6GHz CPU and supporting 2GB DDR3 800 MHz onboard. It comes with 2 x USB 2.0, 1 x LAN, 2 x COM ports, 1 x VGA and 1 x DC Power all by M12 connector. It supports 1 x 2.5" SATAII HDD space, 1 x SD slot up to 32GB, and 9~36V DC wide-ranging power input, and it is IP67 certified and IP69K compliant waterproof. It is ideal for Industrial Automation, Factory Automation, Machine Vision, Process Control, Data Terminal, TI, Surveillance, etc. and running factory operations from small visual interface and maintenance applications to large control process applications. The ACS-2702 works very well along with any of our Display series and it absolutely can provide an easy way to perform control and field maintenance.

Figure 1.2: Overview of ACS-2702

Chapter 2 Hardware

2.1 Motherboard Introduction

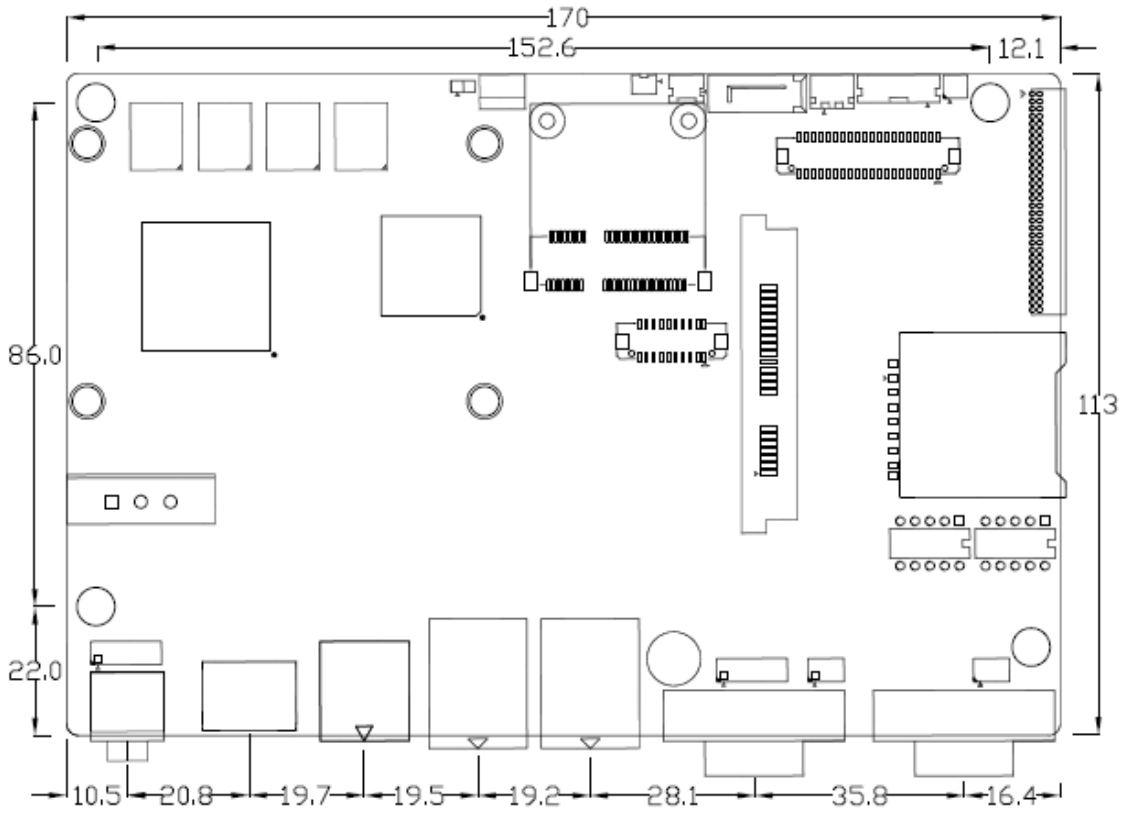
SBC-7106 is a 4" industrial motherboard developed on the basis of Intel Cedarview-M Processors and NM10, which provides abundant peripheral interfaces to meet the needs of different customers. Also, it features dual GbE ports, 3-COM ports and one Mini PCIE configuration, one VGA port, one HDMI port, one LVDS interface. To satisfy the special needs of high-end customers, CN1 and CN2 and CN3 richer extension functions. The product is widely used in various sectors of industrial control.

2.2 Specifications

Specifications	
Board Size	170mm x 113mm
CPU Support	Intel Atom N2600 /1.60GHz (2cores,3.5W, onboard） Intel Atom D2550 /1.86GHz(2cores,10W, option)
Chipset	Intel NM10 Express
Memory Support	Onboard 2GB DDRIII SDRAM (N2600) Onboard 4GB DDRIII SDRAM (D2550)
Graphics	Integrated Intel GMA 3600 (N2600) Integrated Intel GMA 3650 (D2550)
Display Mode	1 x CRT Port 1 x HDMI Port 1 x LVDS1 (18/24-bit single LVDS)
Support Resolution	Up to 1920 x1200 for CRT Up to 1920 x1200 for HDMI Up to 1366 x768 for LVDS1 (N2600) Up to 1440 x 900 for LVDS1 (D2550)
Dual Display	CRT+LVDS1 CRT+HDMI LVDS1+HDMI
Super I/O	Winbond W83627UHG-E
BIOS	AMIBIOS

Storage	1 x SATA Connector (7P) 1 x SATA Connector (7P+15P) 1 x SD Socket (USB to SD)
Ethernet	2 x PCIe Gbe LAN by Realtek RTL8111E
USB	2 x USB 2.0 (type A)stack ports (USB4/USB5) 2 x USB 2.0 Pin header for CN3 (USB2/USB3) 2 x USB 2.0 Pin header for CN1 (USB0/USB1) 1 x USB 2.0 for MPCIE1 (USB7)
Serial	1 x RS232/RS422/RS485 port, DB9 connector for external (COM1) pin 9 w/5V/12V/Ring select 1 x RS232 port, DB9 connector for external (COM2) pin 9 w/5V/12V/Ring select 1 x RS422/485 header for CN2 (COM3) 2 x UART for CN3 (COM5,COM6)
Digital I/O	8-bit digital I/O by Pin header (CN2) 4-bit digital Input 4-bit digital Output 4-bit digital I/O by Pin header (CN3) 2-bit digital Input 2-bit digital Output
Battery	Support CR2477 Li battery by 2-pin header
Audio	Support Audio via Realtek ALC662 HD audio codec Support Line-in, Line-out, MIC by 2x6-pin header
Keyboard /Mouse	1 x PS2 keyboard/mouse by 1x6 box pin header (CN3)
Expansion Bus	1 x mini-PCI-express slot 1 x PCI-express (CN3)
Touch Ctrl	1 x Touch ctrl header for TCH1 (COM4)
Power Management	Wide Range DC10V~30v input 1 x 3-pin power input connector
Switches and LED Indicators	1 x Power on/off switch (CN1) 1 x Reset switch (CN1) 1 x Power LED status (CN1) 1 x HDD LED status (CN1) 1 x Buzzer

External I/O port	2 x COM Ports (COM1/COM2) 2 x USB 2.0 Ports (stack) 2 x RJ45 GbE LAN Ports 1 x HDMI Port 1 x Stack audio Jack (Line out)
Watchdog Timer	Software programmable 1 – 255 second by Super I/O
Temperature	Operating: -20℃ to 70℃ Storage: -40℃ to 85℃
Humidity	5% - 95%, non-condensing, operating
Power Consumption	12V /0.95A (Intel Atom N2600 processor with 2GB DDR3 DRAM)
EMI/EMS	Meet CE/FCC class A



(units :mm)

Figure 2.1: Motherboard Dimensions

2.2.1 Jumpers Setting and Connectors

Board Top

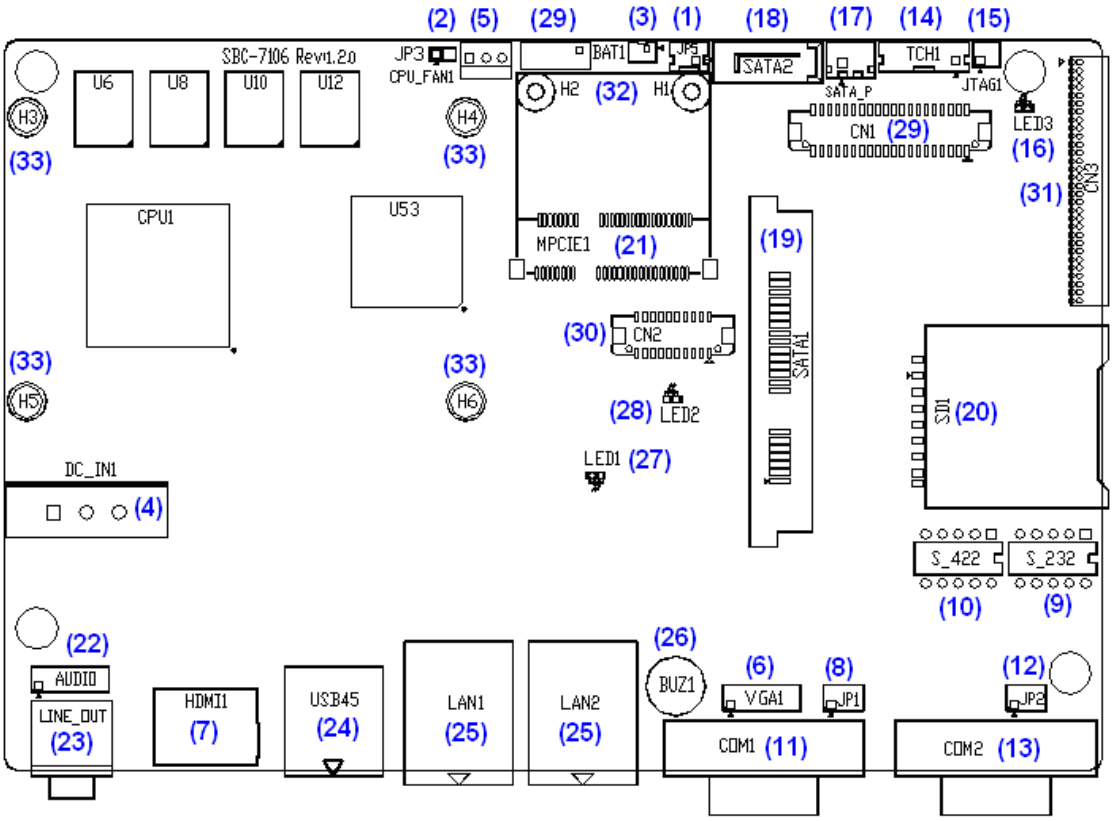


Figure 2.2: Jumpers and Connectors Location_ Board Top

Board Bottom

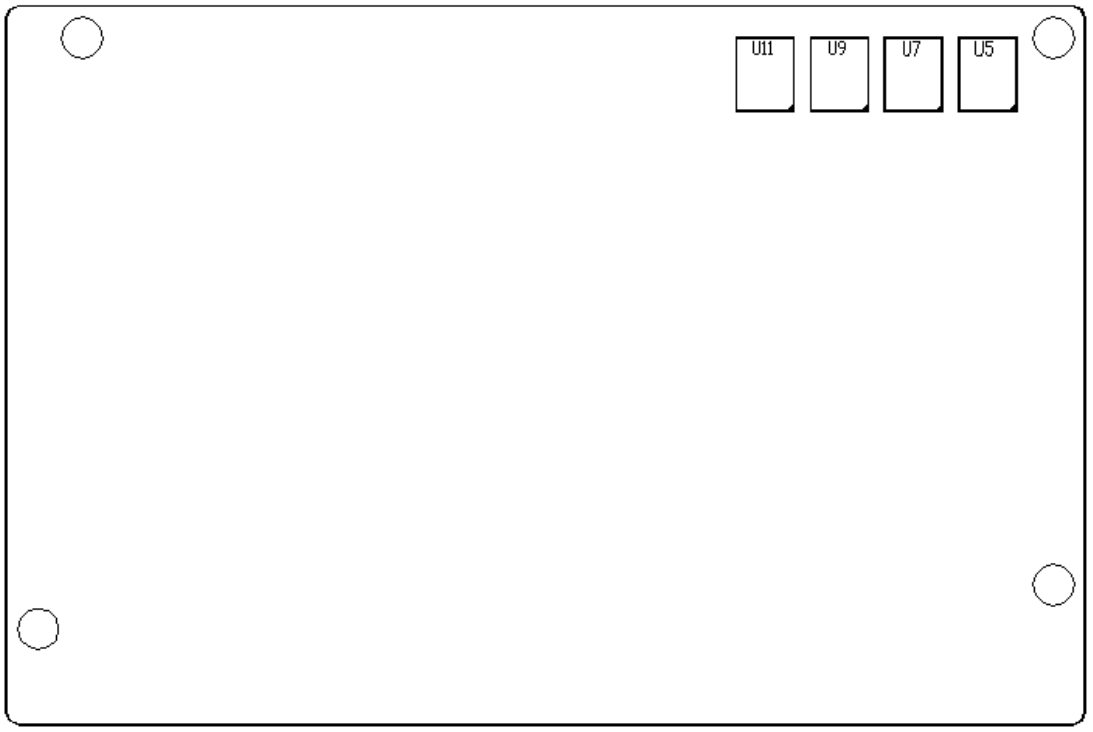


Figure 2.3: Jumpers and Connectors Location_ Board Bottom

2.3 Jumpers Setting and Connectors

1. **JP5:**

   (2.0mm Pitch 1X2 box Pin Header), ATX Power and Auto Power on jumper setting**.**

JP5	Mode
Open	ATX Power
Close	**Auto Power on (Default)**

2. **JP3:**

   (2.0mm Pitch 1X2 Pin Header)CMOS clear jumper, CMOS clear operation will permanently reset old BIOS settings to factory defaults.

JP3	CMOS
Open	NORMAL (Default)
Close 1-2	Clear CMOS

Procedures of CMOS clear:

a) Turn off the system and unplug the power cord from the power outlet.
b) To clear the CMOS settings, use the jumper cap to close pins 1 and 2 for about 3 seconds then reinstall the jumper clip back to pins open.
c) Power on the system again.
d) When entering the POST screen, press the <F1> or <DEL> key to enter CMOS Setup Utility to load optimal defaults.
e) After the above operations, save changes and exit BIOS Setup.

Model	JP3
SBC-7106-N2600	No
SBC-7106-N2600-P	No
SBC-7106-D2550	Yes

3. **BAT1 :**

   (1.25mm Pitch 1X2 box Pin Header) 3.0V Li battery is embedded to provide power for CMOS.

Pin#	Signal Name
Pin1	VBAT
PIN2	Ground

4. **DC_IN1:**

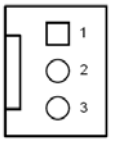
   (5.08mm Pitch 1x3 Pin Connector),DC9V~32V System power input connector。

Pin#	Power Input
Pin1	DC+9V~32V
Pin2	Ground
Pin3	FG

Model	DC_IN1
SBC-7106-N2600	180°Connector
SBC-7106-N2600-P	45°Connector
SBC-7106-D2550	45°Connector

5. CPU_FAN1:

(2.54mm Pitch 1x3 Pin Header), Fan connector, cooling fans can be connected directly for use. You may set the rotation condition of cooling fan in menu of BIOS CMOS Setup.



Pin#	Signal Name
1	Ground
2	VCC
3	Rotation detection

Note:

Output power of cooling fan must be limited under 5W.

Model	CPU_FAN1
SBC-7106-N2600	No
SBC-7106-N2600-P	No
SBC-7106-D2550	Yes

6. VGA1:

(CRT 2.0mm Pitch 2X6 Pin Header), Video Graphic Array Port, Provide 2x6Pin cable to VGA Port.

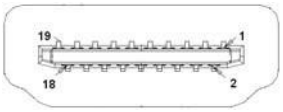
Signal Name	Pin#	Pin#	Signal Name
CRT_RED	1	2	Ground
CRT_GREEN	3	4	Ground
CRT_BLUE	5	6	VGA_EN
CRT_H_SYNC	7	8	CRT_DDCDATA
CRT_V_SYNC	9	10	CRT_DDCCLK
Ground	11	12	Ground

VGA hot plug setting for Windows XP：	
VGA1（Pin Header）	Function

Pin4-Pin6（Close）	VGA Simulation Disabled
Pin4-Pin6（Open）	VGA Simulation Enabled
use the 2.0mm jumper cap to close pin 4 and pin6	

7. HDMI1:

(HDMI 19P Connector), High Definition Multimedia Interface connector.



8. JP1:

(2.0mm Pitch 2x3 Pin Header), COM1 jumper setting, pin 1~6 are used to select signal out of pin 9 of COM1 port.

JP1 Pin#	Function
Close 1-2	**COM1 RI (Ring Indicator) (default)**
Close 3-4	COM1 Pin9=+5V (option)
Close 5-6	COM1 Pin9=+12V (option)

9. S_232:

(Switch), COM1 jumper setting, it provides selectable RS232 or RS422 or RS485 serial signal output.

Function	S_232 Pin#
RS232 (Default)	**ON: Pin1, Pin2, Pin3, Pin4**
RS422 (option)	OFF: Pin1, Pin2, Pin3, Pin4
RS485 (option)	OFF: Pin1, Pin2, Pin3, Pin4

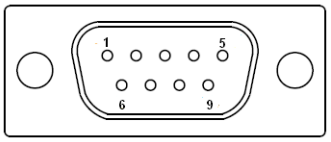
10. S_422:

(Switch), COM1 setting, it provides selectable RS232 or RS422 or RS485 serial signal output.

Function	S_422 Pin#
RS232 (Default)	**OFF: Pin1, Pin2, Pin3, Pin4**
RS422 (option)	ON: Pin1, Pin2, Pin3, Pin4
RS485 (option)	ON: Pin1, Pin2, Pin3, Pin4

11. COM1:

(Type DB9),Rear serial port, standard DB9 Male serial port is provided to make a direct connection to serial devices. COM1 port is controlled by pins No.1~6 of JP1,select output Signal RI or 5V or 12V, For details, please refer to description of JP1 and S_232 and S_422 setting.



RS232 (Default):	
Pin#	Signal Name
1	DCD# (Data Carrier Detect)
2	RXD (Received Data)
3	TXD (Transmit Data)
4	DTR (Data Terminal Ready)
5	Ground
6	DSR (Data Set Ready)
7	RTS (Request To Send)
8	CTS (Clear To Send)
9	**JP1 select Setting (RI/5V/12V)**
BIOS Setup： Advanced/W83627UHG Super IO Configuration/Serial Port 1 Configuration【RS-232】	

RS422 (option):	
Pin#	Signal Name
1	422_RX+
2	422_RX-
3	422_TX-
4	422_TX+
5	Ground
6	NC
7	NC
8	NC
9	NC
BIOS Setup： Advanced/W83627UHG Super IO Configuration/Serial Port 1 Configuration【RS-422】	

RS485 (option):	
Pin#	Signal Name
1	NC
2	NC
3	485-
4	485+
5	Ground
6	NC
7	NC

8	NC
9	NC
BIOS Setup： Advanced/W83627UHG Super IO Configuration/Serial Port 1 Configuration【RS-485】	

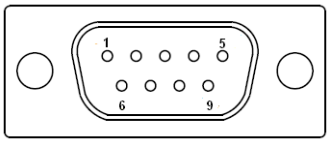
12. JP2:

(2.0mm Pitch 2x3 Pin Header),COM2 jumper setting, pin 1~6 are used to select signal out of pin 9 of COM2 port.

JP2 Pin#	Function
Close 1-2	**COM2 RI (Ring Indicator) (default)**
Close 3-4	COM2 Pin9=+5V (option)
Close 5-6	COM2 Pin9=+12V (option)

13. COM2:

(Type DB9),Rear serial port, standard DB9 Male serial port is provided to make a direct connection to serial devices.



Pin#	Signal Name
1	DCD# (Data Carrier Detect)
2	RXD (Received Data)
3	TXD (Transmit Data)
4	DTR (Data Terminal Ready)
5	Ground
6	DSR (Data Set Ready)
7	RTS (Request To Send)
8	CTS (Clear To Send)
9	RI **(**Ring Indicator**)**

14. TCH1:

(2.0mm Pitch 1x6 box Pin Header), internal Touch controller connector.

Pin#	Signal Name
1	SENSE
2	X+
3	X-
4	Y+
5	Y-
6	GND_EARCH

15. JTAG1(option):

(2.0mm Pitch 2x2 Pin Header), Touch eeprom program to write interface

Signal Name	Pin#		Signal Name
3.3V	1	2	C2D_BR
YC2CK_RST	3	4	Ground

16. LED3:

LED STATUS. Green LED for Touch Power status.

17. SATA_P:

(2.5mm Pitch 1x2 box Pin Header), Two onboard 5V output connectors are reserved to provide power for SATA devices.

Pin#	Signal Name
1	+DC5V
2	Ground

Note:

Output current of the connector must not be above 1A.

18. SATA2:

(SATA 7Pin), SATA Connectors, one SATA connectors are provided, with transfer speed up to 3.0Gb/s.

19. SATA1:

(SATA 7Pin+15Pin), SATA Connectors, one SATA connectors are provided, with transfer speed up to 3.0Gb/s.

20. SD1:

(SD card socket),Secure Digital Memory Card socket.

21. MPCIE1:

(Socket 52Pin),mini PCIe socket, it is located at the top, it supports mini PCIe devices with USB2.0 and LPC and SMBUS and PCIe signal. MPCIe card size is 30x30mm.

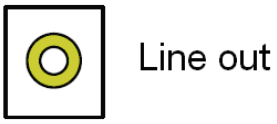
22. AUDIO:

(2.0mm Pitch 2X6 Pin Header), Front Audio, An onboard Realtek ALC662 codec is used to provide high-quality audio I/O ports. Line Out can be connected to a headphone or amplifier. Line In is used for the connection of external audio source via a Line in cable. MIC is the port for microphone input audio.

Signal Name	Pin#	Pin#	Signal Name
5V	1	2	GND_AUD
LINE-OUT-L	3	4	LINE-OUT-R
FRONT_JD	5	6	LINE1_JD
LINE-IN-L	7	8	LINE-IN-R
MIC-IN-L	9	10	MIC-IN-R
GND_AUD	11	12	MIC1_JD

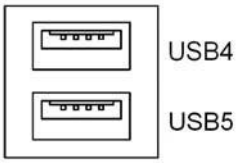
23. LINE_OUT:

(Diameter 3.5mm Jack), HD Audio port, An onboard Realtek ALC662 codec is used to provide high quality audio I/O ports. Line Out can be connected to a headphone or amplifier.



24. USB45:

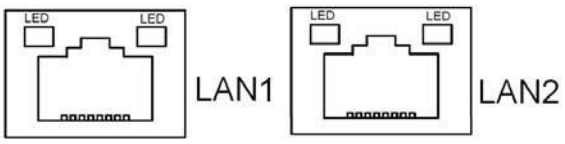
USB4/USB5：(Double stack USB type A), Rear USB connector, it provides up to 4 USB2.0 ports, High-speed USB 2.0 allows data transfers up to480 Mb/s ,support USB full-speed and low-speed signaling.



Each USB Type A Receptacle (2 Ports) Current limited value is 1.5A.
If the external USB device current exceeds 1.5A, please separate connectors into different Receptacle.

25. LAN1/LAN2:

LAN1/LAN2: (RJ45 Connector), Rear LAN port, Two standard 10/100/1000M RJ-45 Ethernet ports are provided. Used Realtek RTL8111E chipset, LINK LED (green) and ACTIVE LED (yellow) respectively located at the left-hand and right-hand side of the Ethernet port indicate the activity and transmission state of LAN.



26. BUZ1:

Onboard buzzer.

27. LED1:

LED STATUS. Green LED for Motherboard Power status.

28. LED2:

LED STATUS. Green LED for Motherboard Standby Power Good status.

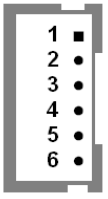
29. CN1:

(DF13-40P Connector),For expand output connector, It provides one 18/24bit single channel LVDS, one Backlight control, two USB ports, one power led, one HDD LED, one power on/off button, one RESET**.**

Function	Signal Name	Pin#		Signal Name	Function
LVDS	12V_S0	2	1	12V_S0	LVDS
	BKLT_EN_OUT	4	3	BKLT_CTRL	
	Ground	6	5	Ground	
	LVDS_VDD5	8	7	LVDS_VDD5	
	LVDS_VDD3	10	9	LVDS_VDD3	
	Ground	12	11	Ground	
	LA_DATAP0	14	13	LA_DATAN0	
	LA_DATAP1	16	15	LA_DATAN1	
	LA_DATAP2	18	17	LA_DATAN2	
	LA_DATAP3	20	19	LA_DATAN3	
	LA_CLKP	22	21	LA_CLKN	
	Ground	24	23	Ground	
	Ground	26	25	Ground	
USB1	USB1_P	28	27	USB1_N	USB1
USB0	USB0_P	30	29	USB0_N	USB0
	5V_USB01	32	31	5V_USB01	USB1
	5V_USB01	34	33	5V_USB01	
PWR LED	PWR_LED+	36	35	HDD_LED+	HDD LED
	Ground	38	37	Ground	
PWR ON/OFF	PWRBTN_ON-	40	39	FP_RST-	RESET

INVT1：

(2.0mm Pitch 1x6 Pin wafer connector), Backlight control connector for LVDS.



Pin#	Signal Name
1	+DC12V
2	+DC12V
3	Ground

4	Ground
5	BKLT_EN_OUT
6	BKLT_CTRL

Note:

Pin6 is backlight control signal, support DC or PWM mode, mode select at BIOS CMOS menu.

30. CN2:

(DF13-20P Connector), for expand output connector, it provides eight GPIO, one RS422 or RS485.

Function	Signal Name	Pin#		Signal Name	Function
5V	5V_S5	2	1	5V_S5	5V
SIO_GPIO61	GPIO_IN2	4	3	GPIO_IN1	SIO_GPIO60
SIO_GPIO63	GPIO_IN4	6	5	GPIO_IN3	SIO_GPIO62
	Ground	8	7	Ground	
SIO_GPIO21	GPIO_OUT2	10	9	GPIO_OUT1	SIO_GPIO20
SIO_GPIO23	GPIO_OUT4	12	11	GPIO_OUT3	SIO_GPIO22
	Ground	14	13	Ground	
485 or 422	485+_422TX+	16	15	485-_422TX-	485 or 422
RS422	422_RX+	18	17	422_RX-	RS422
5V	5V_S0	20	19	5V_S0	5V
COM3 BIOS Setup： Advanced/W83627UHG Super IO Configuration/Serial Port 3 Configuration【RS-422】 Advanced/W83627UHG Super IO Configuration/Serial Port 3 Configuration【RS-485】					

32. H3/H4/H5/H6:

CPU1 and U53 Heat Sink SCREW HOLES, Four screw holes for intel N2600 and NM10 Heat Sink assemble.

33. H1/H2:

MPCIE1 SCREW HOLES, H1and H2 for mini PCIE card (30mmx30mm) assemble.

Chapter 3 BIOS Setup

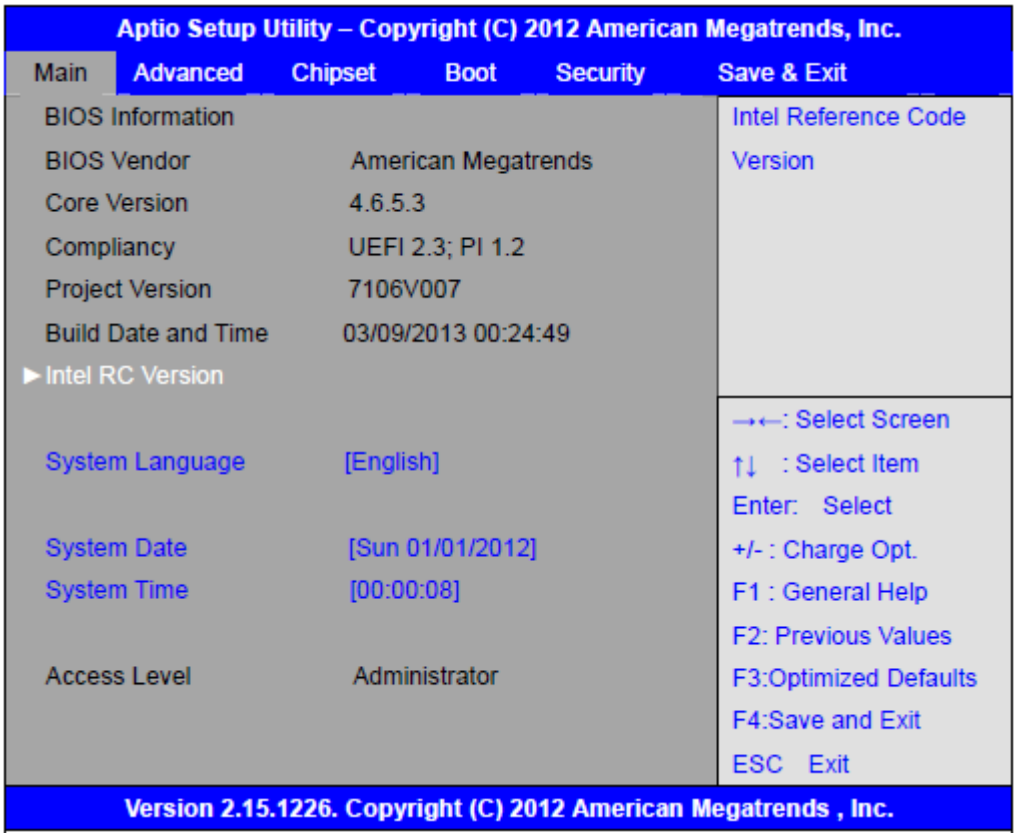
3.1 Operations after POST Screen

After CMOS discharge or BIOS flashing operation,.Press [Delete] key to enter CMOS Setup.

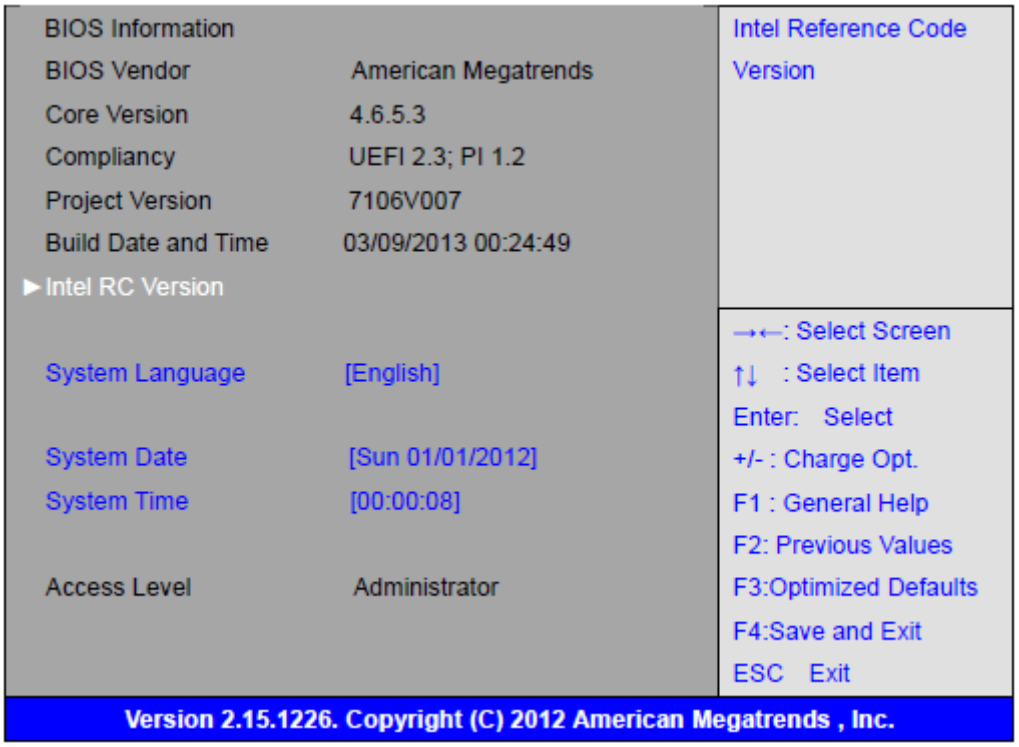
After optimizing and exiting CMOS Setup, the POST screen displayed for the first time is as follows and includes basic information on BIOS, CPU, memory, and storage devices.

3.2 BIOS Setup Utility

Press [Delete] key to enter BIOS Setup utility during POST, and then a main menu containing system summary information will appear.



3.3 Main Settings



System Time:

Set the system time, the time format is:

Hour: 0 to 23

Minute: 0 to 59

Second: 0 to 59

System Date

Set the system date, the date format is:

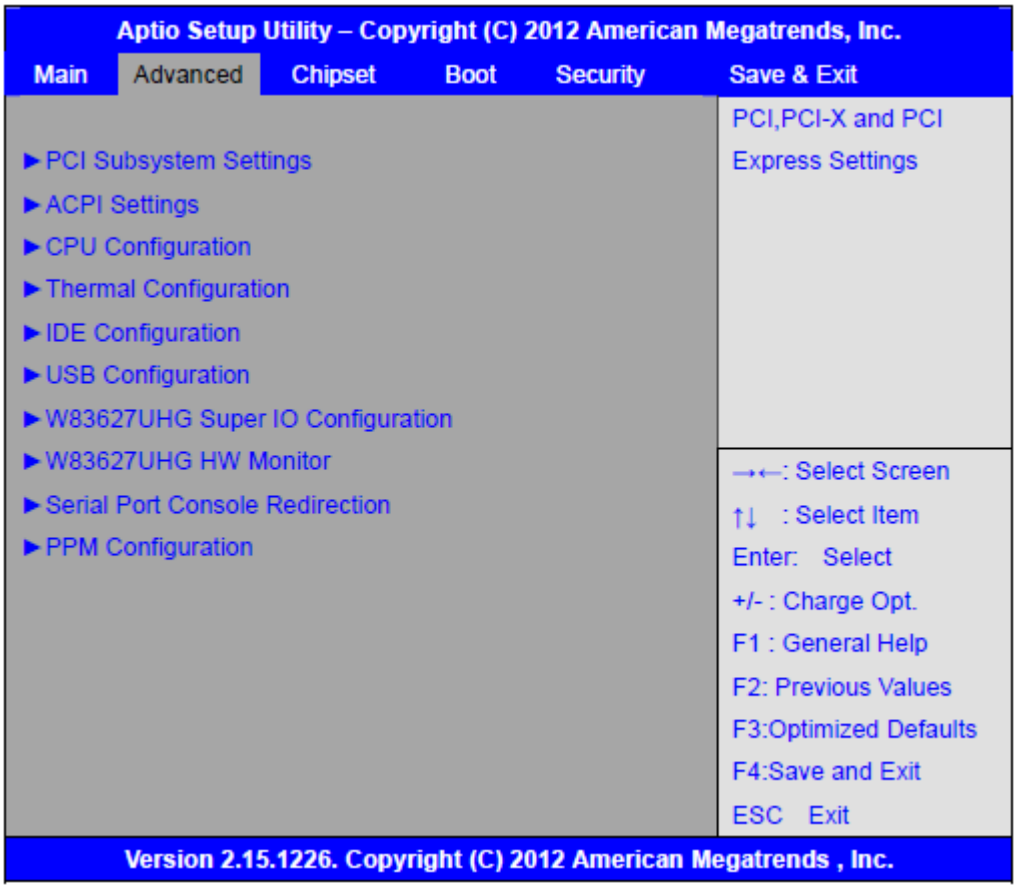
Day: Note that the 'Day' automatically changes when you set the date.

Month: 01 to 12

Date: 01 to 31

Year: 1998 to 2099

3.4 Advanced Settings



3.4.1 PCI Subsystem Settings

PCI Bus Driver Versio V2.05.02

PCI Common Settings:

PCI Latency Timer:

[32 PCI Bus Clocks]

[64 PCI Bus Clocks]

[96 PCI Bus Clocks]

[128 PCI Bus Clocks]

[160 PCI Bus Clocks]

[192 PCI Bus Clocks]

[224 PCI Bus Clocks]

[248 PCI Bus Clocks]

VGA Palette Snoop:

[Disabled]

[Enabled]

PERR# Generation:

[Disabled]

[Enabled]

SERR# Generation: **[Disabled]**

[Enabled]

3.4.2 ACPI Settings

Enable ACPI Auto Conf:

[Disabled]

[Enabled]

Enable Hibernation:

[Enabled]

[Disabled]

ACPI Sleep State:

[Both S1 and S3 available for OS to choose from]

[Suspend Disabled]

[S1 only (CPU Stop Clock)]

[S3 only (Suspend to RAM)]

Lock Legacy Resources:

[Disabled]

[Enabled]

S3 Video Repost:

[Disabled]

[Enabled]

3.4.3 CPU Configuration

Processor Type	Intel(R) Atom(TM) CPU N2600
EMT64	Not Supported
Processor Speed	1600MHz
System Bus Speed	400MHz
Ratio Status	16
Actual Ratio	16
System Bus Speed	400MHz
Processor Stepping	30661
Microcode Revision	269
L1 Cache RAM	2x56 k
L2 Cache RAM	2x512 k
Processor Core	Dual
Hyper-Threading	Supported

Hyper-Threading:

[Enabled]

[Disabled]

Execute Disable Bit:

[Enabled]

[Disabled]

Limit CPUID Maximum:

[Disabled]

[Enabled]

3.4.4 Thermal Configuration

CPU Thermal Configuration

DTS SMM

[Disabled]

[Enabled]

Platform Thermal Configuration

Critical Trip Point [POR]

Active Trip Point Lo [55 C]

Active Trip Point Hi [71C]

Passive Trip Point [95]

Passive TC1 Value 1

Passive TC2 Value 5

Passive TSP Value 10

3.4.5 IDE Configuration

SATA Port0 Not Present

SATA Port1 Not Present

SATA Controller(S):

[Enabled]

[Disabled]

Configure SATA as:

[IDE]

[AHCI]

Misc Configuration for hard disk

3.4.6 USB Configuration

USB Configuration

USB Devices:

1 Drive ， 1 keyboard

Legacy USB Support:

[Enabled]

[Disabled]

EHCI Hand-off:

[Disabled]

[Enabled]

USB hardware delays a

USB transfer time-out:

[20 sec]

[10 sec]

[5 sec]

[1 sec]

Device reset time-out:

[20 sec]

[10 sec]

[30 sec]

[40 sec]

Device power-up delay

[Auto]

[Manual]

3.4.7 W83627UHG Super IO Configuration

W83627UHG Super IO ch W83627UHG

Serial Port 1 Configuration

UART Mode Selection：

[RS-232]

[RS-485]

[RS-422]

Serial Port 2 Configuration

Serial Port 3 Configuration

UART Mode Selection：

[RS-485]

[RS-422]

Serial Port 4 Configuration

Serial Port 5 Configuration

Serial Port 6 Configuration

3.4.8 W83627UHG HW Monitor

PC Health Status

System Temperature1	: +38
System Speed	: N/A
VCORE	: +0.968V
+12V	: +12.302V
+3.3V	: +3.320V
+1.5V	: +1.528V
AVCC	: +5.203V
VCC5V	: +5.216V
VSB5	: +5.203V
VBAT	: +3.334V

3.4.9 Serial Port Console Redirection

COM0

Console Redirection

[Enabled]

[Disabled]

Console Redirection Settings

Serial Port for Out-of-Band Management/

Windows Emergency Management Services (EMS)

Console Redirection

[Disabled]
[Enabled]

Console Redirection Settings

3.4.10 PPM Configuration

PPM Configuration
EIST:

[Enabled]
[Disabled]

CPU C State Report

[Enabled]
[Disabled]

Enhanced C State

[Enabled]
[Disabled]

CPU Hard C4E

[Enabled]
[Disabled]

CPU C6 State

[Enabled]
[Disabled]

C4 Exit Timing

[Fast]
[Default]
[Slow]

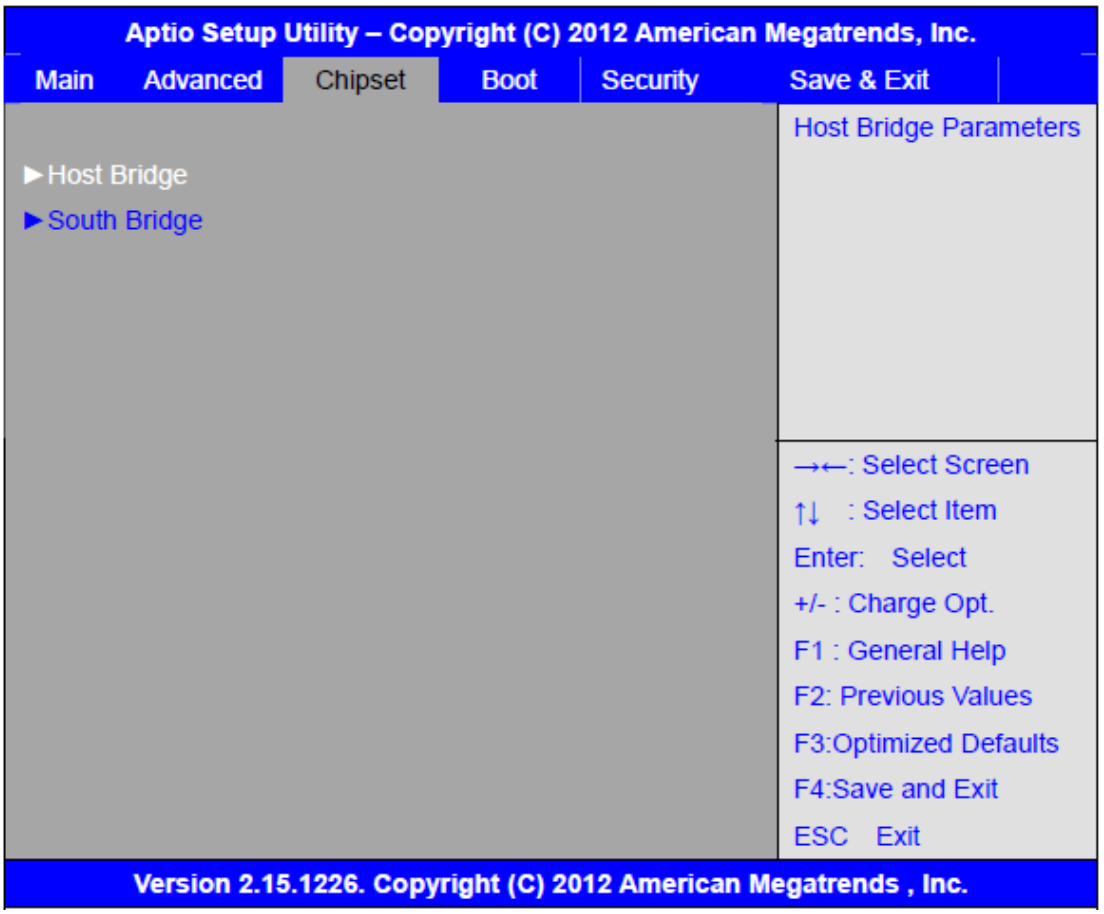
C-state POPDOWN

[Enabled]
[Disabled]

C-state POPUP

[Enabled]
[Disabled]

3.5 Chipset Settings



3.5.1 Host Bridge

►Memory Frequency and Timing

►Intel IGD Configuration

******* Memory Information *******

Memory Frequency	800 MHz(DDR3)
Total Memory	2048 MB
DIMM#0	Not Present
DIMM#1	2048 MB

Memory Frequency and Timing

MRC Fast Boot

[Enabled]

[Disabled]

Max TOLUD

[Dynamic]

[1GB]

[1.25GB]

[1.5GB]

[1.75GB]

[2GB]

[2.25GB]

[2.5GB]

[2.75GB]

[3GB]

[3.25GB]

Intel IGD Configuration

IGFX – Boot Type

[VBIOS Default]

[VGA]

[LVDS]

[HDMI]

[VGA + LVDS]

[VGA + HDMI]

[LVDS + HDMI]

LCD Panel Type

[VBIOS Default]

[640x480，18bit]

[800x480，18bit]

[800x600，18bit]

[1024x600，18bit]

[1024x768，18bit]

[1280x768，18bit]

[1280x800，18bit]

[1280x1024，18bit]

[1366x768，18bit]

[1024x768，24bit]

[1280x768，24bit]

[1280x800，24bit]

[1280x1024，24bit]

[1366x768，24bit]

Panel Scaling

[Auto]

[Force Scaling]

[off]

Active LFP	[Maintain Aspect Ratio]
IGD Clock Source	**[LVDS]** [No LVDS] [EDP]
Fixed Graphics Memory	**[External Clock]** [Internal Clock]
ALS Support	[128MB] [256MB]
Back light Control	**[Disabled]** [Enabled]
Back light Logic	**[DC]** [PWM]
Back light Control Lev	**[Positive]** [Negative]
	[Auto] [Disabled] [Level 8] [Level 1] [Level 2] [Level 3] [Level 4] [Level 5] [Level 6] [Level 7] [Level 8] [Level 9] [Level 10] [Level 11] [Level 12] [Level 13] [Level 14] [Level 15]

3.5.1 South Bridge

TPT Devices
PCI Express Root Port 0
PCI Express Root Port 1
PCI Express Root Port 2
PCI Express Root Port 3
DMI Link ASPM Control
[Enable]
[Disabled]
PCI-Exp. High Priorit
[Disabled]
[Enabled]
High Precision Event Timer Configuration
High Precision Timer
[Enabled]
[Disabled]
SLP_S4 Assertion Widt
[1-2 Seconds]
[2-3 Seconds]
[3-4 Seconds]
[4-5 Seconds]

3.6 Boot Settings

Setup Prompt Timeout [1]
Bootup Numlock State
[On]
[off]
Quiet Boot
[Disabled]
[Enabled]
Fast Boot
[Enabled]
[Disabled]
Skip VGA
[Enabled]
[Disabled]
Skip USB
[Disabled]
[Enabled]
Skip PS2
[Disabled]
[Enabled]
CSM16 Module Version 07.69
Gatea20 Active
[Upon Request]
[Always]
Option ROM Messages
[Force BIOS]
[Keep Current]
Interrupt 19 Capture
[Immediate]
[Postponed]
Boot Option #1
Boot Option #2
…..
Sets the system boot order
Hard Drive BBS Priorities [SATA PM:***…]
Boot Option #1
SATA PM:***…
******
Disabled
CSM Parameters
Launch CSM
[Always]
[Never]
Boot option filter
[UEFI and Legacy]
[Legacy only]
[UEFI only]
Launch PXE OpROM poli
[Do not Launch]
[UEFI only]
[Legacy only]
Launch Storage OpROM
[Legacy only]
[Do not Launch]
[UEFI only]

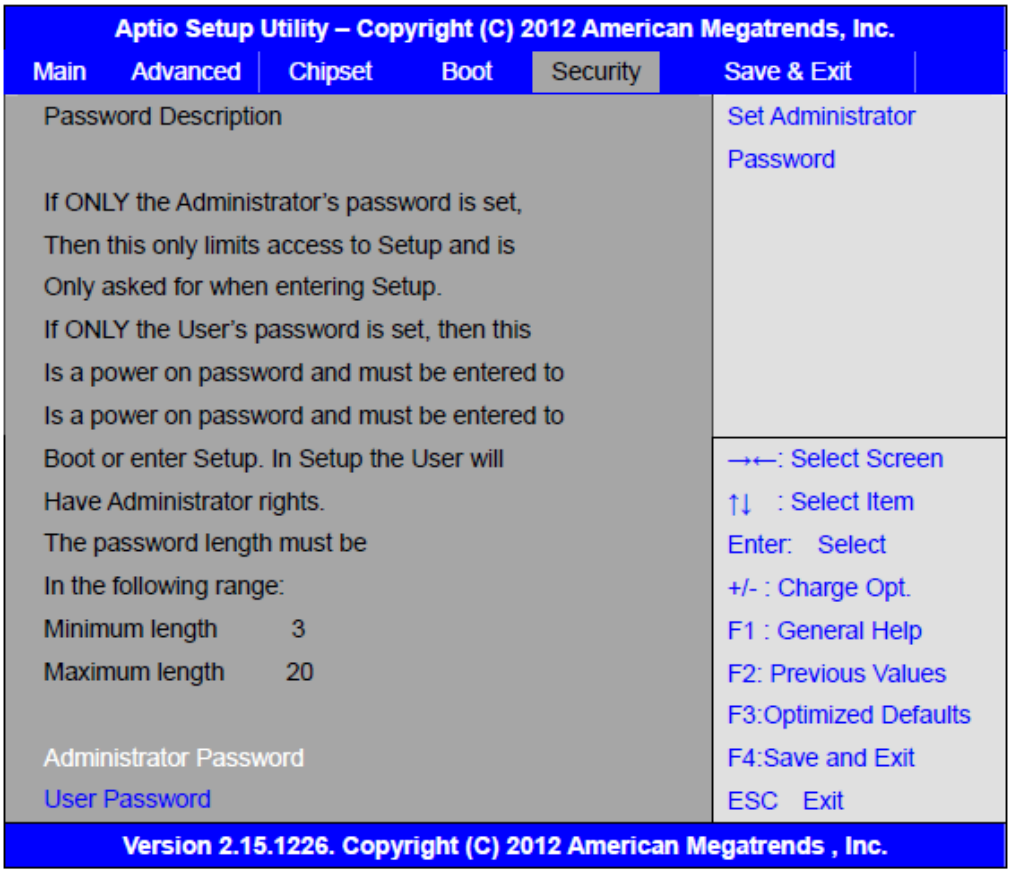
Launch Video OpROM po

[Do not Launch]
[UEFI only]
[Legacy only]

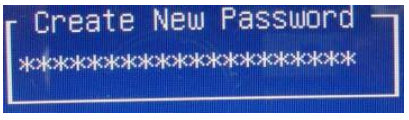
Other PCI device ROM

[UEFI OpROM]
[Legacy OpROM]

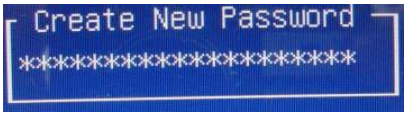
3.7 Security Settings



3.7.1 Administrator Password



3.7.2 User Password



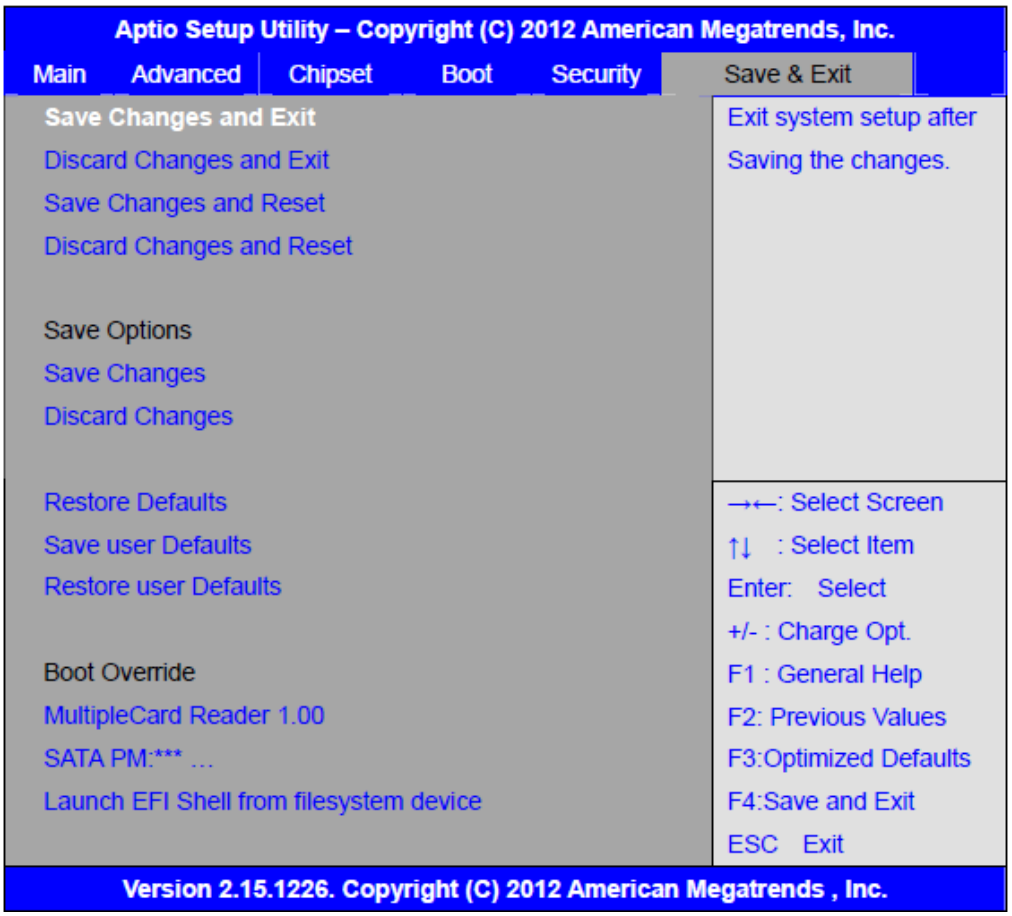
Type the password with up to 20 characters and then press <Enter> key. This will clear all previously typed CMOS passwords. You will be requested to confirm the password. Type the password again and press <Enter> key. You may press <Esc> key to abandon password entry operation.

To clear the password, just press <Enter> key when password input window pops up. A confirmation message will be shown on the screen as to whether the password will be disabled. You will have direct access to BIOS setup without typing any password after system reboot once the password is disabled.

Once the password feature is used, you will be requested to type the password each time you enter BIOS setup. This will prevent unauthorized persons from changing your system configurations.

Also, the feature is capable of requesting users to enter the password prior to system boot to control unauthorized access to your computer. Users may enable the feature in Security Option of Advanced BIOS Features. If Security Option is set to System, you will be requested to enter the password before system boot and when entering BIOS setup; if Security Option is set to Setup, you will be requested for password for entering BIOS setup.

3.8 Save & Exit Settings



Save Changes and Exit

Save & Exit Setup save Configuration and exit?

[Yes]
[No]

Discard Changes and Ext

Exit Without Saving Quit without saving?

[Yes]
[No]

Save Changes and Reset

Save & reset Save Configuration and reset?

[Yes]
[No]

Discard Changes and Reset

Reset Without Saving Reset without saving?

[Yes]
[No]

Save Changes

Save Setup Values Save configuration?

[Yes]
[No]

Discard Changes

Load Previous Values Load Previous Values?

[Yes]
[No]

Restore Defaults

Load Optimized Defaults Load optimized Defaults?

[Yes]
[No]

Save user Defaults

Save Values as User Defaults Save configuration?

[Yes]
[No]

Restore user Defaults

Restore User Defaults Restore User Defaults?

[Yes]
[No]

Launch EFI Shell from filesystem device

WARNING Not Found

[ok]

Chapter 4 Installation of Drivers

This chapter describes the installation procedures for software and drivers under the windows 7. The software and drivers are included with the motherboard. The contents include **Intel chipset driver, VGA driver, LAN drivers, Audio driver Installation instructions are given below.**

> **Important Note:**
> After installing your Windows operating system, you must install first the Intel Chipset Software Installation Utility before proceeding with the installation of drivers.

4.1 Intel Chipset Driver

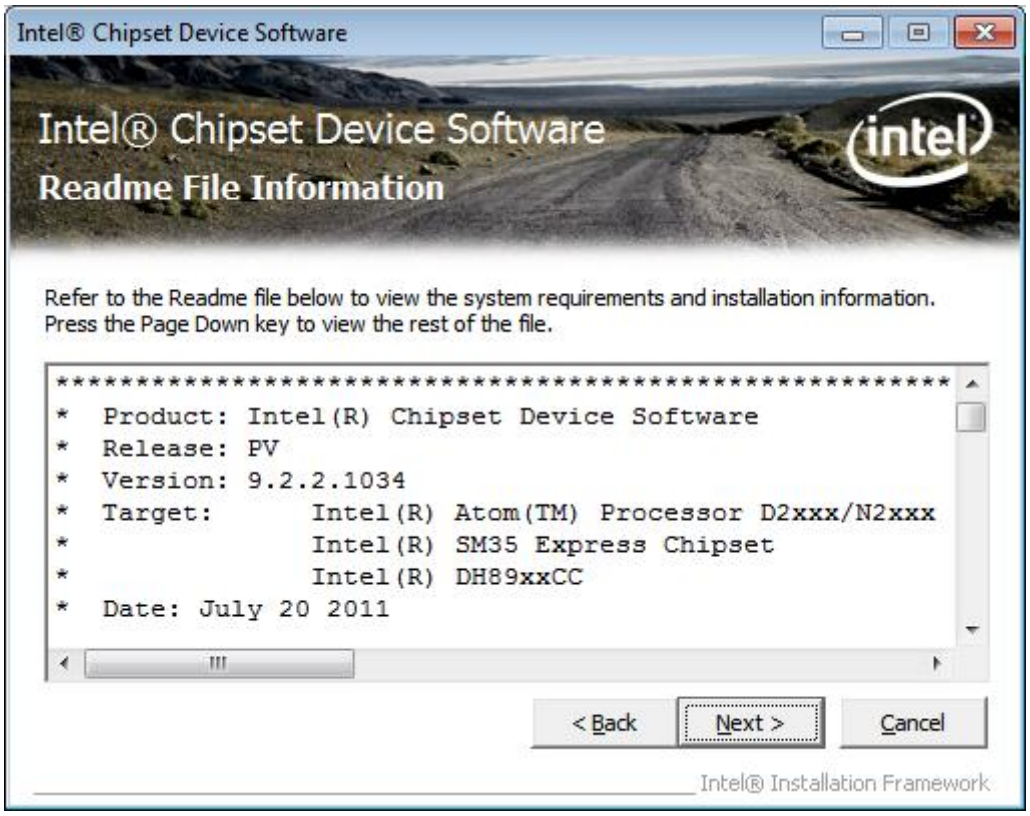
To install the Intel chipset driver, please follow the steps below.

Step 1. Select **Intel (R) Chipset NM10 Express** from the list

Step 2. Click **Next** to setup program.

Step 3. Read the license agreement. Click **Yes** to accept all of the terms of the license agreement.

Step 4. Click **Next** to continue.



Step 5. Click **Next**.

Step 6. Select **Yes, I want to restart this computer now**. Click **Finish**, then remove any installation media from the drives.

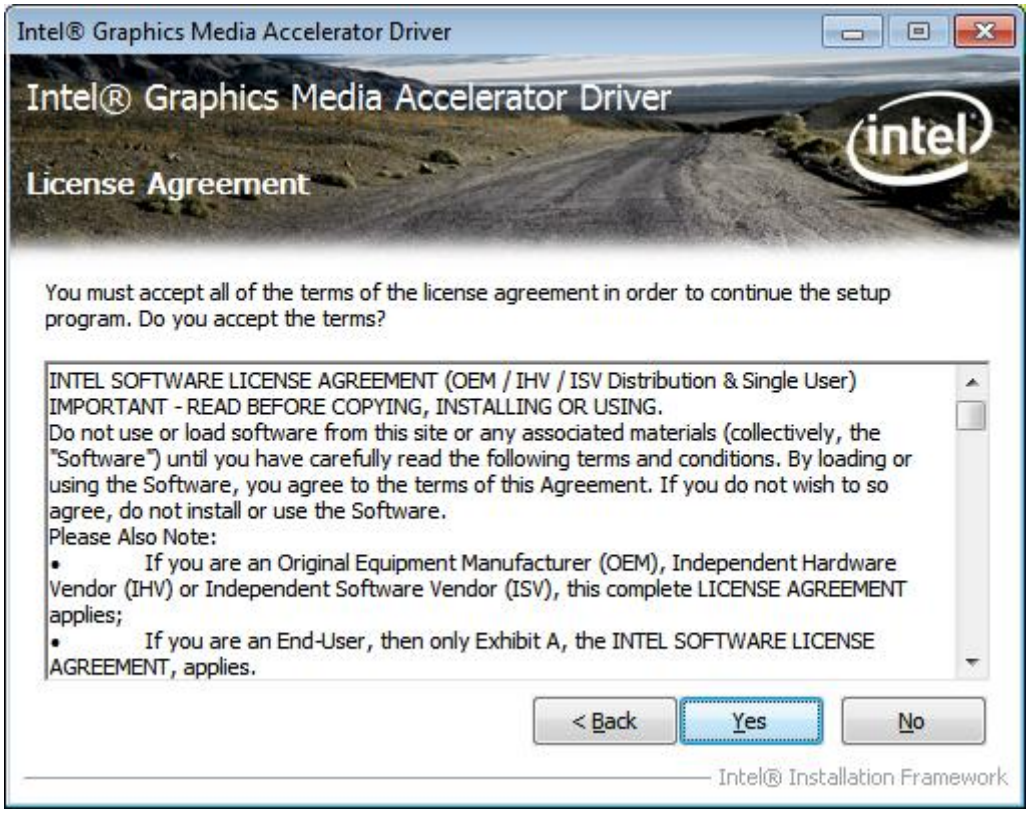
4.2 Intel Graphics Media Accelerator Driver

To install the VGA drivers, follow the steps below to proceed with the installation.

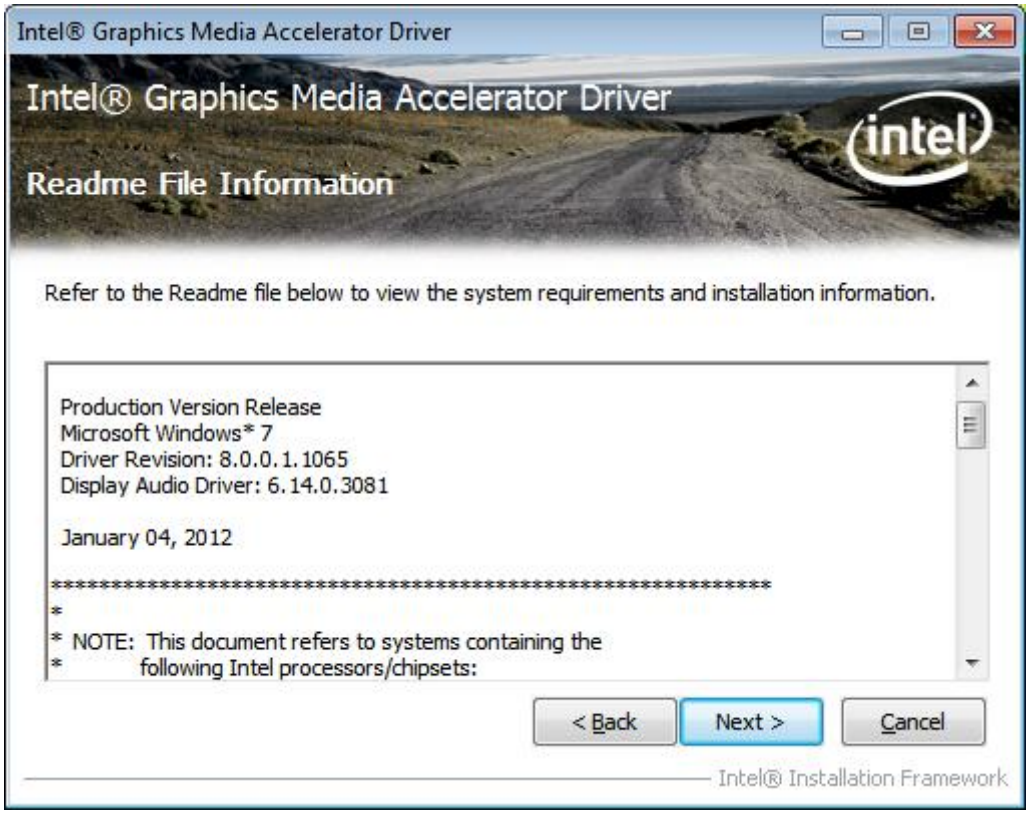
Step 1.Select **Intel(R) VGA Chipset** from the list.

Step 2. Tick **Automatically run WinSAT and enable the Windows Aero desktop theme(if supported).** Click **Next.**

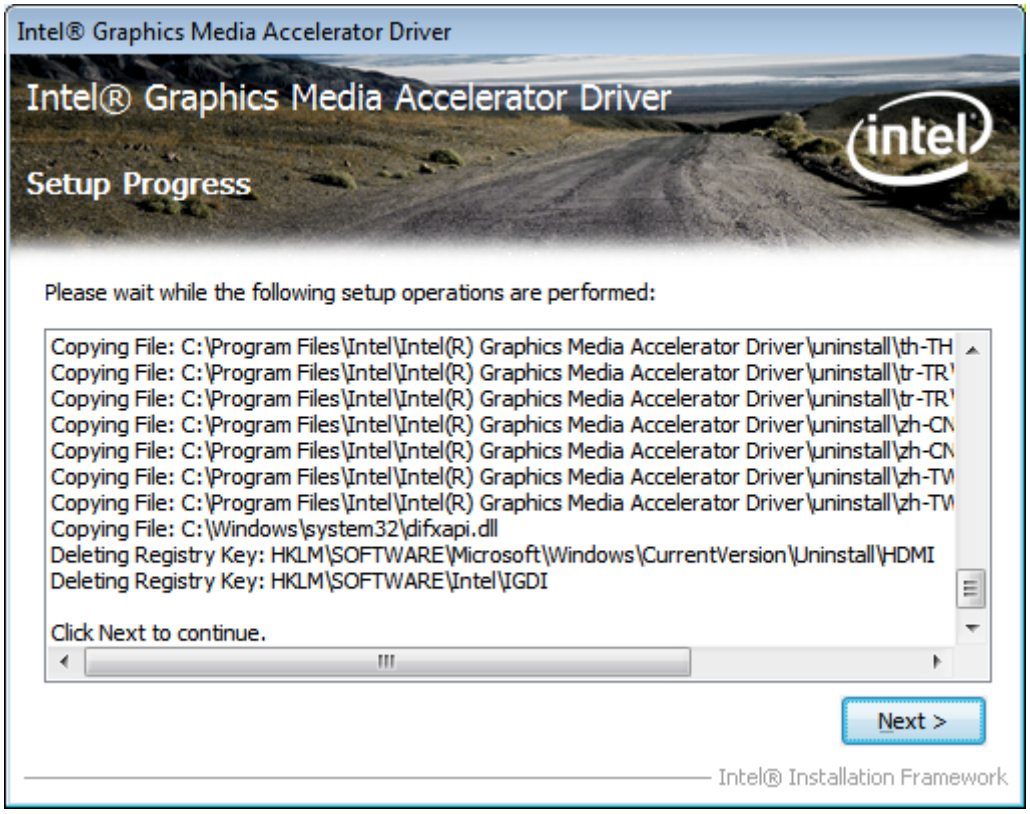
Step 3. Read license agreement. Click **Yes.**



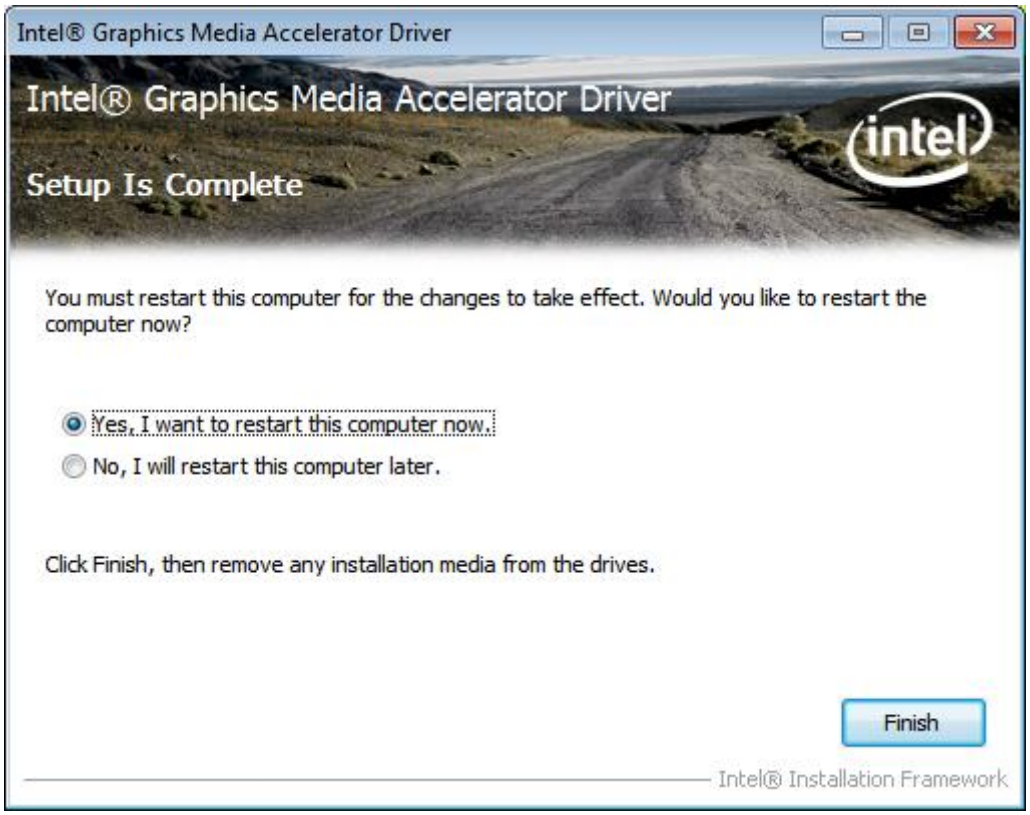
Step 4. Click **Next**.



Step 5. Click **Next**.



Step 6. To restart the computer, select **Yes, I want to restart this computer now**. Then click **Finish**.

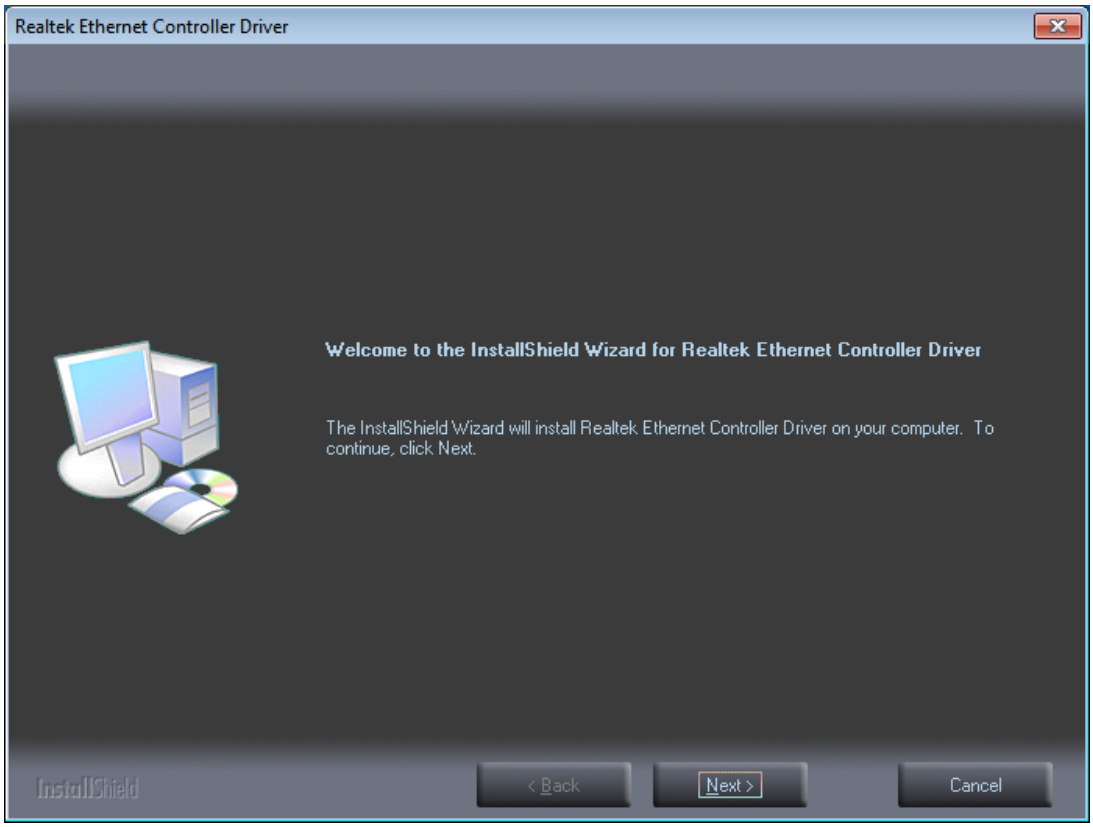


4.3 Intel (R) Network Adapter

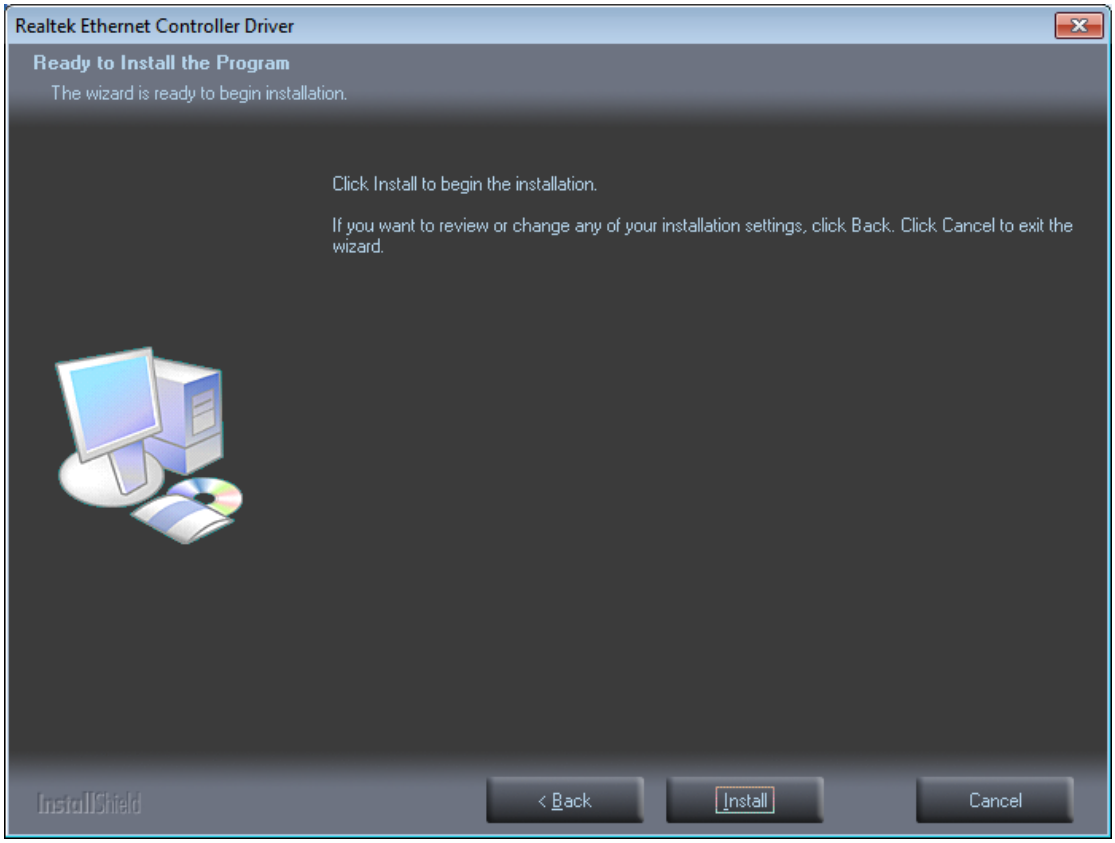
To install the Intel (R) Network Adapter device driver, please follow the steps below.

Step 1. Select **LAN Driver** from the list.

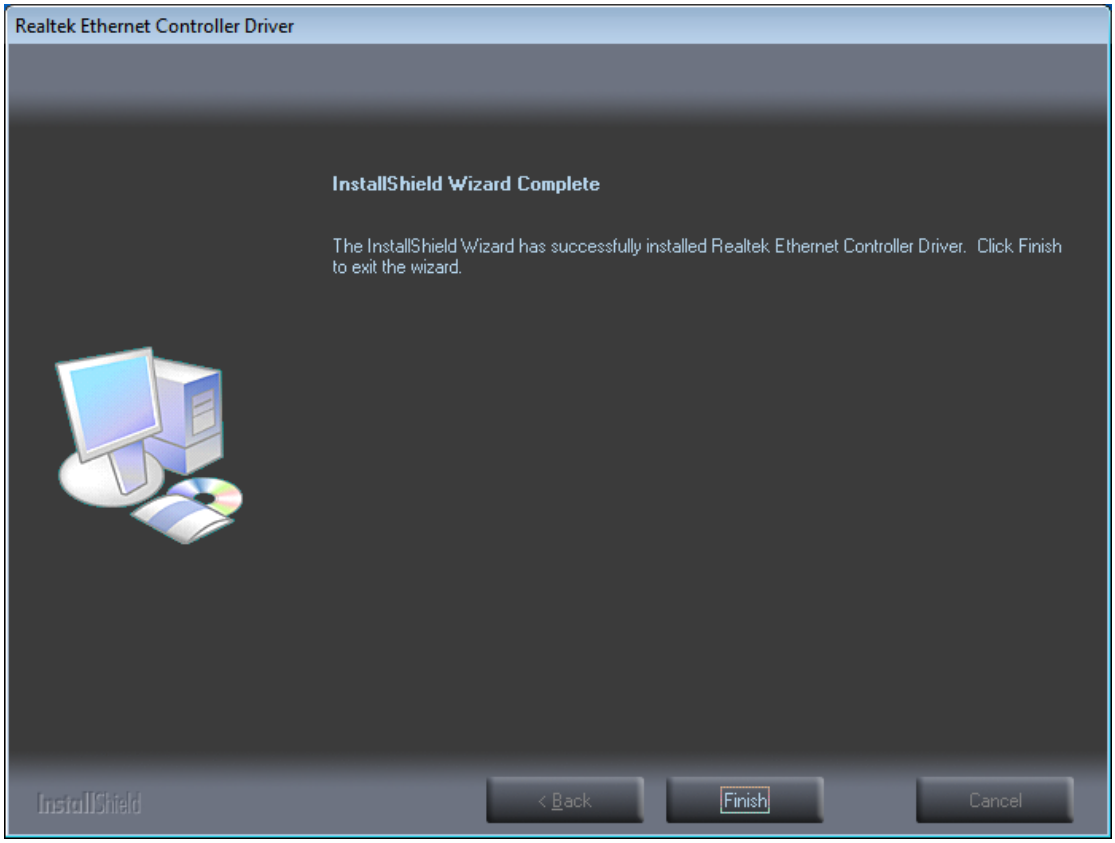
Step 2. Click **Next** to continue.



Step 3. Click **Install** to begin the installation.



Step 5. Click **Finish** to exit the wizard.

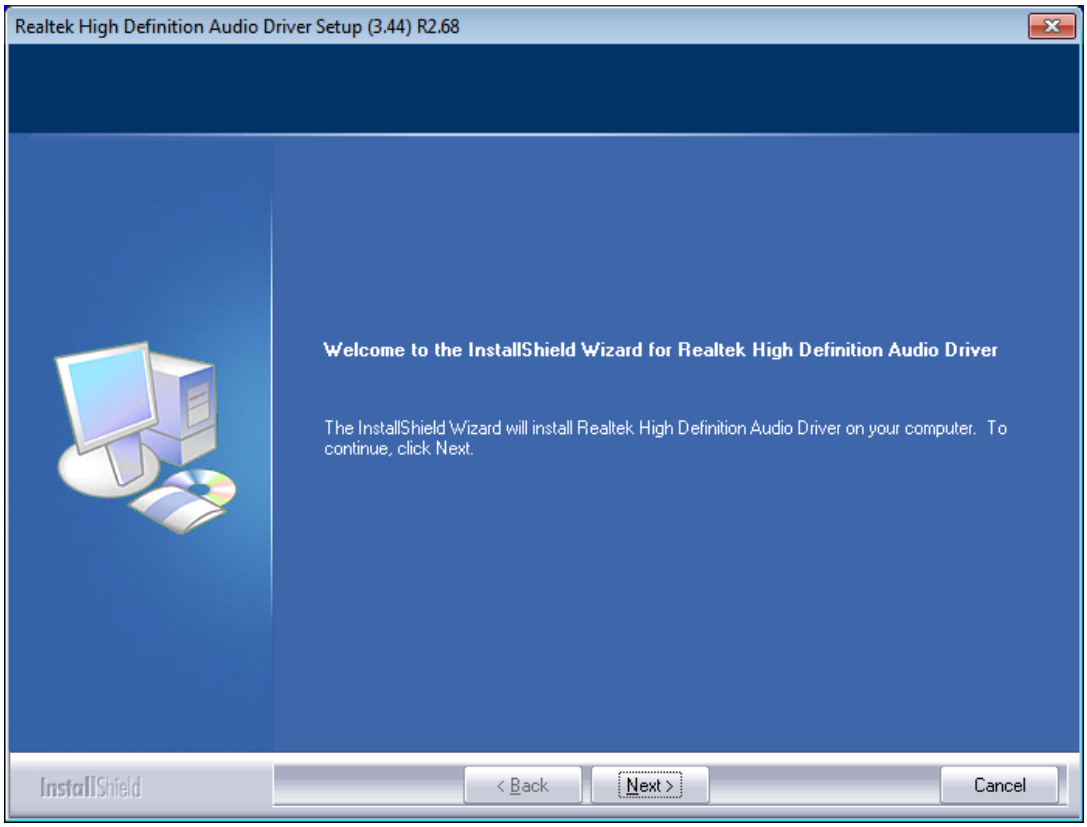


4.4 Realtek ALC662 HD Audio Driver Installation

To install the Realtek ALC662 HD Audio Driver, please follow the steps below.

Step 1. Select **Realtek AL662 Audio Driver** from the list

Step 2. Click **Next** to continue.



Step 3. Click **Yes, I want to restart my computer now**. Click **Finish** to complete the installation.