LPC P-cap Panel PC 2x Series
With Gen 7/6 Core-i7/5/3
User Manual

Published in Taiwan

Release Date : Sep 2020

Revision : V3.1

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 ELGENS Co., Ltd. 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:
☐ Panel Mounting Kits
☐ 3 Pin Male Terminal Block
☐ Optional Adapter
☐ Other._____(please specify)

Safety Precautions

Follow the messages below to avoid 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

ELGENS CO., LTD
LPC P-cap Series User Manual

Chapter 1   Getting Started

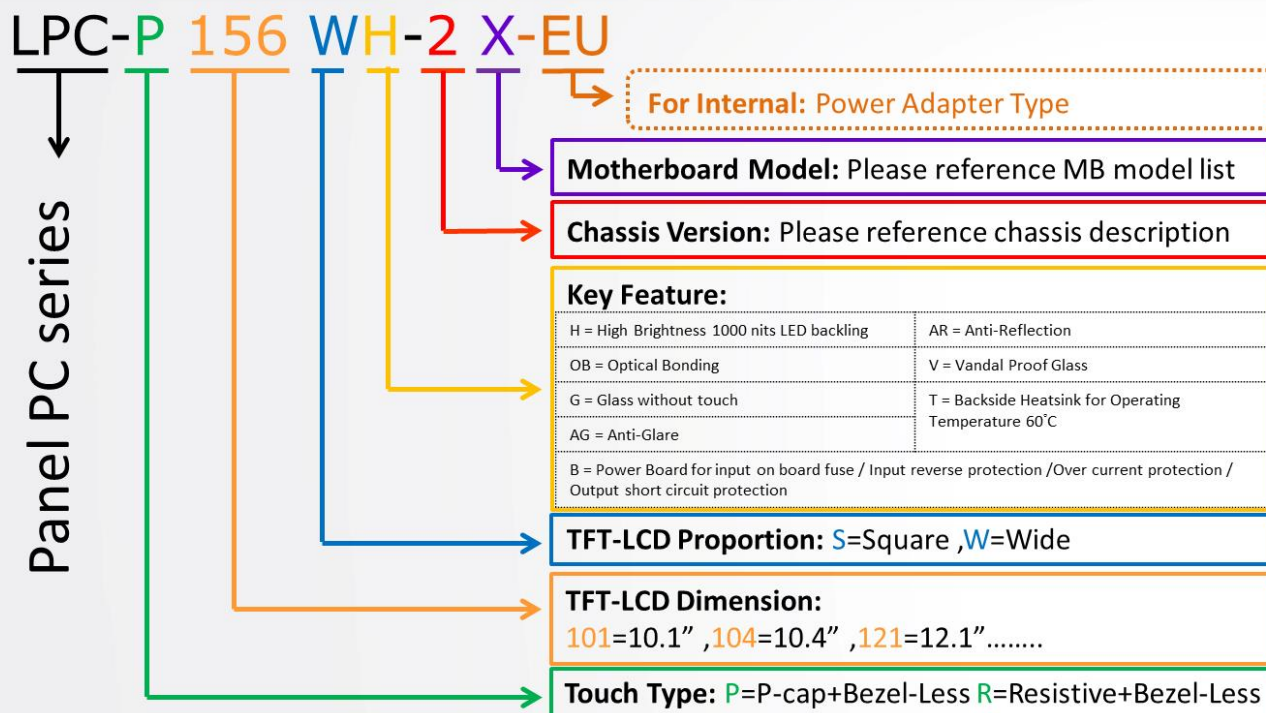## 1.1   Brief Description of LPC P-cap Series

The LPC P-cap 2X series is a power-optimized and delivers robust performance-per-watt for embedded HMI, powered by a Gen 7/6 Core-i7/5/3/Celeron U-Series processor.   It comes with a Bezel-Free design, mSATA slot and a SATA 2.5-inch lockable HDD tray, up to 16GB DDR4 memory, audio jack, 2 Ethernet, DC input, and 4 USB 3.0 ports. The unit supports Win 7 Pro/ WES7 / Win 8 / Win 10. (Gen 7 CPU is only for Win10)   The fanless touch panel computer is ideal for use as Web Browser, Terminal and HMI at all levels of automation control.

1.2   System Specifications

Model Number	LPC-P121S-3X	LPC-P150S-2X	LPC-P156W-2X	LPC-P170S-2X
Max Resolution	1024*768	1024*768	1920*1080	1280*1024
Color	16.7M	16.2M	16.2M	16.7M
Luminance	350 nits	420 nits	450 nits	350 nits
View Angle	160/160	160/160	170/170	160/140
Contrast Ratio	800	800	800	800
Model Number	LPC-P173W-2X	LPC-P185W-2X	LPC-P190S-2X	LPC-P215W-2X
Max Resolution	1920*1080	1920*1080	1280*1040	TBC
Color	16.7M	16.7M	16.7M	TBC
Luminance	400 nits	350 nits	350 nits	TBC
View Angle	140/160	189/189	160/170	TBC
Contrast Ratio	600	1000	1000	TBC

Computing	
Processor	Intel® KBL ULT i7-7600U/i5-7300U/i3-7100U/Celeron 3965U Processor
	Intel® SKL ULT i7-6600U/i5-6300U/i3-6100U/Celeron 3955U Processor
System Memory	1 x SO-DIMM, up to 16 GB DDR4
Storage	2 x SATA 6Gb/s ports (1 x lockable HDD tray)
	1 x mSATA 6Gb/s slot (shared with Mini-PCIe2)
	12.1'' is only with CFast card, not 2.5 HDD
External I/O Port	4 x USB 3.0
	2 x GbE LAN (LAN1: Intel® I219LM /LAN2: Intel® I210-AT)
	1 x Display Port
	1 x HDMI

ELGENS CO., LTD
LPC P-cap Series User Manual

	3 x RS-232 (COM2/3/4)
	1 x RS-485, (COM 1 , adjustable to RS-232/422 by BIOS)
	1 x Audio
	1 x Power press button
	1 x 3-Pin Power Input
Expansion Slots	None
OS support	Win 7 Pro/ WES7 / Win 8 / Win 10 (Gen6/7)
	Win 10 (Gen 7)
Touch Screen	
Type	USB P-cap Touch
Light Transmission	90%
Power Supply	
Power Input	■ DC9~36V Wide Range Power Input
	■ Input on board fuse
	■ Input reverse protection
	■ Over current protection
	■ Output short circuit protection
Mechanical	
Construction	Aluminum Heatsink for 45W
IP Rating	Front Panel compliant IP65
Mounting	Panel/VESA
Environmental	
Operating Temperature	-30~70 °C
Storage Temperature	-30~70 °C
Storage Humidity	10~90% @40 °C non-condensing

ELGENS CO., LTD
LPC P-cap Series User Manual

Model Naming Rule

LPC-P 156 WH-2 X-EU

For Internal: Power Adapter Type

Motherboard Model: Please reference MB model list

Chassis Version: Please reference chassis description

Key Feature:

H = High Brightness 1000 nits LED backling	AR = Anti-Reflection
OB = Optical Bonding	V = Vandal Proof Glass
G = Glass without touch	T = Backside Heatsink for Operating Temperature 60°C
AG = Anti-Glare	
B = Power Board for input on board fuse / Input reverse protection /Over current protection / Output short circuit protection	

TFT-LCD Proportion: S=Square ,W=Wide

TFT-LCD Dimension:
101=10.1" ,104=10.4" ,121=12.1"........

Touch Type: P=P-cap+Bezel-Less R=Resistive+Bezel-Less

Panel PC series

WWW.ELGENS.COM.TW
Customize Flexible Solutions

ELGENS 戎克東方科技
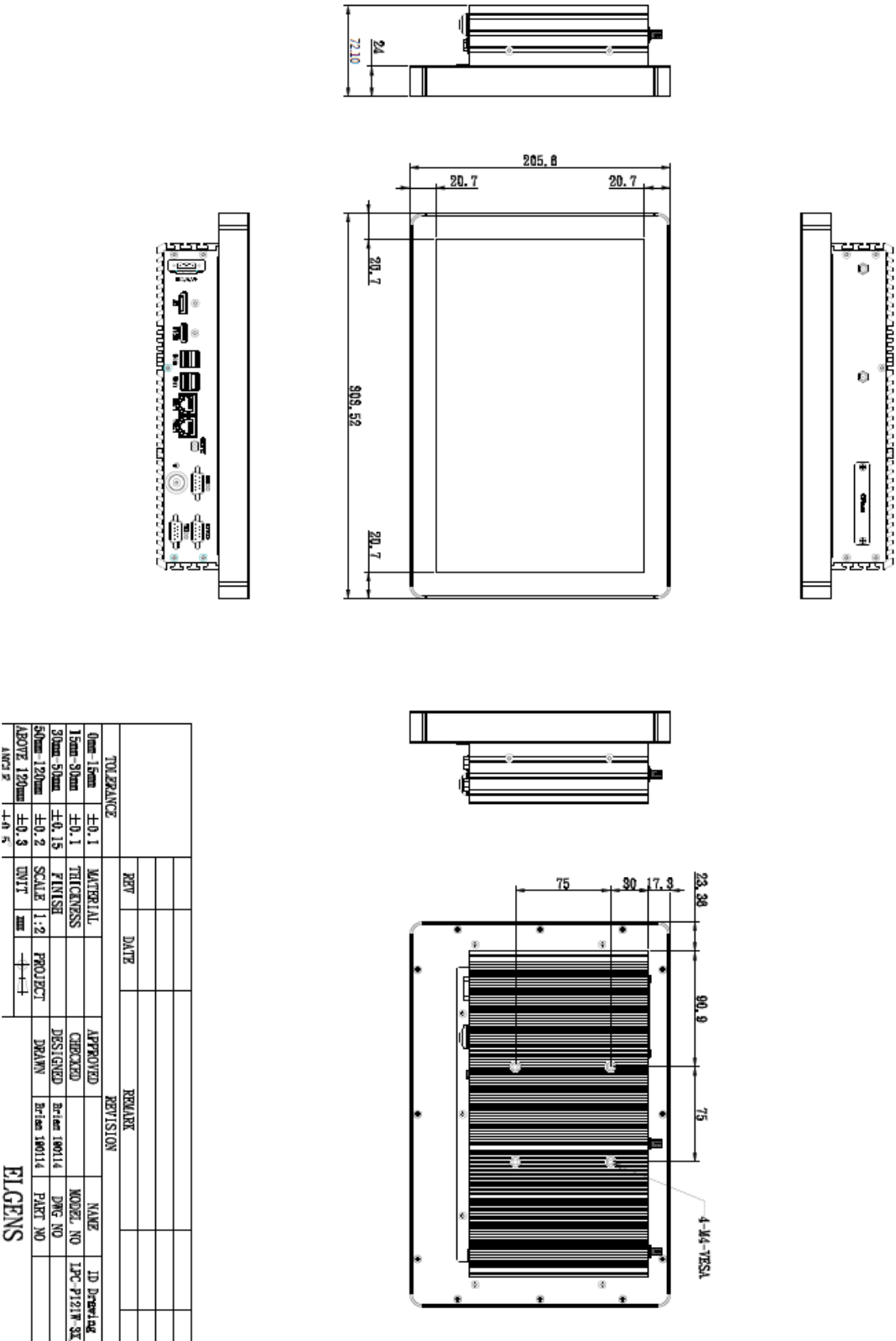
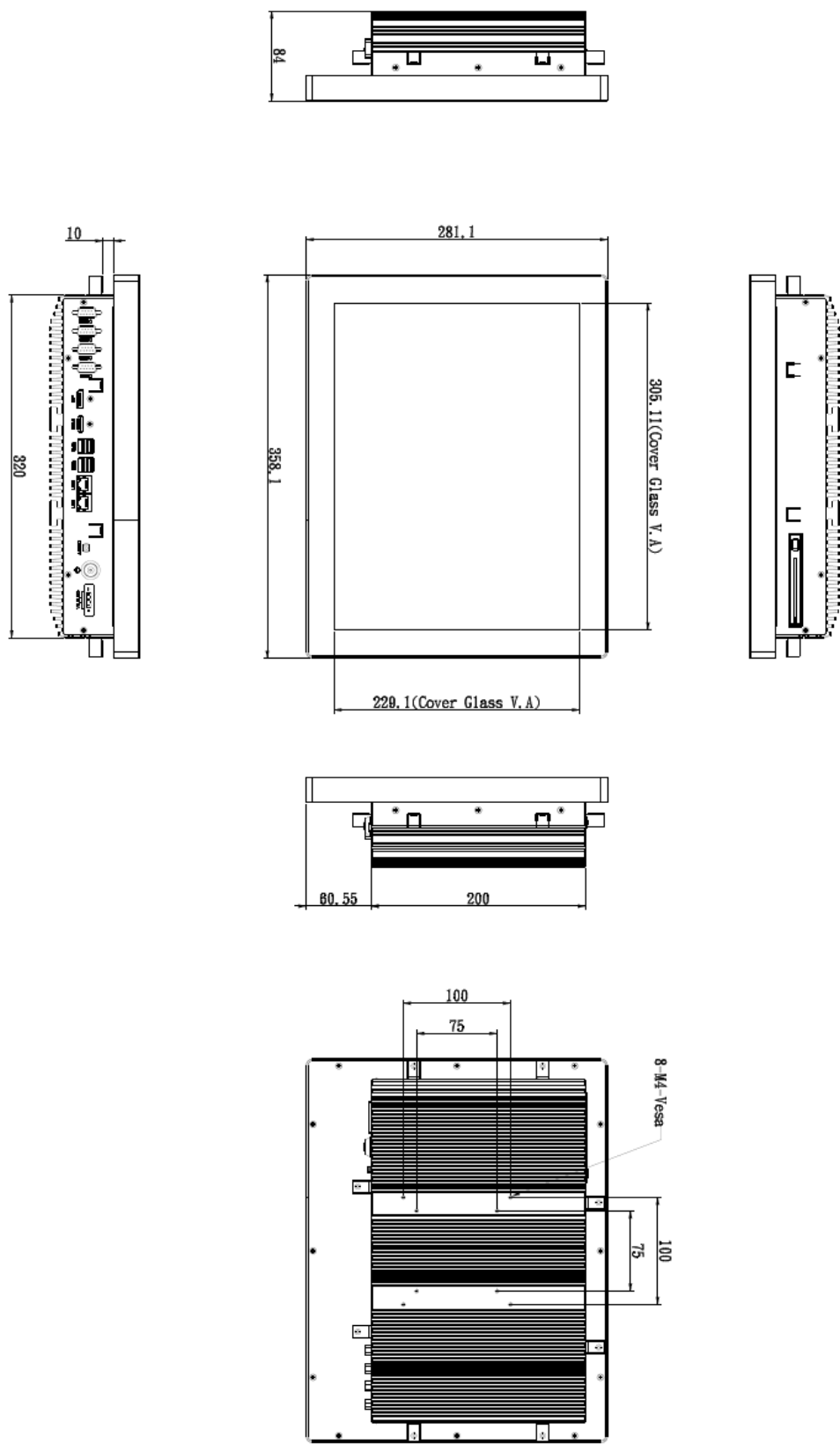| Order Information	
LPC-Pxxxx-**25**	Bezel-Free P-cap Panel PC with **i3-6100U**, DC 9~36V Power Input, including a 3-Pin Power Adapter
LPC-Pxxxx-**26**	Bezel-Free P-cap Panel PC with **i5-6300U**, DC 9~36V Power Input, including a 3-Pin Power Adapter
LPC-Pxxxx-**27**	Bezel-Free P-cap Panel PC with **i7-6600U**, DC 9~36V Power Input, including a 3-Pin Power Adapter
LPC-Pxxxx-**28**	Bezel-Free P-cap Panel PC with **i5-7300U**, DC 9~36V Power Input, including a 3-Pin Power Adapter **(Only work with Win 10)**
WFK-024	Wi-Fi kits w/ cable & Antenna (2.4GHz, 802.11 b/g/n, 1T1R)
WFK-524	Wi-Fi kits w/ cable & Antenna (2.4 & 5GHz, 802.11 a/b/g/n/ac + BT, 2T2R)

ELGENS CO., LTD
LPC P-cap Series User Manual

Order Code	
LPC-PxxxS/W	-H / -OB / -G / -AG / -AR / -B / -V / -T

xxx = size, For example, 10.1" = 101
S = Dimension Ratio Square = 4:3 or 5:4
W= Dimension Ration Wide = 16:9 or 16:10
H = High Brightness 1000 nits LED backlight (Optional to 1600 nits backlight)
OB = Optical Bonding
G = Glass without touch
AG = Anti-Glare
AR = Anti-Reflection
V = Vandal Proof Glass
T = Backside Heatsink for Operating Temperature 60°C

1.3   Dimension

LPC-P121S-3X Drawing

ELGENS CO., LTD
LPC P-cap Series User Manual

LPC-P150S-2X Drawing

Drawing dimensions include: 84, 10, 320, 281.1, 358.1, 305.11(Cover Glass V.A), 220.1(Cover Glass V.A), 60.55, 200, 100, 75, 75, 100, 8-M4-Vesa

TOLERANCE				
0mm~15mm	±0.1			
15mm~30mm	±0.1	MATERIAL	REV	
30mm~50mm	±0.15	THICKNESS		
50mm~120mm	±0.2	FINISH	DATE	
ABOVE 120mm	±0.3	SCALE 1:2		
ANGLE	±0.5°	UNIT mm		

REV	DATE	REMARK
		REVISION
MATERIAL	APPROVED	NAME
THICKNESS	CHECKED	MODEL NO
FINISH	DESIGNED	DWG NO LPC-P150S-2?
PROJECT	DRAWN Brian 171225	PART NO
	DRAWN Brian 171225	ID drawing

ELGENS

ELGENS CO., LTD
LPC P-cap Series User Manual

LPC-P156W-2X Drawing

ELGENS CO., LTD
LPC P-cap Series User Manual

LPC-P170S-2X Drawing

The drawing shows multiple orthographic views with dimensions:
- 84 (top side view)
- 10, 320 (left side view)
- 324.74 (top width)
- 392.32
- 338.92(Cover Glass V.A)
- 271.34(Cover Glass V.A)
- 78.9, 200 (bottom side view)
- 100, 75, 100, 75 (rear view VESA mounting)
- 8-M4-Vesa

Title block:

TOLERANCE					
0mm~15mm	±0.1				
15mm~30mm	±0.1				
30mm~50mm	±0.15				
50mm~120mm	±0.2				
ABOVE 120mm	±0.3				
ANGLE	±0.5				

		REMARK			
MATERIAL		APPROVED		NAME	ID Drawing
THICKNESS		CHECKED		MODEL NO	LPC-P170S-2T
FINISH		DESIGNED	Brien 181010	DWG NO	
SCALE 1:2		DRAWN	Brien 181010	PART NO	A1
UNIT mm			REVISION		
PROJECT					

REV   DATE

ELGENS

ELGENS CO., LTD
LPC P-cap Series User Manual

LPC-P173W-2X Drawing

ELGENS CO., LTD
LPC P-cap Series User Manual

LPC-P185W-2X Drawing

84

10

275.58

320

450.45

410.8(Cover Glass V.A)

231.4(Cover Glass V.A)

52.3   200

100

75

8-M4-Vesa

100

75

LPC-P190S-2X Drawing

		TOLERANCE		REV	DATE	REMARK		NAME	1D Drawing
0mm~15mm	±0.1	MATERIAL					APPROVED	MODEL NO	LPC-P190S-2Y
15mm~30mm	±0.1	THICKNESS					CHECKED	DWG NO	
30mm~50mm	±0.15	FINISH					DESIGNED	Brian 181020	
50mm~120mm	±0.2	SCALE	1:2				DRAWN	Brian 181020	PART NO
ABOVE 120mm	±0.3	UNIT	mm			REVISION			
ANGLE	±0.5	PROJECT						ELGENS	A1

ELGENS CO., LTD
LPC P-cap Series User Manual

1.4   General Rear IO Placement
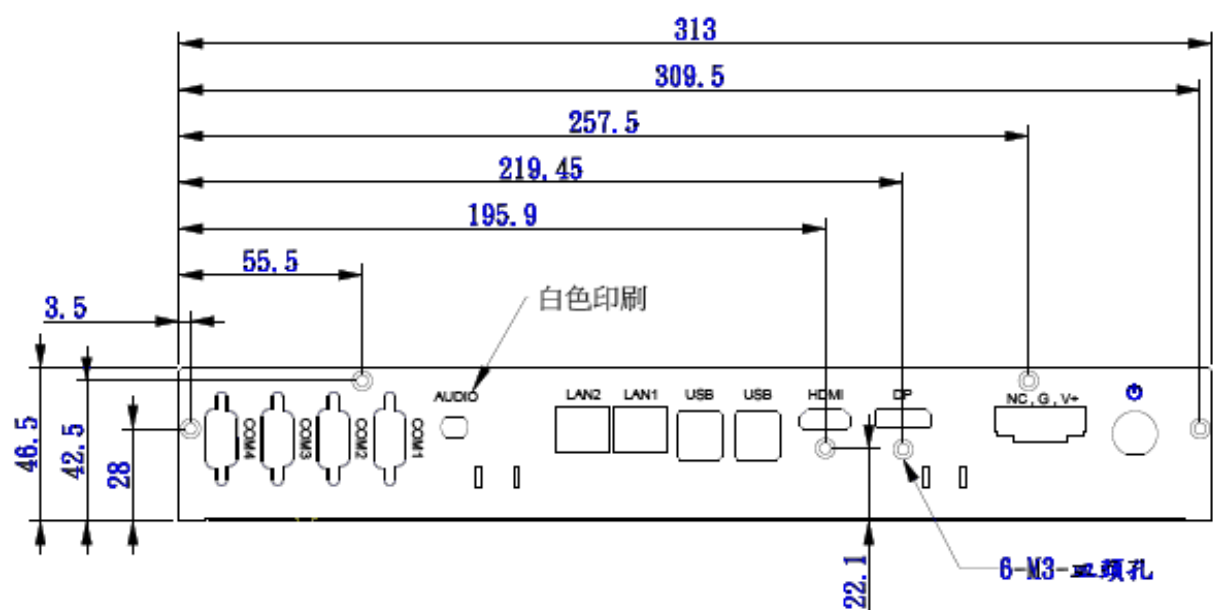
COM 1 is default RS-485 as below pin definition, adjustable to RS-RS232/422 by BIOS.

Pin No	Color	RS-232	RS-422	RS-485
1	Brown	DCD	422 TXD-	485 TXD-
2	Red	SIN	422 TXD+	485 TXD+
3	Orange	SOUT	422 RXD+	NC
4	Yellow	DTR	422 RXD-	NC
5	Black	GND	GND	GND
6	Green	DSR	NC	NC
7	Blue	RTS	NC	NC
8	Purple	CTS	NC	NC
9	Grey	VCC	VCC	VCC
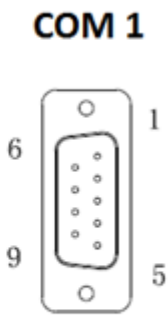
Power input terminal block pin definition is as below.
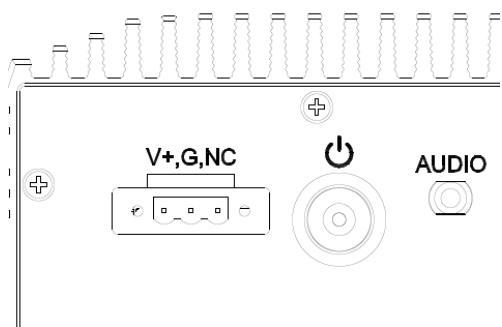
1.5   Front View of LPC- Pcap Series

1.6   Rear View of LPC- Pcap Series

ELGENS CO., LTD
LPC P-cap Series User Manual
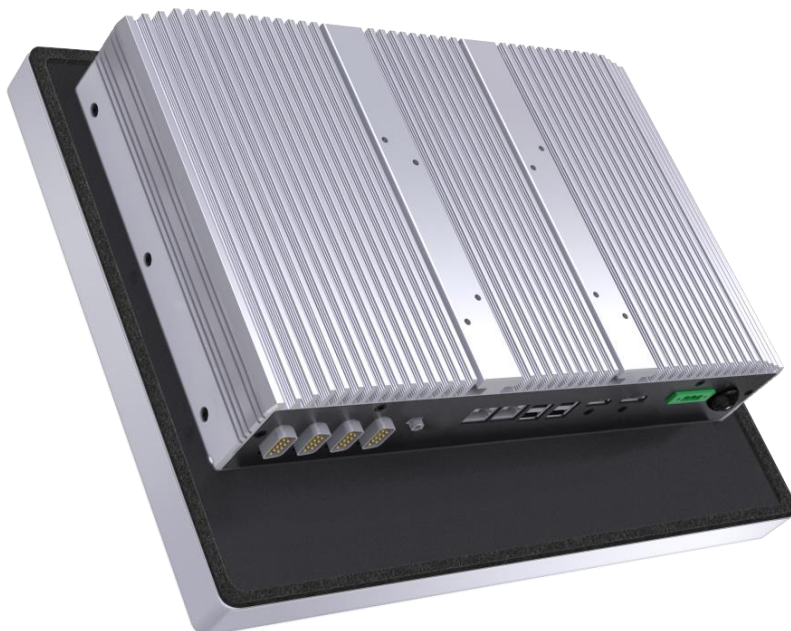
1.7   Top / Bottom IO View
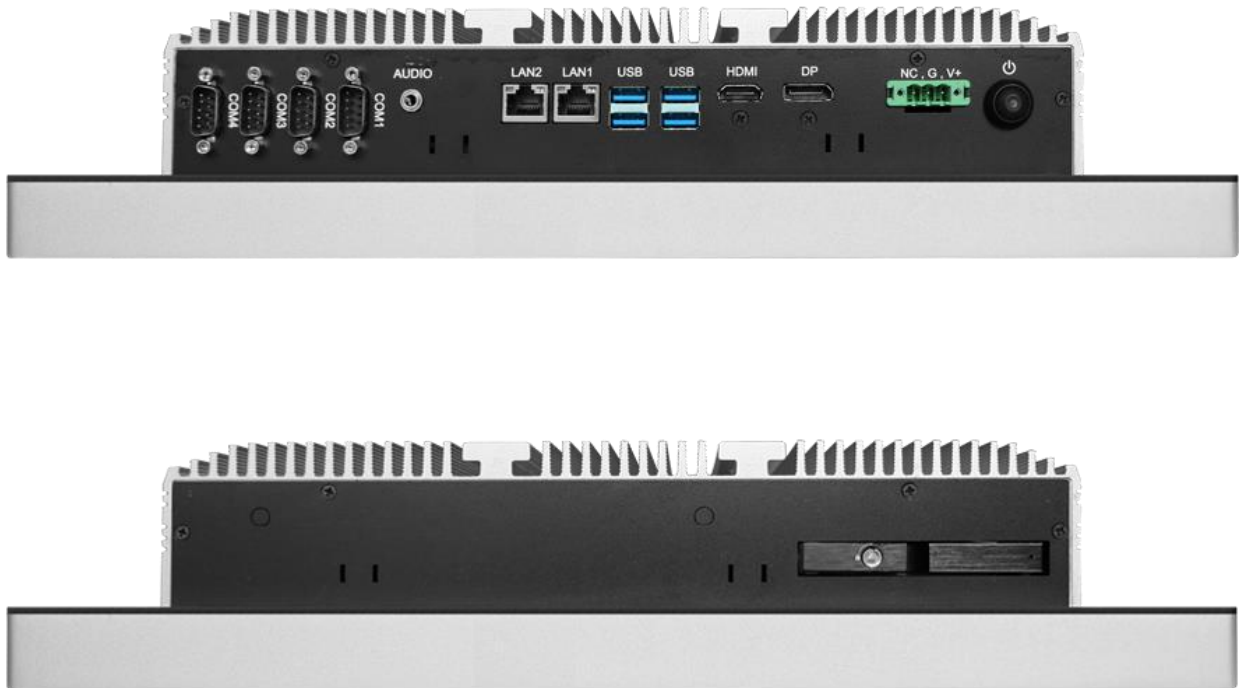
1.8   Installation of HDD

Chapter 2　　　BIOS Setup

This chapter provides information on the BIOS Setup program and allows users to configure the system for optimal use.

Users may need to run the Setup program when:

- An error message appears on the screen at system startup and requests users to run SETUP.
- Users want to change the default settings for customized features.

Important

- Please note that BIOS update assumes technician-level experience.
- As the system BIOS is under continuous update for better system performance, the illustrations in this chapter should be held for reference only.

2.1　　Entering Setup

Power on the computer and the system will start POST (Power On Self Test) process. When the message below appears on the screen, press <DEL> or <F2> key to enter Setup.

<div align="center">

Press <DEL> or <F2> to enter SETUP

</div>

If the message disappears before you respond and you still wish to enter Setup, restart the system by turning it OFF and On or pressing the RESET button.　You may also restart the system by simultaneously pressing <Ctrl>, <Alt>, and <Delete> keys.

Important

The items under each BIOS category described in this chapter are under continuous update for better system performance. Therefore, the description may be slightly different from the latest BIOS and should be held for reference only.

Control Keys

← →	Select Screen
↑ ↓	Select Item
Enter	Select
+ -	Change Option
F1	General Help
F7	Previous Values
F9	Optimized Defaults
F10	Save & Reset
Esc	Exit

Getting Help

After entering the Setup menu, the first menu you will see is the Main Menu.

Main Menu

The main menu lists the setup functions you can make changes to. You can use the arrow keys (↑↓) to select the item. The on-line description of the highlighted setup function is displayed at the bottom of the screen.

Sub-Menu

If you find a right pointer symbol appears to the left of certain fields that means a sub-menu can be launched from this field. A sub-menu contains additional options for a field parameter. You can use arrow keys (↑↓) to highlight the field and press <Enter> to call up the sub-menu. Then you can use the control keys to enter values and move from field to field within a sub-menu. If you want to return to the main menu, just press the <Esc >.

General Help <F1>

The BIOS setup program provides a General Help screen. You can call up   this screen from any menu by simply pressing <F1>. The Help screen lists the appropriate keys to use and the possible selections for the highlighted item. Press <Esc> to exit the Help screen.

2.2   The Menu Bar

```
                Aptio Setup Utility - Copyright (C) 2017 American Megatrends, Inc.
        Main  Advanced  Boot  Security  Chipset  Power  Save & Exit

        System Date                  [Tue 05/20/2017]        Set the Date. Use Tab to
        System Time                  [10:13:30]              switch between Date elements.

        SATA1                        Empty
        SATA2                        Empty
        mSATA                        Empty

        SATA Mode Selection          [AHCI]

        USB Devices:
              1 Drive, 1 Keyboard, 1 Mouse

        Intel(R) Celeron(R) CPU 3955U @ 2.00GHz
        Processor Speed              2000 MHz              →←: Select Screen
        Processor ID                 0x406E3               ↑↓: Select Item
        BIOS Version                 E98H3IMS V1.0b12 062017  Enter: Select
        Build Type                   64                    +/-: Change Opt.
        Total Memory                  8192 MB (DDR4)       F1: General Help
                                                           F7: Previous Values
                                                           F9: Optimized Defaults
                                                           F10: Save & Reset
                                                           ESC: Exit

                Version 2.18.1263. Copyright (C) 2017 American Megatrends, Inc.
```

▶ Main

Use this menu for basic system configurations, such as time, date, etc.

▶ Advanced

Use this menu to set up the items of special enhanced features.

▶ Boot

Use this menu to specify the priority of boot devices.

▶ Security

Use this menu to set supervisor and user passwords.

▶ Chipset

This menu controls the advanced features of the onboard chipsets.

▶ Power

Use this menu to specify your settings for power management.

▶ Save & Exit

This menu allows you to load the BIOS default values or factory default settings

into the BIOS and exit the BIOS setup utility with or without changes.

2.3   Main
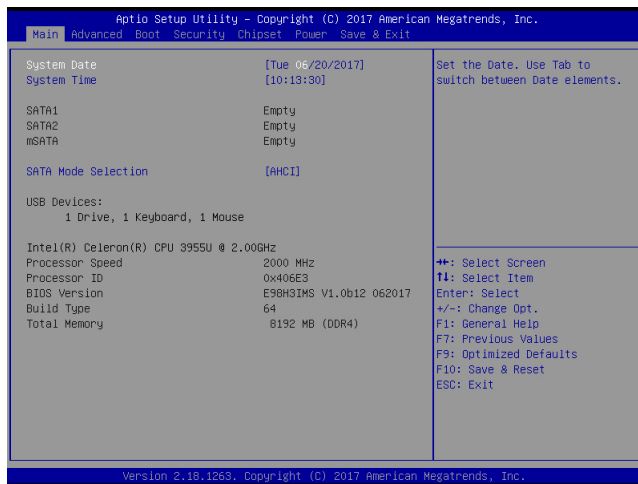
▶ System Date

This setting allows you to set the system date. The date format is <Day>, <Month>

<Date> <Year>.

▶ System Time

This setting allows you to set the system time. The time format is <Hour>

<Minute> <Second>.

▶ SATA Mode Selection

This setting specifies the SATA controller mode.

2.4   Advanced

▶ Full Screen Logo Display

This BIOS feature determines if the BIOS should hide the normal POST messages

with the motherboard or system manufacturer's full-screen logo.

When it is enabled, the BIOS will display the full-screen logo during the boot-up sequence, hiding normal POST messages.

When it is disabled, the BIOS will display the normal POST messages, instead of the full-screen logo.

Please note that enabling this BIOS feature often adds 2-3 seconds of delay to the booting sequence. This delay ensures that th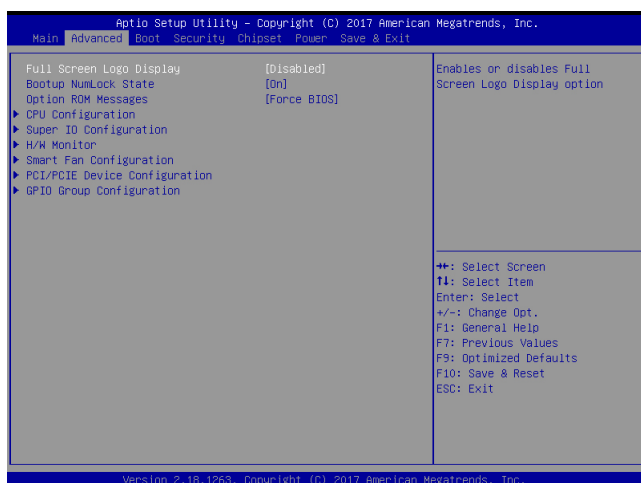e logo is displayed for a sufficient amount of time. Therefore, it is recommended that you disable this BIOS feature for a faster boot-up time.

▶ Bootup NumLock State

This setting is to set the Num Lock status when the system is powered on. Setting

to [On] will turn on the Num Lock key when the system is powered on. Setting to [Off] will allow users to use the arrow keys on the numeric keypad.

▶ Option ROM Messages

This item is used to determine the display mode when an optional ROM is

initialized during POST. When set to [Force BIOS], the display mode used by AMI BIOS is used. Select [Keep Current] if you want to use the display mode of optional ROM.

▶ CPU Configuration

```
                    Advanced

CPU Configuration

Intel(R) Celeron(R) CPU 3955U @ 2.00GHz
Processor ID                    0x406E3
Processor Speed                 2000 MHz
L2 Cache                        256 KB x 2
L3 Cache                        2 MB

Intel Virtualization Technology [Enabled]
Active Processor Cores          [All]
Execute Disable Bit             [Enabled]
Intel(R) SpeedStep(tm)          [Enabled]
C states                        [Enabled]
```
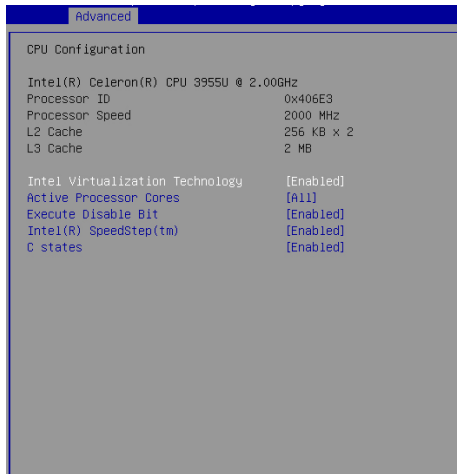
▶ Intel Virtualization Technology

Virtualization enhanced by Intel Virtualization Technology will allow a platform

to run multiple operating systems and applications in independent partitions. With virtualization, one computer system can function as multiple "Virtual" systems.

▶ Active Processor Cores

This setting specifies the number of active processor cores.

▶ Execute Disable Bit

Intel's Execute Disable Bit functionality can prevent certain classes of malicious

"buffer overflow" attacks when combined with a supporting operating system. This functionality allows the processor to classify areas in memory by where application code can execute and where it cannot. When a malicious worm attempts to insert code in the buffer, the processor disables code execution, preventing damage or worm propagation.

▶ Intel SpeedStep

EIST (Enhanced Intel SpeedStep Technology) allows the system to dynamically

adjust processor voltage and core frequency, which can result in decreased average power consumption and decreased average heat production. When disabled, the processor will return the actual maximum CPUID input value of the processor when queried.

▶ C-States

This setting controls the C-States (CPU Power states).

▶ Super IO Configuration
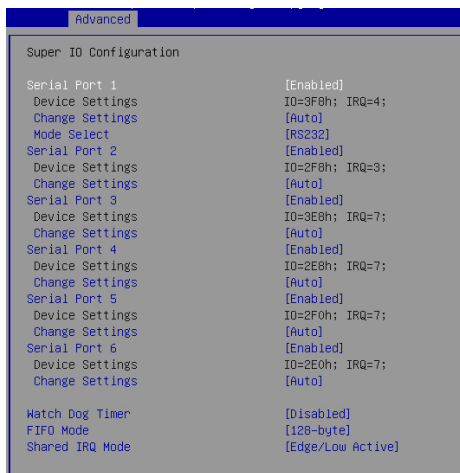
▶ Serial Port 1/ 2/ 3/ 4/ 5/ 6

This setting enables/disables the specified serial port.

▶ Change Settings

This setting is used to change the address & IRQ settings of the specified

serial port.

▶ Mode Select

Select an operation mode for the specified serial port.

▶ Watch Dog Timer

You can enable the system watch-dog timer, a hardware timer that generates

a reset when the software that it monitors does not respond as expected each time the watch dog
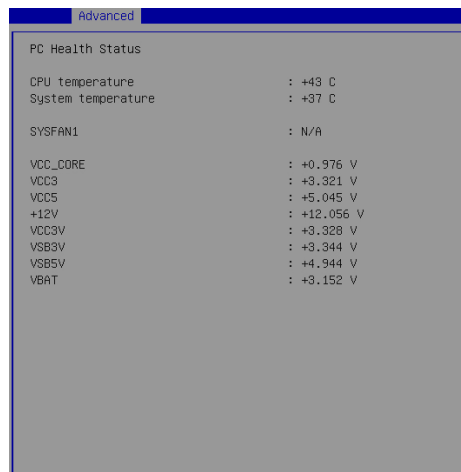
polls it.

▶ FIFO Mode

This setting controls the FIFO data transfer mode.

▶ Shared IRQ Mode

This setting provides the system with the ability to share interrupts among its

serial ports.

▶ H/W Monitor

These items display the current status of all monitored hardware devices/

components such as voltages, temperatures and all fans' speeds.

```
 Advanced

 PC Health Status

 CPU temperature            : +43 C
 System temperature         : +37 C

 SYSFAN1                     : N/A

 VCC_CORE                    : +0.976 V
 VCC3                        : +3.321 V
 VCC5                        : +5.045 V
 +12V                        : +12.056 V
 VCC3V                       : +3.328 V
 VSB3V                       : +3.344 V
 VSB5V                       : +4.944 V
 VBAT                        : +3.152 V
```

▶ Smart Fan Configuration

```
 Advanced

 Configuration Smart FAN

 SYSFAN1                [Disabled]
```

▶ SYSFAN1

This setting enables/disables the Smart Fan function. Smart Fan is an

excellent feature which will adjust the CPU/system fan speed automatically depending on the current CPU/system temperature, avoiding the overheating to damage your system.

▶ PCI/PCIE Device Configuration

▶ Legacy USB Support

Set to [Enabled] if you need to use any USB 1.1/2.0 device in the operating

system that does not support or have any USB 1.1/2.0 driver installed, such as DOS and SCO Unix.
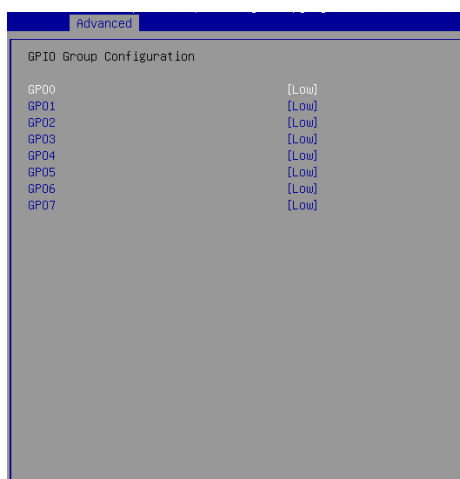
▶ Audio Controller

This setting enables/disables the onboard audio controller.

▶ Launch OnBoard LAN OpROM

These settings enable/disable the initialization of the onboard/onchip LAN

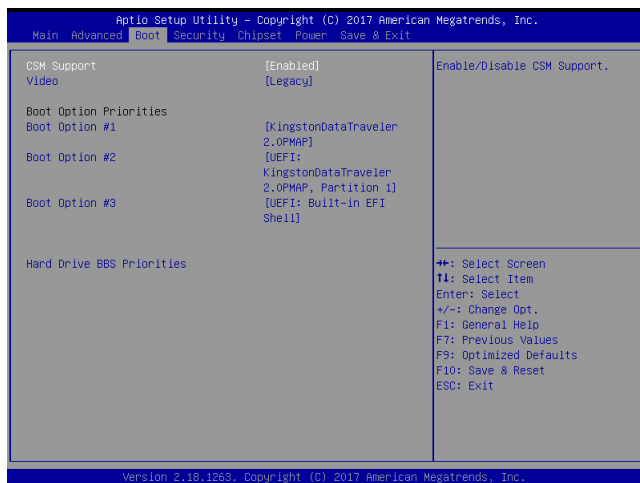Boot ROM during bootup. Selecting [Disabled] will speed up the boot process.

▶ GPIO Group Configuration

▶ GPO0 ~ GPO7

These settings control the operation mode of the specified GPIO.

2.5   Boot

▶ CSM Support

This setting enables/disables the support for Compatibility Support Module, a

part of the Intel Platform Innovation Framework for EFI providing the capability to support legacy BIOS interfaces.

▶ Video

This setting selects the video mode.

▶ Boot Option Priorities

This setting allows users to set the sequence of boot devices where BIOS

attempts to load the disk operating system.

▶ Hard Drive BBS Priorities

This setting allows users to set the priority of the specified devices. First press

<Enter> to enter the sub-menu. Then you may use the arrow keys (↑↓) to select the desired device, then press <+>, <-> or <PageUp>, <PageDown> key to move it up/down in the priority list.

2.6   Security
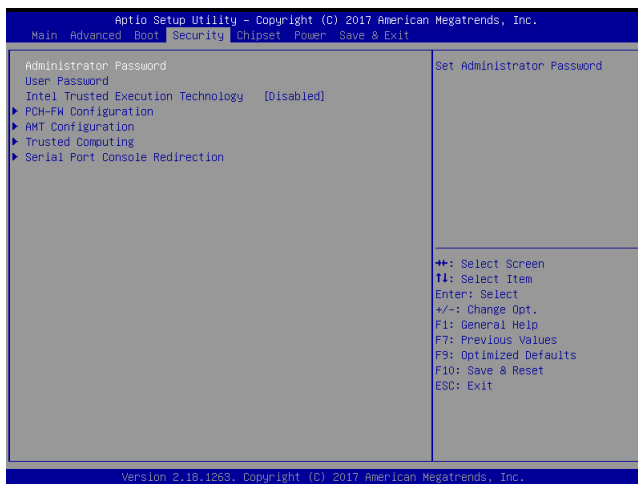
▶ Administrator Password

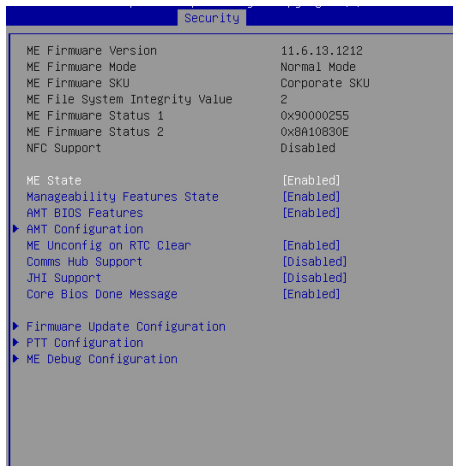Administrator Password controls access to the BIOS Setup utility.

▶ User Password

User Password controls access to the system at boot and to the BIOS Setup

utility.

▶ Intel Trusted Execution Technology

Intel Trusted Execution Technology provides highly scalable platform security in

physical and virtual infrastructures.

▶ PCH-FW Configuration

```
                        Security
ME Firmware Version              11.6.13.1212
ME Firmware Mode                 Normal Mode
ME Firmware SKU                  Corporate SKU
ME File System Integrity Value   2
ME Firmware Status 1             0x90000255
ME Firmware Status 2             0x8A10830E
NFC Support                      Disabled

ME State                         [Enabled]
Manageability Features State     [Enabled]
AMT BIOS Features                [Enabled]
▶ AMT Configuration
ME Unconfig on RTC Clear         [Enabled]
Comms Hub Support                [Disabled]
JHI Support                      [Disabled]
Core Bios Done Message           [Enabled]

▶ Firmware Update Configuration
▶ PTT Configuration
▶ ME Debug Configuration
```

▶ ME Firmware Version, ME Firmware Mode, ME Firmware SKU, System Integrity Value, ME Firmware Status 1, ME Firmware Status 2, NFC Sup-

port

These settings show the firmware information of the Intel ME (Management Engine).

▶ ME Status

This setting enables/disables the ME status.

▶ Manageablility Features States

This setting specifies the Intel ME Manageability Features.

▶ AMT BIOS Features

This setting specifies theAMT BIOS Features.

▶ AMT Configuration

Intel Active Management Technology (AMT) is hardware-based technology for remotely managing and securing PCs out-of-band.

▶ ME Unconfig on RTC Clear

This setting enables/disables ME Firmware Un-configure on RTC clear state.

▶ Comms Hub Support

This setting enables/disables Comms Hub Support.

▶ JHI Support

This setting enables/disables JHI Support.

▶ Core BIOS Done Message

This setting enables/disables the Core BIOS Done Message.

▶ Firmware Update Configuration

▶ ME FW Image Re-Flash

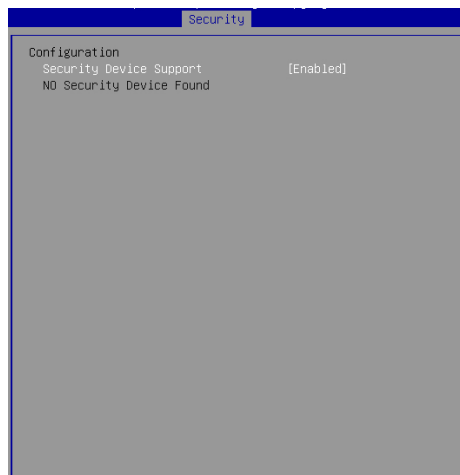This setting enables/disables the ME FW image reflash.

▶ PTT Configuration

Intel Platform Trust Technology (PTT) is a platform functionality for credential storage and key management used by Microsoft Windows.

ELGENS CO., LTD
LPC P-cap Series User Manual

▶ ME Debug Configuration

▶ Trusted Computing

▶ Security Device Support

This setting enables/disables BIOS support for security device. When set to

[Disable], the OS will not show security device. TCG EFI protocol and INT1A interface will not be available.
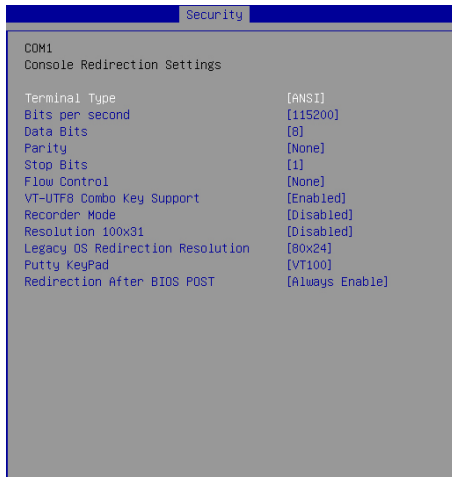
▶ Serial Port Console Redirection

```
                          Security

COM1
Console Redirection              [Disabled]
▶ Console Redirection Settings
```

▶ Console Redirection

Console Redirection operates in host systems that do not have a monitor

and keyboard attached. This setting enables/disables the operation of console redirection. When set to [Enabled], BIOS redirects and sends all contents that should be displayed on the screen to the serial COM port for display on the terminal screen. Besides, all data received from the serial port is interpreted as keystrokes from a local keyboard.

▶ Console Redirection Settings

▶ Terminal Type

To operate the system's console redirection, you need a terminal supporting

ANSI terminal protocol and a RS-232 null modem cable connected between the host system and terminal(s). This setting specifies the type of terminal device for console redirection.

▶ Bits per second, Data Bits, Parity, Stop Bits

This setting specifies the transfer rate (bits per second, data bits, parity,

stop bits) of Console Redirection.

▶ Flow Control

Flow control is the process of managing the rate of data transmission

between two nodes. It's the process of adjusting the flow of data from one device to another to ensure that the receiving device can handle all of the incoming data. This is particularly important where the sending device is capable of sending data much faster than the receiving device can receive it.

▶ VT-UTF8 Combo Key Support

This setting enables/disables the VT-UTF8 combination key support for

ANSI/VT100 terminals.

▶ Recorder Mode, Resolution 100x31

These settings enable/disable the recorder mode and the resolution

100x31.

▶ Legacy OS Redirection Resolution

This setting specifies the redirection resolution of legacy OS.

ELGENS CO., LTD
LPC P-cap Series User Manual

▶ Putty Keypad

PuTTY is a terminal emulator for Windows. This setting controls the numeric keypad for use in PuTTY.

▶ Redirection After BIOS POST

This setting determines whether or not to keep terminals' console redirection running after the BIOS POST has booted.

2.7   Chipset
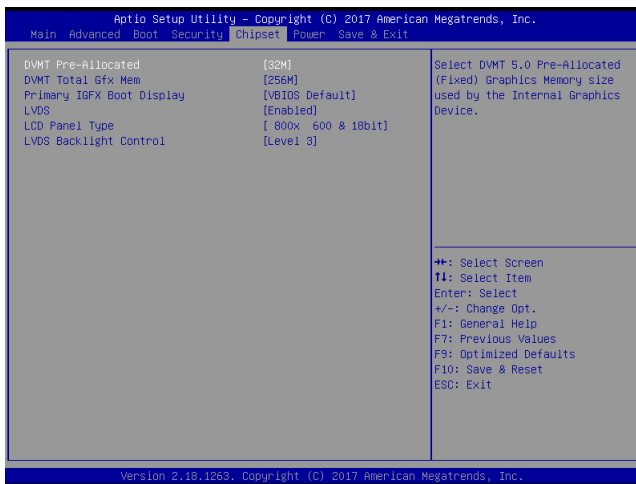
▶ DVMT Pre-Allocated

This setting defines the DVMT pre-allocated memory. Pre-allocated memory is

the small amount of system memory made available at boot time by the system BIOS for video. Pre-allocated memory is also known as locked memory. This is because it is "locked" for video use only and as such, is invisible and unable to be used by the operating system.

▶ DVMT Total Gfx Mem

This setting specifies the memory size for DVMT.

▶ Primary IGFX Boot Display

Use the field to select the type of device you want to use as the displays of the

system.

▶ LVDS

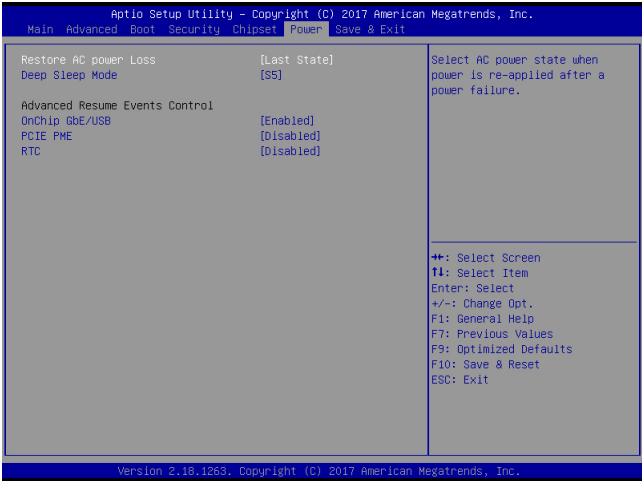This setting enables/disables LVDS.

▶ LCD Panel Type

This setting specifies the LCD panel type.

▶ LCD Backlight Control

This setting controls the LVDS backlight.

2.8   Power

▶ Restore AC Power Loss

This setting specifies whether your system will reboot after a power failure or

interrupt occurs. Available settings are:

[Power Off]	Leaves the computer in the power off state.
[Power On]	Leaves the computer in the power on state.
[Last State]	Restores the system to the previous status before power failure or interrupt occurred.

▶ Deep Sleep Mode

The setting enables/disables the Deep S5 power saving mode. S5 is almost

the same as G3 Mechanical Off, except that the PSU still supplies power,   at   a minimum, to the power button to allow return to S0. A full reboot is required. No previous content is retained. Other components may remain powered so the computer can "wake" on input from the keyboard, clock, modem, LAN, or USB device.

** Advanced Resume Events Control **

▶ Onchip GbE / USB

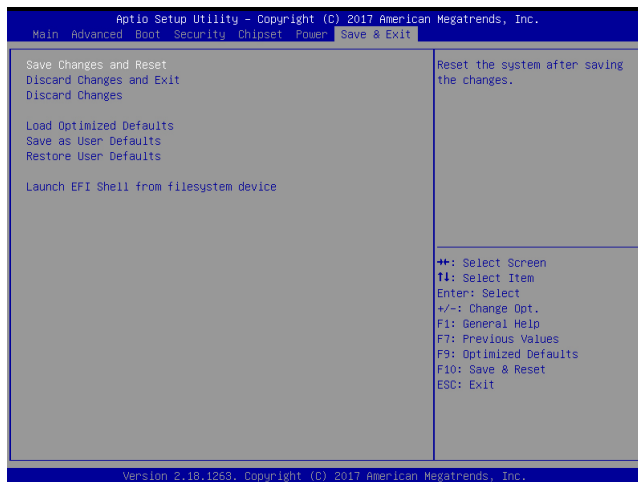The item allows the activity of the OnChip GbE/USB device to wake up the system from S3/S4 sleep state.

▶ PCIE PME

This field specifies whether the system will be awakened from power saving modes when activity or input signal of onboard PCIE PME is detected.

▶ RTC

When [Enabled], your can set the date and time at which the RTC (real-time clock) alarm awakens the system from suspend mode.

2.9   Save & Exit

```
                 Aptio Setup Utility – Copyright (C) 2017 American Megatrends, Inc.
         Main  Advanced  Boot  Security  Chipset  Power  Save & Exit

         Save Changes and Reset                              Reset the system after saving
         Discard Changes and Exit                            the changes.
         Discard Changes

         Load Optimized Defaults
         Save as User Defaults
         Restore User Defaults

         Launch EFI Shell from filesystem device


                                                             →←: Select Screen
                                                             ↑↓: Select Item
                                                             Enter: Select
                                                             +/-: Change Opt.
                                                             F1: General Help
                                                             F7: Previous Values
                                                             F9: Optimized Defaults
                                                             F10: Save & Reset
                                                             ESC: Exit


                   Version 2.18.1263. Copyright (C) 2017 American Megatrends, Inc.
```

▶ Save Changes and Reset

Save changes to CMOS and reset the system.

▶ Discard Changes and Exit

Abandon all changes and exit the Setup Utility.

▶ Discard Changes

Abandon all changes.

▶ Load Optimized Defaults

Use this menu to load the default values set by the motherboard manufacturer
specifically for optimal performance of the motherboard.

▶ Save as User Defaults

Save changes as the user's default profile.

▶ Restore User Defaults

Restore the user's default profile.

▶ Launch EFI Shell from filesystem device

This setting helps to launch the EFI Shell application from one of the available file
system devices.

Chapter 3　　USB 3.0 driver installation

SOP of USB 3.0 driver installation prior to Win 7 by Smart kit

Purpose:

The original Windows 7 is imcompatible with USB 3.0, the program "MSI Smart Tool Kits" will help you to compile USB 3.0 driver into your original Windows 7, in order to avoid the system failure when you install OS. This tool can make your own bootable Windows 7 USB from your original Windows 7 disk.

Things need to prepare:

Prepare your Windows 7 DVD, and an USB disk at least 8Gb

Put the DVD in the DVD-ROM and plug USB into your computer.

Please download "MSI Smart Tool Kits" from the website below:

https://drive.google.com/drive/u/0/folders/0B0ap8HaD1zCCOU5sN2cyZ1JMSjQ

MSI Smart Tool Kits

1. Click "Source folder" choose the location of your Windows 7 disc.

2. Choose "USB storage" as bootable USB for your Windows 7

3. Click"Start"

4. Click"YES"
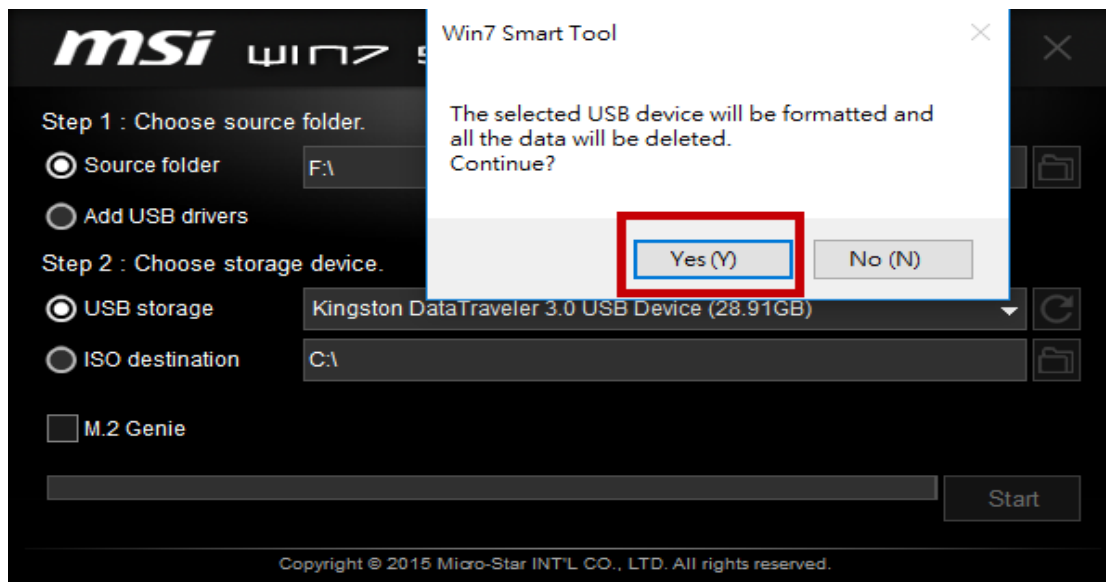
Once the status bar reach to 100%, withdraw the USB device and done.

Step A .

- **A-1.** Plug your modified USB to USB 3.0 port, and keyboard
- **A-2.** Then turn on the LPC series press "Delete" to enter BIOS mode,
- **A-3.** In BIOS mode, go to "Boot" page and select "Hard Drive BBS Priorities"

ELGENS CO., LTD
LPC P-cap Series User Manual
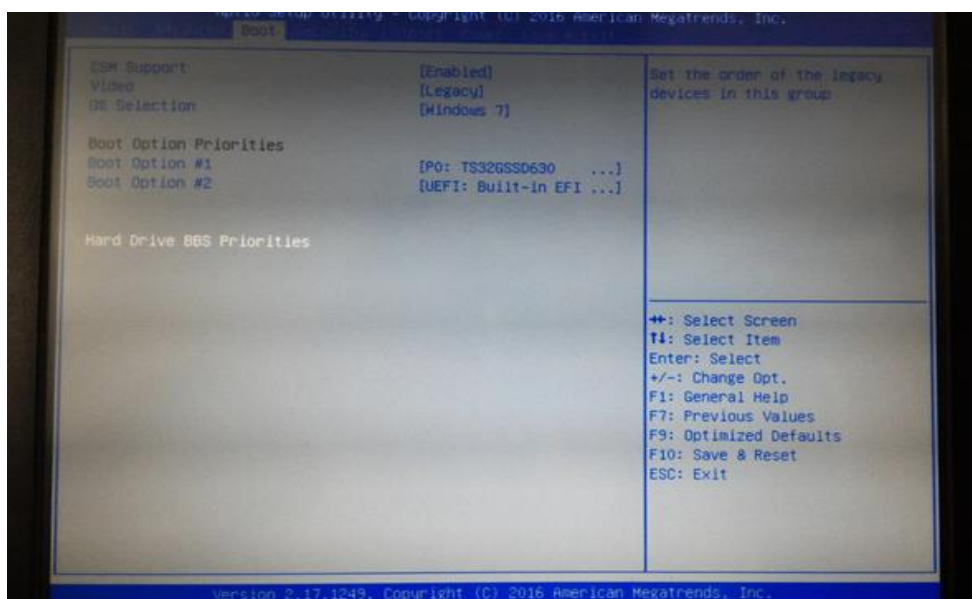
A-4. Select your Modified USB disk as "Boot Option #1"
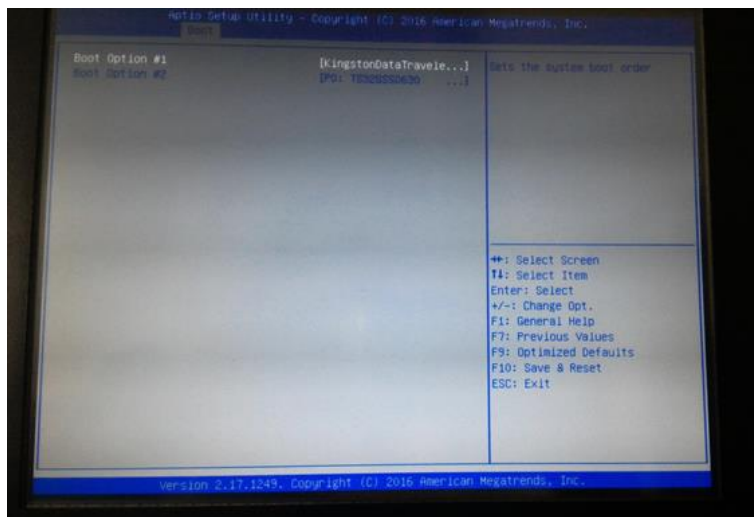
A-5. Then go to "Save & Exit" page choose "Save Changes and Reset"
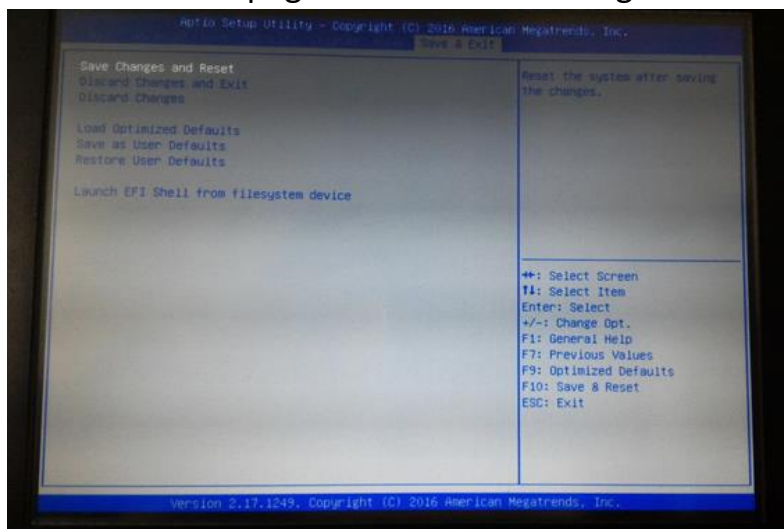
A-6. Then the Win 7 installation will appear on the screen. Now you can install Windows 7 with your keyboard through USB 3.0.

Chapter 4   Installation Drivers

4.1   Chipset Driver Installation

4.1.1.   Select Chipset folder and execute "Setupchipset.exe"

4.1.2.   Please follow the red blank.
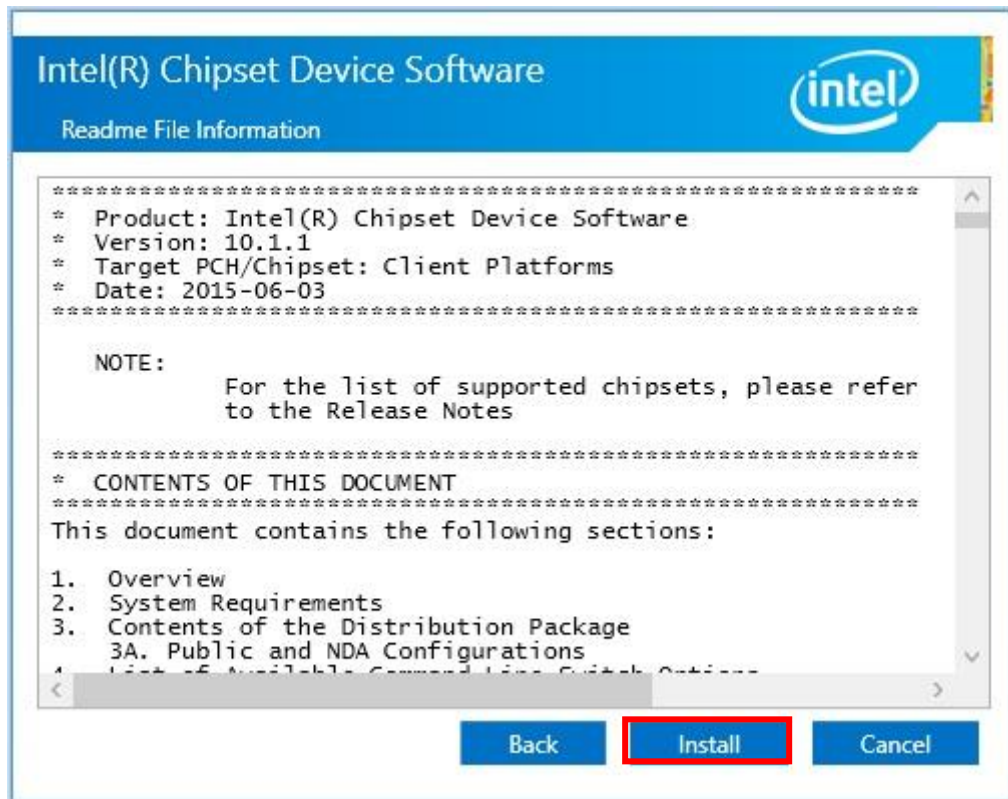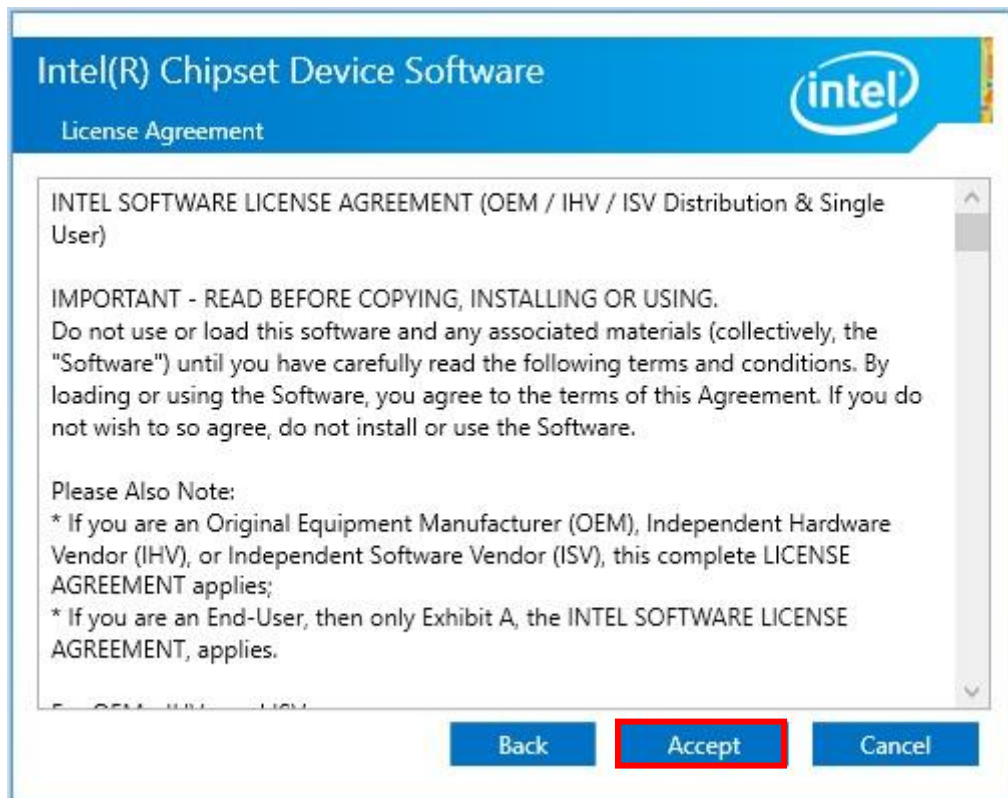
ELGENS CO., LTD
LPC P-cap Series User Manual
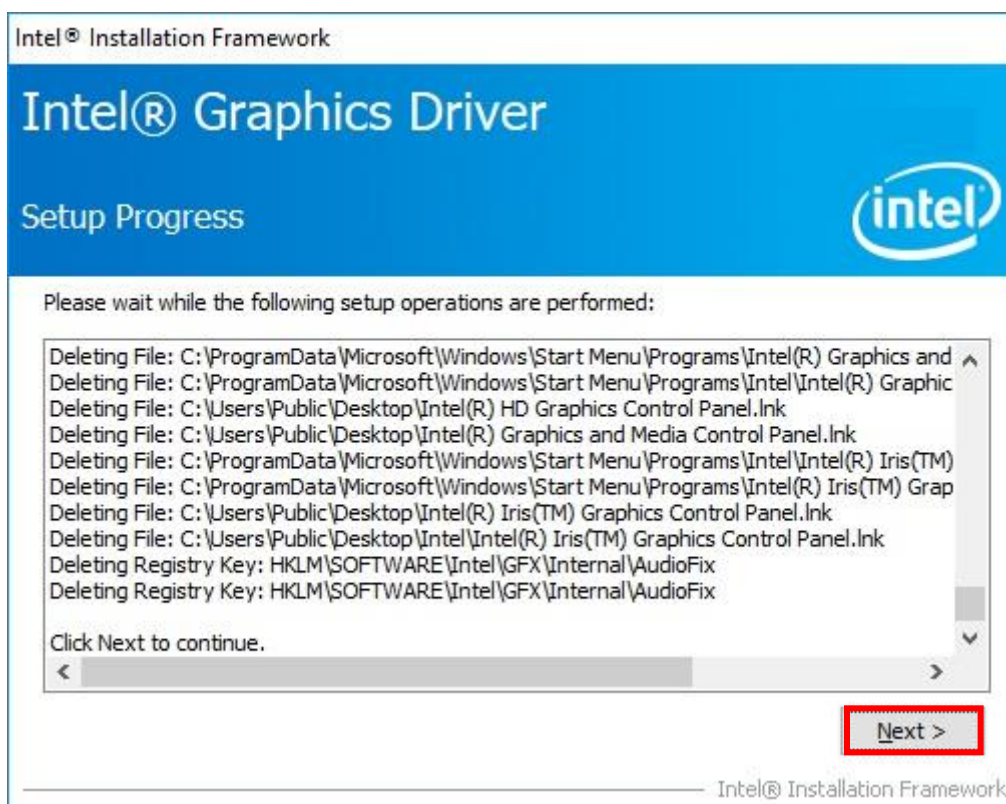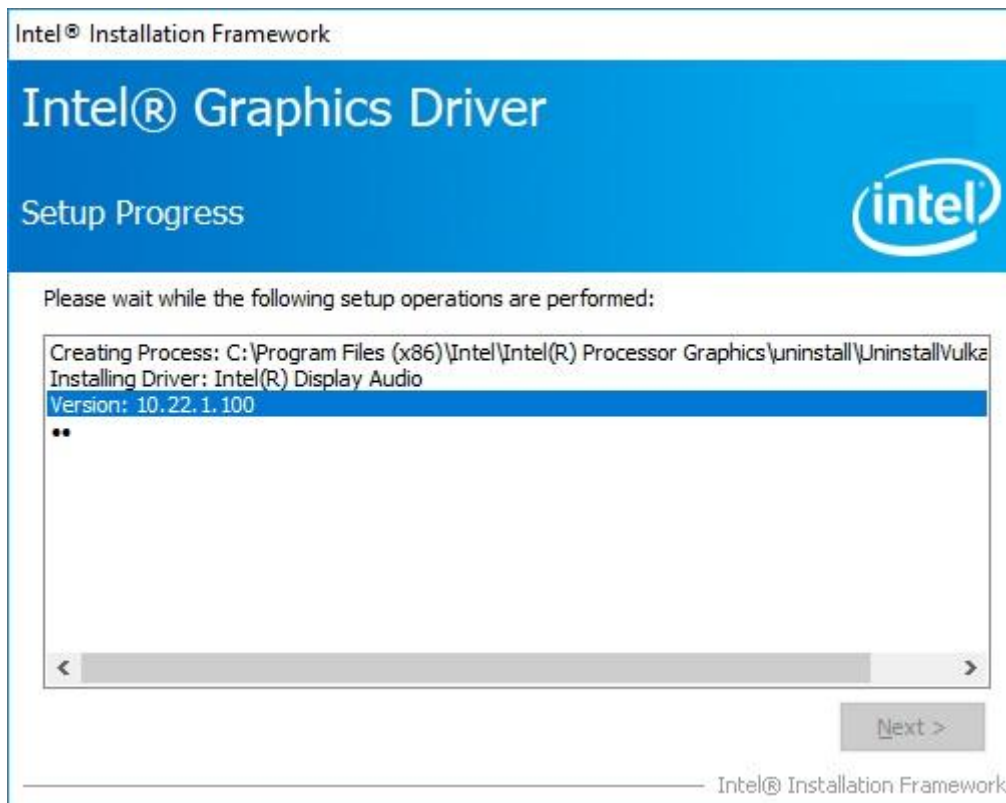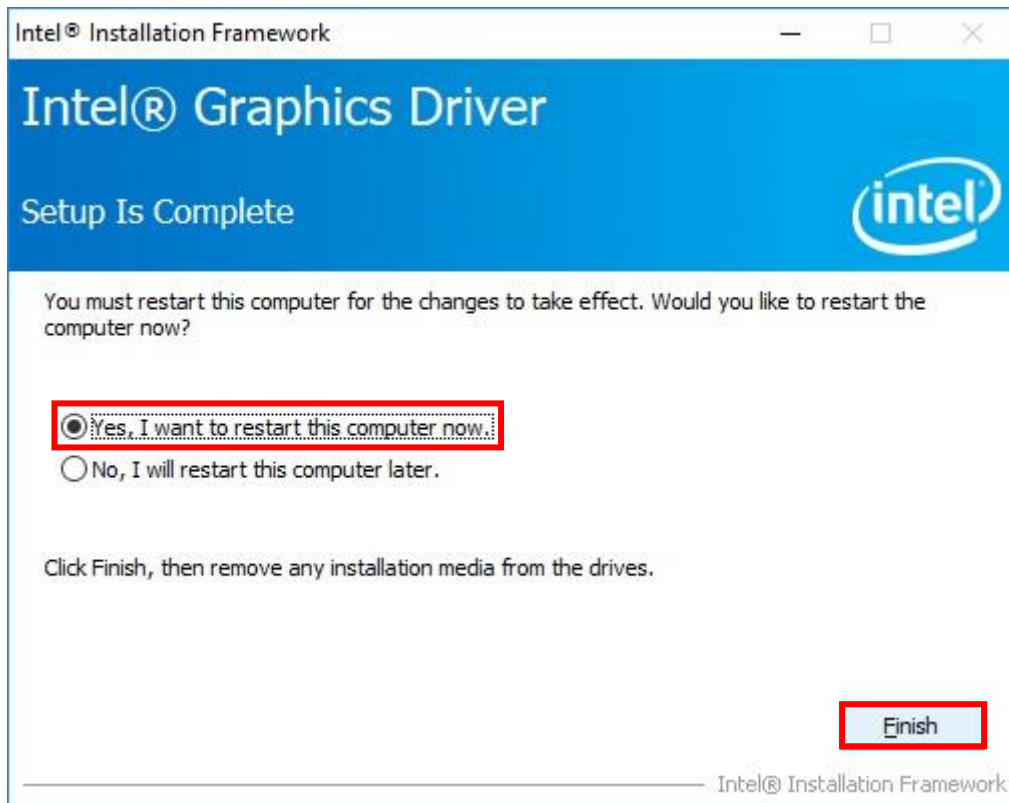
4.2   Graphics Driver Setup

4.2.1.   Select " Graphics\4678\win64" folder and execute "Setup.exe"

4.2.2.   Please follow the red blank.
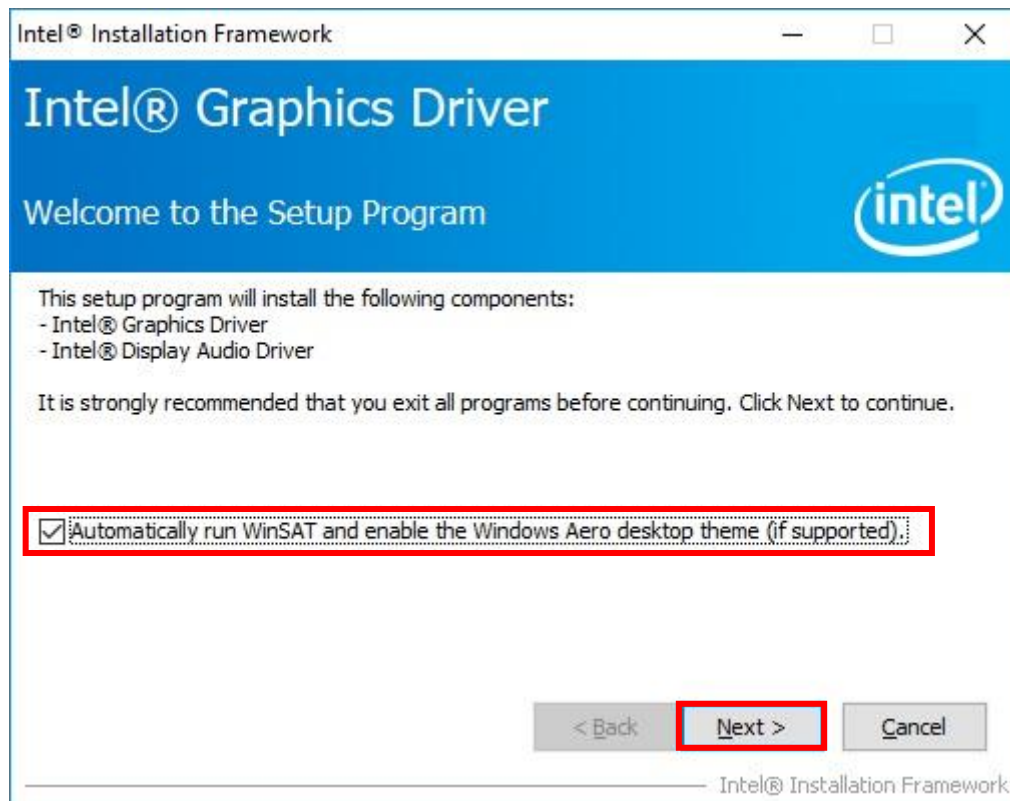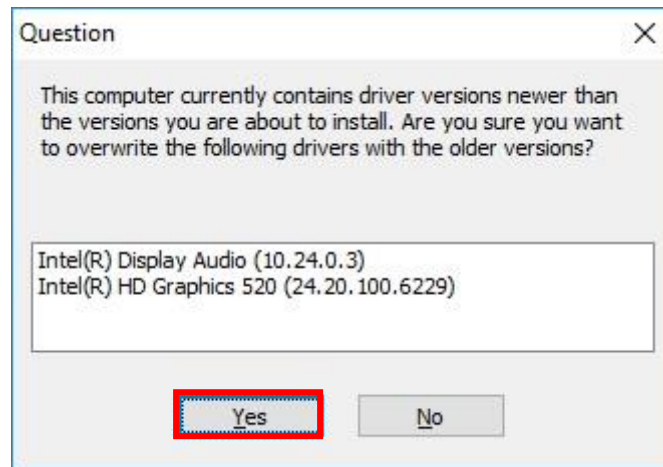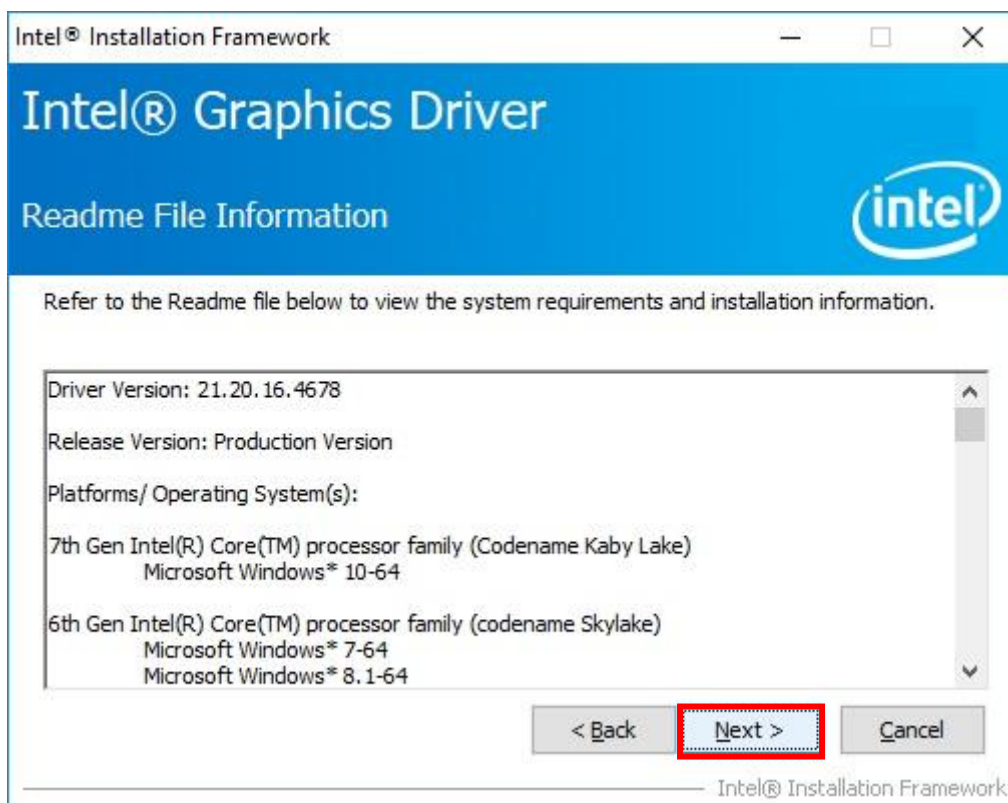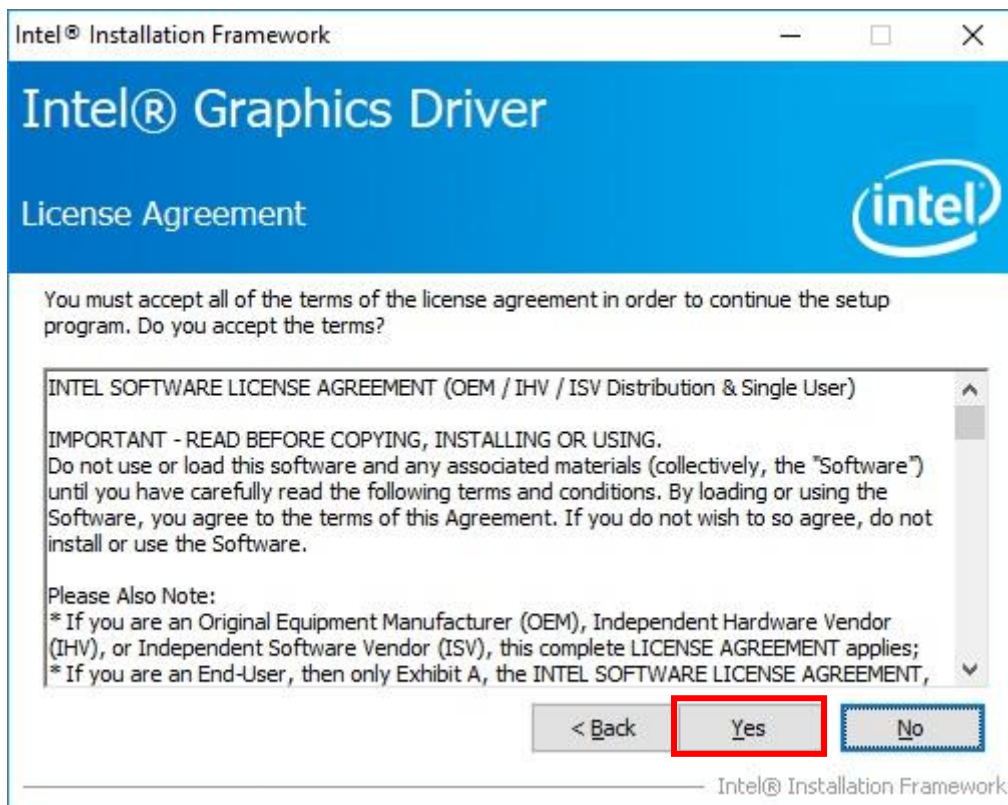
4.3   Audio Driver Setup

    4.3.1.   Select "Audio\8010_PG454_Win10_TH_RS_Win8.1_Win8_Win7_WHQL" folder and execute "Setup.exe"

    4.3.2.   Please follow the red blank.

Welcome to the InstallShield Wizard for Realtek High Definition Audio Driver

The InstallShield Wizard will install Realtek High Definition Audio Driver on your computer. To continue, click Next.

Realtek High Definition Audio Driver Setup (4.54) 6.0.1.8010 x64 Edition

Setup Status

Realtek High Definition Audio Driver is configuring your new software installation.

C:\Program Files (x86)\Realtek\Audio\Drivers\Win64\AudysseyEfx.dll

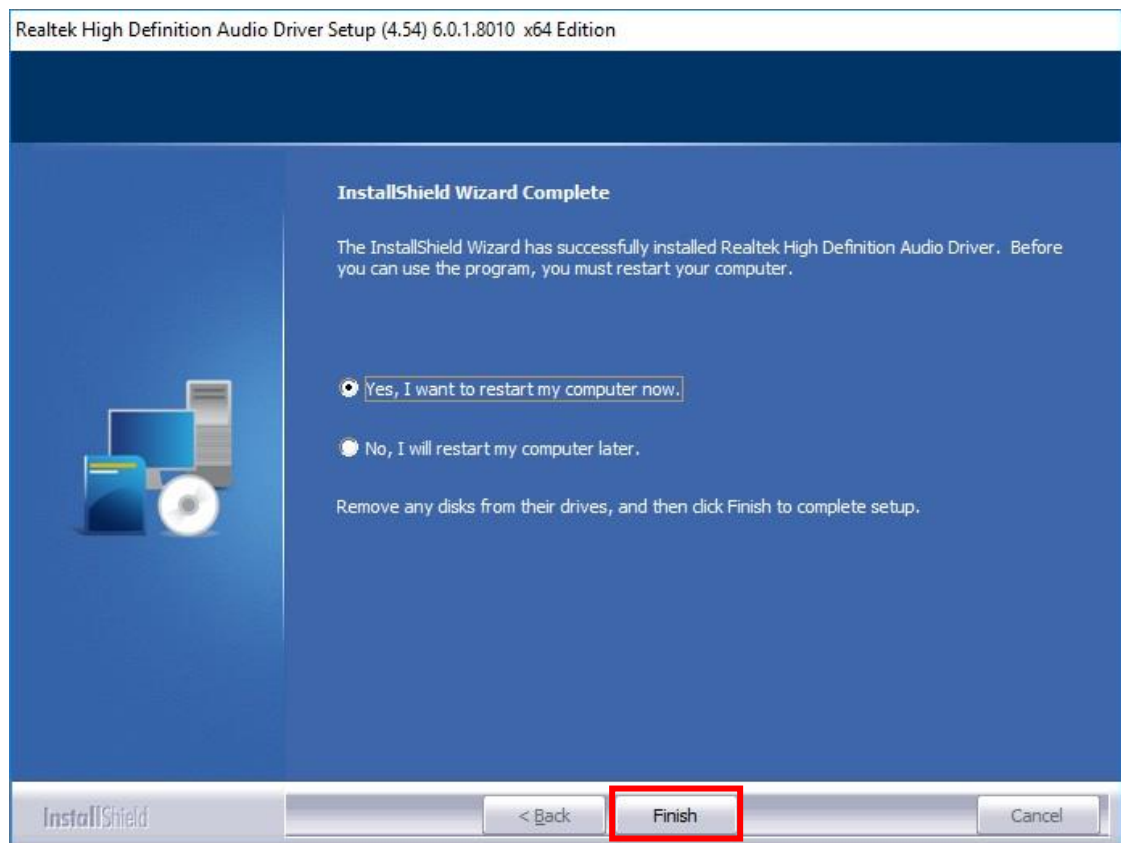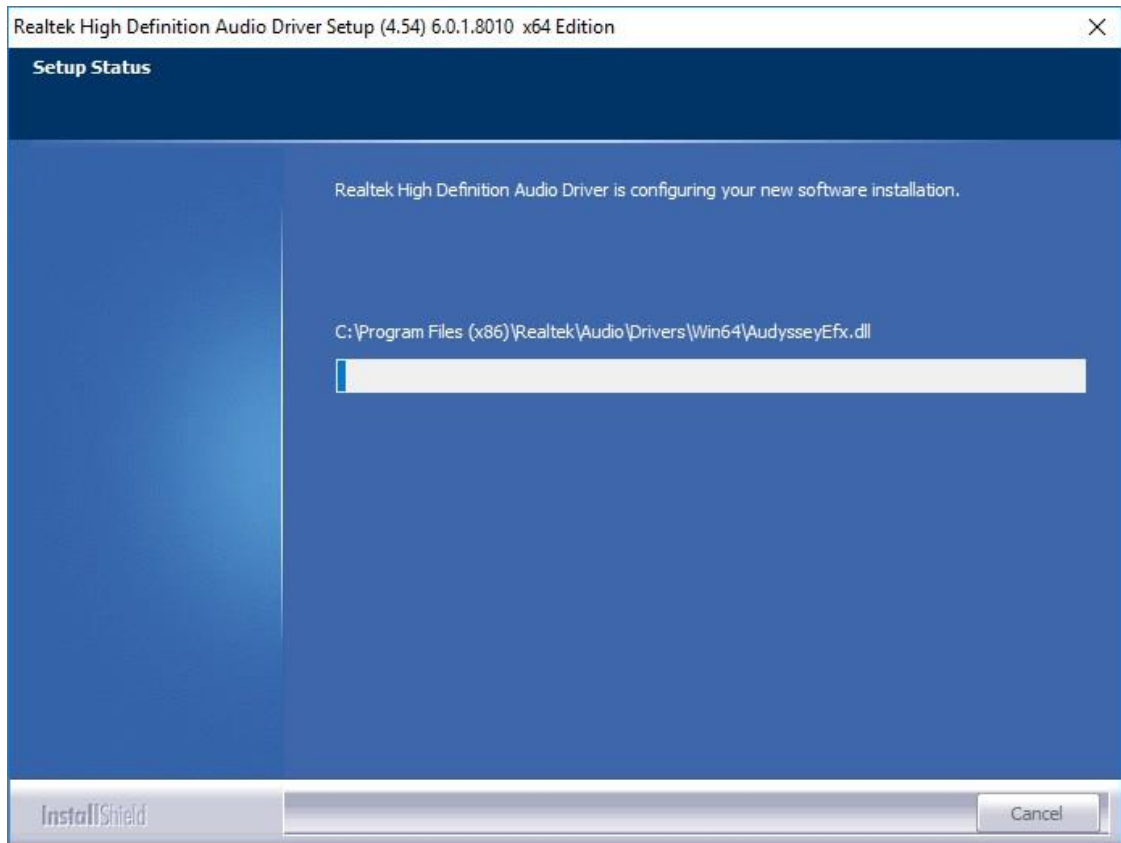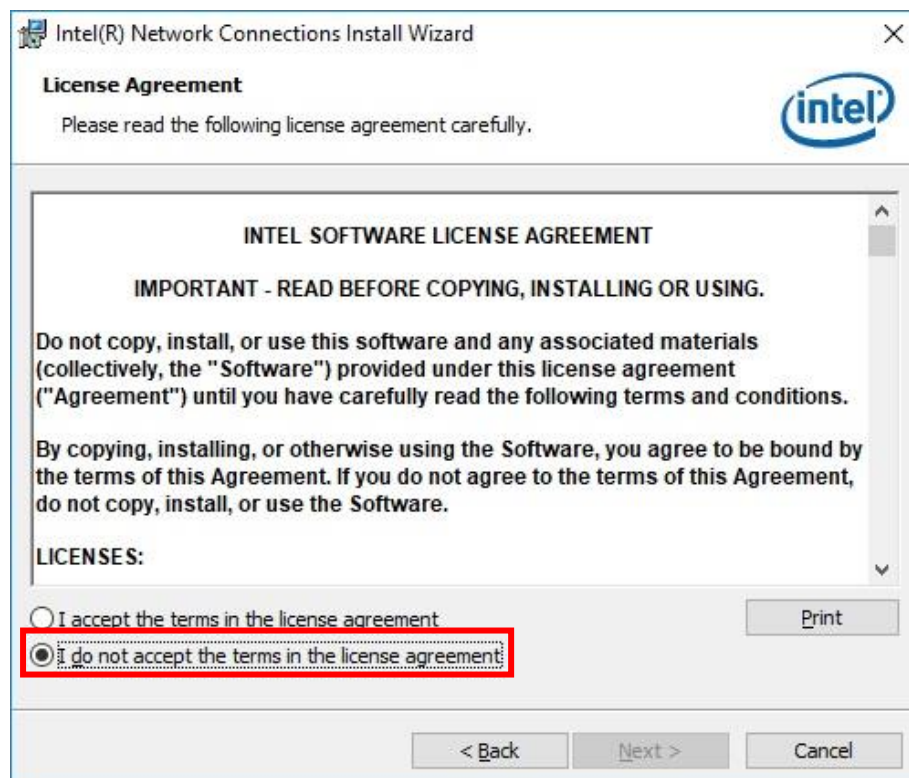InstallShield   Cancel

---

Realtek High Definition Audio Driver Setup (4.54) 6.0.1.8010 x64 Edition

InstallShield Wizard Complete

The InstallShield Wizard has successfully installed Realtek High Definition Audio Driver. Before you can use the program, you must restart your computer.

⦿ Yes, I want to restart my computer now.

◯ No, I will restart my computer later.

Remove any disks from their drives, and then click Finish to complete setup.

InstallShield   < Back   Finish   Cancel

4.4   LAN Driver Setup

4.4.1.   Go to LAN file and choose 32 bits or 64 bits " Setup.exe"
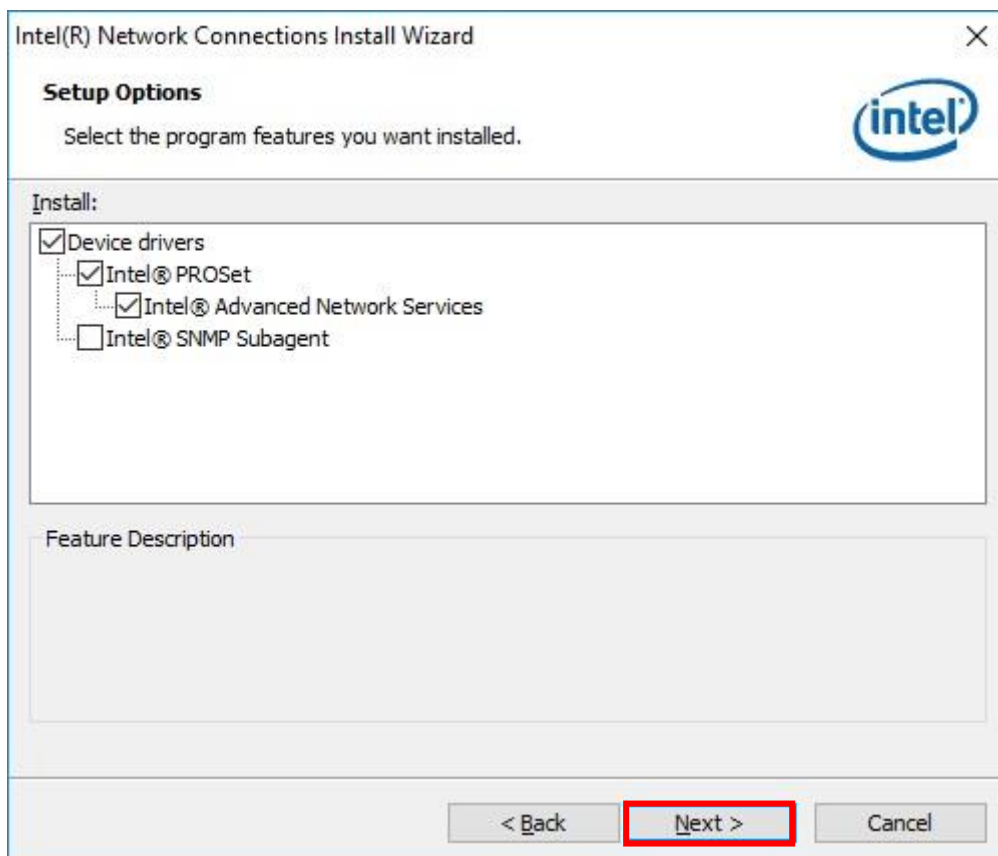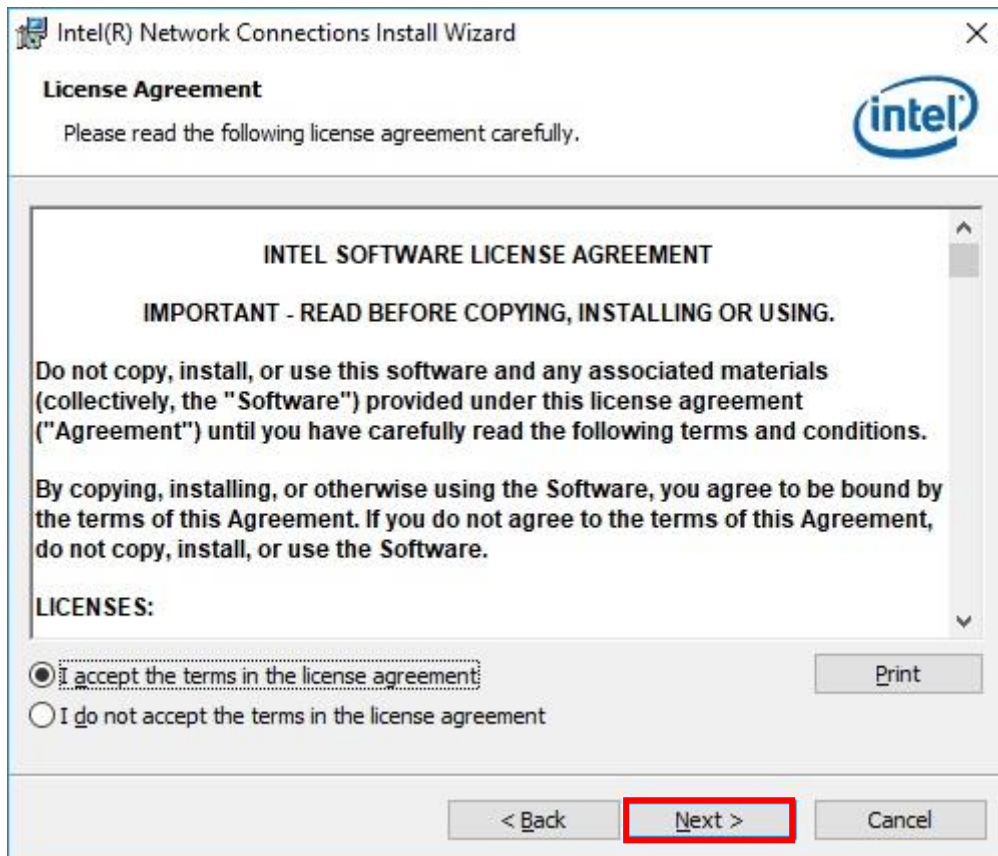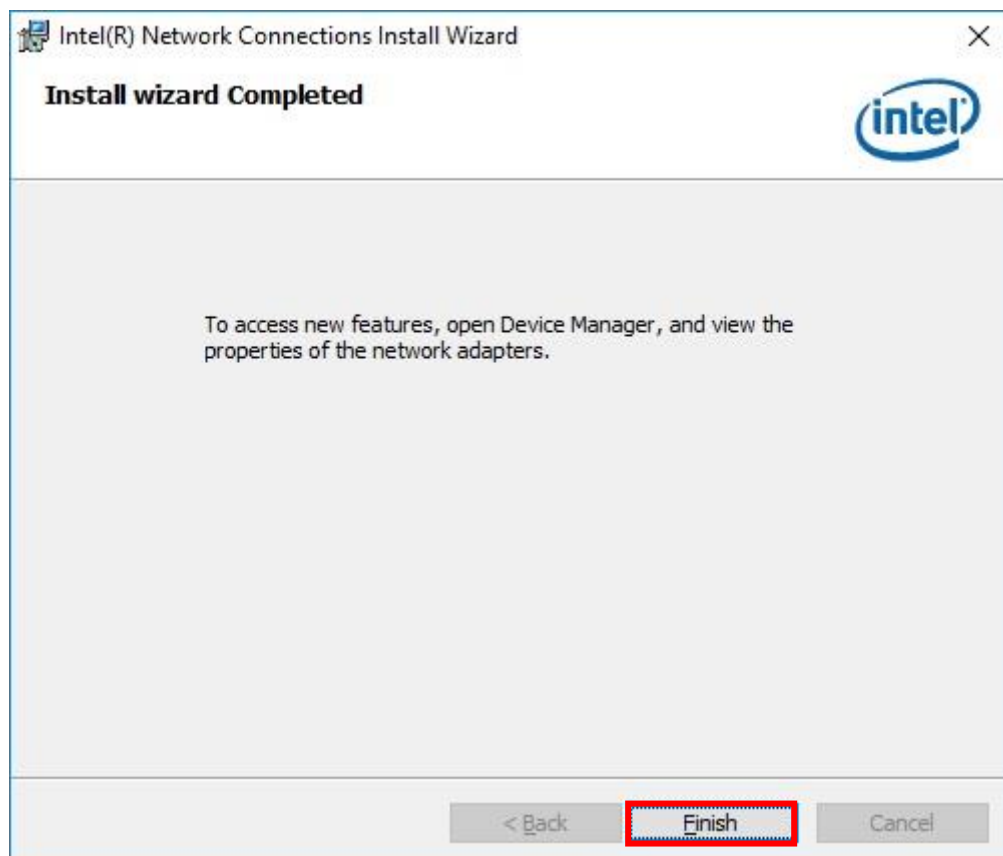
4.4.2.   Please follow the red blank.

Intel(R) Network Connections Install Wizard

Ready to Install the Program

The wizard is ready to begin installation.

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.

< Back   Install   Cancel

Intel(R) Network Connections Install Wizard

Install wizard Completed

To access new features, open Device Manager, and view the properties of the network adapters.

< Back   Finish   Cancel

ELGENS CO., LTD
LPC P-cap Series User Manual

4.5   SIO Driver Setup

4.5.1.   Go to "SIO\30.100.1713.2" and Choose "SetupSerialIO"

4.5.2.   Please follow the red blank.

ELGENS CO., LTD
LPC P-cap Series User Manual

Setup ✕

Intel® Serial IO
Confirmation

(intel)

You are about to install the following components:

- Intel® Serial IO GPIO Driver
- Intel® Serial IO UART Driver

Intel Corporation   < Back   **Next >**   Cancel
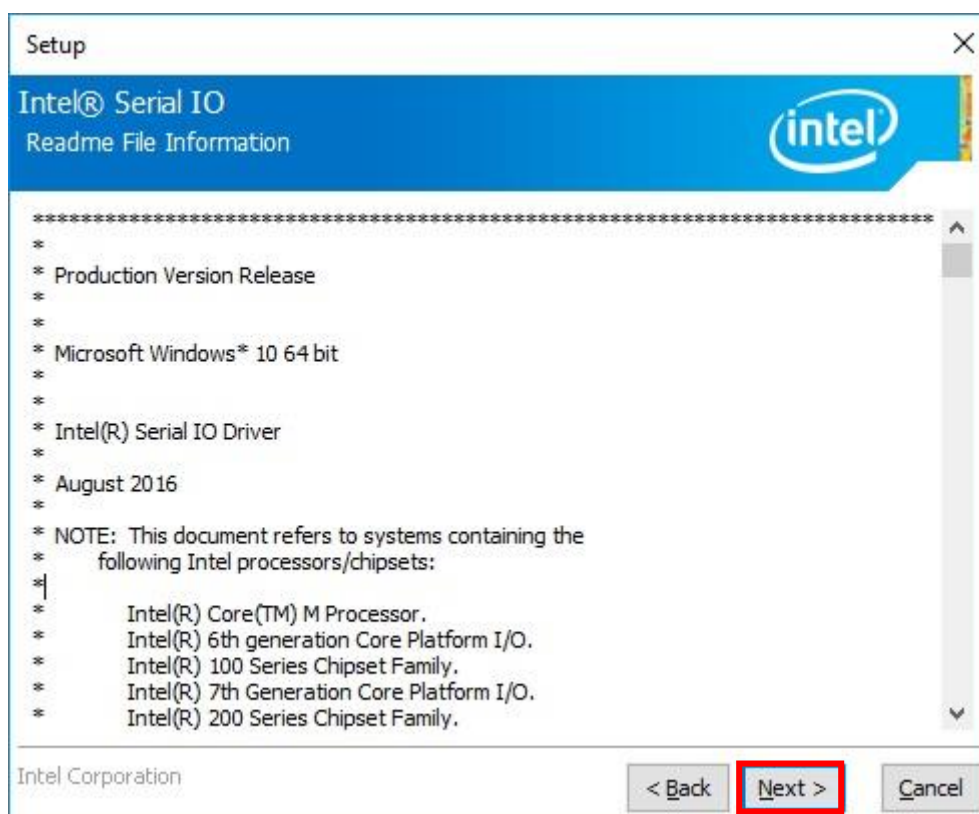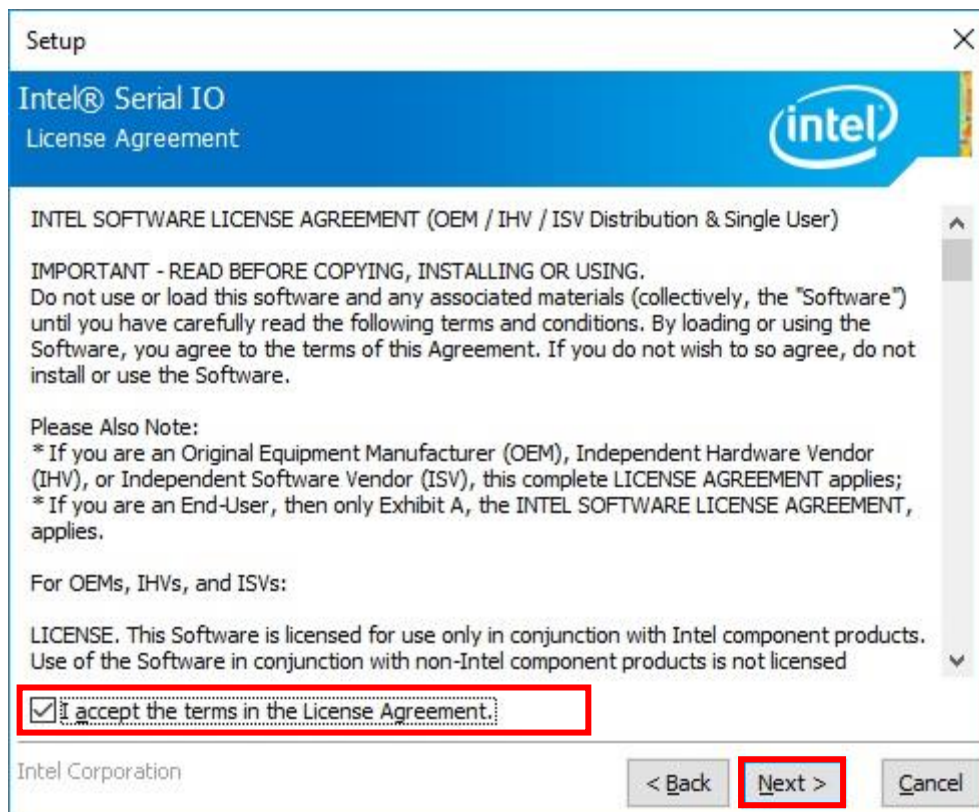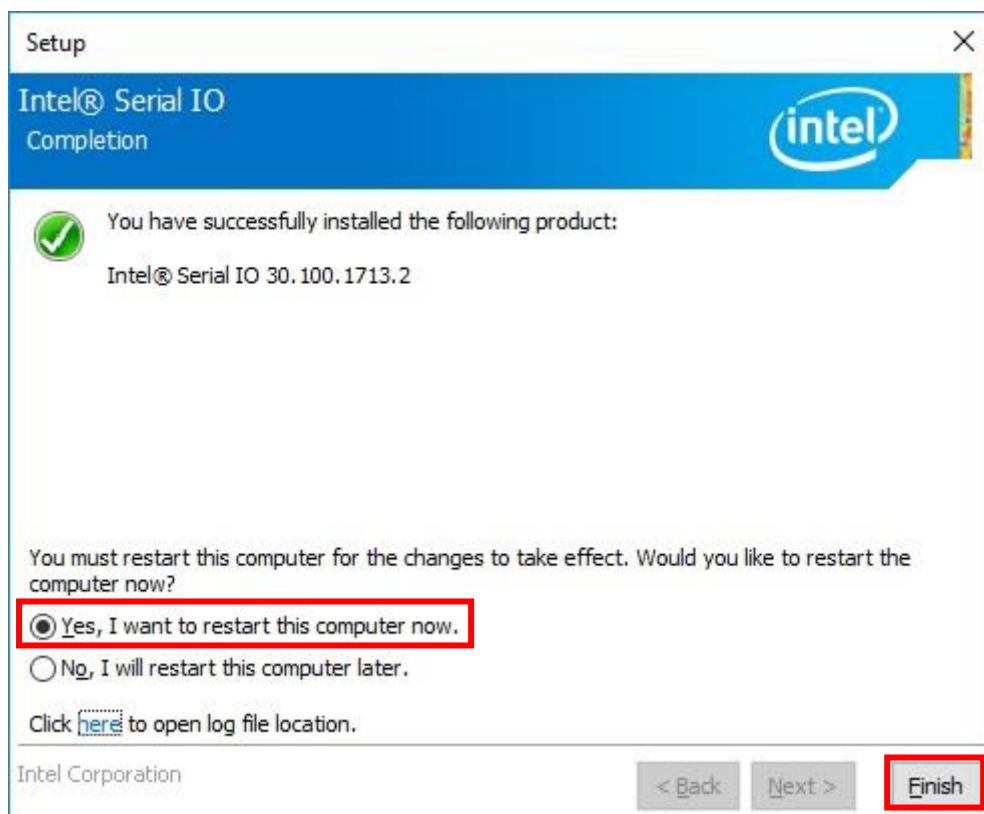
Setup ✕

Intel® Serial IO
Completion

(intel)

You have successfully installed the following product:

Intel® Serial IO 30.100.1713.2

You must restart this computer for the changes to take effect. Would you like to restart the computer now?

⦿ Yes, I want to restart this computer now.

◯ No, I will restart this computer later.

Click here to open log file location.

Intel Corporation   < Back   Next >   **Finish**

4.6   ME Driver Setup

4.6.1.   Go to "AMT11.6\ME11.6_corp_11.6.50.1213"E "and choose "SetupME.exe"

4.6.2.   Please follow the red blank.

ELGENS CO., LTD
LPC P-cap Series User Manual

Setup

Intel® Management Engine Components
Completion

(intel)

You have successfully installed the following components:

- Intel® Management Engine Interface
- Serial Over LAN
- Local Management Service
- Intel® Management and Security Status

Click here to open log file location.

Intel Corporation   < Back   Next >   Finish