



# APC-3XX2

7" and 8" Fanless Total IP66 Intel Atom<sup>™</sup> E3845 Fleet Management Panel PC

## **User Manual**

Release Date	9		Revision
Feb. 2020			V1.4
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# **Revision History**

Reversion	Date	Description
1.0	2016/08/24	Official Version
1.1	2016/09/10	Modify PB-422B Specifications
1.2	2016/12/05	Add 7" Panel PC: APC-3072, and add
		projected capacitive touch
1.3	2017/7/18	Define I/O function
1.4	2020/02/24	MB:SBC-7810-BIOS

## 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.

#### Caution

Risk of explosion if the battery is replaced with an incorrect type. Batteries should be recycled where possible. Disposal of used batteries must be in accordance with local environmental regulations.

#### 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.

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# Chapter 1

### **1.1 Features**

- High brightness LED backlight LCD
- Intel<sup>®</sup> Atom <sup>TM</sup> Processor E3845
- 4GB DDR3L memory on board
- Wide range DC 6~36V power input
- Total 6 sides IP66
- Support function key: 6 key F1~F6 programmable for APC-3072
- Support OSD keypad for APC-3082

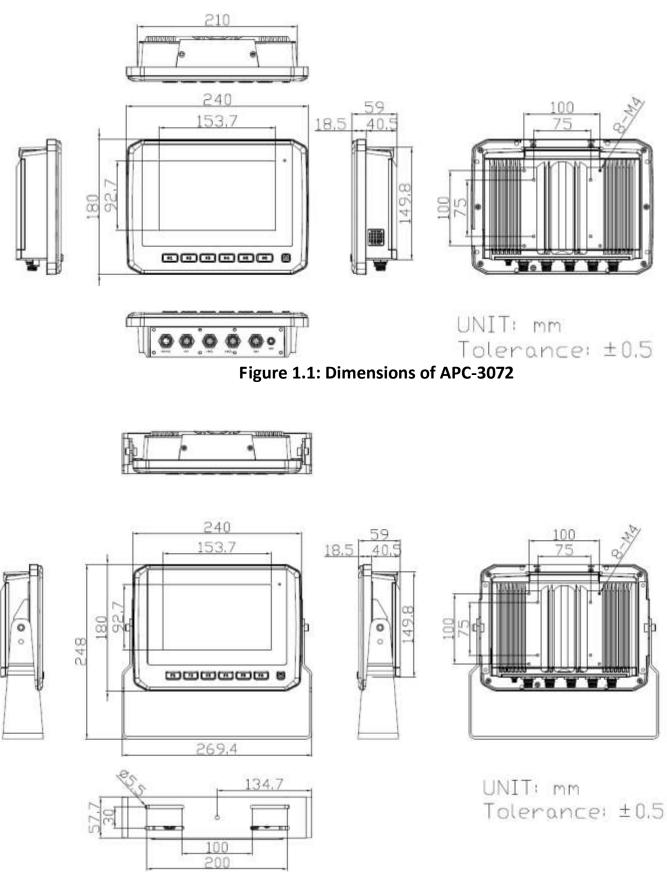
### **1.2 Specifications**

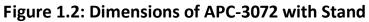
System	APC-3072			APC-3082	
Processor	Intel <sup>®</sup> Atom <sup>™</sup> Processor E3845(2M Cache, 1.91GHz)				
System Memory	Onboard 4GB DDR3L memory				
OSD Keypad	Default g F1~F6 key	7 keys (F1~F6 with power button) Default general keyboard F1~F6 key, programmable other define		5 keys brightness up/brightness down control 0~100% volume up/volume down via audio power on/off LED indicator: power on/off	
Speaker		1	x 2W IP6	55 speaker	
I/O Ports: IP66 I/O Co	I/O Ports: IP66 I/O Connector				
USB	1 x M12 for 2 x USB 2.0 USB1/2: CN1 Pin Define		.0	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	
	1	USB1 5V		Le all'	
	3	D1-			
	4	D1+		5	
	7	GND		Pin Assignments	
	2	USB2 5V		Front View 正視圖	
	5	D2-			
	6	D2+			
	8	GND			

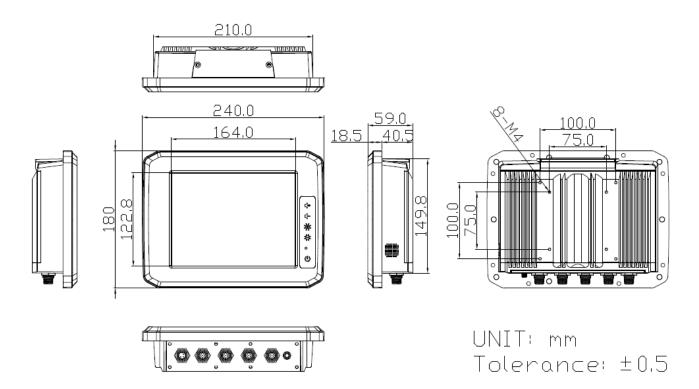
Serial/Parallel	1 x M12 for RS-232/422/485,	1				
	default RS-232	2				
	1 x M12 for RS-232	8				
	COM1/2:	3 ( ( 0 0 0) ) 7				
	Pin Define					
	1 DCD	4 6				
	2 RXD	5 Pin Assignments				
	3 TXD	Front View 正视圈				
	4 DTR	Pre-tense and an oral mark				
	5 GND					
	6 DSR					
	7 RTS					
	8 CTS					
LAN	1 x M12 for GbE LAN					
	LAN:	8				
	Pin Define	° (b°a)				
	2 LAN1_0+	3 0 0 0 7				
	1 LAN1_0-					
	4 LAN1_1+	4-5-6				
	3 LAN1_1-	Pin Assignments				
	6 LAN1_2+	Front View 正視圈				
	5 LAN1_2-					
	8 LAN1_3+					
	7 LAN1_3-					
Power	1 x DC power input (6~36V) by	~				
	M12 connector					
	Pin Define					
	1 NC					
	3 VCC					
	4 GND					
		Pin Assignments				
		Front View				
Others		or option GPS antenna				
Europeire Chat	1 x Power LED(Green) front touch panel					
Expansion Slots						
Expansion Slots	1. 1 x Full-size mini-PCle socket (PCle+USB) for 3G/LTE/GPS (optional)					
	2. 1 x Half-size mini-PCIe socket (PCIe+USB) for WIFI/BT (optional)					
Storage	3. 1 x SIM slot on board					
Storage	4	C on board				
Storage	1 x Micro SD on board 1 x mSATA MO-300 slot					
Dowor						
Power						

Power Input	6~36V DC default						
Optional Power	6~36V DC + Ignition/VCC power						
Power Consumption	MAX: 15W	MAX: 19.8W					
LCD							
Display Type	7" color TFT LCD	8" color TFT LCD					
Max. Resolution	800 x 480	800 x 600					
Max. Color	262K	16.2M					
Contrast Ratio	400: 1	500: 1					
Luminance (cd/m2)	600	600					
	(option 1000nits)	(option 1000nits)					
Viewing Angle	135(H) / 125(V)	140(H) / 125(V)					
Backlight Lifetime	50,000 hrs	50,000 hrs					
Touch Screen – Resist	tive Touch Window Type (default	for APC-3082)					
(APC-3082 can option	PCT touch screen but without O	SD keypad function)					
Interface	US	i B					
Light Transmission	Over	80%					
Touch Screen – Proie	cted Capacitive Touch Screen (def	ault for APC-3072					
-	resistive touch screen)						
Interface	USB						
Light Transmission	Over 90%						
Mechanical							
Construction	Rugged plastics housing with aluminum heatsink for APC-3082						
	(optional aluminum front bezel)						
	Aluminum front bezel and plastic back cover with aluminum heatsink						
	for APC	C-3072					
Mounting	Support Pa	nel mount					
	VESA mou	nt 75 x 75					
	VESA moun	t 100 x 100					
	Yoke mount and sta	ind mount <mark>(option)</mark>					
IP Rating	Total	IP66					
Dimension (LxWxH)	240 x 180 x 59 mm	240 x 180 x 59 mm					
Net Weight	2.1 Kg	1.6 Kg					
Environmental							
Operating	0~50	D°C					
Temperature	WT1: -20°C~60°C for option						
Storage Temperature	-30~80 °C						
Storage Humidity	10%~90%@ 40 $^\circ\!\mathrm{C}$ , non-condensing						
Certificate	CE / FCC Class A						
OS Support	Windows 7 Professional	for Embedded Systems					
	Windows 7 Ultimate for Embedded Systems						
	Windows Emb	edded 8.1 Pro					
	Windows Embedded 8.1 Industry Pro						
	Windows 10 IOT 2016						

### **1.3 Dimensions**

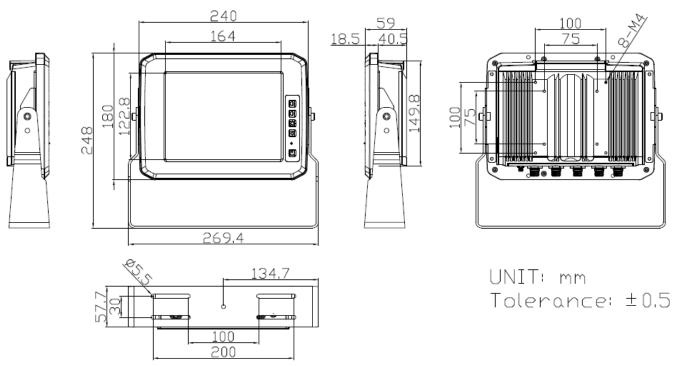


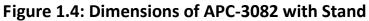












### 1.4 Brief Description of APC-3XX2

APC-3XX2 is a fanless and fleet management low power consumption designed panel PC. It comes with total 6 sides IP66 waterproof grade, powered by Intel Atom E3845 processor, and supports 4GB DDR3L memory onboard. The LCD supports LED backlight for power saving, and can be optional high brightness LCD for sunlight readable. Furthermore, there is F1~F6 programmable function keypad with power button for APC-3072; and there is an OSD keypad control for power system on/off, brightness up and down, and volume up and down for APC-3082. APC-3072 and APC-3082 can support variety of communication interface. For instance, it has 1 x Mini-PCle half size slot for optional WIFI and Bluetooth, 1 x Mini-PCle full size slot for optional 3G, LTE, and GPS, and also 1 x mSATA MO-300 slot for storage. The model can be VESA 75 x 75 or 100 x 100 mounted, and adjustable stand is for option. In short, APC-3XX2 is ideal for fleet management application in any ways.



Figure 1.5 Front View of APC-3072



Figure 1.6 Rear View of APC-3072



Figure 1.7 Front View of APC-3082



Figure 1.8 Rear View of APC-3082

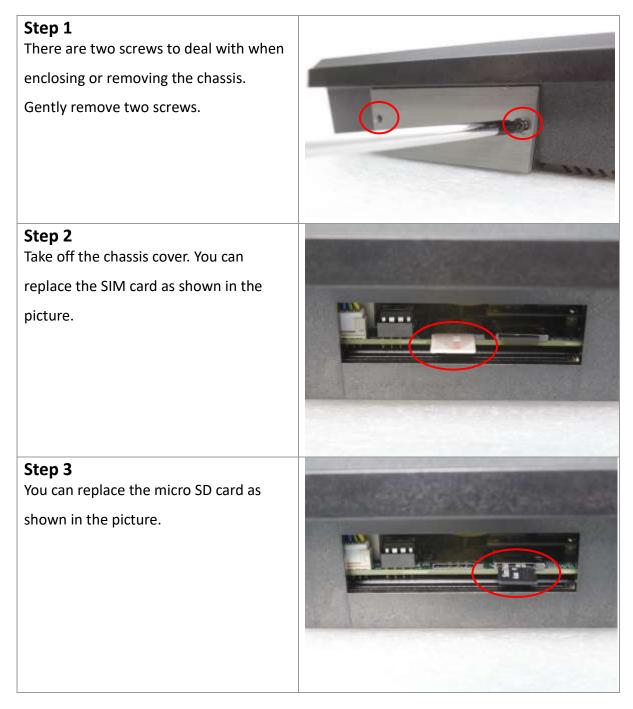


Figure 1.9 APC-3072 with Stand



Figure 1.10 APC-3082 with Stand

### 1.5 Installation of SD Card and SIM Card



### 1.6 The Mounting of Stand I



### 1.7 The Mounting of Stand II



#### Step 5

Screw the last screw as shown in the picture. After screwing the four screws, you manage to mount the stand.



### **1.8 VESA Mounting**

APC-3XX2 is designed to be VESA mounted as shown in the Figure 1.11. Just carefully place the unit through the hole and tighten the given screws from the rear to secure the mounting.

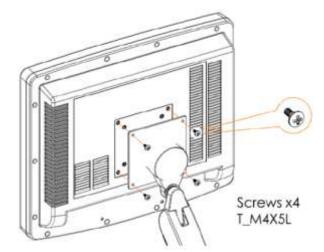


Figure 1.11: VESA Mounting of APC-3XX2

### **1.9 Panel Mounting**

The APC-3XX2 is designed to be panel-mounted as shown in Figure 1.12. Just carefully place the unit through the hole and tighten the given screws from the rear to secure the mounting.

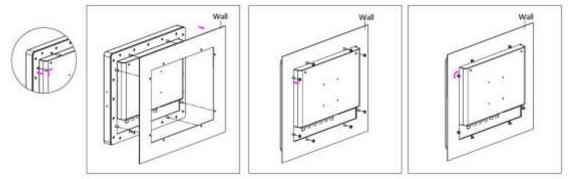
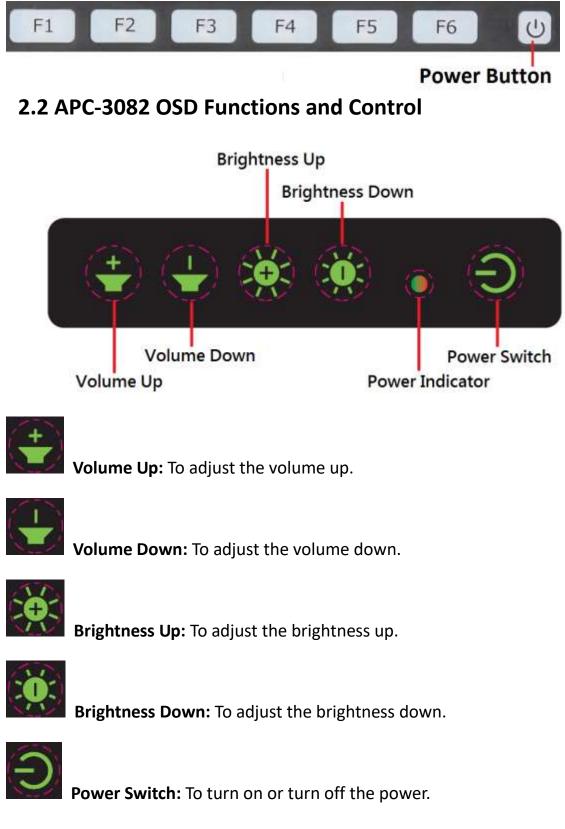


Figure 1.12: Panel Mounting of APC-3XX2

### 2.1 APC-3072 Front Function Keyboard with Power Button

Default General Keyboard F1~F6 key, programmable other define.



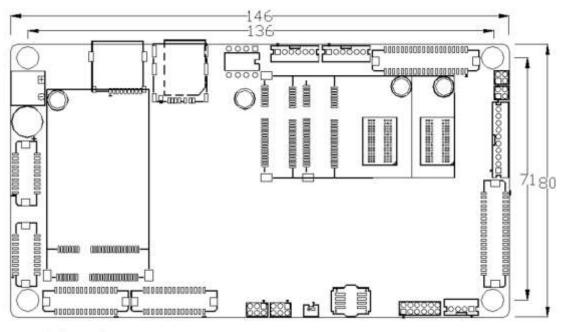
### **3.1 Motherboard Introduction**

SBC-7810 is a 146 x 80mm Industrial motherboard developed on the basis of Intel Bay trail-I/M Processors, which provides abundant peripheral interfaces to meet the needs of different customers. Also, it features dual GbE ports, 4-COM ports and two Mini PCIE configuration, one CRT port, one LVDS interface. To satisfy the special needs of high-end customers, CN1 and CN2 and CN4 and FP1 and MIO1 richer extension functions. The product is widely used in various sectors of industrial control.

Specifications		
Board Size	146mm x 80mm	
CPU Support	Intel Atom E3845 / 1.91GHz (4cores, 10W, onboard) Intel Celeron N2930 / 1.83 up to 2.16GHz (4cores, option)	
Chipset	SoC	
Memory Support	Onboard 4GB DDR3L SDRAM (E3845) Onboard 2GB DDR3L SDRAM (N2930, option)	
Graphics	Intel® HD Graphics 542/792MHz (E3845) Intel® HD Graphics 313/854MHz (N2930)	
Display Mode	1 x LVDS (18/24-bit dual LVDS) 1 x CRT Port	
Support Resolution	Up to 1920 x 1200 for LVDS (PS8625) Up to 1920 x 1200 for CRT	
Dual Display LVDS + CRT		
Super I/O	ITE IT8518E Fintek F81216AD	
BIOS	AMI/UEFI	
Storage	1 x MSATA Connector (MSATA1) 1 x SATAII Signal (MSATA1, option) 1 x Micro SD Slot	
Ethernet	2 x PCIe Gbe LAN by Intel 82574L (CN2: LAN1/LAN2, option)	
USB	1 x USB 2.0 Pin header for CN1 (USB1) 1 x USB 2.0 for internal Touch controller (USB4)	

### **3.2 Motherboard Specifications**

	USB 2.0 HUB (USB2514): 2 x USB 2.0 Pin header for MIO1 (E-USB5/E-USB6) 1 x USB 2.0 for MPCIE1 (E-USB7) 1 x USB 2.0 for MPCIE2 (E-USB8)
Serial	1 x RS232/RS422/RS485 header for CN1(COM1) Pin 16 w/5V/12V/RI select 1 x RS232/RS422/RS485 header for MIO1(COM2) Pin 16 w/5V/12V/RI select 2 x UART header for CN4 (F81216AD/COM3/COM4)
Digital I/O	8-bit digital I/O by Pin header (MIO1) 4-bit digital Input 4-bit digital Output 8-bit digital I/O by Pin header (EC_GPIO1)
Battery	Support CR2477 Li battery by 2-pin header (BAT1/CMOS)
Audio	Support Audio via Realtek ALC269 audio codec Support Line-out, MIC by 2x6-pin header (F_AUDIO1) Support Line-out by 1x4-pin header (1CH/2W,SPK1)
Keyboard /Mouse	1 x PS2 keyboard by pin header (MIO1) 1 x PS2 mouse by pin header (MIO1)
Expansion Bus	2 x Mini-PCI-express slots (MPCIE1/MPCIE2)
Touch Ctrl	1 x Touch ctrl header for TCH1 (PM6000 for USB4)
Power Management	DC 12V input only 1 x 2-pin power input connector (DC_IN1)
Switches and LED Indicators	1 x Power on/off switch (CN2/FP1) 1 x Power LED status (CN3) 1 x HDD LED status (MIO1) 1 x Buzzer
SIM	1 x Micro SIM Slot
Temperature	Operating: -20 $^\circ$ to 60 $^\circ$ Storage: -40 $^\circ$ to 85 $^\circ$
Humidity	10% - 90%, non-condensing, operating
Power Consumption	12V /0.80A (Intel Atom E3845 processor with 4GB DDR3L DRAM) 12V /0.70A (Intel Atom N2930 processor with 2GB DDR3L DRAM)
EMI/EMS	Meet CE/FCC class A



(units :mm)

Figure 3.1: Motherboard Dimensions

**3.3 Jumpers and Connectors Location** 

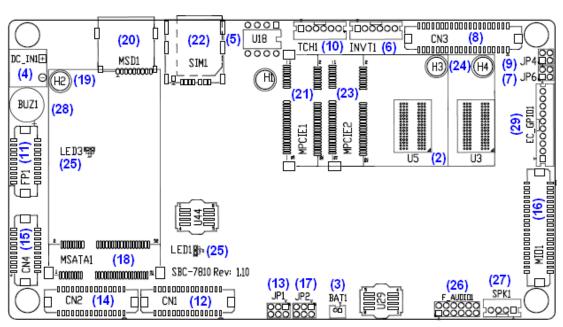


Figure 3.2: Jumpers and Connectors Location- Board Top

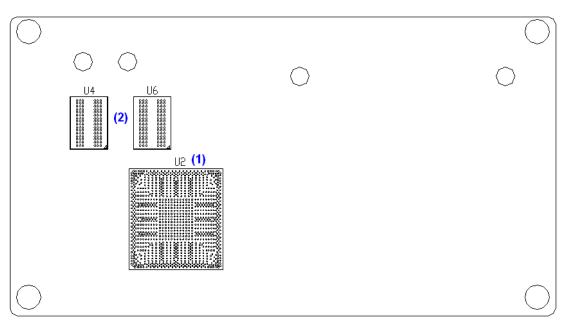


Figure 3.3: Jumpers and Connectors Location- Board Bottom

### **3.4 Jumpers Setting and Connectors**

#### 1. U2:

(FCBGA1170), onboard Intel Bay trail-I/M Processors.

Model	Processor					
	Number	PBF	Cores/Threads	TDP	Remarks	
SBC-7810-E3845-4G	E3845	1.91GHz	4 / 4	10W		
SBC-7810-N2930-2G	N2930	1.83 up to	4 / 4	4.5/7.5W	option	
		2.16GHz				

#### 2. U3/U4/U5/U6:

(FBGA96)Onboard DDR3L Memory.

Model	Memory
SBC-7810-E3845-4G	4GB
SBC-7810-N2930-2G	2GB (option)

#### 3. BAT1:

(1.25mm Pitch 1x2 Wafer 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 1x2 Pin Connector), DC9V~36V System power input connector.

Pin#	Power Input			
Pin1	DC+12V			
Pin2	Ground			

#### 5. U18:

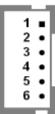
AT24C02-DIP8,The EEPROM IC  $(\,\rm U18\,)\,$  is the set of LVDS resolution.

If you need other resolution settings, please upgrade U18 data.

Model	LVDS resolution		
SBC-7111-E3845-4G	1280*1024 (Default)		
SBC-7111-N2930-2G	800*480 (option)		
	800*600 (option)		
	1024*768 (option)		
	1920*1080 (option)		

#### 6. INVT1:

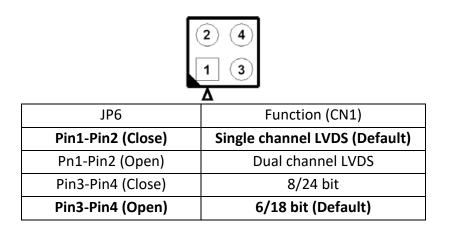
#### (2.0mm Pitch 1x6 wafer Pin Header), Backlight control connector for LVDS



Pin#	Power Input					
1	+DC12V					
2	+DC12V					
3	Ground					
4	Ground					
5	BKLT_EN_OUT					
6	BKLT_CTRL					

#### 7. JP6:

(2.0mm Pitch 2x2 Pin Header), LVDS jumper setting



#### 8. CN3:

(1.25mm Pitch 2x20 Connector, DF13-40P), for 18/24-bit LVDS output connector, fully supported by Parad PS8625 (DP to LVDS), the interface features dual channel 24-bit output. Low Voltage Differential Signaling, A high speed, low power data transmission standard used for display connections to LCD panels.

Function	Signal Name	Pin#		Signal Name	Function
	12V_S0	2	1	12V_S0	
	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_D0_P	14	13	LA_D0_N	
	LA_D1_P	16	15	LA_D1_N	
LVDS	LA_D2_P	18	17	LA_D2_N	LVDS
	LA_D3_P	20	19	LA_D3_N	
	LA_CLKP	22	21	LA_CLKN	
	LB_D0_P	24	23	LB_D0_N	
	LB_D1_P	26	25	LB_D1_N	
	LB_D2_P	28	27	LB_D2_N	
	LB_D3_P	30	29	LB_D3_N	
	LB_CLKP	32	31	LB_CLKN	
	Ground	34	33	Ground	USB2
USB2	USB2_P	36	35	USB2_N	
	5V_S5_USB	38	37	5V_S5_USB	
Power LED	PWR_LED+	40	39	Ground	Power LED

#### 9. JP4 (*Reserve*):

(2.0mm Pitch 2x2 Pin Header).

JP4	Function	
Open 3-4(default)	-	
Open 1-2(default)	-	
Close 3-4(option)	Hardware Disable (TCH1)	
2 1 4	<ul><li>(4)</li><li>(3)</li></ul>	

#### 10. TCH1:

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

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

#### 11. FP1:

(DF13-30P-1.25mm Connector), For expand output connector, via a dedicated cable connected to PB-422x FP1. Please see the PB-422x Manual.

Function	Signal Name	Pir	า#	Signal Name	Function
	NC	2	1	Ground	
	NC	4	3	NC	
	PWRBTN_ON-	6	5	Ground	
	NC	8	7	NC	
	EC_SMDATA1	10	9	EC_SMCLK1	
	Ground	12	11	Ground	
	NC	14	13	NC	
	NC	16	15	NC	
	FP_TXD1	18	17	FP_RXD1	
	12V_S0	20	19	12V_S0	

#### 12. CN1:

(DF13-30P-1.25mm Connector), for expand output connector, It provides one CRT, one USB2.0, one RS232 or RS422 or RS485 connect to the TB-535 I/O board.

Function	Signal Name	Pi	n#	Signal Name	Function
	5V_USB3	2	1	5V_USB3	
	USB3_TX1_N	4	3	USB1_N	USB1
USB1	USB3_TX1_P	6	5	USB1_P	(USB2.0)
(NC)	Ground	8	7	Ground	
	USB3_RX1_N	10	9	CRT_DDCDATA	
	USB3_RX1_P	12	11	CRT_DDCCLK	
	Ground	14	13	5V_VGA	
COM1: RI/5V/12V	VCC_RI1-	16	15	CRT_H_SYNC	
COM1: 232/422	DTR1422RX	18	17	CRT_V_SYNC	
COM1: 232	CTS1-	20	19	3P3V_S0	CRT
COM1: 232/422	TXD1_422RX+	22	21	CRT_FB_RED	
COM1:232	RTS1-	24	23	Ground	
COM1:232/422/485	RXD1_422TX+_485+	26	25	CRT_FB_GREEN	
COM1:232	DSR1	28	27	CRT_FB_BLUE	
COM1:232/422/485 DCD1422TX485- 30 29 Ground					
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.					
Advanced (E81216SEC Super IO Configuration (Serial Port 1 Configuration					

Advanced/F81216SEC Super IO Configuration/Serial Port 1 Configuration [RS-232] / [RS-422] / [RS-485]

#### 13. JP1:

(2.0mm Pitch 2x3 Pin Header), COM1 jumper setting, pin 1~6 are used to select signal out of pin 16 of COM1 port.

JP1 Pin#	Function			
Close 1-2	COM1 RI (Ring Indicato	r) (default)		
Close 3-4	COM1 Pin16: DC+5V	(option)		
Close 5-6	COM1 Pin16: DC+12V	(option)		

#### 14. CN2:

(DF13-30P-1.25mm Connector), For expand output connector, It provides two Ethernet ports. connected to the TB-535 I/O board. Two standard 10/100/1000M Ethernet ports are provided. Used intel 82574L chipset.

Function	Signal Name	Pi	n#	Signal Name	Function
	3P3V_S5	2	1	Ground	
	LAN1_MDI0+	4	3	LAN2_MDI0+	
	LAN1_MDI0-	6	5	LAN2_MDI0-	
	LAN1_MDI1+	8	7	LAN2_MDI1+	
	LAN1_MDI1-	10	9	LAN2_MDI1-	
	LAN1_MDI2+	12	11	LAN2_MDI2+	
	LAN1_MDI2-	14	13	LAN2_MDI2-	
LAN1	LAN1_MDI3+	16	15	LAN2_MDI3+	LAN2
	LAN1_MDI3-	18	17	LAN2_MDI3-	
	Ground	20	19	Ground	
	LAN1_1000M_LINK-	22	21	LAN2_1000M_LINK	
	LAN1_100M_LINK-	24	23	LAN2_100M_LINK	
	LAN1_ACT-	26	25	LAN2_ACT	
	Ground	28	27	Ground	
Power on/off	PWRBTN_ON-	30	29	Ground	

#### 15. CN4:

(DF13-20P-1.25mm Connector), for expand output connector, it provides two UART Signal.

Function	Signal Name	Pin#		Signal Name	Function
DC5V	5V_S0	2	1	12V_S0	DC12V
	COM3_CTS-	4	3	COM4_CTS-	
	COM3_DSR-	6	5	COM4_DSR-	
	COM3_RTS-	8	7	COM4_RTS-	
COM3	COM3_DTR-	10	9	COM4_DTR-	COM4

(UART)	COM3_RXD	12	11	COM4_RXD	(UART)
	COM3_TXD	14	13	COM4_TXD	
	COM3_DCD-	16	15	COM4_DCD-	
	COM3_RI-	18	17	COM4_RI	
	Ground	20	19	Ground	

#### 16. MIO1:

(DF13-40P-1.25mm Connector), for expand output connector, it provides eight GPIO, one RS232 or RS422 or RS485, two USB2.0,one PS/2 mouse, one PS/2 key board, one HDD LED.

Even et i eve	Cierrel Nierree	D:	- H	Circual Nama	E
Function	Signal Name		n#	Signal Name	Function
	Ground	2	1	5V_S0	
SOC_5V_GPIO04	GPIO_OUT1	4	3	GPIO_OUT2	SOC_5V_GPIO05
SOC_5V_GPIO06	GPIO_OUT3	6	5	GPIO_OUT4	SOC_5V_GPIO08
SOC_5V_GPIO09	GPIO_IN1	8	7	GPIO_IN2	SOC_5V_GPIO10
SOC_5V_GPI017	GPIO_IN3	10	9	GPIO_IN4	SOC_5V_GPIO26
	Ground	12	11	Ground	
	Ground	14	13	MS_CLK	PS2 KB/MS
COM2:RI/5V/12V	VCC_RI2-	16	15	KB_CLK	
COM2:232/422	DTR2422RX-	18	17	5V_S0	
COM2:232	CTS2-	20	19	Ground	-
COM2:232/422	TXD2_422RX+	22	21	MS_DATA	-
COM2:232	RTS2-	24	23	KB_DATA	
COM2:232/422/485	RXD2_422TX+_485+	26	25	Ground	
COM2:232	DSR2-	28	27	HDD_LED+	HDD LED
COM2:232/422/485	DCD2422TX485-	30	29	Ground	
	Ground	32	31	AUTO_PWRON-	Power auto on
USB5	Ground	34	33	Ground	USB6
(HUB-USB2.0)	E_USB5_N	36	35	E_USB6_N	(HUB-USB2.0)
	E_USB5_P	38	37	E_USB6_P	-
	5V_USB1	40	39	5V_USB1	
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.					

COM2 BIOS Setup:

Advanced/IT8518Super IO Configuration/Serial Port 2 Configuration [RS-232]/[RS-422]/[RS-485]

#### 17. JP2:

(2.0mm Pitch 2x3 Pin Header), COM2 jumper setting, pin 1~6 are used to select signal out of pin 16 of COM2 port.

JP1 Pin#	Function			
Close 1-2	COM2 RI (Ring Indicator) (default)			
Close 3-4	COM2 Pin16: DC+5V (option)			
Close 5-6	COM2 Pin16: DC+12V (option)			

#### 18. MSATA1:

(50.95mmx30mm Socket 52Pin), mSATA socket, it is located at the top, it supports SATAII Signal and SMBUS and B2 mSATA bus for flash disk signal.

Function	Support
B2 mSATA	•
SMBUS	•
SATA II	O (option)

#### 19. H2:

MSATA1 SCREW HOLES, H2 for mini SATA card (30mmx50.95mm) assemble.

#### 20. MSD1:

(Micro SD card slot), Micro Secure Digital Memory Card slot

#### 21. MPCIE1:

(Socket 52Pin), mini PCIe socket, it is located at the top, it supports mini PCIe devices with USB2.0 and SIM and SMBUS and PCIe signal. MPCIe card size is 30x50.95mm.

#### 22. SIM1:

(Micro SIM Card slot), support micro SIM Card devices

#### 23. MPCIE2:

(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 30x50.95mm.

#### 24. H3/H4:

MPCIE1 SCREW HOLES, H3 for mini PCIe1 card (30mmx50.95mm) assemble. H4 for mini PCIe2 card (30mmx50.95mm) assemble.

#### 25. LED1, LED3 (option):

LED1: LED STATUS. Green LED for Motherboard Power Good status. LED3: LED STATUS. Green LED for EC Power status.

#### 26. F\_AUDIO1:

(2.0mm Pitch 2x6 Pin Header), Front Audio, An onboard Realtek ALC269 codec is used to provide high-quality audio I/O ports. Line Out can be connected to a headphone or amplifier. MIC is the port for microphone input audio.

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

#### 27. SPK1:

(2.0mm Pitch 1x4 Wafer Pin Header), support 2-W(per channel) efficient, audio power amplifier for driving bridged-tied stereo speakers.

Pin#	Signal Name
1	SPK_OUTR_P
2	SPK_OUTR_N
3	SPK_OUTL_N
4	SPK_OUTL_P

#### 28. BUZ1:

Onboard buzzer

#### 29. EC\_GPIO1 (option):

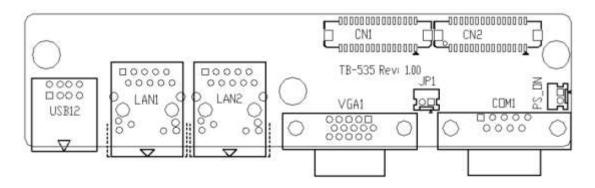
(2.0mm Pitch 1X10 Pin Header), for expand connector, it provides eight GPIO.

Pin#	Signal Name
1	Ground
2	GPA0_ONOFF (EC_GPA0)
3	GPA1_SPK- (EC_GPA1)
4	GPE6_BKLT- ( EC_GPE6)
5	GPE0_BKLT+ ( EC_GPE0)
6	GPC3_SPK+ ( EC_GPC3)
7	BKLT_CTRL_PWR
8	ADC6_BKLT_CTRL (EC_ADC6)
9	ADC7_L_SENSE (EC_ADC7)
10	3.3V

EC_GPIO1	Function
OSD keypad	5Key: Power, Brightness up, Brightness
	down, Volume up, Volume down

#### 30. TB-535:

SBC-7810 I/O Card, via a dedicated cable connected to SBC-7810 CN1 and MIO1 and CN2. TB-535 Top :



С	Ν	1	•
-		-	•

Function	Signal Name	Pi	n#	Signal Name	Function
	5V_USB3	2	1	5V_USB3	
	NC	4	3	USB1_N	USB1
(NC)	NC	6	5	USB1_P	(USB2.0)
	Ground	8	7	Ground	
	NC	10	9	CRT_DDCDATA	
	NC	12	11	CRT_DDCCLK	
	Ground	14	13	5V_VGA	
COM1:RI/5V/12V	VCC_RI1-	16	15	CRT_H_SYNC	
COM1:232/422	DTR1422RX	18	17	CRT_V_SYNC	
COM1:232	CTS1-	20	19	3P3V_S0	CRT
COM1:232/422	TXD1_422RX+	22	21	CRT_FB_RED	
COM1:232	RTS1-	24	23	Ground	
COM1:232/422/485	RXD1_422TX+_485+	26	25	CRT_FB_GREEN	
COM1:232	DSR1-	28	27	CRT_FB_BLUE	
COM1:232/422/485	DCD1422TX485-	30	29	Ground	

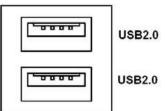
#### **CN2:**

Function	Signal Name	Pi	n#	Signal Name	Function
	3P3V_S5	2	1	Ground	
	LAN1_MDI0+	4	3	LAN2_MDI0+	
	LAN1_MDI0-	6	5	LAN2_MDI0-	
	LAN1_MDI1+	8	7	LAN2_MDI1+	
	LAN1_MDI1-	10	9	LAN2_MDI1-	
LAN1	LAN1_MDI2+	12	11	LAN2_MDI2+	LAN2
	LAN1_MDI2-	14	13	LAN2_MDI2-	
	LAN1_MDI3+	16	15	LAN2_MDI3+	
	LAN1_MDI3-	18	17	LAN2_MDI3-	
	Ground	20	19	Ground	
	LAN1_1000M_LINK-	22	21	LAN2_1000M_LIN	
				К	

	LAN1_100M_LINK-	24	23	LAN2_100M_LINK	
	LAN1_ACT-	26	25	LAN2_ACT	
MIO1/USB5	USB2_P	28	27	USB2_N	MIO1/USB5
Power on/off	WRBTN_ON-	30	29	Ground	

#### USB12:

(Double stack USB typeA), USB connector, it provides up to two USB2.0 ports, support USB full-speed and low-speed signaling.

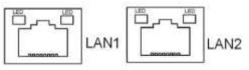


#### Each USB Type A Receptacle (2 Ports) Current limited value is 1.5A.

If the external USB device current exceeds 1.5A, please separate connectors into different Receptacle.

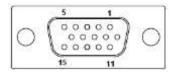
#### LAN1/LAN2:

(RJ45 Connector), Rear LAN port, Two standard 10/100/1000M RJ-45 Ethernet ports are provided. Used intel 82574L 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.



#### VGA1:

(CRT Connector DB15), Video Graphic Array Port, provide high-quality video output.

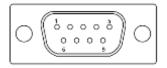


JP1:

VGA hot plug setting		
JP1	Function	
Pin1-Pin2 (Close)	VGA Simulation Disabled	
Pin1-Pin1 (Open)	VGA Simulation Enabled	
Use the 2.0mm jumper cap to close pin 1 and pin 2		

#### COM1:

**(Type DB9M),** Rear serial port, standard DB9 Male serial port is provided to make a direct connection to serial devices.



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/F81216SEC Super IO Configuration/Serial Port 1			
Configuration	RS-232		

RS422 (option)			
Pin#	Signal Name		
1	422_TX		
2	422_TX+		
3	422_RX+		
4	422_RX-		
5	Ground		
6	NC		
7	NC		
8	NC		
9	NC		
BIOS Setup:			
Advanced/F81216SEC Super IO Configuration/Serial Port 1			
Configuration [RS-422]			

RS485 (option)		
Pin#	Signal Name	
1	485-	
2	485+	
3	NC	
4	NC	

5	Ground	
6	NC	
7	NC	
8	NC	
9	NC	
BIOS Setup:		
Advanced/F81216SEC Super IO Configuration/Serial Port 1		
Configuration 【RS-485】		

#### PS\_ON:

Power on/off button, used to connect power switch button

### 3.5 Power Board PB-422B Jumpers Setting and Connectors

PB422B is a power management board for SBC-7810. It contains DC\_IN1  $\ DC_OUT1 \ SW_C1 \ SW_T1 \ FP1$  and BAT1 connectors. It inputs 6-36V voltage through DC\_IN1 and 12V from the battery through the BAT1 connector. It outputs 14V or 0V voltage to SBC-7810 through DC\_OUT1. When the power button is pressed for a period of time (2-5s) or the ACC signal is changed, the voltage of DC\_OUT1 will be changed after a delay time. The delay time will be determined by the dial switch or data which is sent from SBC-7810 via FP1.

#### 1. DC\_IN1:

(3.81mm Pitch 1\*3 Pin Connector), DC IN1 inputs 6-36V voltage and ACC signal from vehicle.

Pin#	Signal Name			
1	ACC			
2	DC-			
3	DC+			

#### 2. DC\_OUT1:

(3.81mm Pitch 1\*2 Pin Connector), DC\_OUT1 outputs 14V or 0V voltage to SBC-7810.

Pin#	Signal Name			
1	DC+			
2	DC-			

#### 3. SW\_C1:

5 bit dial switch. SW\_C1 determines the delay time by the dial switch or the data from SBC-7810.

Signal Name	Pin#		Signal Name
HW_SET	1	2	GND
NC	3	4	GND
MB_PWR_OFF-	5	6	GND

RSV_SW_P3_3	7	8	GND
PWRON_TST-	9	10	GND

### 4. SW\_T1:

6 bit dial switch. SW\_T1 provides the delay signal.

Signal Name	Pi	n#	Signal Name
SET_ON_1	1	2	GND
SET_ON_2	3	4	GND
SET_ON_3	5	6	GND
SET_OFF_1	7	8	GND
SET_OFF_2	9	10	GND
SET_OFF_3	11	12	GND

### 5. FP1:

(1.25mm Pitch 2\*10 Pin Connector) FP1 communicates with SBC-7810 through IIC and UART and receive the power button signal.

Signal Name	Pi	n#	Signal Name
GND	1	2	PWR_BTN_MCU-
DC13V_ON_LED-	3	4	5V_ALLS
GND	5	6	PWR_BTN_MB-
SBW_TCK	7	8	SBW_TDIO_RST-
UCB0_SCL	9	10	UCB0_SDA
GND	11	12	GND
NC	13	14	NC
MB_PWR_OFF-	15	16	NC
P_RXD1	17	18	P_TXD1
14V_PC	19	20	14V_PC

### 6. BAT1:

BAT1 communicates with the battery through the SMBUS and input 12V battery voltage.

Signal Name
VCC_BAT1
VCC_BAT1
VCC_BAT1
SMB_DAT_BAT1
SMB_CLK_BAT1
BAT1_TEMP
GND
GND
GND
SET_BAT1_ON

# **Chapter 4**

# UEFI SETUP UTILITY

### 4.1 Operations after POST Screen

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



### 4.2 BIOS Setup Utility

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

### 4.3 Main Settings

	Aptio Setup	Utility –	Copyright (C) 20	019 American I	Megatrends, Inc.
Main	Advanced	Chipset	Security	Boot	Save & Exit
BIOS	Information				Choose the system default
BIOS	Vendor			American	Language
Megati	rends				
Core Ve	ersion		5.010		
Compli	ancy		UEFI 2.4;	PI 1.3	
Project	Version		7810 0.08	x64	
Build D	ate and Time	5	10/31/2019	10:36:36	
CPU	Configuratio	n			
Microc	ode Patch		901		
BayTrai	il SoC		DO Steppir	ng	
KSC Inf	ormation				
KSC Ve	rsion		N/A		
					→←: Select Screen
Memo	ry Informatio	n			↑ ↓ : Select Item
Total N	lemory		4096 MB	(DDR3L)	Enter: Select +/- : Charge Opt.
					F1 : General Help
GOP In	formation				F2: Previous Values
Intel (	R) GOP Driv	rer	[N/A]		F3:Optimized Defaults F4:Save and Exit
					ESC Exit
TXE Inf	ormation				
Sec RC	Version		00.05.00.0	0	
TXE FW	/ Version		01.01.00.1	089	
System	Language		[English]		
System	Date		[Sun 01/01,	/2012]	
System			[00:00:10]	-	
	Version 2.1	7.1246. C	opyright (C) 20	19 American N	legatrends , Inc.

### 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 dateMonth:01 to 12Date:01 to 31Year:1999 to 2099

### 4.4 Advanced Settings

Antio Setun	Utility – Co	ovright (C) 2	19 Ameri	ican Megatrends, Inc.
Main Advanced	Chipset	Security	Boot	Save & Exit
Main Advanced ACPI Settings F81216SEC Super I IT8518 Super IO Co Intel (R) Smart Co CPU Configuration PPM Configuration Thermal Configuration Miscellaneous Config LPSS & SCC Config System Component Network Stack Config CSM Configuration SDIO Configuration USB Configuration Platform Trust Techr Security Configuration	O Configuration nfiguration nnect Techno on guration guration guration	tion	Boot	Save & Exit System ACPI Parameters. →←: Select Screen ↑↓ : Select Item Enter: Select +/- : Charge Opt. F1 : General Help F2: Previous Values F3:Optimized Defaults F4:Save and Exit ESC Exit
Version 2.17	.1246. Cop	vright (C) 20	19 Americ	an Megatrends , Inc.

### 4.4.1 ACPI Settings

Enable ACPI Auto Conf:

[Disabled] [Enabled]

Enable Hibernation:

[Enabled] [Disabled]

**ACPI Sleep State:** 

[S3 (Suspend to RAM)] [Suspend Disabled]

Lock Legacy Resources:

[Disabled] [Enabled]

### 4.4.2 F81216SEC Super IO Configuration

Super IO chip F81216SEC Serial Port 1 Configuration UART1 Mode Selection :

> **[RS-232]** [RS-485] [RS-422]

Backlight PWM Controller :

[RS-232]	
[RS-485]	
[RS-422]	

Serial Port 3 Configuration Change Settings [Auto] Serial Port 4 Configuration Change Settings [Auto]

### 4.4.3 IT8518 Super IO Configuration

Super IO chip IT8518/IT8519	
Serial Port 1 Configuration	
Change Settings	[Auto]
Serial Port 2 Configuration (COM6)	
Change Settings	[Auto]

### 4.4.4 Intel<sup>®</sup> Smart Connect Technology

**ISCT Support** 

[Disabled] [Enabled]

### 4.4.5 CPU Configuration

### Socket 0 CPU Information

Intel® ATOM™ CPU E3845 @ 1.910	GHz
CPU Signature	30679
Microcoede Patch	901
Max CPU Speed	1910 MHz
Mix CPU Speed	500MHz
Processor Cores	4
Intel HT Technology	Not Supported
Intel HT-X Technology	Supported
L1 Date Cache	24KB x 4
L1 Code Cache	32KB x 4
L2 Cache	1024 KB x 2
L2 Cache	Not Present
CPU Thermal configuration	
CPU Speed	1918 MHz
64-bit	Supported
Limit CPUID Maximum:	
	[Disabled]

[Enabled]

Execute Disable Bit:

[Enabled] [Disabled]

Intel Virtualization Technology:

[Enabled] [Disabled]

Power Technology

[Energy Efficient] [Disabled] [Custom]

### 4.4.6 PPM Configuration

CPU C State Report

[Enabled] [Disabled]

Max CPU C-state

**[C7]** [C6] [C1]

SOix

[Disabled] [Enabled]

### 4.4.7 Thermal Configuration Parameters

### 4.4.8 IDE Configuration

Serial-ATA (SATA)

[Disabled]

SATA Test Mode

### [Disabled] [Enabled]

[Enabled]

SATA Speed Support

[Gen2] [Gen1]

SATA ODD Port

[No ODD] [Porto ODD] [Port1 ODD] [Disabled]

SATA Mode	
	[AHCI Mode]
	[IDE Mode]
Serial-ATA Port 0	
	[Enabled]
	[Disabled]
SATA Port0 Hotplug	
	[Disabled]
	[Enabled]
Serial-ATA Port 1	
	[Enabled]
	[Disabled]
SATA Port1 Hotplug	
	[Disabled]
	[Enabled]
SATA Port0	
Not Present	

### 4.4.9 Miscellaneous Configuration

SATA Port1 Not Present

LPSS DMA #2 Support

LPSS I2C #1 Support

OS Selection	Windows 7
	[Windows 8.x]

LPSS & SCC Configuration	
SCC Configuration	
SCC eMMC Support	[eMMC AUTO MODE]
SCC eMMC 4.5 DDR50 Support	[Enabled]
SCC eMMC 4.5 HS200 Support	[Disabled]
eMMC Secure Erase	[Disabled]
SCC SDIO Support	[Enabled]
SCC SD Card Support	[Enabled]
SDR25 Support for SDCard	[Enabled]
SDR50 Support for SDCard	[Enabled]
MIPI HSI Support	[Disabled]
LPSS Configuration	[Enabled]
LPSS DMA #1 Support	[Enabled]

[Enabled]

[Enabled]

LPSS I2C #2 Support	[Enabled]
LPSS I2C #3 Support	[Enabled]
LPSS I2C #4 Support	[Enabled]
LPSS I2C #5 Support	[Enabled]
LPSS I2C #6 Support	[Enabled]
LPSS I2C #7 Support	[Enabled]
NFC	[Disabled]
Touch Pad	[Disabled]
I2C touch Device Address	[AUTO]
LPSS HSUART #1 Support	[Disabled]
LPSS HSUART #2 Support	[Disabled]
LPSS PWM #1 Support	[Enabled]
LPSS PWM #2 Support	[Enabled]
4.4.11 System Component	
4.4.12 Network Stack Configuration	
Network Stack	[Disabled]
4.4.13 CSM Configuration	
CSM Support	[Enabled]
CSM16 Module Version	07.76
GateA20 Active	[Upon Request]
Gaterizerietive	[Always]
Option ROM Messages	[Force BIOS]
option now messages	[Keep Current]
Boot option filter	[UEFI and Legacy]
boot option men	[Legacy only]
	[UEFI only]
Network	
	[UEFI]
	[Do not launch]
	[Legacy]
Storage	[Back]
	[UEFI]
	[Do not launch]
	[Legacy]
Video	
	[Legacy]
	[UEFI]

[Do not launch]

Other PCI devices

[UEFI] [Do not launch] [Legacy]

### 4.4.14 SDIO Configuration

4.4.15 USB Configuration	
USB Configuration	
USB Module Version 8.11.02	
USB Devices:	
1 keyboard, 2 Mice,	2 Hubs
Legacy USB Support:	
	[Enabled]
	[Disabled]
XHCI Hand-off:	
	[Enabled]
	[Disabled]
EHCI Hand-off:	
	[Disabled]
	[Enabled]
USB Mass Storage Driver Sup	port
	[Enabled]
	[Disabled]
USB hardware delays and tim	ne-outs:
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]

### 4.4.16 Platform Trust Technology

Ftpm

[Disabled] [Enabled]

### 4.4.17 Security Configuration

## **4.5 Chipset Settings**

	Aptio Setup	Jtility – Cop	yright (C) 20	19 American	Megatrends, Inc.
Main	Advanced	Chipset	Security	Boot	Save & Exit
► North ► South					Host Bridge Parameters
					→←: Select Screen $\uparrow\downarrow$ : Select Item Enter: Select +/- : Charge Opt. F1 : General Help F2: Previous Values F3:Optimized Defaults F4:Save and Exit ESC Exit
	Version 2.17	.1246. Copy	right (C) 201	9 American M	legatrends , Inc.

### 4.5.1 North Bridge

► Intel IGD Configuration

IGD – LCD Control	
Force Lid Status	[On]
[off]	
BIA	[Auto]
ALS Support	[Disabled]
IGD Flat Panel	[Auto]
Pannel Scaling	[Auto]

### ► Memory Frequency and Timing

### ► Graphics Power Management Control

Memory Information	
Total Memory	4096 MB(DDR3L)
Memory Slot0	4096 MB(DDR3L)
DIMM#2	Not Present

Max TOLUD

Max TOLOD	
	[Dynamic]
	[2GB]
	[2.25GB]
	[2.5GB]
	[2.75GB]
	[3GB]
Backlight PWM or DC Control	
	[PWM]
	[DC]
Backlight PWM Control	
	[Button Control PWM by EC]
	[PWM Inverted by BIOS]
	[PWM Normal by BIOS]
	[Button Control PWM by EC]
BIOS Control Backlight Level	
	[Level 7]
	[Level 0]
	[Level 1]
	[Level 2]
	[Level 3]
	[Level 4]
	[Level 5]
	[Level 6]
	[Level 8]
	[Level 9]
	[Level 10]
	[Level 11]
	[Level 12]
	[Level 13]
	[Level 14]
	[Level 15]
Power on Delay Time [10 Second]	
	[30 Second]
	[1min]
	[5min]
	[10min]
	[15min]
	[30min]
	[1Hour]
	[1.5Hour]

[2Hour] [2.5Hour] [3Hour]

### 4.5.2 South Bridge

► Azalia HD Audio

USB Configuration	
USB OTG Support	[Disabled]
USB VBUS	[on]
XHCI Mode	[smart Auto]
USB2 Link Power Management	[Enabled]
USB 2.0(EHCI) Support	[Enabled]
USB EHCI debug	[Disabled]
USB Per Port Control	[Enabled]
USB Port 0	[Enabled]
USB Port 1	[Enabled]
USB Port 2	[Enabled]
USB Port 3	[Enabled]

# **4.6 Security Settings**

Aptio Setup Utili	ty – Copyright (C)	2019 Americar	n Megatrends, Inc.
Main Advanced Chips	et Security	Boot	Save & Exit
Password Description			Set Administrator Password
If ONLY the Administrato Then this only limits acce Only asked for when ente If ONLY the User's passw	ess to Setup ar ering Setup.	nd is	
•			
Is a power on password a Is a power on password a Boot or enter Setup. In S Have Administrator right The password length mu In the following range: Minimum length 3 Maximum length 2	and must be en etup the User s. st be	ntered to	<ul> <li>→←: Select Screen</li> <li>↑↓ : Select Item</li> <li>Enter: Select</li> <li>+/-: Charge Opt.</li> <li>F1 : General Help</li> <li>F2: Previous Values</li> <li>F3:Optimized Defaults</li> <li>F4:Save and Exit</li> <li>ESC Exit</li> </ul>
Administrator Password			
User Password Secure Boot menu			
Version 2.17.12	4 <mark>6. Copyright (C)</mark> 2	019 American	Megatrends , Inc.

### 4.6.1 Administrator Password



Type the password with up to 20 characters and then press  $\lt$ Enter key. This will clear all previously typed CMOS passwords. You will be requested to confirm the password. Type the password again and press  $\lt$ Enter key. You may press  $\lt$ 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.

## 4.7 Boot Settings

Aptio Setup Utility – Copy		019 America	
	ecurity	Boot	Save & Exit
Boot Configuration			Number of seconds toWait for Setup Activation key.
Setup Prompt Timeout			65535(0xFFFF)means Indef
Bootup Numlock State	[On]		inite waiting.
Quiet Boot	[Disab]	-	
Fast Boot	[Enable	ed]	
			→←: Select Screen ↑↓   : Select Item
Boot Option Priorities			Enter: Select
Boot Option	l	#1	+/- : Charge Opt.
[UEFI:Built-in EFI]			F1 : General Help F2: Previous Values
			F3:Optimized Defaults
			F4:Save and Exit
Version 2.17.1246. Copyr	iaht (C) 201	9 America	ESC Exit n Megatrends , Inc.
Setup Prompt Timeout [1]			
Bootup Numlock State			
		[On]	
		[off]	
Quiet Boot			
		[Disabled	]
		[Enabled]	
Fast Boot		-	
		[Disabled	1
		[Enabled]	-
Poot Option Drianitias		[LIIGDIEU]	
Boot Option Priorities			
Boot Option #1			
		Sets the s	system boot order
Hard Drive BBS Priorities [S	SATA PM:*	*** ]	
		Boot Opti	ion #1
		SATA PM	
		3ATA PIVI. *****	
		Disabled	

# 4.8 Save & Exit Settings

Aptio Setup Utility – Copyright (C) 2019 American	
MainAdvancedChipsetBootSecuritySave Changes and ExitDiscard Changes and ResetDiscard Changes and Reset	Save & Exit Exit system setup after Saving the changes.
Save Options	
Save Changes	
Discard Changes	→←: Select Screen ↑↓ : Select Item Enter: Select
Restore Defaults	+/- : Charge Opt.
Save user Defaults	F1 : General Help
Restore user Defaults	F2: Previous Values F3:Optimized Defaults F4:Save and Exit
Boot Override	ESC Exit
UEFI:Built-in EFI Shell	
Launch EFI Shell from filesystem device	
► Reset System with ME disabl ModeMEUD000	
Version 2.17.1246. Copyright (C) 2019 American M	legatrends , Inc.

Save Changes and Exit	
Save & Exit Setup save Configuration and	d exit ?
	[Yes]
	[No]
Discard Changes and Ext	
Exit Without Saving Quit without saving	?
	[Yes]
	[No]
Save Changes and Reset	
Save & reset Save Configuration and rese	et?
	[Yes]
	[No]
Discard Changes and Reset	
Reset Without Saving Reset without savi	ng?
	[Yes]
	[No]
Save Changes	
Save Setup Values Save configuration?	
	[Yes]
	[No]

Discard Changes	
Load Previous Values Load P	revious Values?
	[Yes]
	[No]
Restore Defaults	
Load Optimized Defaults Loa	ad optimized Defaults?
	[Yes]
	[No]
Save user Defaults	
Save Values as User Defaults	s Save configuration?
	[Yes]
	[No]
Restore user Defaults	
Restore User Defaults Resto	re User Defaults?
	[Yes]
	[No]
Launch EFI Shell from filesystem	device
WARNING Not Found	
	[ok]
Reset System with ME disable M	odeMEUD000
ME will runs into the tempo	rary disable mode, Ignore if ME Ignition FWMEUD00

# Chapter 5 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 driver, Audio driver, USB 3.0 driver, and Com 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.

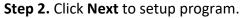


# 5.1 Intel<sup>®</sup> AtomTM SoC Chipset Driver

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

Step 1. Select Intel AtomTM SoC Chipset from the list



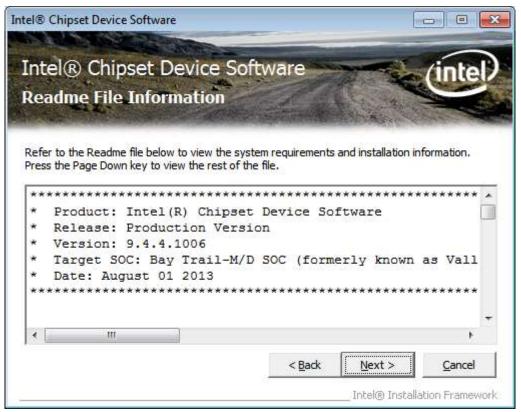


Intel® Chipset Device Software	
Intel <sup>®</sup> Chipset Device Softwa	re (intel)
Welcome to the Setup Program	
This setup program will install the Intel® Chipset Dev strongly recommended that you exit all programs bef	
	< Back Next > Cancel
	Intel® Installation Framework

**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.



# 5.2 Intel<sup>®</sup> VGA Chipset Driver

To install the VGA drivers, follow the steps below to proceed with the installation. **Step 1**.Select **Intel® VGA Chipset Driver.** 



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

Intel® Installation Framework	
Intel® Graphics Driver	
Welcome to the Setup Program	(intel)
This setup program will install the following components: - Intel® Graphics Driver - Intel® Display Audio Driver	
It is strongly recommended that you exit all programs before continu	uing. Click Next to continue.
Automatically run WinSAT and enable the Windows Aero desktop	o theme (if supported).
< <u>B</u> ack	Next > Cancel

Step 3. Read license agreement. Click Yes.

Intel® Installation Framework		×
Intel® Graphics Driver		
License Agreement	(intel	)
You must accept all of the terms of the license agreement in order to continue t program. Do you accept the terms?	he setup	
INTEL SOFTWARE LICENSE AGREEMENT (OEM / IHV / ISV Distribution & Single	User)	*
IMPORTANT - READ BEFORE COPYING, INSTALLING OR USING. Do not use or load this software and any associated materials (collectively, the until you have carefully read the following terms and conditions. By loading or a Software, you agree to the terms of this Agreement. If you do not wish to so a install or use the Software.	using the	
Please Also Note: * If you are an Original Equipment Manufacturer (OEM), Independent Hardwar (IHV), or Independent Software Vendor (ISV), this complete LICENSE AGREEM * If you are an End-User, then only Exhibit A, the INTEL SOFTWARE LICENSE	ENT applies;	~
	No Installation Fram	ework

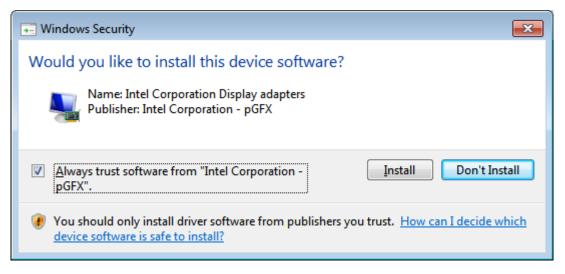
### Step 4. Click Next to continue.

ntel® Installation Framework			
Intel® Graphics Driver			
Readme File Information			(intel)
Refer to the Readme file below to view the system	n requirements	and installation	information.
Release Notes for the Intel(R) Embedded Media and Graphics Drivers (In Gold 2 Production Version 36.15.0.xxxx(32-bit) ar (where xxxx = build version number) release for Windows* 7/Windows Embedded Stan with production license March 2014	nd 37.15.0.xxx	cx(64-bit)	
			<b>*</b>
	< Back	Next >	Cancel

#### Step 5. Click Install.

• Windows Security	×
Would you like to install this device software?	
Name: Intel(R) Corporation Sound, video and ga Publisher: Intel Corporation - Software and Firmwar	
Always trust software from "Intel Corporation - Software and Firmwar".	't Install
You should only install driver software from publishers you trust. How can I decide which device so safe to install?	iftware is

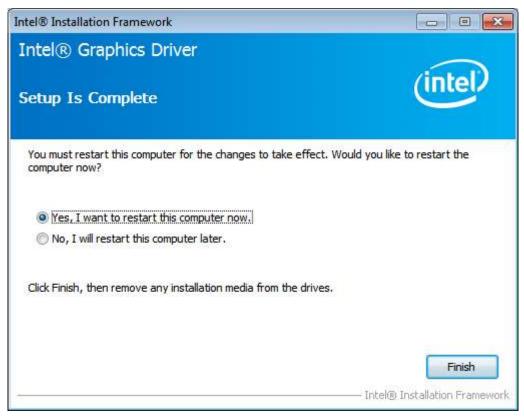
#### Step 6. Click Install.



Step 7. Click Next.

exe ams\Intel\Intel(R) HD Graf ams\Intel(R) HD Graphics
ams\Intel\Intel(R) HD Graphics (
ams\Intel\Intel(R) HD Graphics (
ams\Intel\Intel(R) HD Graphics (
ams\Intel(R) Graphics and ams\Intel\Intel(R) Graphic Panel.Ink Control Panel.Ink ams\Intel\Intel(R) Iris(TM) htrol Panel.Ink Control Panel.Ink
4
a

**Step 8.** Select **Yes, I want to restart this computer now.** Then click **Finish** to complete the installation.



## 5.3 Intel® 82574L LAN Driver

To install the Intel<sup>®</sup> 82574L LAN Driver, please follow the steps below.

Step 1. Select Intel® 82574L LAN Driver from the list.



Step 2. Click Next to continue.

HINTER INTERIOR STATE IN THE INPUT INTERIOR INTERIORIA INTERIORIA INTERIORIA INTERIORI INTERIOR INTERIORIA INTERIORIZIA INTERIORIA	
Welcome to the install wizard for Intel(R) Network Connections	(intel)
Installs drivers, Intel(R) Network Connections, and Advanced Networking Services.	
WARNING: This program is protected by copyright law and international treaties.	
< <u>B</u> ack Next >	Cancel

### Step 3. Read license agreement. Click I accept the terms in the license agreement.

~	: -   -		ext.
( )	ICK	- IN	<b>ΑΥΤ</b>
~	IUN		-

HIII Intel(R) Network Connections Install Wizard	<b>X</b>
License Agreement Please read the following license agreement carefully.	(intel)
INTEL SOFTWARE LICENSE AGREEMENT IMPORTANT - READ BEFORE COPYING, INSTALLING OR USING Do not copy, install, or use this software and any associated materials (collectively, the "Software") provided under this license agreement ("Agreement") until you have carefully read the following terms and co By copying, installing, or otherwise using the Software, you agree to be the terms of this Agreement. If you do not agree to the terms of this Agreement.	onditions. e bound by
<ul> <li>I accept the terms in the license agreement</li> <li>○ I do not accept the terms in the license agreement</li> </ul>	Print
< <u>B</u> ack <u>N</u> ext >	Cancel

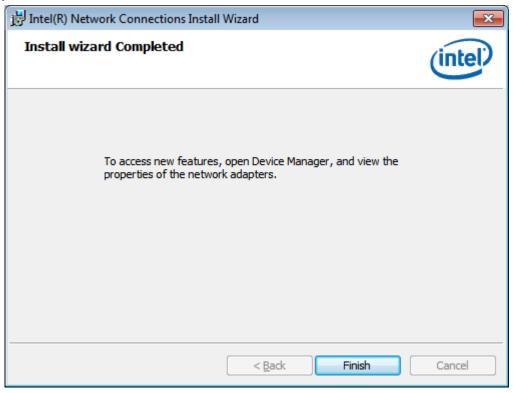
### Step 4. Click Next to continue.

Intel(R) Network Connections	
Setup Options Select the program features you want installed.	(intel)
Install: Drivers Intel(R) PROSet for Windows* Device Manager Advanced Network Services Windows* PowerShell Module Intel(R) Network Connections SNMP Agent	
Feature Description	Next > Cancel

Step 5. Click Install to begin the installation.

🗒 Intel(R) Network Connections Install Wizard	<b>—</b>
Ready to Install the Program	(intal)
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, dick Back. Click exit the wizard.	Cancel to
< <u>B</u> ack Install	Cancel

Step 6. Click Finish to exit the wizard.



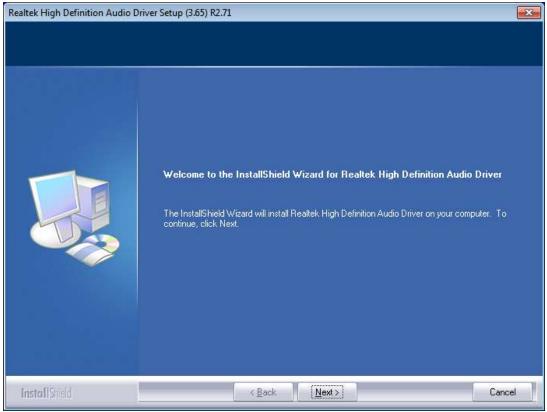
# 5.4 Realtek ALC662 HD Audio Driver

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

Step 1. Select Realtek ALC662 GD Audio Driver from the list

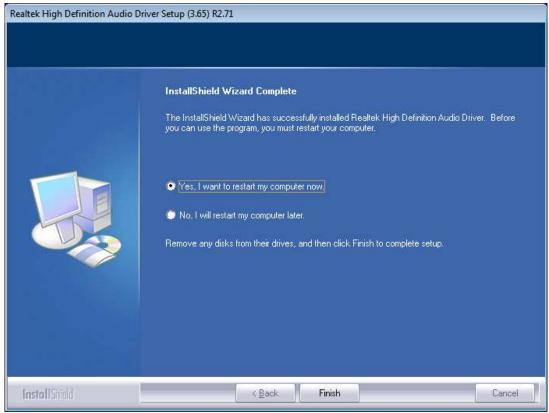


### Step 2. Click Next to continue.



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**Step 3.** Select **Yes, I want to restart my computer now.,** and then click **Finish** to complete installation.



### 5.5 USB 3.0 Driver

To install the USB 3.0 Driver, please follow the steps below.

Step 1. Select USB 3.0 Driver from the list.



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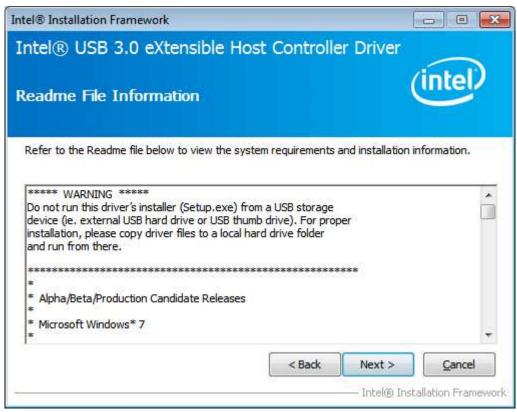
Step 2. Click Next to continue.



#### Step 3. Read the license agreement and click Yes to continue.



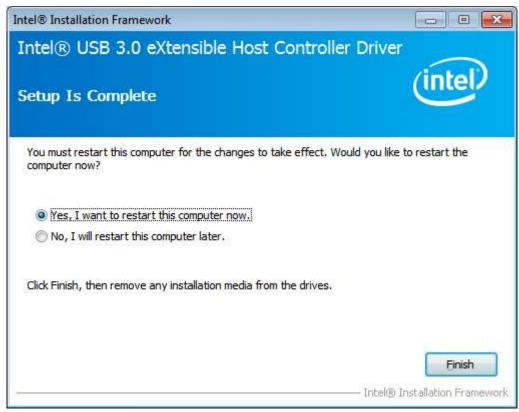
Step 4. Click Next to continue.



Step 5. Click Next to continue



**Step 6.** Select **Yes, I want to restart this computer now.**, and then click **Finish** to complete the installation.



### 5.6 Com Driver

To install the Com Driver, please follow the steps below. **Step 1.** Select **Com Driver** from the list.

😏 Drivers CD			- • •
the test of the			
Industria	al Par	el PG	
	CENTRE LA CONTRACTOR		
	WIN7 - D	RIVER	
	DRIVERS	Intel(R) AtomTM SoC Chipset Intel(R) VGA Chipset Intel(R) 82574L LAN Driver Realtek ALC662 HD Audio Driver USB 3.0 Driver Touch Panel Driver	
		Com Driver	٢
	OTHERS	User Manual	
			-
		View	EXIT

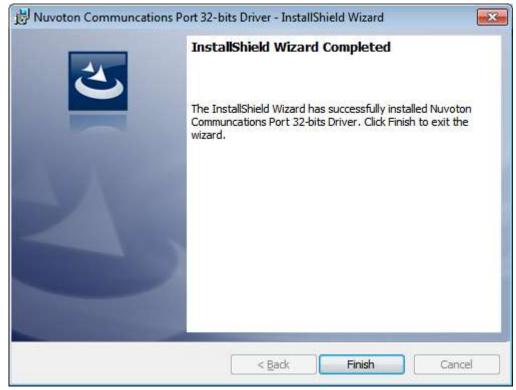
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#### Step 2. Click Next to continue.



#### Step 3. Click install to begin the installation.

😸 Nuvoton Communcations Port 32-bits Driver - InstallShield 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.
InstallShield
< <u>B</u> ack Install Cancel



### Step 4. Click Finish to complete the installation.

# **Chapter 6 Touch Screen Installation**

This chapter describes how to install drivers and other software that will allow your touch screen work with different operating systems.

# 6.1 Windows 7/8.1 Universal Driver Installation for

# PenMount 6000 Series

Before installing the Windows 7/8.1 driver software, you must have the Windows 7/8.1 system installed and running on your computer. You must also have one of the following PenMount 6000 series controller or control boards installed: PM6500, PM6300.

### 6.1.1 Installing Software(Resistive Touch)

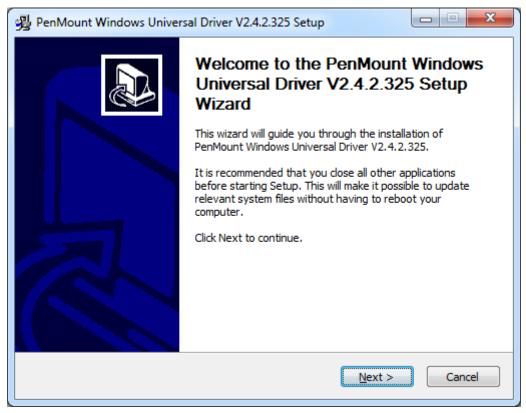
If you have an older version of the PenMount Windows 7 driver installed in your system, please remove it first. Follow the steps below to install the PenMount DMC6000 Windows 7 driver.

**Step 1.** Insert the product CD, the screen below would appear. Click **Touch Panel Driver** from the list.



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Step 2. Click Next to continue.



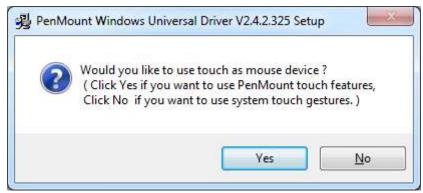
Step 3. Read the license agreement. Click I Agree to agree the license agreement.

PenMount Windows Universal Driver V2.4.2.325 Setup		
License Agreement Please review the license terms before installing PenMount Windows Universal Driver V2.4.2.325.		
Press Page Down to see the rest of the agreement.		
PLEASE READ THE LICENSE AGREEMENT		
PenMount touch screen driver software is only for using with		
PenMount touch screen controller or control board. Any person or company using a PenMount driver on any piece of		
equipment which does not utilize an PenMount touch screen controller will be prosecuted to the full extent of the law.		
If you accept the terms of the agreement, dick I Agree to continue. You must accept the agreement to install PenMount Windows Universal Driver V2.4.2.325.		
Nullsoft Install System v2.46		
< <u>B</u> ack I <u>Ag</u> ree Cancel		

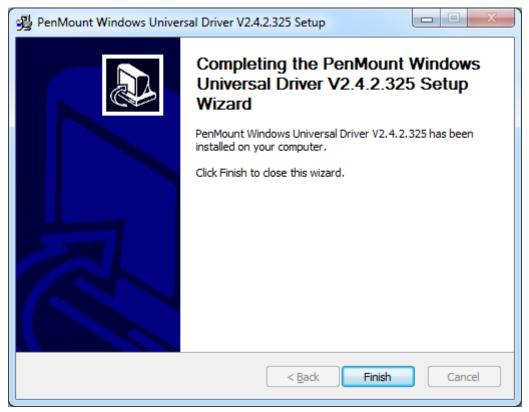
**Step 4.** Choose the folder in which to install PenMount Windows Universal Driver. Click **Install** to start the installation.

😼 PenMount Windows Universal Driver V2.4.2.325 Setup
Choose Install Location Choose the folder in which to install PenMount Windows Universal Driver V2.4.2.325.
Setup will install PenMount Windows Universal Driver V2.4.2.325 in the following folder. To install in a different folder, click Browse and select another folder. Click Install to start the installation.
Destination Folder           C:\Program Files (x86)\PenMount Windows Universal Driver         Browse
Space required: 0.0KB Space available: 136.8GB
Nullsoft Install System v2.46

Step 5. Click Yes to continue.



Step 6. Click Finish to complete installation.



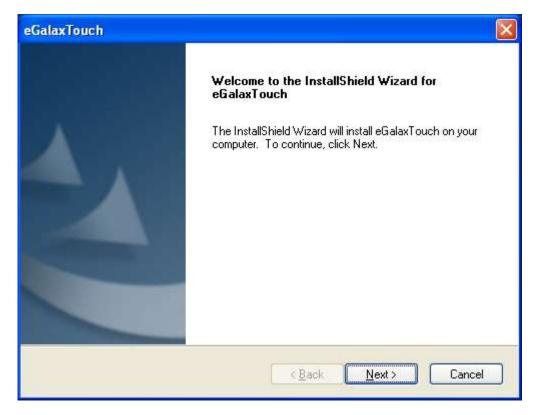
# 6.1.2 Installing Software (Projected Capacitive)

**Step 1.** Insert the product CD, the screen below would appear. Click **touch panel driver** from the list.



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#### Step 2. Click Next to continue.



Step 3. Select I accept the terms of the license agreement. Click Next.

eGalaxTouch	x
License Agreement Please read the following license agreement carefully.	
Declaration and Disclaimer	<b>^</b>
The programs, including but not limited to software and/or firmware (hereinafter referred to "Programs" or "PROGRAMS"), are owned by eGalax_eMPIA Technology Inc. (hereinafter referred to EETI) and are compiled from EETI Source code. EETI hereby grants to licensee a personal, non-exclusive, non-transferable license to copy, use and create derivative works of Programs for the sole purpose in conjunction with an EETI Product, including but not limited to integrated circuit and/or controller. Any reproduction, copies, modification, translation, compilation, application, or representation of Programs except as specified above is prohibited without the express written permission by EETI.	н
Disclaimer: EETI MAKES NO WARRANTY OF ANY KIND, EXPRESS OR IMPLIED,	Ŧ
I gccept the terms of the license agreement      Definit      I do not accept the terms of the license agreement  InstallShield	
< <u>B</u> ack <u>N</u> ext > Cano	;el

## Step.4. Click Next to continue.

eGalaxTouch
Setup Type Select the setup type that best suits your needs.
Extra PS/2 interface driver for eGalaxTouch controller. Please check the check box for PS/2 touch controller.
InstallShield

Step 5. Click Install RS232 interface driver. Then click Next to continue.

eGalaxTouch	×
Setup Type Select the setup type that best suits your needs.	
Extra RS232 interface driver for eGalaxTouch controller. Please check the check box for RS232 touch controller.	
Install RS232 interface driver	
InstallShield	
< <u>B</u> ack <u>N</u> ext> Cancel	]

#### Step 6. Select None. Click Next.

eGalaxTouch
Setup Type Select the setup type that best suits your needs.
Do 4 point calibration after system reboot
O Every system boot up
◯ Next system boot up
⊙ None
InstallShield
< <u>B</u> ack <u>N</u> ext > Cancel

#### Step 7. Click OK to continue.

eGalaxTouch - InstallShield Wizard

If you are trying to install the USB touch device, please make sure that your touch monitor or touch controller's USB cable is plugged into the computer now.
Please close the "Found New Hardware Wizard" dialog when it appears.

OK

## Step 8. Click Support Muti-Monitor System. Click Next.

eGalaxTouch	×
Setup Type Select the setup type that best suits your needs.	
If you want to use Multi-Monitor, please check the box.	
Support Multi-Monitor System	
InstallShield	
< <u>B</u> ack <u>N</u> ext > Cancel	

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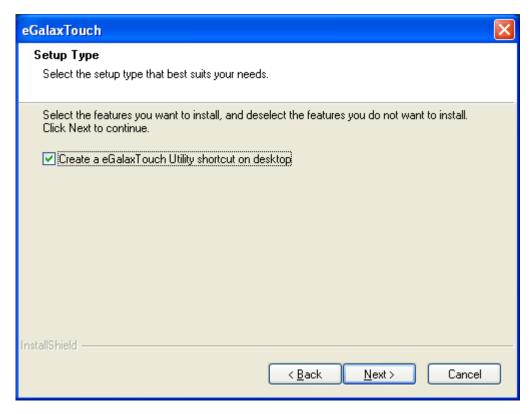
Step 9. Go to C:\Program Files\eGalaxTouch. Click Next.

eGalaxTouch	X
Choose Destination Location Select folder where setup will install files.	
Setup will install eGalaxTouch in the following folder. To install to this folder, click Next. To install to a different folder, click Browse and select another folder.	
Destination Folder         C:\Program Files\eGalaxTouch         Browse         InstallShield         < Back	

## Step 10. Click Next.

eGalaxTouch	
Select Program Folder	
Please select a program folder.	
Setup will add program icons to the Program Folder listed below. You may type a new fo name, or select one from the existing folders list. Click Next to continue.	lder
Program Folder:	
eGalaxTouch	
Existing Folders:	
Accessories Administrative Tools	
Games	
Startup	
InstallShield	
	incel

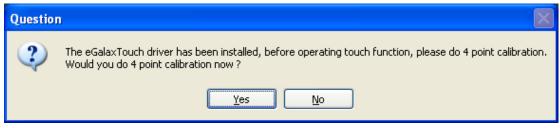
**Step 11.** Click **Create a eGalaxTouch Utility shortcut on desktop**. Click **Next**.



Step 12. Wait for installation.

eGalaxTouch	
Setup Status	No.
eGalaxTouch is configuring your new software installation.	
C:\Program Files\eGalaxTouch\msvcrt.dll	
InstallShield	
	Cancel

#### Step 13. Click Yes to do 4 point calibration.



# 6.2 Software Functions

# 6.2.1 Software Functions(Resistive Touch)

Upon rebooting, the computer automatically finds the new 6000 controller board. The touch screen is connected but not calibrated. Follow the procedures below to carry out calibration.

1. After installation, click the PenMount Monitor icon "PM" in the menu bar.

2. When the PenMount Control Panel appears, select a device to "Calibrate."

## PenMount Control Panel(Resistive Touch)

The functions of the PenMount Control Panel are **Device**, **Multiple Monitors**, **Tools** and **About**, which are explained in the following sections.

### Device

In this window, you can find out that how many devices be detected on your system.

Peniv	fount Control Panel	
evice	Multiple Monitors   Tools   About	
Sele	ect a device to configure.	
	6	
1.000	nMount D0 USB	
-		
	Configure Refresh	
		ОК

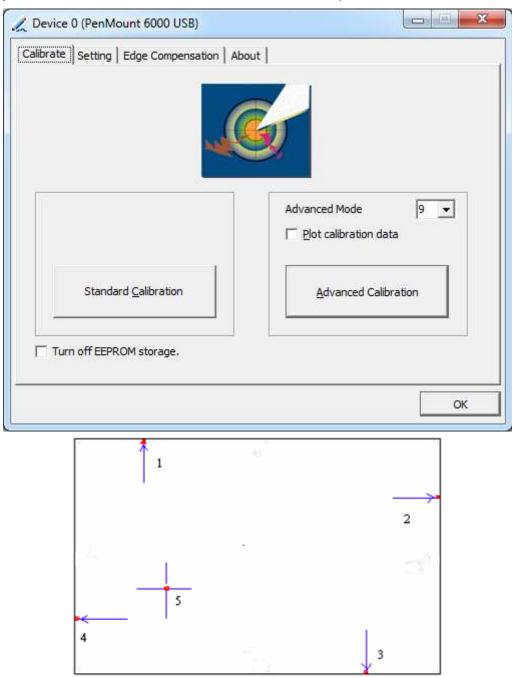
# Calibrate

This function offers two ways to calibrate your touch screen. 'Standard Calibration' adjusts most touch screens. 'Advanced Calibration' adjusts aging touch screens.

Standard Calibration	Click this button and arrows appear pointing to red squares. Use your finger or stylus to touch the red squares in sequence. After the fifth red point calibration is complete. To skip, press 'ESC'.
Advanced Calibration	Advanced Calibration uses 4, 9, 16 or 25 points to effectively calibrate touch panel linearity of aged touch screens. Click this button and touch the red squares in sequence with a stylus. To skip, press ESC'.

**Step 1.** Please select a device then click "Configure". You can also double click the device too.

PenMount Control Panel	X
Device   Multiple Monitors   Tools   About   Select a device to configure.	
PenMount 6000 USB	
Configure Refresh	OK



Step 2. Click "Standard Calibration" to start calibration procedure

**NOTE:** The older the touch screen, the more Advanced Mode calibration points you need for an accurate calibration. Use a stylus during Advanced Calibration for greater accuracy. Please follow the step as below:



Step 3. Select Device to calibrate, then you can start to do Advanced Calibration.

**NOTE:** Recommend to use a stylus during Advanced Calibration for greater accuracy.



Plot Calibration Data	Check this function and a touch panel linearity
	comparison graph appears when you have finished
	Advanced Calibration. The blue lines show linearity
	before calibration and black lines show linearity after
	calibration.
Turn off EEPROM	The function disable for calibration data to write in
storage	Controller. The default setting is Enable.

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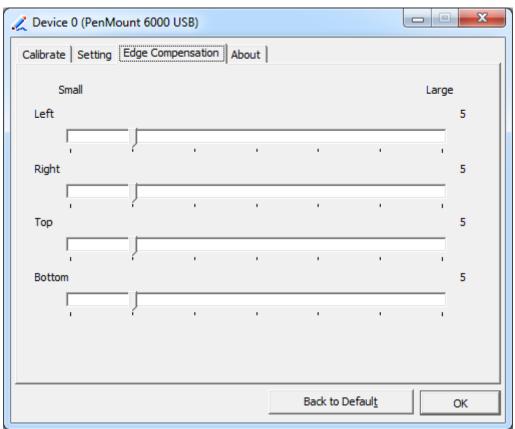
# Setting

🗶 Device 0 (PenMount 6000 USB)				
Calibrate Setting Edge Compen	sation About			
Operation Mode	Mouse Emulation	]		
Eeep Sound	Kind of Sound	Buzzer Beep 💌		
Beep Mode © Beep on pen down	Beep Frequency	1000 Hz		
C Beep on pen yp	Beep Duration	100 ms		
C Beep on both				
Cursor Stabilizer You can use Cursor Stabilizer to remove	Use press and hold as Delay:	s right click		
jitter of cursor.	Area:			
	Back to	Defaul <u>t</u> OK		

Touch Mode	This mode enables and disables the mouse's ability to drag			
	on-screen icons – useful for configuring POS terminals.			
	Mouse Emulation – Select this mode and the mouse			
	functions as normal and allows dragging of icons.			
	Click on Touch – Select this mode and mouse only provides a			
	click function, and dragging is disables.			
Beep Sound	Enable Beep Sound – turns beep function on and off			
	Beep on Pen Down – beep occurs when pen comes down			
	Beep on Pen Up – beep occurs when pen is lifted up			
	Beep on both – beep occurs when comes down and lifted up			
	Beep Frequency – modifies sound frequency			
	Beep Duration – modifies sound duration			
Cursor Stabilizer	Enable the function support to prevent cursor shake.			
Use press and	You can set the time out and area for you need.			
hold as right click				

# **Edge Compensation**

You can use Edge Compensation to calibrate more subtly.



## About

This panel displays information about the PenMount controller and driver version.

🔏 Device 0 (PenMount 6000 USB)						
Calibrate Setting	Edge Compensation About					
	PenMount 6000 USB (10-bit)					
~	Driver Version	2.4.2				
	Firmware Version	6000.6.0.0				
	Firmware Config Data	2,36864,852,32,7,500,12				
		ОК	i			

## **Multiple Monitors**

Multiple Monitors support from two to six touch screen displays for one system. The PenMount drivers for Windows 7/8.1 support Multiple Monitors. This function supports from two to six touch screen displays for one system. Each monitor requires its own PenMount touch screen control board, either installed inside the display or in a central unit. The PenMount control boards must be connected to the computer COM ports via the USB interface. Driver installation procedures are the same as for a single monitor. Multiple Monitors support the following modes:

Windows Extends Monitor Function Matrox DualHead Multi-Screen Function nVidia nView Function

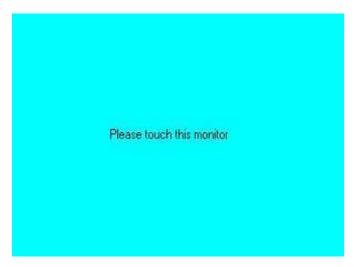
**NOTE:** The Multiple Monitor function is for use with multiple displays only. Do not use this function if you have only one touch screen display. Please note once you turn on this function the rotating function is disabled.

Enable the multiple display function as follows:

**1.** Check the **Enable Multiple Monitor Support** box; then click **Map Touch Screens** to assign touch controllers to displays.

PenMount Control Panel	
Device Multiple Monitors Tools About Multiple Monitor Support	]
Map <u>T</u> ouch Screens	

- 2. When the mapping screen message appears, click OK.
- **3.** Touch each screen as it displays "Please touch this monitor". Following this sequence and touching each screen is called **mapping the touch screens.**



- **4.** Touching all screens completes the mapping and the desktop reappears on the monitors.
- **5.** Select a display and execute the "Calibration" function. A message to start calibration appears. Click **OK**.



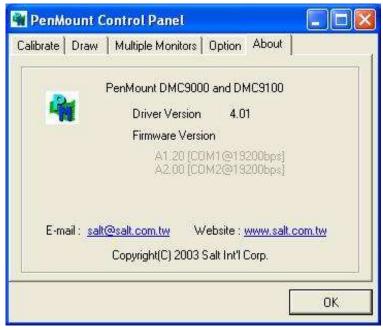
- **6.** "Touch this screen to start its calibration" appears on one of the screens. Touch the screen.
- 7. "Touch the red square" messages appear. Touch the red squares in sequence.
- **8.** Continue calibration for each monitor by clicking **Standard Calibration** and touching the red squares.

### NOTES:

- 1. If you use a single VGA output for multiple monitors, please do not use the **Multiple Monitor** function. Just follow the regular procedure for calibration on each of your desktop monitors.
- 2. The Rotating function is disabled if you use the Multiple Monitor function.
- 3. If you change the resolution of display or screen address, you have to redo **Map Touch Screens,** so the system understands where the displays are.

## About

This panel displays information about the PenMount controller and this driver version.

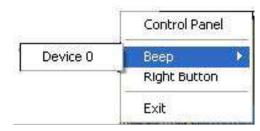


### PenMount Monitor Menu Icon

The PenMount monitor icon (PM) appears in the menu bar of Windows 7/8.1 system when you turn on PenMount Monitor in PenMount Utilities.



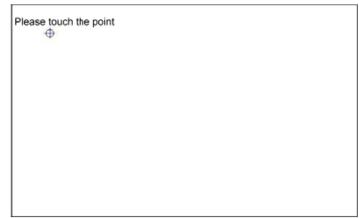
## PenMount Monitor has the following function



Control Panel	Open Control Panel Windows
Веер	Setting Beep function for each device
Right Button	When you select this function, a mouse icon appears in the right-bottom of the screen.Click this icon to switch between Right and Left Button functions.
Exit	Exits the PenMount Monitor function.

## Configuring the Rotate Function

- 1. Install the rotation software package.
- 2. Choose the rotate function (0°, 90°, 180°, 270°) in the 3rd party software. The calibration screen appears automatically. Touch this point and rotation is mapped.



**NOTE:** The Rotate function is disabled if you use Monitor Mapping

# 6.2.2 Software Functions(Projected Capacitive)

## General

In this window, you can see there is USB Controller. Click **OK** to continue.

eGalaxTouch : USB Controller	
General Setting Tools Display H	ardware About
Installed Touchscreen Controllers	
Q	
USB Controller	
Monitor Mapping	Add Remove
ОК	Cancel Apply

## **Monitor Mapping**

to adjust touch panel

Add

to search for device

## Setting

🖻 eGalaxTouch : USB Controller	$\mathbf{\times}$
General Setting Tools Display Hardware About	
Beep       Frequency         ✓       Beep On Touch         □       Beep On Release         ✓       Beep From System Beep         □       Beep From Sound Card	
Linearization Style © 9 Points © 25 Points	
Double Click Time       Shorter<	
Double Click Area       Smaller<	
Normal Mode Option	
OK Cancel Apply	

## Веер

- Beep On Touch
- Beep On Release
- Beep From System Beep
- Beep From Sound Card

## Linearization Style

- 9 points
- 25 points

### **Double Click Time**

Shorter

Longer

#### **Double Click Area**

Smaller

Bigger

#### Normal mode

Simulate the mouse mode

Option	×
Option	
Function ✓ Enable Constant Touch ✓ Enable Auto Right Click ✓ Enable Touch ✓ Enable Cursor Stabilization Constant Touch Area	
Smaller<< >>Bigger	
Auto Right Click Time 1000 ms Shorter<<  >>Longer	
OK Cancel Apply	

## Option

Function Enable Constant Touch Enable Auto Right Click Enable Touch Enable Cursor Stabilization Constant Touch Area Auto Right Click Time

### Tools

Click **OK** to continue the settings.

🖻 eGalaxTouch : USB Controller 🛛 🔀								
General Setting Tools Display Hardware About								
l	Linearization Curve	•						
			1					
	4 Points Calibrati	Do 4 point:	: alignm	ient to mato	ch disp	ilay.		
	Clear and Calibrate		Clear linear alignment.	ization	parameter a	and do	) 4 points	
	Linearization		Do 9 point: linearity.	: lineari	zation for b	etter to	ouchscre	en
Draw Test		Do draw te	est to v	erify the tou	ich aco	curacy.		
			0K		Cance	el	<u>A</u> p	ply

#### **4** Points Calibration

Do 4 points alignment to match display.

#### **Clear and Calibrate**

Clear linearization parameter and do 4 points alignment.

#### Linearization

Do 9 points linearization for better touchscreen linearity.

#### **Draw Test**

Do draw test to verify the touch accuracy.

# Display

In this window, it shows the mode of display.

🖻 eGalaxTouch : USB Controller	×
General Setting Tools Display Hardware About	
Display	
Double click on the monitor area to map the touchscreen to the display monitor. I Enable Multiple Monitors.	
Map to main display if system has only one display monitor.	
Operation Mode	
Full Screen     C Lower Screen     C Left Screen	
C Upper Screen C Right Screen Other	
OK Cancel <u>A</u> pply	

Enable Multiple Monitors.

Map to main display if system has only one display monitor

Full Screen Lower Screen Left Screen Upper Screen Right Screen

Other	
Other Active Area	
Other	
C Quarter 1	C Quarter 3 C Customized
C Quarter 2	C Quarter 4
Customized Area800 X 4	80
Left 0	Тор 0
Right 800	Bottom 480
Drag W	/orking Area
	OK Cancel Apply

## Other

Other mode of display. Quarter1~4 and Customized area.

Other				×
Other Active Area				
Active Area				
🔲 Enable The Active Area	a Function	L		
Active Area List	Left	0	Top 0	
1	Right	0	Bottom 0	
Drag Active Are	a			
	[	OK	Cancel	Apply

## **Active Area**

Drag active area to enable Active Area Function.

## Hardware

🖻 eGalaxTouch : USB Controller 🛛 🔀				
General Setting Tools Display Hardware About				
Controller Model PCAP7200 Series				
Firmware Version 1030				
Hardware Calibration				
OK Cancel Apply				

Saturn Hardware Configuration

Saturn - Hardware Configuration	×				
Saturn					
Saturn - Hardware Configuration					
Sensitivity 128					
Delay Time 800 us Shorter<< >>Longer					
Reset all of the control parameters to factory default setting.					
OK Cance	:				

# About

To display information about eGalaxTouch and its version.

🖻 eGalaxTouch : U	SB Controller	X			
General Setting Too	ols Display Hardware About				
	Touch Screen Utility				
	Copyright (C) 2000-2011				
eGalaxTouch	eGalax_eMPIA_TechnologyInc.				
	Version 5.11.0.9126				
	We provide a full range of controllers for Arrow both analog resistive and capacitive touch panels.				
The resistive contro through RS232, PS	oller communicates with the PC system directly i/2 or USB port.				
The design is optimized for an accurate, sensitive and quick touch performance as well as an ease of use interface.					
The driver supports a set of operating systems, i.e. Windows(R) 2000 / Windows(R) XP , Windows Vista(R), Wind					
	~				
<					
	OK Cancel Apple				