Panel PC

COMMELL

TRADEMARK

Intel®, Pentium® and MMX are registered trademarks of Intel® Corporation. Microsoft® and Windows® are registered trademarks of Microsoft Corporation.

Specifications

Main Board

CPU

PP7000D-15	Intel® Atom™ processor D525 (1M Cache, 1.80 GHz)
PP6000D-12	Intel® Atom™ processor D525 (1M Cache, 1.80 GHz)
Chipset	Intel® NM10 Express Chipset
System Memory	Socket-type RAM device, 204PIN SO-DIMM DDR3 RAM, up to 4GB
Graphic Memory	Shared system memory up to 256MB

LCD Panel

PP7000D-15

Panel Size	15"
Maximum Resolution	1024 x 768
Brightness	250 cd/m1
Contrast Ratio	600 : 1
Response Time	8 ms
View Angles (H/V)	160 / 160
Touch Panel	Five Wires Resistive

PP6000D-12

Panel Size	12.1"
Maximum Resolution	1024 x 768
Brightness	195 cd/m1
Contrast Ratio	400 : 1
Response Time	16 ms
View Angles (H/V)	90 / 65
Touch Panel	Five Wires Resistive

Storage

HDD	2.5" SATA interface
Compact Flush	Type I&II

Expansion

Mini-PCIE Socket	One

Power

Power Adaptor	Input AC 100-240V 2.5A 50/60Hz, Output DC 12V 6.66A

I / O

USB	Six
Serial	Four COM ports with RJ-45 Connector
	Pin 9 with 5V / 12V power selectable
Parallel	One LPT with adaptor cable
LAN	One
2nd VGA Output	One with optional adaptor cable
PS/2	One
Audio	One Earphone & One Microphone

Control/Indicator

Power Button	One
LED Indicators	Power (Green), HDD (Red), LAN(Orange)

Optional Peripherals

Magnetic Card Reader	ISO Track 1/2/3, USB interface
VFD customer display	20 x 2 characters, RS-232 interface

Dimensions

PP-7000D-15	358(W) X 300(L) X 52(H) mm
PP-6000D-12	294(W) X 235(L) X 45(H) mm

Environment

|	
Operating Temperature	0°C ~ 40°C (32°F ~ 104°F)
Storage Temperature	- 20°C ~ 60°C (- 4°F ~ 140°F)
Operating Humidity	10% - 80% RH non condensing
Storage Humidity	10% - 80% RH non condensing

Model Number

PPS000DX – SS   Intel® Atom™ processor D525 (1M Cache, 1.80 GHz)

      X : M --- Shinny Black housing

         Q --- Dull Black housing

         W – Shinny White housing

            S000DX-SS: 7000DX-15 --- 15" TFT LCD

                  6000DX-12 --- 12" TFT LCD

Items Checklist

If any item is missing, please contact your sale agent immediately.

Take the system unit out from the carton. Remove the unit by carefully holding the foam inserts and remove slowly to protect the system. The following items should be found in the carton:
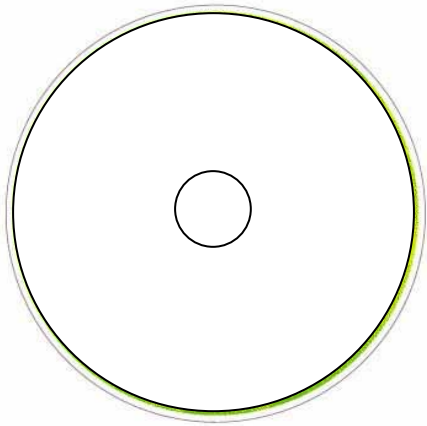
1. CD that including all driver and manual

2. The System

. Power Adaptor

4. AC Power Cord

5. Printer Port conversion cable

6. Two RS-232 port conversion cables

7. Second Display cable (Optional)

About Your System

Please unplug the AC power of the adapter before opening any part of the system. Since the standby power is always on after the adapter is plugged in. It may cause permanent damage to your system when you open any part of it.

MSR (Optional)

VFD (Optional)

75 x 75mm VESA

USB x 2

Power

HDD

LAN

Power SW

The connector panel

Please notice that all Four COM ports using RJ-45 connector and two RJ-45 to DB-9 conversion cables are provided in the package.
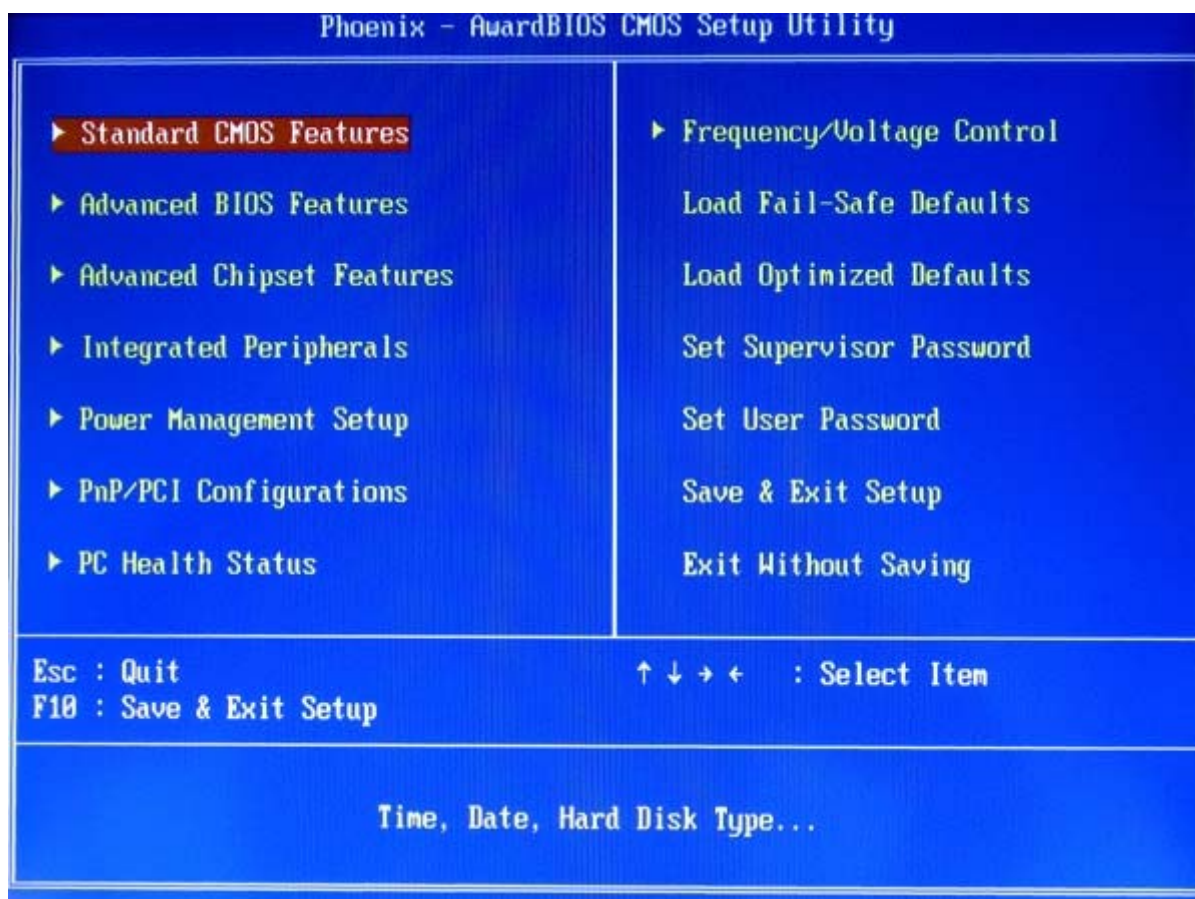

Please notice that the Printer and VGA connectors in the second level, using JST PHD pitch 1.25 type connectors. The package includes a Printer Port adapter cable to connect to this connector and a centronic connector. The VGA, Audio adapter is optional accessory.

BIOS Setting

⚠ Important Notice

If you find the screen is completely dark when power on. Please Reset BIOS setting as described in the former chapter. After clean CMOS operation, press <DEL> key many times after power on beep sound to enter BIOS setup mode then press <F10> and <Enter>. It will set BIOS to default value. Or connect a monitor to the second VGA port and enter BIOS setup mode then Load Optimized Defaults and Save &Exit Setup.

```
                Phoenix - AwardBIOS CMOS Setup Utility

    ▶ Standard CMOS Features        ▶ Frequency/Voltage Control

    ▶ Advanced BIOS Features          Load Fail-Safe Defaults

    ▶ Advanced Chipset Features       Load Optimized Defaults

    ▶ Integrated Peripherals          Set Supervisor Password

    ▶ Power Management Setup          Set User Password

    ▶ PnP/PCI Configurations          Save & Exit Setup

    ▶ PC Health Status               Exit Without Saving

    Esc : Quit                       ↑ ↓ → ←   : Select Item
    F10 : Save & Exit Setup

                   Time, Date, Hard Disk Type...
```

Standard CMOS Features

Use this menu for basic system configuration.

Advanced BIOS Features

Use this menu to set the Advanced Features available on the system.

Advanced Chipset Features

Use this menu to change the values in the chipset registers and optimize the system's performance.

Integrated Peripherals

Use this menu to specify your settings for integrated peripherals.

Power Management setup

Use this menu to specify your settings for power management.

PnP/PCI Configurations

This entry appears if your system supports Plug and Play and PCI Configuration.

PC Health Status

Displays CPU, System Temperature, Fan Speed, and System Voltages Value.

Frequency / Voltage Control

Control DIMM & PCI Clock

Load Fail-Safe Defaults

Use this menu to load the BIOS default values, i.e., factory settings for fail-safe system operations

Load Optimized Defaults

Use this menu to load the BIOS default values, i.e., factory settings for optimal performance system operations. While Award has designed the custom BIOS to maximize performance, the factory has the option to change these defaults to meet their needs.

Set Supervisor Password

Enables you to change, set, or disable the supervisor or user password.

Set User Password

Change, set, or disable the password.

It allows you to limit access to the system and to the setup, or just to the setup.

Save & exit setup

Save CMOS value changes to CMOS and exits setup.

Exit without saving

Ignores all CMOS value changes and exits setup.

> **For the PP7000D-15 (15" TFT), Panel Type (LVDS) should set to 1024 x 768 24 bits while the PP7000D-12 (12.1" TFT) is 1024x768 18 bits.**

Installing the Windows Driver

Driver List
a. Intel Chipset driver
b. Intel Extreme Graphics driver
c. Intel 82562ET LAN driver
d. Realtek AC97 codec driver
e. TouchKit Touch Screen driver

Please always install the Intel Chipset driver first and restart the Windows system before processing other driver's installation.

Chipset Driver Installation

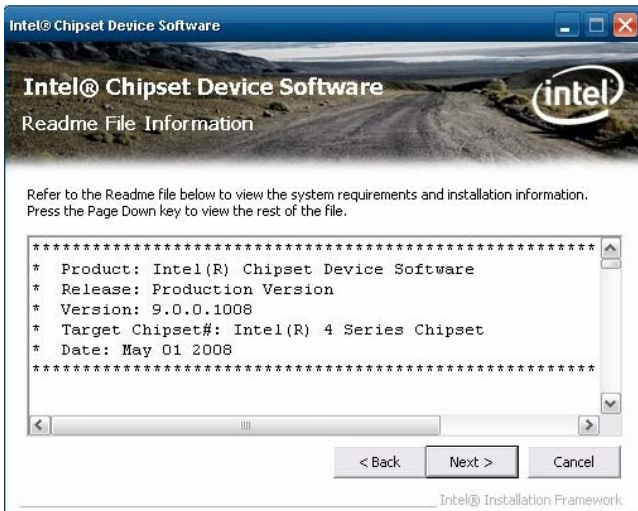Insert the CD comes with the system into any USB external CD-ROM, select the CD driver and change directory to "Chipset".
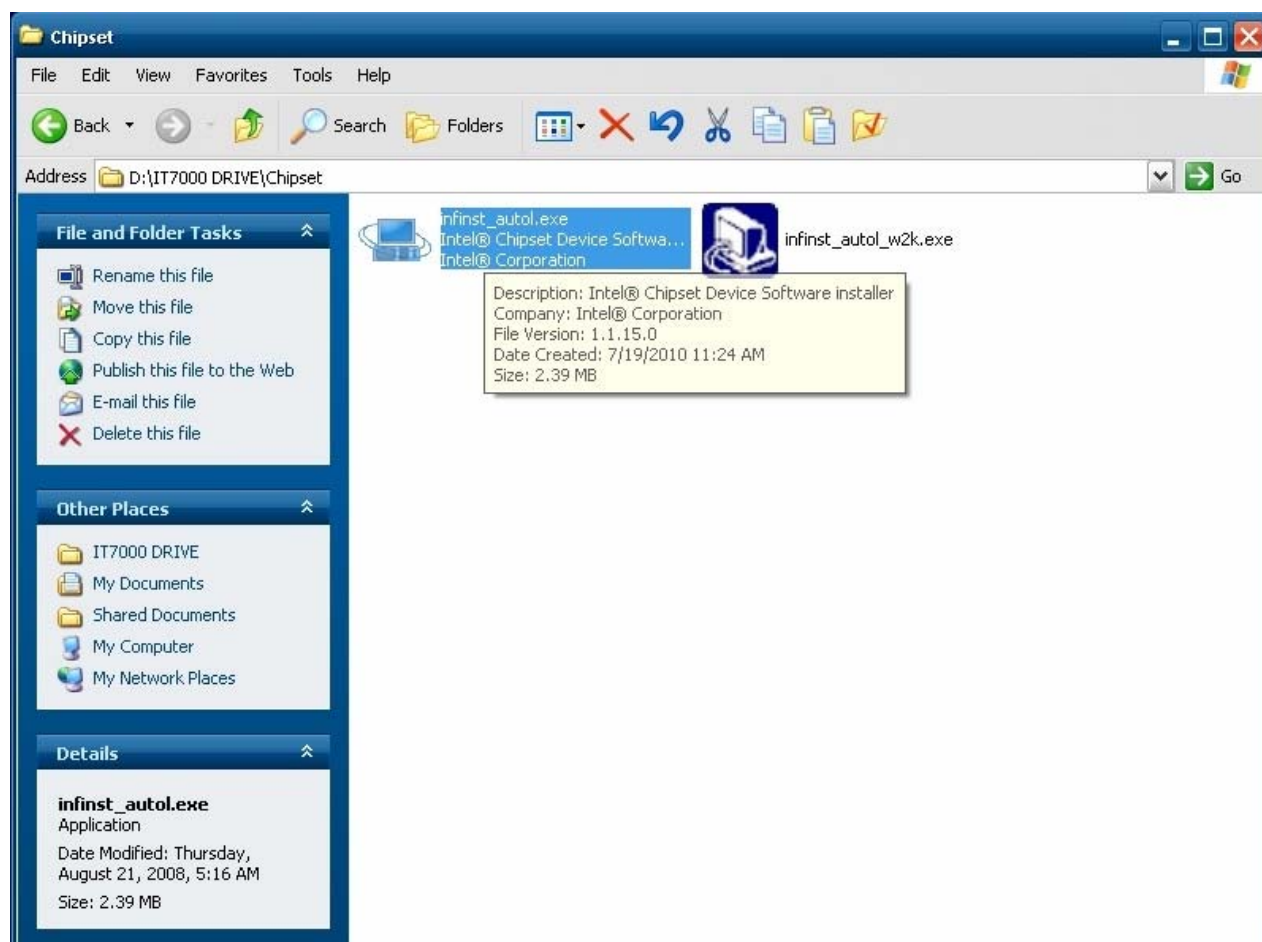
A. Click the "Next" button on the
Welcome window

B. Click the "Yes" button on the License
Agreement window

C. Click the "Next" button to continue

D. Click the "Finish" button

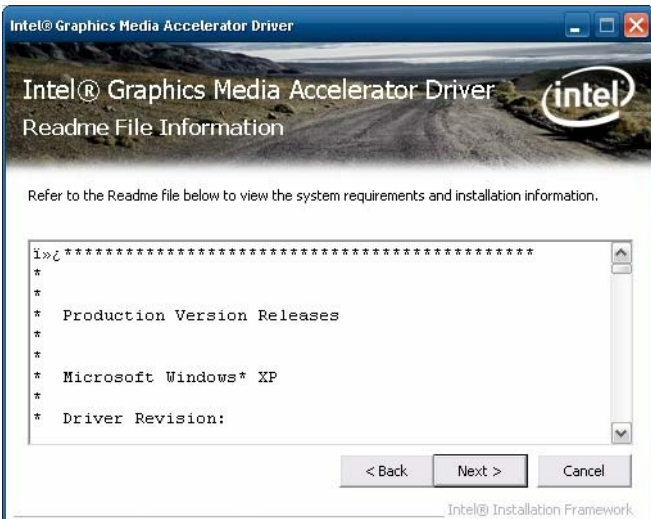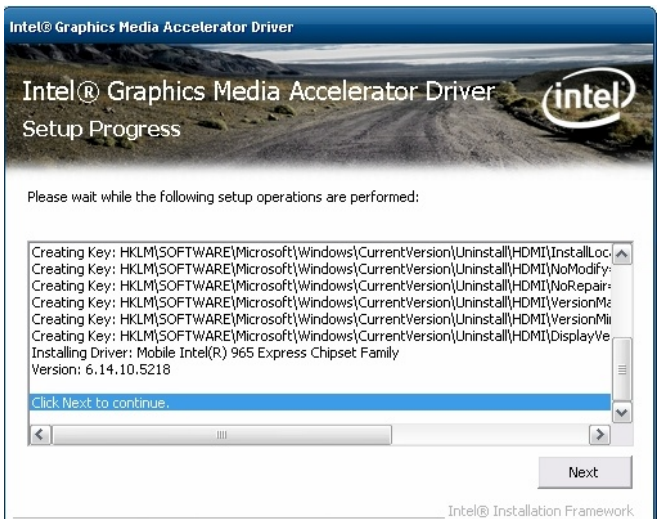# VGA Driver Installation

Select the CD directory to "VGA"
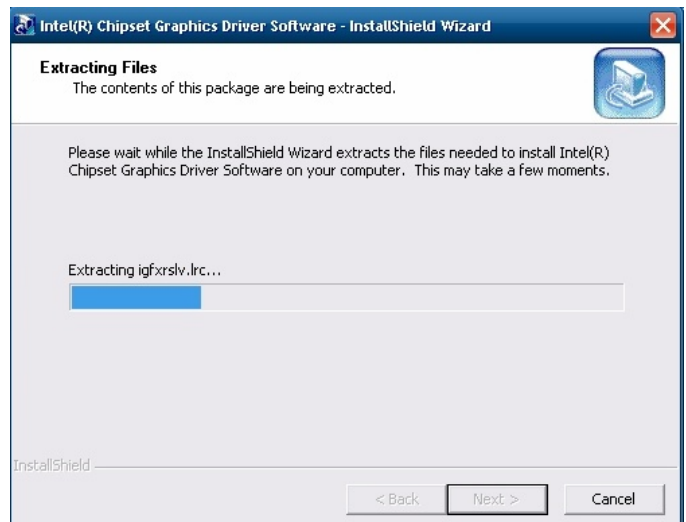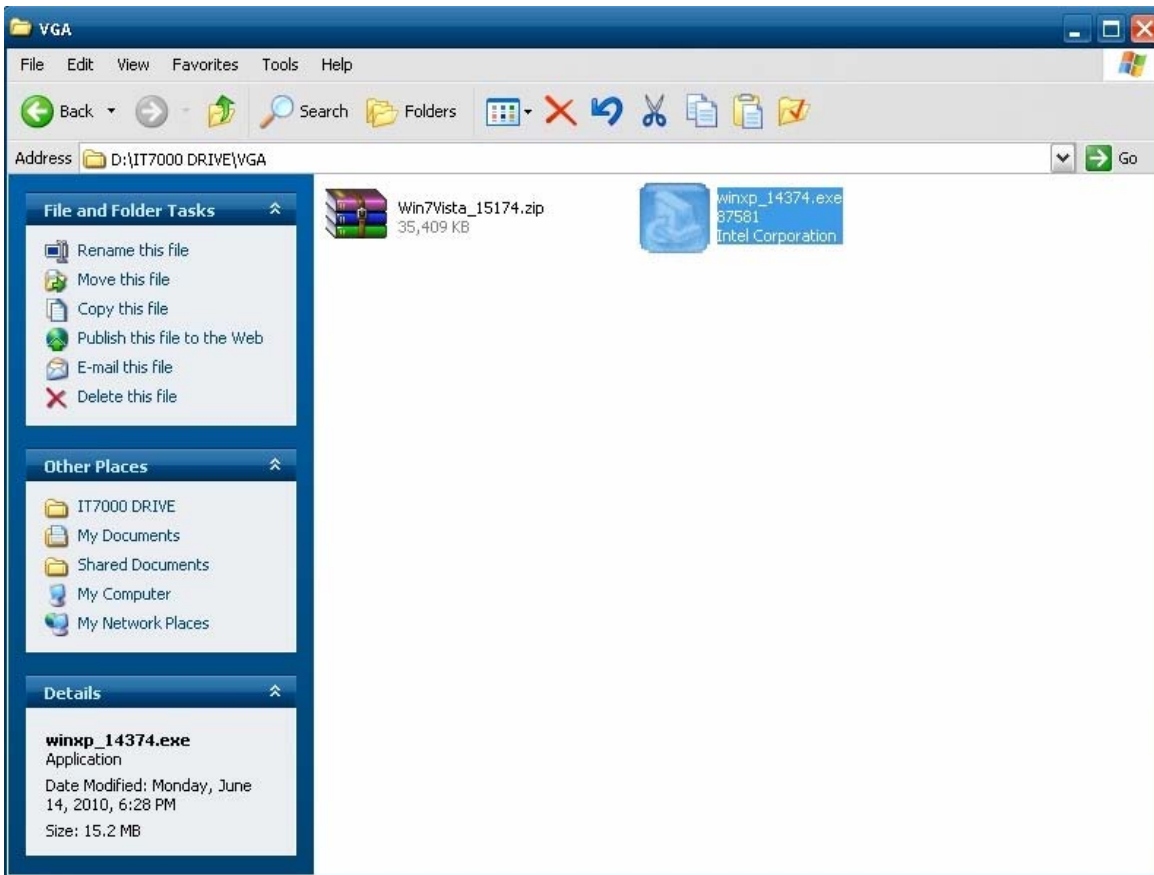
A. Click the "Next" button on the Welcome window

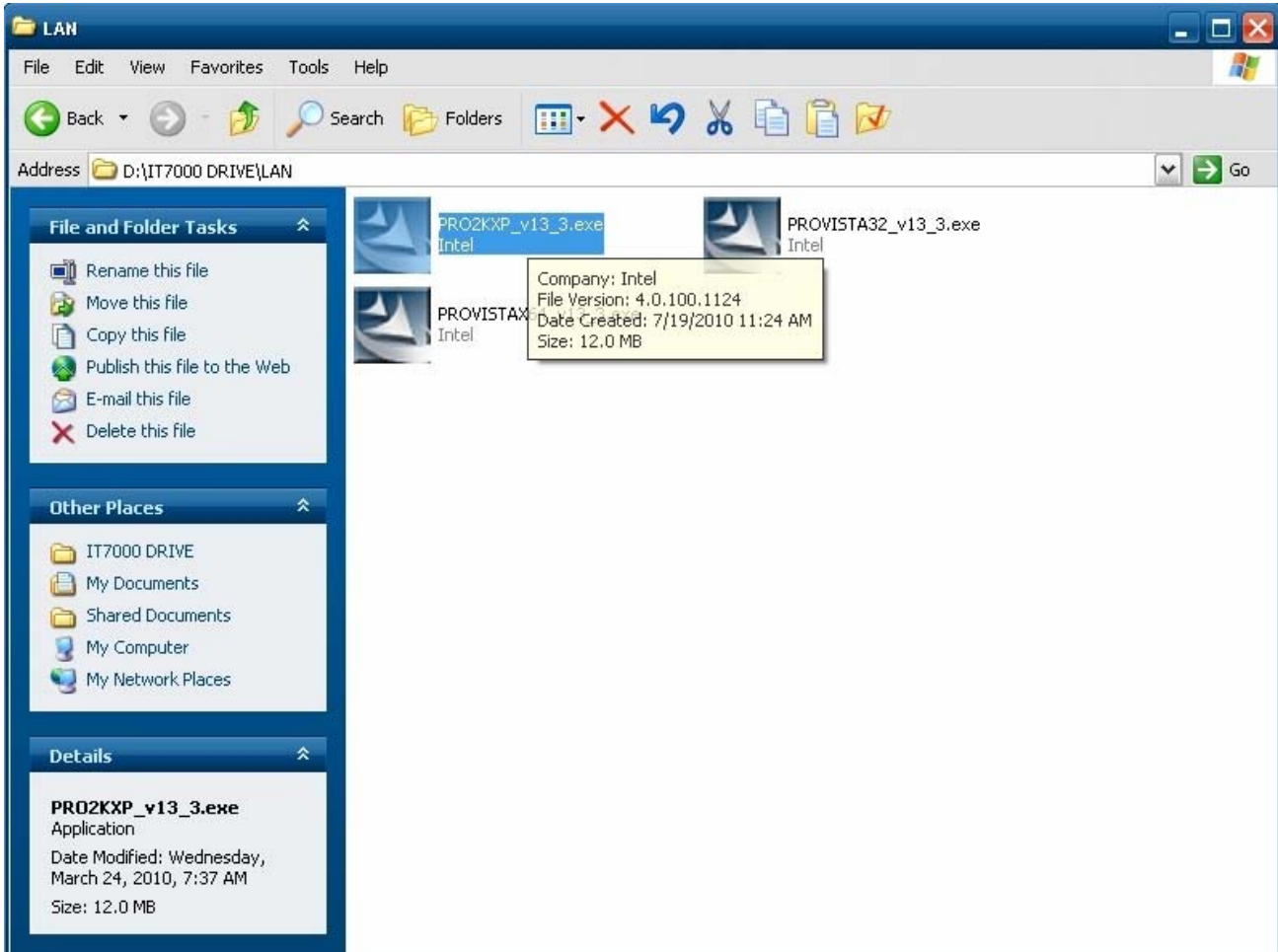B. Click the "Yes" button on the License Agreement window
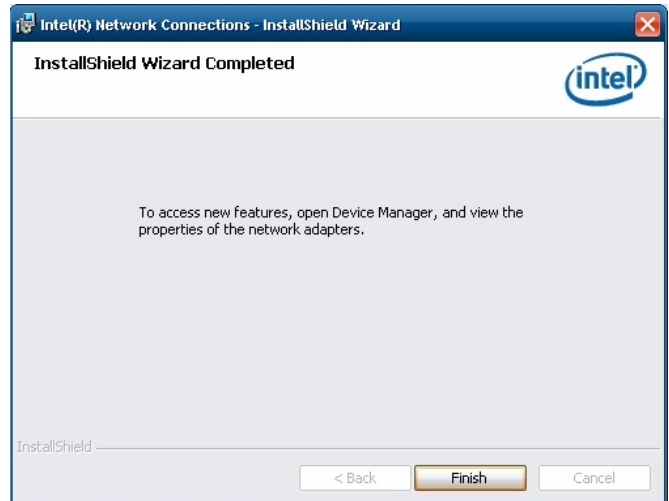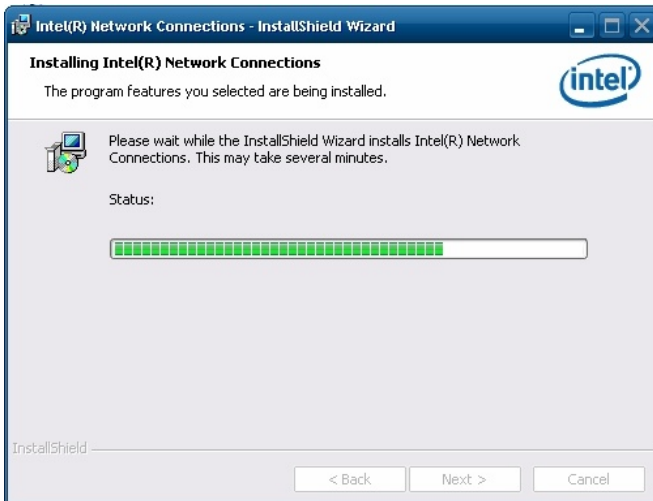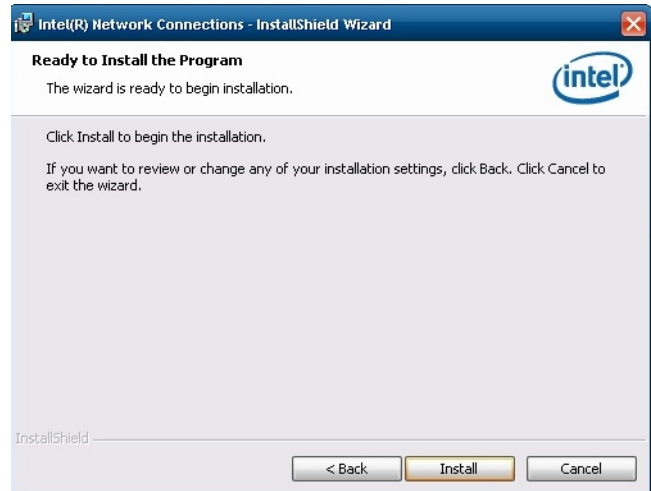

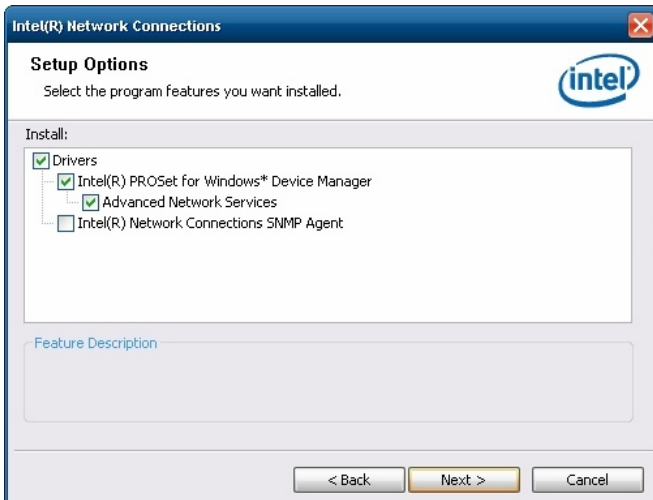C. Click the "Next" button to continue

D. Click the "Finish" button

LAN Driver Installation

Select the CD directory to "LAN"

A. Click the "Next" button on the Welcome window

B. Click the "Finish" button

Audio Driver Installation

Select the CD directory to "Step 4 - Install Realtek AC97 codec Driver"

A. Click "NEXT"
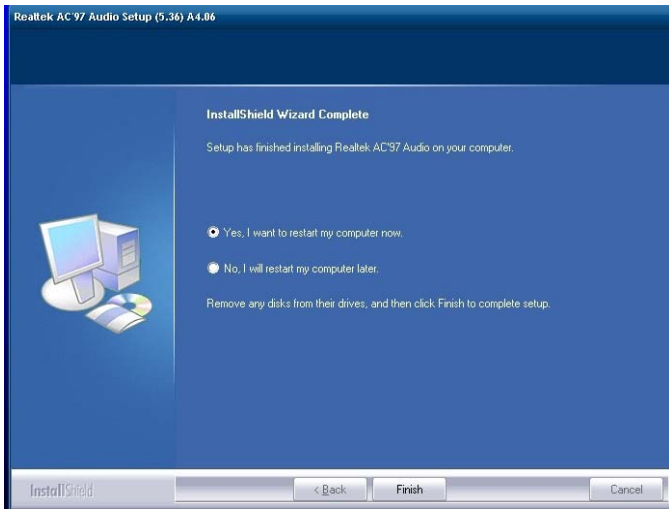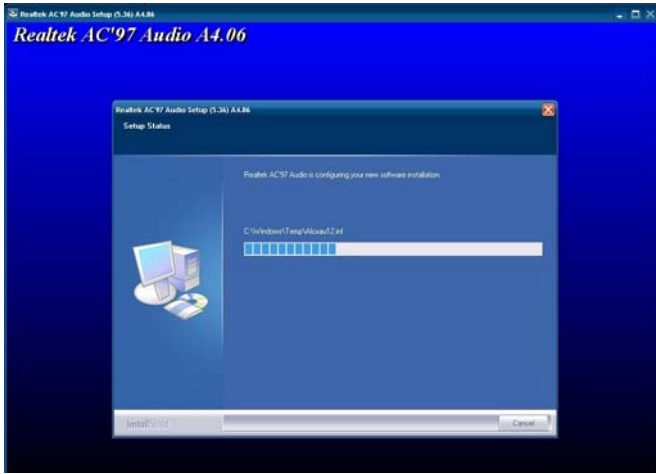
B. Click the "Finish" button

Touch Kit Touch Driver Installation

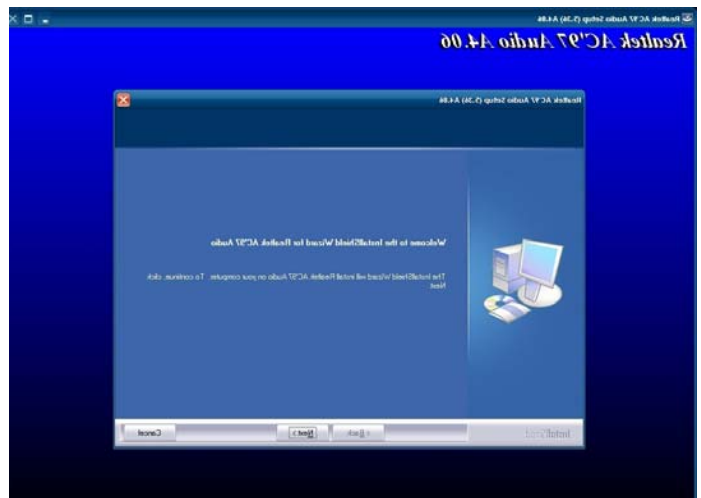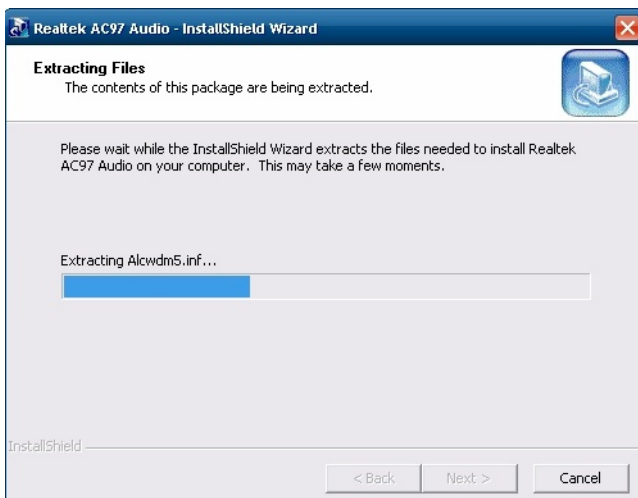**Select the CD directory to "TouchKit Driver"**

A. Double click "SETUP" on the My computer window
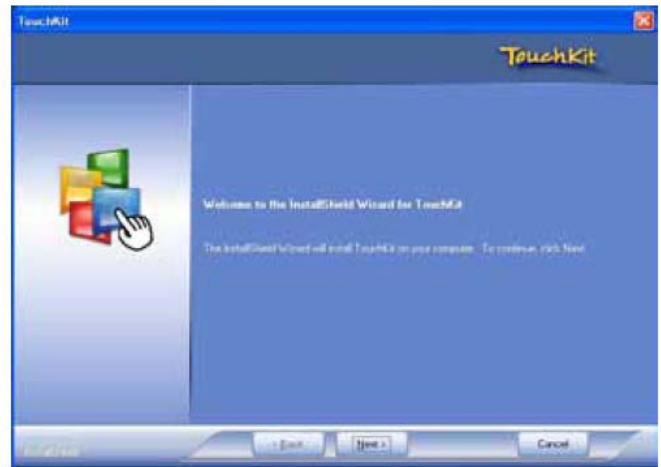
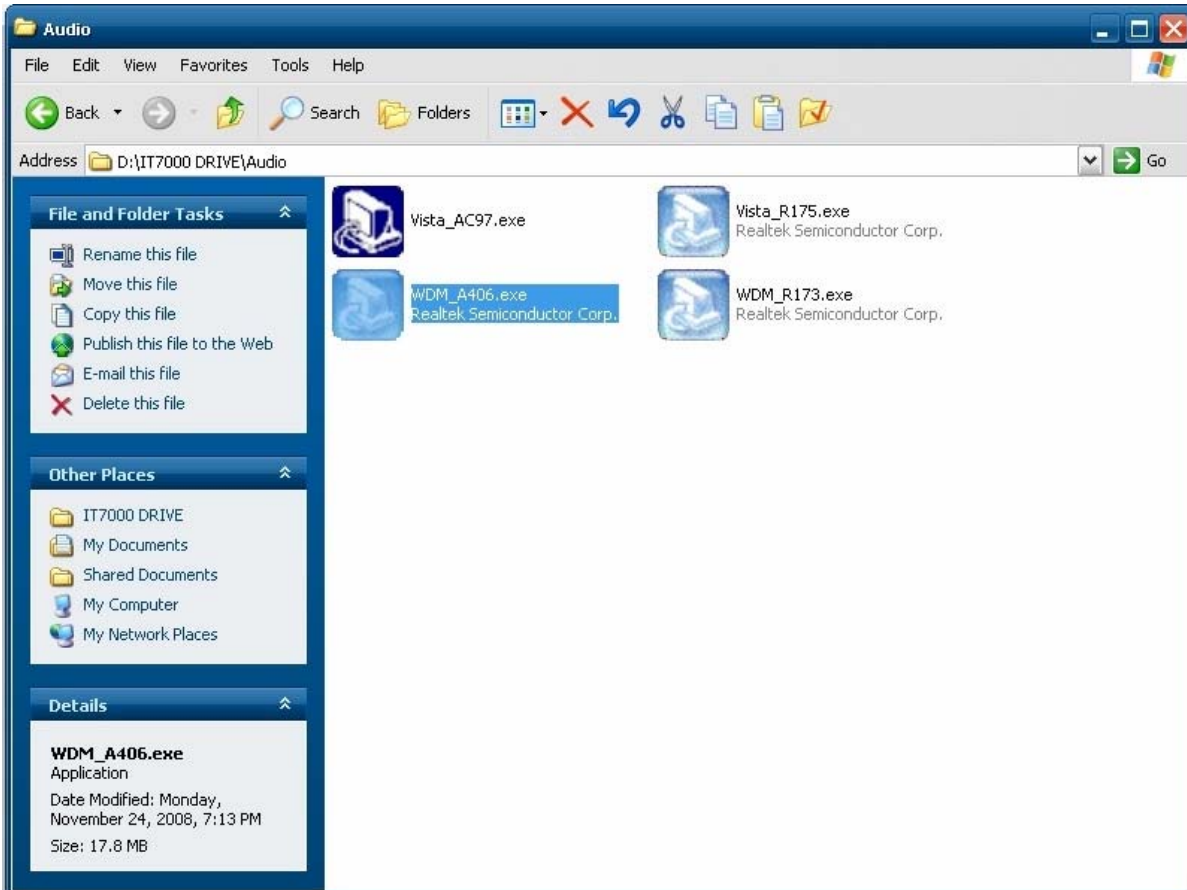B. Click the "Next" button on the Welcome window
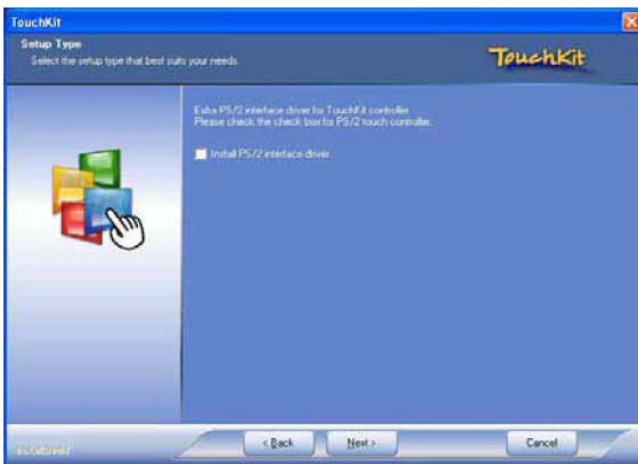
C. Click "Next "button on the "Select Type" window

D. Select "None" and Click "Next"

E. Click " OK "
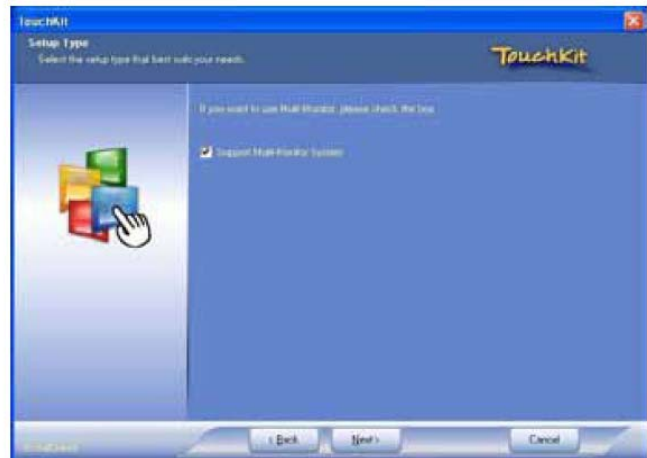
F. Select "Support Multi-Monitor System" Click "Next"

A. Double click "SETUP" on the my computer window
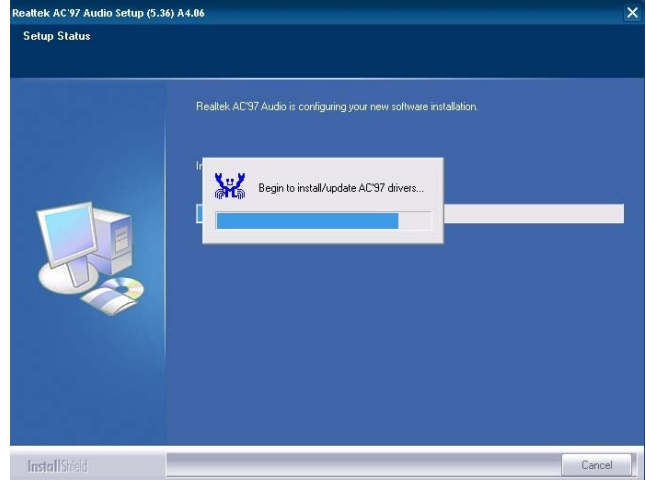

B. Click the "Next" button on the Welcome window
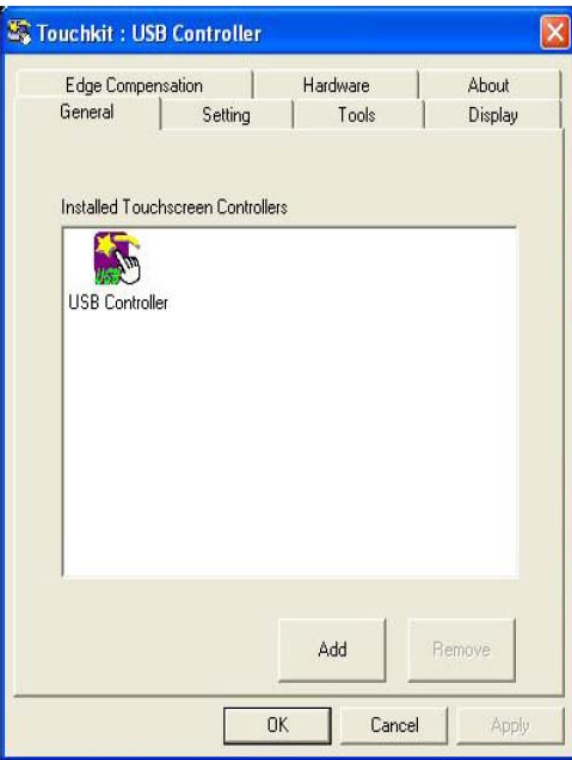
G. Install successful and restart your system

Four Points Calibration of the touch screen

Always perform the Four Points Calibration of the TouchKit program after your first installation of the touch screen driver.
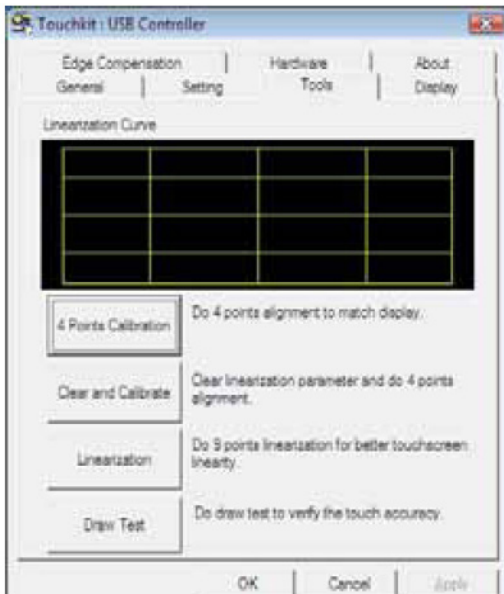
A. Select Tools then 4 Points Calibration.
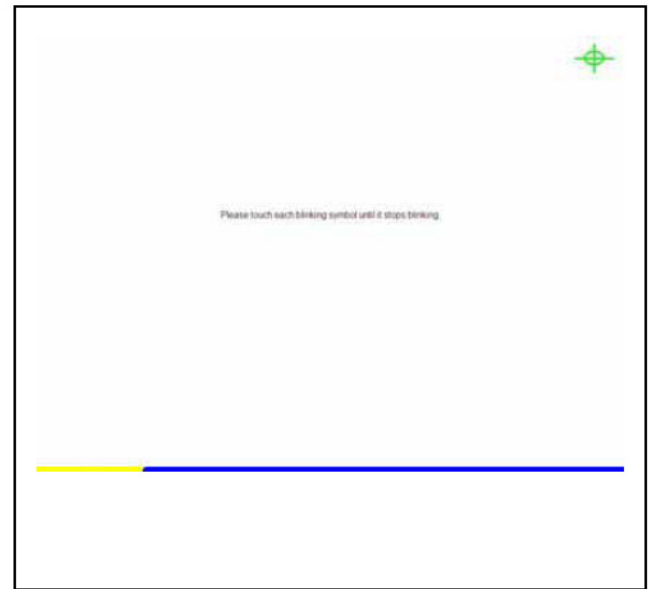
B. Press the Green Blink Cross mark.
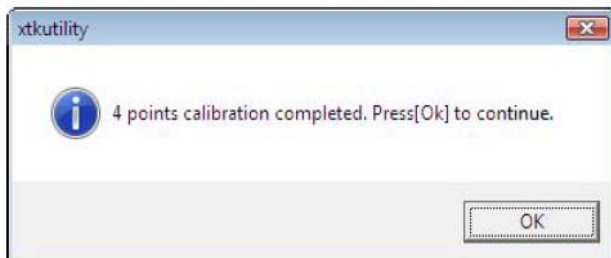
C. Press OK to continue.

DirectX 9 Installation
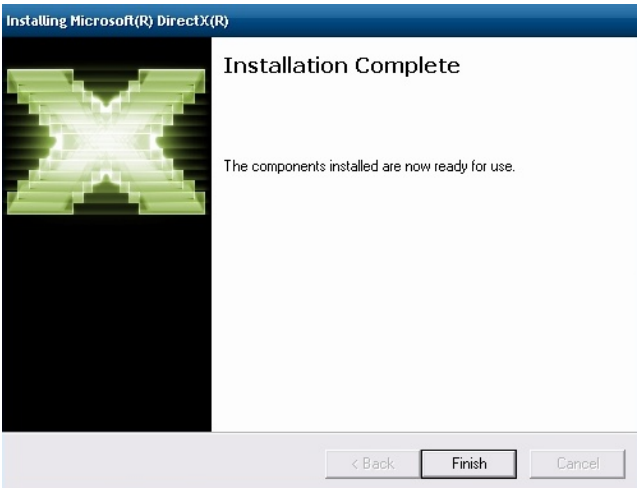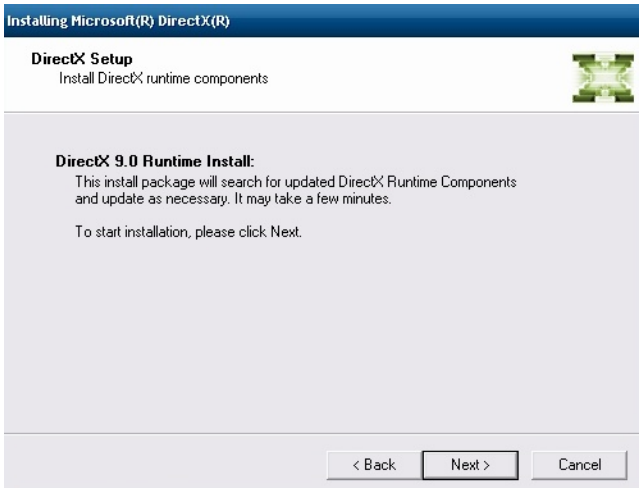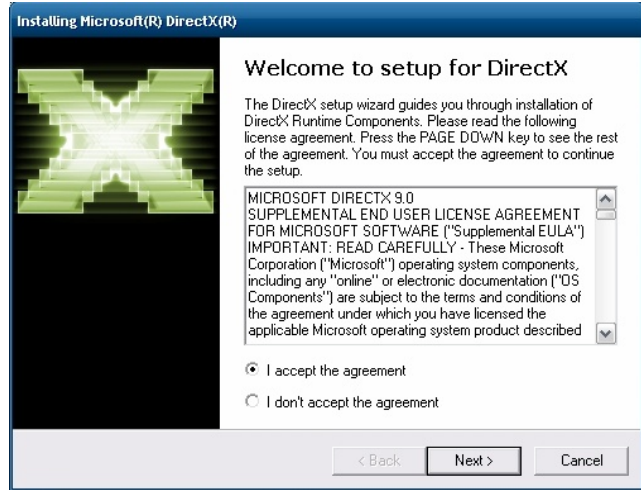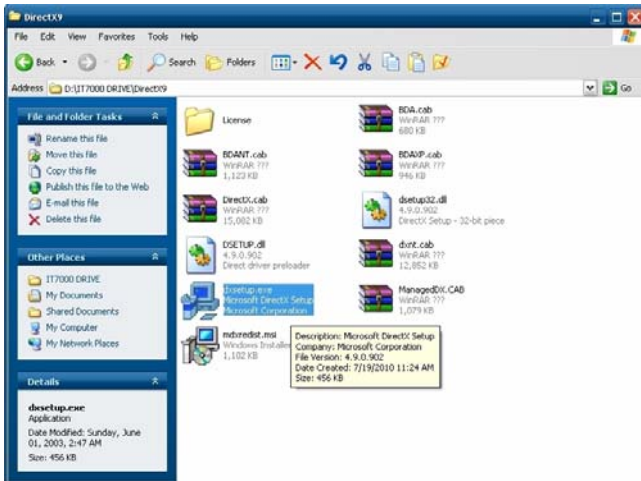
Main Board Setting

Please unplug the AC power of the adapter before opening any part of the system. Since the standby power is always on after the adapter is plugged in. It may cause permanent damage to your system when you open any part of the system.

Installing Peripherals Connectors & Jumpers settings

Motherboard Layout Component Side

COM5   USB   LVDS   INV   SATA   SATA power

FAN
Front
Board

USB

USB   LAN   COM 1 / 2 / 3 / 4   PS/2   PW
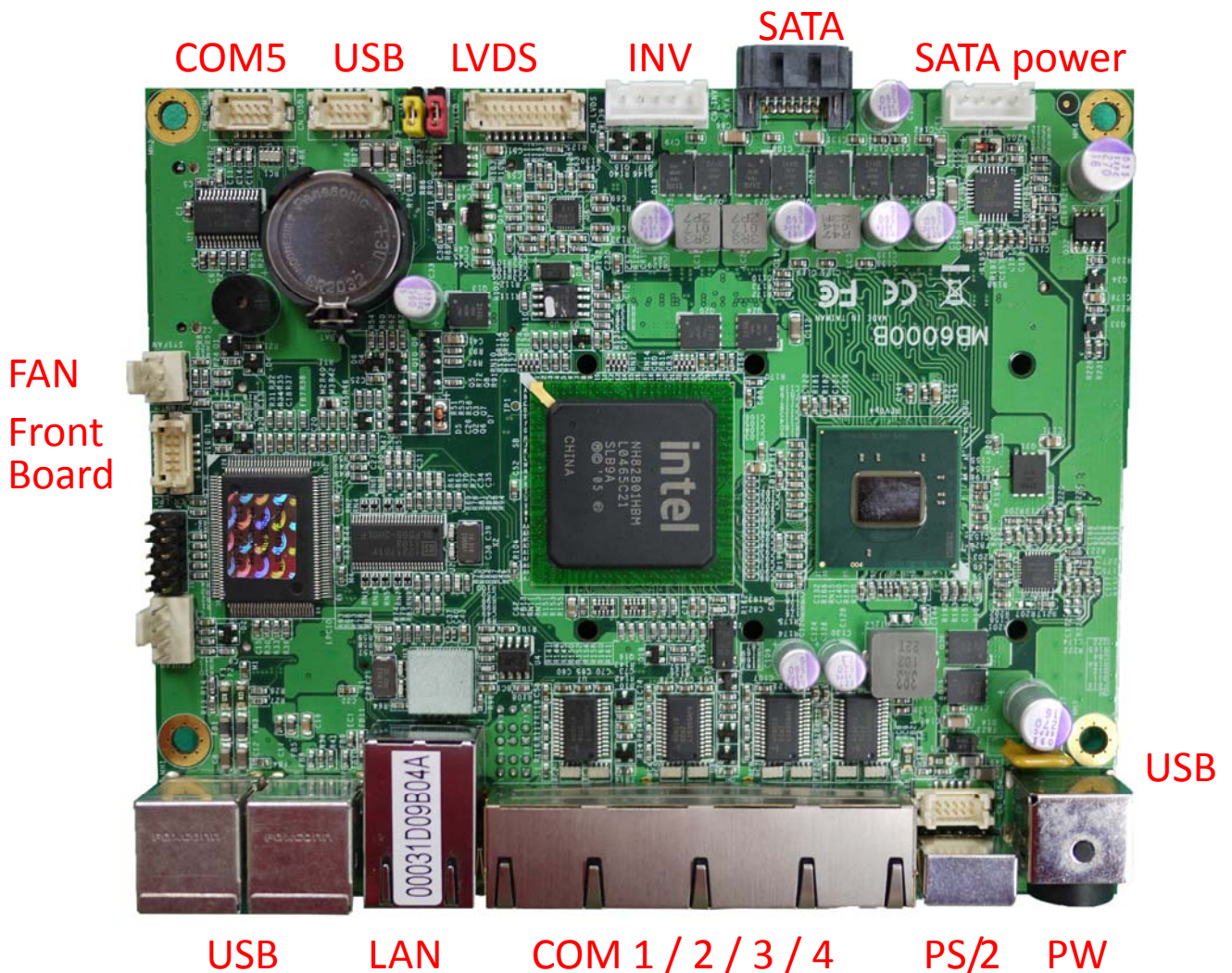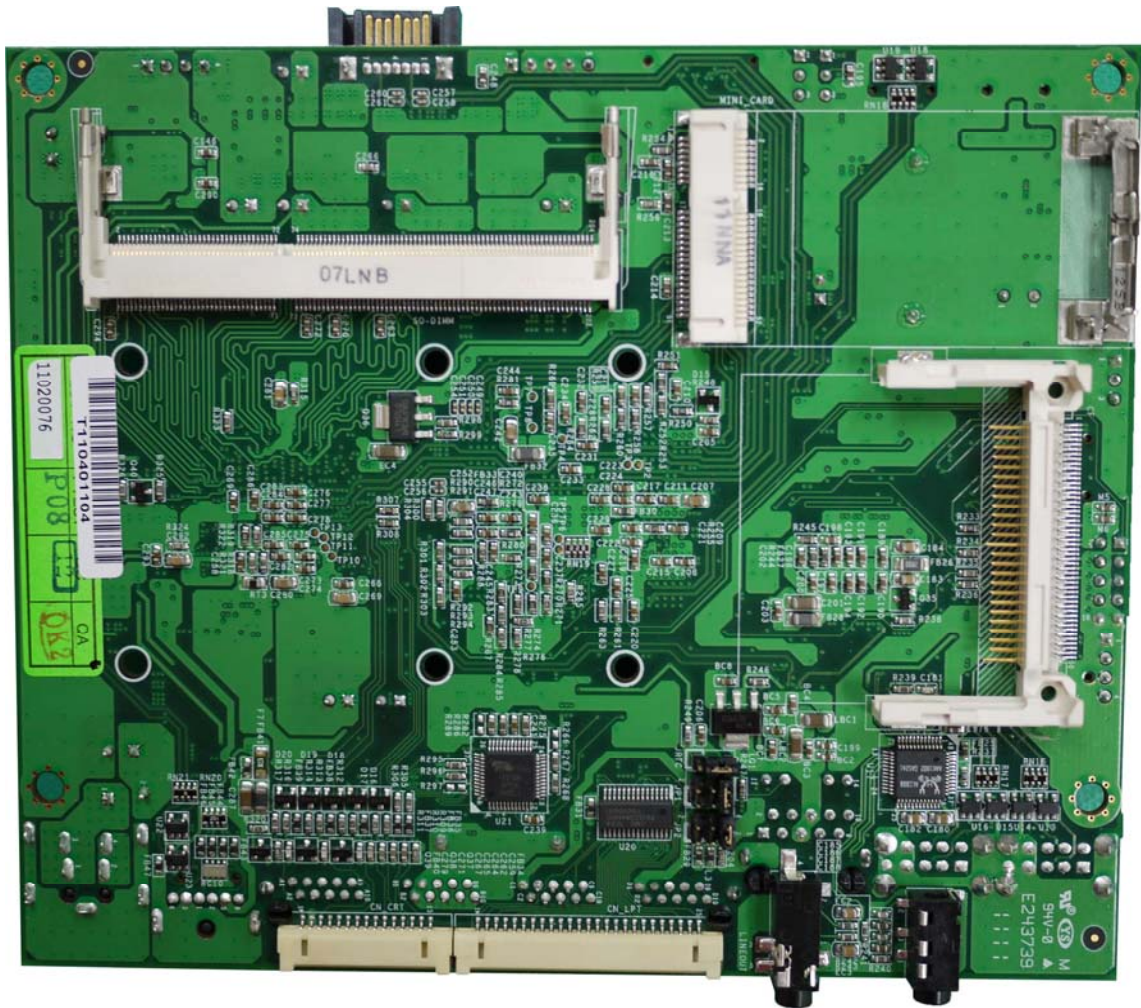
VGA   LPT   Audio   MIC
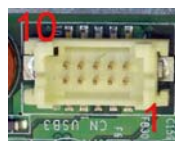
Connector: CN_USB3/4

Type: DF13 10-pin pitch=1.25mm

Pin	Description	Pin	Description
1	5VSB	2	5VSB
3	USB4N/6N	4	USB5N/7N
5	USB4P/6P	6	USB5P/7P
7	GND	8	GND
9	GND	10	N/C

Connector: CN_COM1

Type: DF13 10-pin pitch=1.25mm

Pin	Description	Pin	Description
1	MDCD1	2	MSIN1
3	MS01	4	MDTR1
5	GND	6	MDSR1
7	MRTS1	8	MCTS1
9	+12V	10	N/C
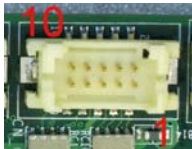
Connector: CN_COM2

Type: DF13 10-pin pitch=1.25mm

Pin	Description	Pin	Description
1	MDCD1/2	2	MSIN1/2
3	MS01/2	4	MDTR1/2
5	GND	6	MDSR1/2
7	MRTS1/2	8	MCTS1/2
9	+5V	10	N/C
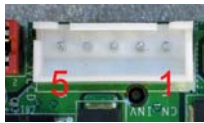
Connector: CN_INV

Type: 5-pin LVDS Power Header

Pin	Description
1	+12V
2	CTLBKL
3	GND
4	GND
5	ENABKL

Connector: JVLCD
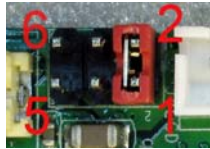
Type: 6-pin Power select Header

Pin	Description
1-2	**LCDVCC (3.3V)**
3-4	**LCDVCC (5V)**
5-6	**LCDVCC (12V)**

Connector: CN_LVDS
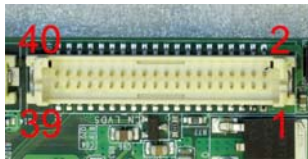
Type: onboard 40-pin connector for LVDS connector
Connector model: HIROSE DF13-40DP-1.25V

Pin	Description	Pin	Description
2	LCDVCC	1	LCDVCC
4	GND	3	GND
6	ATX0-	5	BTX0-
8	ATX0+	7	BTX0+
10	GND	9	GND
12	ATX1-	11	BTX1-
14	ATX1+	13	BTX1+
16	GND	15	GND
18	ATX2-	17	BTX2-
20	ATX2+	19	BTX2+
22	GND	21	GND
24	ACLK-	23	BTX3-
26	ACLK+	25	BTX3+
28	GND	27	GND
30	ATX3-	29	BCLK-
32	ATX3+	31	BCLK+
34	GND	33	GND
36	DDCPCLK	35	N/C
38	DDCPDATA	37	N/C
40	N/C	39	N/C

Connector: CN_JFRNT
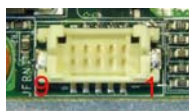
Type: DF13 10-pin pitch=1.25mm

Pin	Description	Pin	Description
1	PWRBT-	2	PWRBT-
3	LANLED-	4	LANLED+
5	HDLED	6	HDLED+
7	PWRLED	8	PWRLED+
9	Reset+	10	Reset-
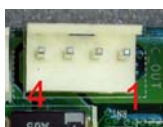
Connector: DC_OUT

Type: 4-pin connector for +5V/+12V output

Pin	Description	Pin	Description
1	+12V	2	Ground
3	Ground	4	+5V

Connector: CN_LPT

Type: DF14 25-pin pitch=1.25mm

Pin	Description	Pin	Description
1	-PSTB	2	AFD
3	PRD0	4	ERR
5	PRD1	6	INIT
7	PRD2	8	SLIN
9	PRD3	10	GND
11	PRD4	12	GND
13	PRD5	14	GND
15	PRD6	16	GND
17	PRD7	18	GND
19	ACK	20	GND
21	BUSY	22	GND
23	PE	24	GND
25	SLCT		

Connector: CN_CRT

Type: DF14 25-pin pitch=1.25mm

Pin	Description	Pin	Description
1	BR	2	5VSB
3	BG	4	GND
5	BB	6	N/C
7	N/C	8	CDA
9	GND	10	HSYNC
11	GND	12	VSYNC
13	GND	14	CLK
15	GND		

Customer Display Setting

Character Font Table

A. Control code set

HEX	CODE	HEX	CODE
00H	NULL	10H	DLE
01H	MD1	11H	DC1
02H	MD2	12H	DC2
03H	MD3	13H	DC3
04H	MD4	14H	DC4
05H	MD5	15H	
06H	MD6	16H	
07H	MD7	17H	
08H	BS, Md8	18H	CAN
09H	HT	19H	
0AH	LF	1AH	
0BH	HOM	1BH	ESC
0CH	CLR	1CH	
0DH	CR	1DH	
0EH	SLE1	1EH	SF1
0FH	RS,SLE2	1FH	US, SF2

B. U.S.A. font set

C. International character selection

ASCII CODE

3DH: Standard Europe international font set

3EH: Multingual international font set

3FH: Portuguese international font set

40H: Canadian French international font set

41H: NORDIC internatinal font set

42H: RUSSIA font set

43H: SLAVONIC Font set

44H: Katakana font set

System Commands

Command Format
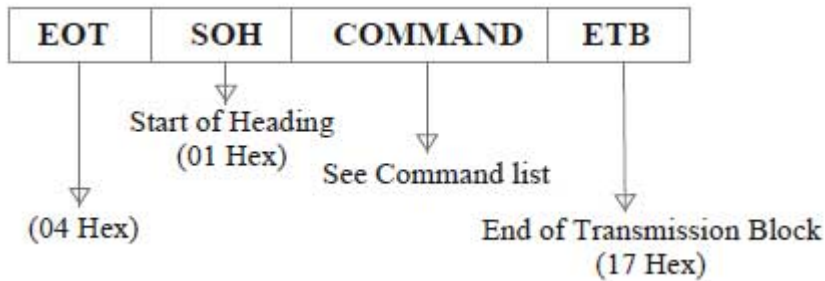
Command List

A. Set Baud Rate

COMMAND: B

COMPUTER:EOT SOH 'B' 'BAUD RATE' 'N' ETB

	ASCII	(04H)	(01H)	(42H)	(31H~37H)	(4EH)	(17H)
	Byte	1	1	1	1	1	1

DISPLAY: ACK   (or NACK if failed)

	ASCII	(06H)	(15H)
	Byte	1	1

Note: Baud rates

       31H: 9600

       32H: 4800

       33H: 2400

       34H: 1200

       35H: 600

       36H: 300

       37H:19200

B. Select international code table

COMMAND: I

COMPUTER:EOT SOH 'I' 'CHAR' ETB

    ASCII(04H)(01H)(49H)(30H~44H)(17H)

      Byte   1   1   1   1   1

DISPLAY: ACK   (or NACK if failed)

    ASCII (06H)   (15H)

      Byte   1   1

Note : International Character Code

30H : U.S.A.	3BH : Slavonic
31H : France	3CH : Russia
32H : Germany	3DH : Standard Europe International font set
33H : U.K.	3EH : Multingual International font set
34H : Denmark I	3FH : Portuguese International font set
35H : Sweden	40H : Canadian French International font set
36H : Italian	41H : Nordic International font set
37H : Spain	42H : Russia font set
38H : Japan	43H : Slavonic font set
39H : Norway	44H : Katakana font set
3AH : Denmark II	

C. Save the current view message

(Save Demo view data)

COMMAND: S

COMPUTER:EOT SOH 'S' 'Layer' ETB

    ASCII(04H)(01H)(53H)(31H~33H)(17H)

      Byte 1   1 1   1   1

DISPLAY: ACK   (or NACK if failed)

    ASCII (06H)   (15H)

      Byte   1   1

Note : 31H: Layer 1 / 32H: Layer 2 / 33H: Layer 3

D. Set cursor position

COMMAND: P

COMPUTER: EOT SOH 'P' 'Position' ETB

    ASCII (04H) (01H) (50H) (31H~58H) (17H)

      Byte 1   1   1   1   1

DISPLAY: ACK   (or NACK if failed)

    ASCII (06H)   (15H)

      Byte   1   1

Note: The cursor can be set to the position from 1 to 40

        Position 1 means the upper left corner position.

        Position 20 means the upper right corner position.

        Position 21 means the lower left corner position.

        Position 40 means the lower right corner position.

E. Clear display range

COMMAND: C

COMPUTER: EOT SOH 'C' 'START' 'END' ETB

    ASCII (04H)(01H)(43H)(31H~58H)(31H~58H)(17H)

      Byte 1   1   1   1   1

DISPLAY: ACK   (or NACK if failed)

    ASCII (06H)   (15H)

      Byte   1   1

Note: Some part of the current view messages can be
cleared by this COMMAND. It can start clearing
between position 1 and position 40.

F. Display the saved DEMO message

COMMAND: D

COMPUTER: EOT SOH 'D' 'Layer' 'Mode' ETB

    ASCII (04H)(01H)(44H)(31H~37H)(31H~33H)(17H)

      Byte 1   1   1   1   1

DISPLAY: ACK   (or NACK if failed)

    ASCII (06H)   (15H)

      Byte   1   1

Note:

a) There are three layers of saved view messages as described on COMMAND "S"

b) There are two modes of display:

        Mode 1 is running the saved messages from right to left, which is a horizontal scroll mode.

        Mode 2 is running the saved messages from the lower line to the upper line, which is a vertical scroll mode.

c) For display layers:

select 31H means display the message saved on layer 1.

select 32H means display the message saved on layer 2.

select 33H means display the message saved on layer 1+ layer2.

select 34H means display the message saved on layer 3.

select 35H means display the two messages saved on layer 1 + layer 3.

select 36H means display the two messages saved on layer 2 +layer 3.

select 37H means display all the messages saved on layer 1 +layer 2 + layer 3.

d) For display modes,

select 31H means display the message with Mode 1.

select 32H means display the message with Mode 2.

select 33H means display the message with Mode 1+Mode 2.

For this Demo display function, you must have saved the message by COMMAND "S" previously, For example, select 37H for displaying layers and select 33H for displaying modes, DSP would display all the three messages saved on layer 1+ layer 2 + layer 3 with both Mode 1 + Mode 2 displaying modes.

e) Any new message from the computer would stop this Demo

display function and DSP would display that new message from the computer.

G. Select the Command Mode

COMMAND: M

COMPUTER: EOT SOH 'M' 'Mode' ETB

ASCII (04H) (01H) (4DH)(30H~38H) (17H)

Byte   1   1   1   1   1

DISPLAY: ACK   (or NACK if failed)

ASCII (06H)   (15H)

Byte   1   1

Note: Command Modes Selection

30H : VFD-450	35H : ICD 2002
31H : EPSON ESC/POS	36H : CD 5220
32H : UTC/S	37H : DSP-800
33H : UTC/E	38H : ADM 787/788
34H : AEDEX	

H. Set all default

COMMAND: X

COMPUTER: EOT SOH 'X' ETB

ASCII (04H) (01H) (58H) (17H)

Byte   1   1   1   1

Transmission method

Each ASCII character is transmitted with

> 1 start bit
>
> 8 data bits
>
> 1 stop bit
>
> No parity

Note: You may generate your own application software to run the display according to the standard RS-232C communication protocols and the SOFTWARE CONTROL information listed on this chapter.

Command Modes

The command modes can be selected with the Demo Software.

> Mode 0: Default
>
> Mode 1: EPSON Esc/POS
>
> Mode 2: UTC Standard
>
> Mode 3: UTC Enhanced
>
> Mode 4: AEDEX
>
> Mode 5: ICD 2002
>
> Mode 6: CD 5220
>
> Mode 7: DSP-800
>
> Mode 8: ADM 787/788

Mode 0: Default

Command	Hexadecimal Codes	Function
B	42H	Set baud rate and parity
I	49H	Select international character set
S	53H	Save the current view message
P	50H	Set cursor position
C	43H	Clear display message
D	44H	Display the saved DEMO message
ESC G	IBH 47H	Print ON command
ESC S	IBH 53H	Print OFF command
M	4DH	Select command mode
X	58H	Set all default

Mode 1: EPSON Esc/POS mode

Command	Code Description (hex)	Function
HT	09	Move cursor right
BS	08	Move cursor left
US LF	1F 0A	Move cursor up
LF	0A	Move cursor down
US CR	1F 0D	Move cursor to right-most position
CR	0D	Move cursor to left-most position
HOM	0B	Move cursor to home position
US B	1F 42	Move cursor to bottom position
US $ x y	1F 24 x y X=1-20 y=01,02	Move cursor to specified position
CLR	0C	Clear display screen
CAN	18	Clear cursor line
US E n	1F 45 n n=00-ff	Blink display screen
ESC @	1B 40	Initialize display
ESC R n	1B 52 n n=0~15	Select international character set
US MD1	1F 01	Specify overwrite mode
US MD2	1F 02	Specify vertical scroll mode
US MD3	1F 03	Specify horizontal scroll mode
ESC W n s x1 y1 x2 y2	1B 57 n s x1 y1 x2 y2 n=1,2,3,4 s=0, 1	Specify/cancel the window range $1<=x1<=x2<=20$ $1<=y1<=y2<=2$
US:	1F 3A	Set starting/ending position of macro definition
US ^ n m	1F 5E n m $00<=(n,m)<=ff$	Execute and quit macro
US @	1F 40	Execute self-test
US T h m	1F 54 h m $0<=h<=17,$	Display time $0<=m<=3b$
US U	1F 55	Display time continuously
US.n	1F 2E n	n= a displayable character code Display the code with a dot
US,n	1F 2C n	n= a displayable character code Display the code with a comma
US;n	1F 3B n	n= a displayable character code Display the code with a semicolon
US#nm	1F 23 n m n = 0 ro 1 $0 <=m<=20$	Turn the anuciator (▼) ON/OFF

Mode 2: UTC Standard mode

Command	Code Description (hex)	Function
BS	08	Back space
HT	09	Horizontal tab
LF	0A	Line feed
CR	0D	Carriage return
DLE	0F	Display position
DC1	11	Over write display mode
DC2	12	Vertical scroll mode
DC3	13	Cursor on
DC4	14	Cursor off
ESC d	1B 64	Change to UTC enhanced mode
US	1F	Clear display

Mode 3: UTC enhanced mode

Command	Code Description (hex)	Function
ESC u ACR	1B 75 41 [data x 20] 0D	Upper line display
ESC u BCR	1B 75 42 [data x 20] 0D	Bottom line display
ESC u DCR	1B 75 44 [data x 20] 0D	Upper line message scroll continuously
ESC u ECR	1B 75 45 hh ':' mm 0D H,m='0'-'9'	Display time
ESC u FCR	1B 75 46 [data x 20] 0D	Upper line message scroll once pass
ESC u HCR	1B 75 48 n m 0D 20h<=n,m	Change attention code
ESC u ICR	1B 75 49 [data x 40] 0D	Two line display
ESC RS CR	1B 0F 0D	Change to UTC standard mode

Mode 4: AEDEX mode

Command	Code Description (hex)	Function
! # 1CR	21 23 31 [data x 20] 0D	Upper line display
! # 2CR	21 23 32 [data x 20] 0D	Bottom line display
! # 4CR	21 23 34 [data x 20] 0D	Upper line message scroll continuously
! # 5CR	21 23 35 hh ':' mm 0D H,m='0'-'9'	Display time
! # 6CR	21 23 36 [data x 20] 0D	Upper line message scroll once pass
! # 8CR	21 23 38 n m 0D 20h<=n,m	Change attention code
! # 9CR	21 23 39 [data x 40] 0D	Two line display
! # ACR	21 23 41 [data x 20] 0D	Upper line scroll message
! # BCR	21 23 42 [data x 20] 0D	Bottom line display message

Mode 5: ICD 2002 mode

Command	Code Description (hex)	Function
HT	09	Move cursor right (only valid in overwrite mode)
BS	08	Move cursor left (only valid in overwrite mode)
CR	0D	Move cursor to left-most position (only valid in overwrite mode)
ESC @	1B 40	Initialize customer display to initial state, clears display buffer, set display mode to shift and sets current display row to upper row
ESC U	1B 55	Select upper row as current row (initial default)
ESC D	1B 44	Select lower row as current row
ESC A φ	1B 41 φ	Sets customer display disable or enable φ 'D'=disable, 'E'=enable
ESC C r c	1B 43 r c	Move cursor to specified position (only valid in overwrite mode) -r Row ('U'=upper,'D'=lower) -c Column number (range from 1~20)
ESC E r φ	1B 45 r φ	Set special effect or display mode of specified row
ESC R n	1B 52 n n=30~44	Set international font sets -n international fonts code

REMARK)* Using command "ESC E r Φ", the value of parameter:

r 58= all rows

55= upper row

44= lower row

Φ special function, the value is one of

30= shift mode (default)

31= rotation mode

32= blink mode

33= clear this row and switch to shift mode

34= overwrite mode

35= vertical mode

Mode 6: CD 5220 standard mode

Command	Code Description (hex)	Function
ESC DC1	1B 11	Overwrite mode
ESC DC2	1B 12	Vertical scroll mode
ESC DC3	1B 13	Horizontal scroll mode
ESC Q A...CR	1B 51 41 [n]x20 0D	Set the string display mode, write string to upper line
ESC Q B...CR	1B 51 42 [n]x20 0D	Set the string display mode, write string to lower line
ESC Q D...CR	1B 51 44 [n]x20 0D	Upper line message scroll continuously
ESC [D	1B 5B 44	Move cursor left
BS	08	Move cursor left
ESC [C	1B 5B 43	Move cursor right
HT	09	Move cursor right
ESC [A	1B 5B 41	Move cursor up
ESC [B	1B 5B 42	Move cursor down
LF	0A	Move cursor down
ESD [H	1B 5B 48	Move cursor to home position
HOM	0B	Move cursor to home position
ESC [L	1B 5B 4C	Move cursor to left-most position
CR	0D	Move cursor to left-most position
ESC [R	1B 5B 52	Move cursor to right-most position
ESC [K	1B 5B 4B	Move cursor to bottom position
ESC 1 x y	1B 6C x y 1<=x<=20, y=1,2	Move cursor to specified position
ESC @	1B 40	Initialize display
ESC W s x1 x2 y	1B 57 1 x1 x2 y 1<=x1<=x2<=20 Y=1,2	Set or cancel the window range at horizontal scroll mode
CLR	0C	Clear display screen, and Clear string mode
CAN	18	Clear cursor line, and clear string mode
ESC _ n	1B 5F n n=0,1	Set cursor ON/OFF
ESC f n	1B 66 n n=30~44	Select international fonts set

30H : U. S. A.	3BH : Slavonic
31H : France	3CH : Russia
32H : Germany	3DH : Standard Europe International font set
33H : U. K.	3EH : Multingual International font set
34H : Denmark I	3FH : Portuguese International font set
35H : Sweden	40H : Canadian French International font set
36H : Italian	41H : Nordic International font set
37H : Spain	42H : Russia font set
38H : Japan	43H : Slavonic font set
	44H : Katakana font set

Mode 7: DSP-800 mode

Command	Code Description (hex)	Function
EOT SOH I n ETB	04 01 49 n 17	Select international fonts set
EOT SOH P n ETB	04 01 50 n 17 n=31H-58H	Move cursor to specified position
EOT SOH C n m ETB	04 01 43 n m 17 31H$\leq$n$\leq$m$\leq$58H	Clear display range from n position to m position and move cursor to n position
EOT SOH S n ETB	04 01 53 n 17 n=31H-35H	Save the current displaying data to n layer for demo display
EOT SOH D n m ETB	04 01 44 n m 17 n=31H-4FH m=31H-33H	Display the saved data
EOT SOH T ETB	04 01 54 17	Transmit the current view message to computer
EOT SOH B n N ETB	04 01 42 n 4E 17 n=31H: 9600 n=32H: 4800 n=33H: 2400 n=34H: 1200 n=35H: 600 n=36H: 300	Set baud rate

Mode 8: ADM 787/788 mode

Command	Code Description (hex)	Function
CLR	0C	Clear display
CR	0D	Carriage return
SLE1	0E	Clear upper line and move cursor to upper left-end position
SLE2	0F	Clear bottom line and move cursor to bottom left-end position
DC0	10 n	Set period to upper line, last n position 31h<n<37h
DC1	11 n	Set line blinking, upper line n ='1' bottom line n='2'
DC2	12 n	Clear line blinking, upper linen ='1', bottom line n='2'
SF1	1E	Clear field 1 and move cursor to field 1, first position
SF2	1E	Clear field 2 and move cursor to field 2, first position

Safety Regulatory Notices

CE MARK

This device compiles with the requirements of the EEC directive 89/336/EEC with regard to "Electromagnetic compatibility" and 73/23/EEC "Low Voltage Directive"

FCC

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions:

(1)This device may not cause harmful interference.

(2)This device must accept any interference received, including interference that may cause undesired operation.

CAUTION ON LITHIUM BATTERIES

There is adapter of explosion if the battery is replaced incorrectly. Replace only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.

LEGISLATION AND WEEE SYMBOL

2002/96/EC Waste Electrical and Electronic Equipment Directive on the treatment, collection, recycling and disposal of electric and electronic devices and their components.

The crossed dustbin symbol on the device means that it should not be disposed of with other household wastes at the end of its working life. Instead, the device should be taken to the waste collection centers for activation of the treatment, collection, recycling and disposal procedure.

To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate this from other types of wastes and recycle it responsibly to promote the sustainable reuse of material resources.

Household users should contact either the retailer where they purchased this product, or their local government office, for details of where and how they can take this item for environmentally safe recycling. Business users should contact their supplier and check the terms and conditions of the purchase contract. This product should not be mixed with other commercial wastes for disposal.