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# User Manual

# VDX3-6724

with

## DM&P Vortex86DX3 1GHz processor

## Half-Size CPU Module with

## 4S/4USB/VGA/LCD/LVDS/

## AUDIO/2LAN/GPIO/

## 1/2GB DDR3 Onboard

Version 1.0

ICOP Technology Inc.

# Copyright



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# Revision History

| Revision | Date | Remark |
|---|---|---|
| 1.0 | June 13, 2016 | First release |

# Table of Contents

# 1 General Information

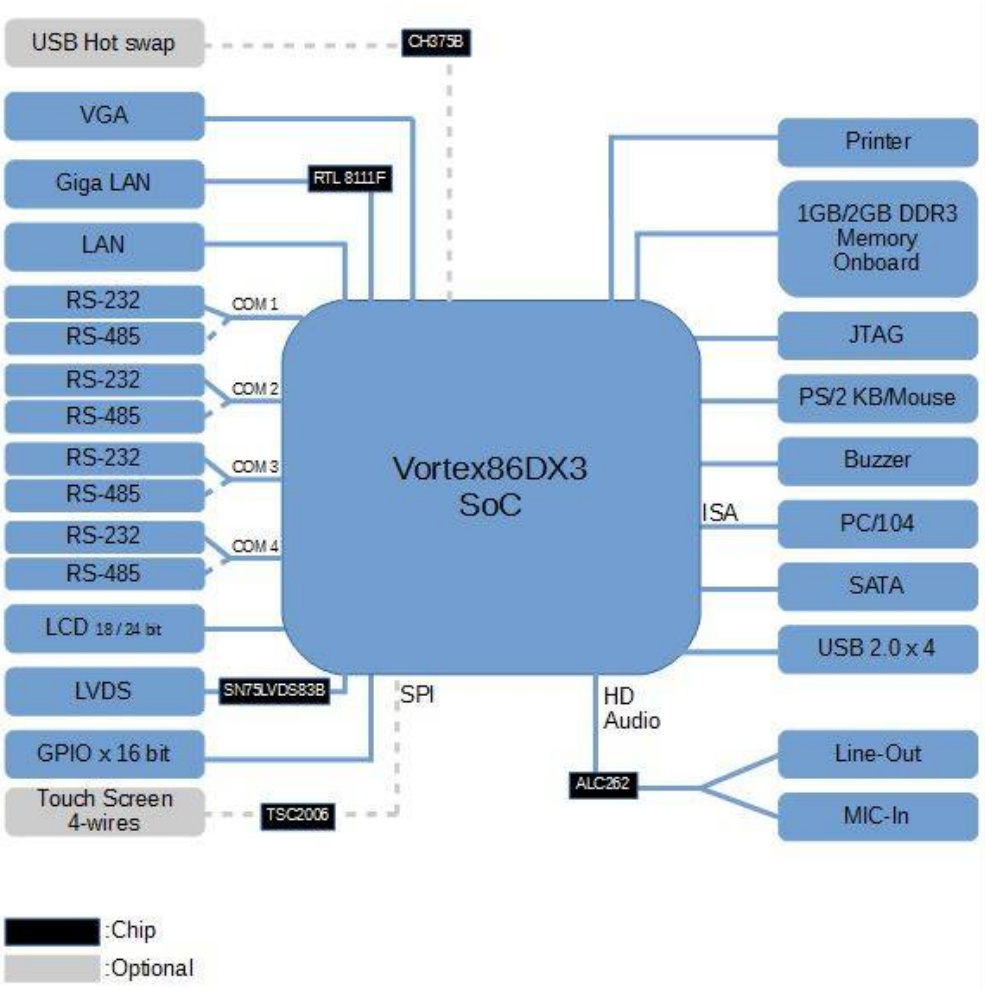
## 1.1 Overview

The VDX3-6724 is a low-power CPU module which compliant with ETX standard. It takes the advantage of Vortex86DX3 1GHz x86 CPU which integrate the SATA, I2C, VGA, LVDS, PS/2, USB, HD Audio and even with 16-bit ISA bus support.

The VDX3-6724 is designed as a plug in replacement, with backward compatibility to support legacy software to help extend existing product life cycle without heavy re-engineering.

## 1.2 Block diagram

Board Block Diagram



# 1.3 Specifications

| | |
|---|---|
| Processor | DM&P SoC CPU Vortex86DX3 1GHz<br>L1:32K I-Cache, 32K D-Cache, L2 Cache:512KB |
| RAM | 1GB/2GB DDR3 Onboard |
| Bus | PC/104 Standard Compliant |
| Watchdog Timer | Software programmable from 30.5 us to 512 seconds x2sets |
| Display | Integrated 2D VGA chip with dual display support<br>(VGA + TTL / VGA + LVDS)<br>VGA: Maximum resolution up to 1920x1080 @ 60Hz<br>LVDS: Maximum resolution up to 1024x768 @ 60Hz<br>Single channel 24-bit LVDS |
| LAN | Integrated 10/100Mbps Ethernet x1<br>Realtek 81111F 10/100/1000Mbps Ethernet x1 |
| Audio | HD Audio |
| Optional Interface | PS/2 touch controller x1<br>USB hot SWAP x1 |
| I/O Interface | SATA 7P Connector x1<br>RS232 port x2<br>RS232/485 port x2<br>Parallel port x1<br>USB port (Ver. 2.0) x4<br>16-bit GPIO port x1<br>10/100Mbps Ethernet port x1<br>10/100/10000Mbps Ethernet port x1 |

| | |
|---|---|
| Connectors | SATA 7P for SATA x1, 2P for SATA Power x1<br>2.54mm 26-pin box header for Printer x1<br>2.54mm 20-pin box header for GPIO x1<br>2.54mm 10-pin box header for USB x2<br>2.54mm 10-pin box header for RS232 x3<br>2.54mm 2-pin header for Reset x1<br>2.0mm 44-pin box header for LCD x1<br>2.0mm 20-pin header for LVDS x1<br>2.0mm 8-pin header for Ethernet x1<br>1.25mm 4-pin wafer for Line-out/MIC-in x2<br>External RJ-45 connector for Ethernet x1<br>External Mini DIN connector for KBD/Mouse x1<br>External D-Sub 15 pins female connector for VGA x1<br>External D-Sub 9 pins male connector for RS232 x1 |
| Flash Disk Support | Compact Flash Type I/II (Optional)<br>Onboard eMMC 512MB/4GB (Optional) |
| Power Requirement | Single Voltage +5V @1000mA (Typical) |
| Dimensions | 184mm x 122mm (7.24 x 4.80 inches) |
| Weight | 180g |
| Operating Temp. | -20℃ ~ +70℃<br>-40℃ ~ +85℃ (Optional) |
| Operating System Support | Free DOS, DOS 6.22, PCDOS 7.1, DR-DOS, x-DOS, OS/2, Windows 7, Windows Embedded Standard 7, Windows Embedded Compact 7, Windows Embedded Compact 6, Windows XP Professional, Windows Embedded Standard(XPE), POS Ready(WePOS), Embedded Linux, X-Linux, QNX, Vxworks and FreeBSD. |

# 1.4 Ordering Information

| Part Number | Product Description |
|---|---|
| VDX3-6724-1G | Vortex86DX3 Half-Size CPU Module with 1GB DDR3 |
| VDX3-6724-2G | Vortex86DX3 Half-Size CPU Module with 2GB DDR3 |
| VDX3-6724-CF-1G | Vortex86DX3 Half-Size CPU Module with 1GB DDR3<br>with CF card slot |
| VDX3-6724-CF-2G | Vortex86DX3 Half-Size CPU Module with 2GB DDR3<br>with CF card slot |
| CABLE-6724-SET | RS-232 (2.54) x3<br>USB (2.54) x2<br>GPIO (2.54) x1<br>Printer (2.54) x1<br>Audio Line x2<br>NET 4x2 (2.0) x1<br>YKB x1 |
| ICOP-0096 | Vortex86 LVDS 18-bit Converter Kit for LCD Panel Display |
| CABLE-LVDS-30 | 18-Bit LVDS Cable |

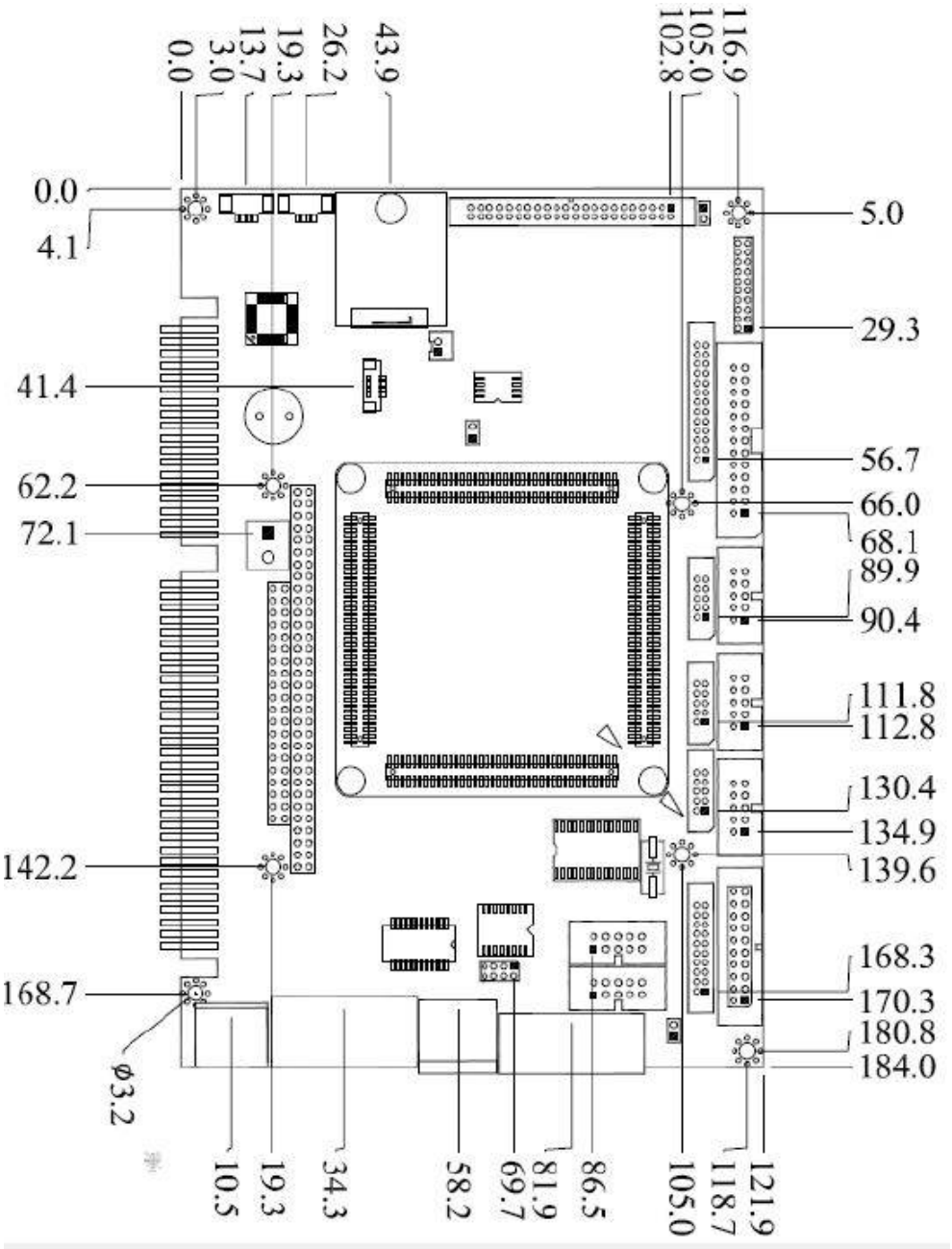
*Default setting for processor on VDX3-6724 is Single-core. If Dual-core processor is required, please contact ICOP (info@icop.com.tw).

## Storages:

| Product Name | MLC | SLC | 0℃ ~ +70℃ | -40℃ ~ +85℃ |
|---|---|---|---|---|
| SDM-SST-2G-H-M | V | | V | |
| SDM-SST-4G-H-M | V | | V | |
| ISATA-8G-H-M | V | | V | |
| ISATA-16G-H-M | V | | V | |
| ISATA-32G-H-M | V | | V | |
| ISATA-4G-H-M-X | V | | | V |
| ISATA-8G-H-M-X | V | | | V |
| ISATA-16G-H-M-X | V | | | V |
| ISATA-32G-H-M-X | V | | | V |
| ISATA-1G-H-S | | V | V | |
| ISATA-2G-H-S | | V | V | |
| ISATA-4G-H-S | | V | V | |
| ISATA-8G-H-S | | V | V | |
| ISATA-16G-H-S | | V | V | |
| SDM-SST-2G-H-S-X | | V | | V |
| SDM-SST-4G-H-S-X | | V | | V |
| SDM-SST-8G-H-S-X | | V | | V |
| ISATA-16G-H-S-X | | V | | V |

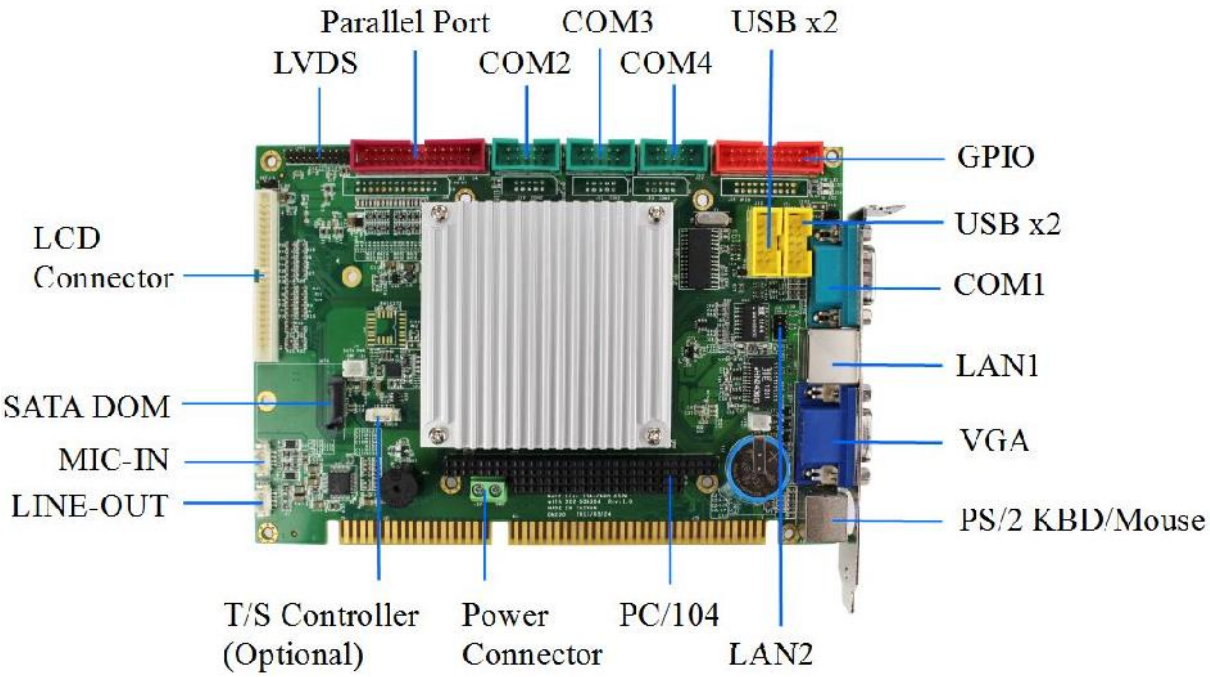
# 2 Hardware Information

## 2.1 Board Dimension



## 2.2 Board Outline

# VDX3-6724

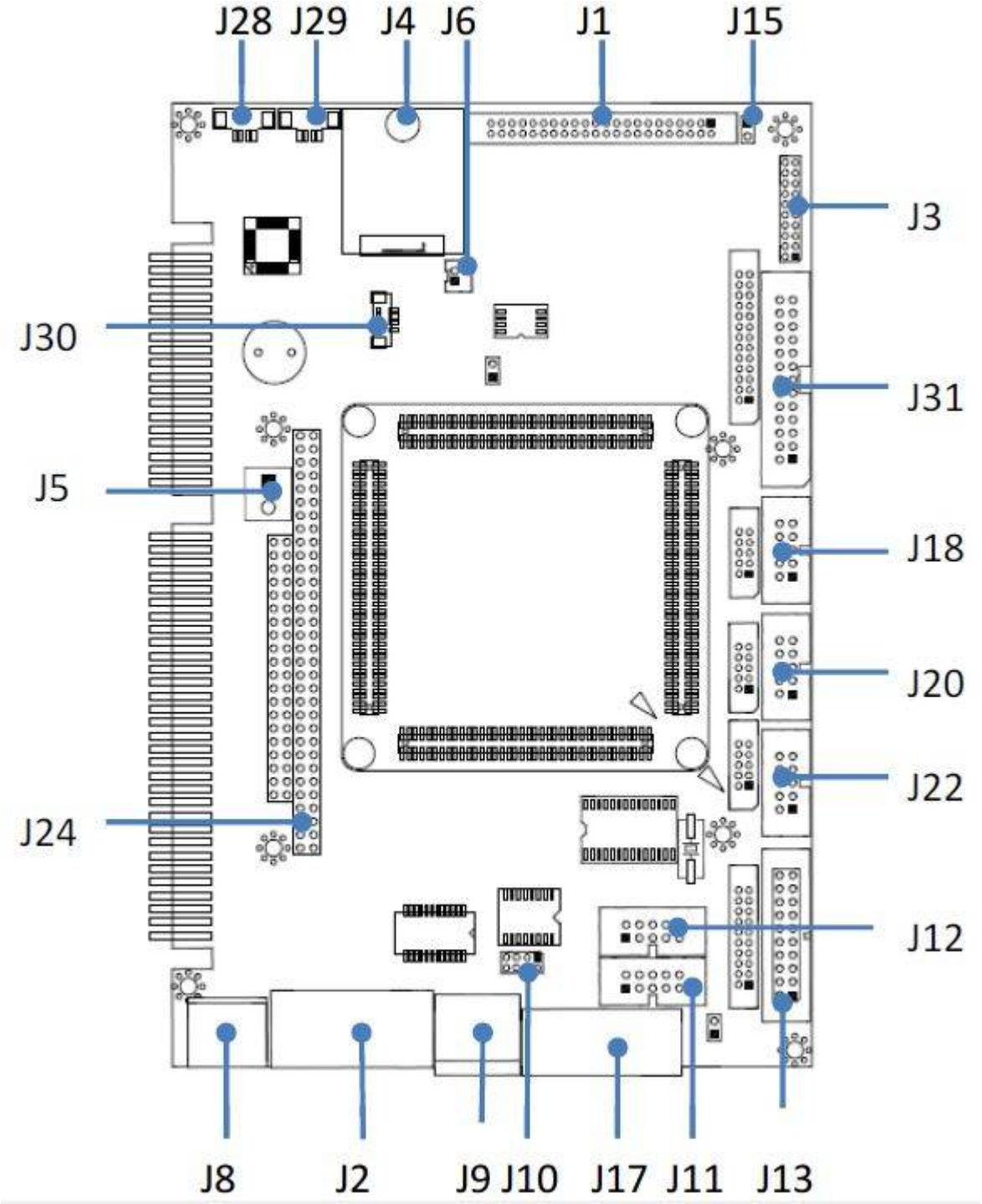



**Note:**

1. COM RS232/485 is selected by BIOS.
2. Touch screen is optional. If touch screen function is selected, onboard SPI ROM and PS/2 function will be disabled.
3. GPIO will be occupied when eMMC is selected on VDX3-6754.
4. LPT, eMMC, and GPIO are not available on VDX3-6754-CF.
5. CF card slot is only available on VDX3-6754-CF. (See the image below)

## 2.3 Connector and Jumper Location and Summary

Jumper Location:



## Jumper Summary:

| Nbr. | Name | Type of Connections | Pin Nbr |
|---|---|---|---|
| J1 | LCD | Box Header, 2.0mm, 2x22 | 44 |
| J2 | VGA | Pin Header, 2.0mm, 5x2 | 10 |
| J3 | 24-bit LVDS | Pin Header, 2.0mm, 10x2 | 20 |
| J4 | SATA DOM | SATA 7P Connector, 7x1 | 7 |
| J5 | Power Connector | Terminal Block, 5.0mm, 2x1 | 2 |
| J6 | SATA DOM Power | Box Header, 2.0mm, 1x2 | 2 |
| J8 | PS/2 Keyboard/Mouse | Mini-DIN Female | 6 |
| J9 | LAN1 | RJ45 Connector | 8 |
| J10 | LAN2 | Pin Header, 2.0mm, 4x2 | 8 |
| J11 | USB0&1 | Box Header, 2.54mm, 5x2 | 10 |
| J12 | USB2&3 | Box Header, 2.54mm, 5x2 | 10 |
| J13 | GPIO (Port6/7) | Box Header, 2.54mm, 10x2 | 20 |
| J15 | Reset | Pin Header, 2.54mm, 1x2 | 2 |
| J17 | COM1(RS232/485 or optional TTL/P4) | D-Sub Male | 9 |
| J18 | COM2(RS232/485 or optional TTL/P5) | Box Header, 2.54mm, 5x2 | 10 |
| J20 | COM5(RS232/485 or optional TTL/P0) | Box Header, 2.54mm, 5x2 | 10 |
| J22 | COM6(RS232/485 or optional TTL/P1) | Box Header, 2.54mm, 5x2 | 10 |
| J24A | PC104 Connector – 64 pins | Box Header, 2.54mm, 32x2 | 64 |
| J24B | PC104 Connector – 40 pins | Box Header, 2.54mm, 20x2 | 40 |
| J28 | Line-Out | Wafer, 1.25mm, 4x1 | 4 |
| J29 | MIC-In | Wafer, 1.25mm, 4x1 | 4 |
| J30 | Touch screen Controller (Optional) | Wafer, 1.25mm, 4x1 | 4 |
| J31 | Print | Box Header, 2.0mm, 13x2 | 26 |
| J34 | Master/Slave for CF Card | Slide switch | 3 |
| CF1 | CF card slot | | |
| SP1 | Buzzer | | |

# 2.4 Pin Assignments & Jumper Settings

## J1: LCD

| Pin# | Single Name | Pin # | Single Name |
|---|---|---|---|
| 1 | +3.3V | 2 | +3.3V |
| 3 | LG2 | 4 | LG3 |
| 5 | LG4 | 6 | LG5 |
| 7 | NC | 8 | NC |
| 9 | LR0 | 10 | LR1 |
| 11 | LR2 | 12 | LR3 |
| 13 | LR4 | 14 | LR5 |
| 15 | GND | 16 | NC |
| 17 | NC | 18 | NC |
| 19 | NC | 20 | GND |
| 21 | NC | 22 | NC |
| 23 | LB0 | 24 | LB1 |
| 25 | LB2 | 26 | LB3 |
| 27 | LB4 | 28 | LB5 |
| 29 | NC | 30 | NC |
| 31 | LG0 | 32 | LG1 |
| 33 | GND | 34 | GND |
| 35 | NC | 36 | LCLK |
| 37 | NC | 38 | LDE |
| 39 | NC | 40 | LHSYNC |
| 41 | NC | 42 | LVSYNC |
| 43 | LBACKL | 44 | LVDDEN |

**(Please refer to Appendix for TFT Flat Panel Data Output)**

## J2: VGA

| Pin# | Single Name | Pin # | Single Name |
|---|---|---|---|
| 1. | R OUT | 2 | GND |
| 3 | G OUT | 4 | GND |
| 5 | B OUT | 6 | GND |
| 7 | HSYNC | 8 | GND |
| 9 | VSYNCD | 10 | GND |

## J3: LVDS (24-bit Support Only)

| Pin# | Single Name | Pin # | Single Name |
|---|---|---|---|
| 1 | VCC3 (+3.3V) | 2 | VCC3 (+3.3V) |
| 3 | GND | 4 | GND |
| 5 | RxIN0+ | 6 | RxIN0- |
| 7 | RxIN1- | 8 | GND |
| 9 | GND | 10 | RxIN1+ |
| 11 | RxIN2+ | 12 | RxIN2- |
| 13 | CKIN- | 14 | GND |
| 15 | GND | 16 | CKIN+ |
| 17 | RxIN3- | 18 | GND |
| 19 | GND | 20 | GxIN3+ |

## J4: SATA DOM

| Pin# | Single Name | Pin # | Single Name |
|---|---|---|---|
| 1 | GND | 2 | TX+ |
| 3 | TX- | 4 | GND |
| 5 | RX- | 6 | RX+ |
| 7 | GND | | |

## J5: Power Connector (Terminal Block 5.0mm)

| Pin# | Single Name |
|---|---|
| 1 | +5V |
| 2 | GND |

## J6: SATA DOM POWER

| Pin# | Single Name | Pin # | Single Name |
|---|---|---|---|
| 1 | VCC | 2 | GND |

## J8: PS/2 KEYBOARD/MOUSE

| Pin# | Single Name | Pin # | Single Name |
|---|---|---|---|
| 1 | MSCLK | 2 | MSDATA |
| 3 | NC | 4 | GND |
| 5 | VCC | | |

## J9: LAN1 (RJ45)

| Pin# | Single Name | Pin # | Single Name |
|---|---|---|---|
| 1 | ATX+ | 2 | ATX- |
| 3 | ARX+ | 4 | LED0 |
| 5 | LED0+ | 6 | ARX- |
| 7 | LED1+ | 8 | LED1 |

## J10: LAN2

| Pin# | Single Name | Pin # | Single Name |
|---|---|---|---|
| 1 | ATX+ | 2 | ATX- |
| 3 | ARX+ | 4 | LED0 |
| 5 | LED0+ | 6 | ARX- |
| 7 | LED1+ | 8 | LED1 |

## J11: USB0&1

| Pin# | Single Name | Pin # | Single Name |
|---|---|---|---|
| 1. | VCC | 2 | VCC |
| 3 | LUSBD0- | 4 | LUSBD0- |
| 5 | LUSBD0+ | 6 | LUSBD1+ |
| 7 | GND | 8 | GND |
| 9 | GGND | 10 | GGND |

## J12: USB2&3

| Pin# | Single Name | Pin # | Single Name |
|---|---|---|---|
| 1. | VCC | 2 | VCC |
| 3 | LUSBD2- | 4 | LUSBD3-/**LUSBD4-** |
| 5 | LUSBD2+ | 6 | LUSBD3+/**LUSBD4+** |
| 7 | GND | 8 | GND |
| 9 | GGND | 10 | GGND |

***USB3 will be replaced by USB4 when DOS USB Hot Swap function is enabled (Optional)**

## J13: GPIO (Port 6/7)

| Pin# | Single Name | Pin # | Single Name |
|---|---|---|---|
| 1. | GND | 2 | VCC |
| 3 | GP60/SDA_D2 | 4 | GP70 |
| 5 | GP61/SDA_D3 | 6 | GP71 |
| 7 | GP62/SDA_CMD | 8 | GP72 |
| 9 | GP63/SDA_CLK | 10 | GP73 |
| 11 | GP64/SDA_D0 | 12 | GP74 |
| 13 | GP65/SDA_D1 | 14 | GP75 |
| 15 | GP66/SDA_CD | 16 | GP76 |
| 17 | GP67/SDA_WP | 18 | GP77 |
| 19 | VCC | 20 | GND |

***When onboard eMMC is enabled, GPIO will be disabled.**

****Not available on VDX3-6724-CF**

## J15: RESET

| Pin# | Single Name | Pin # | Single Name |
|---|---|---|---|
| 1. | RST_SW | 2 | GND |

## J17: COM1 RS232/485 D-Sub 9 pin (Optional: TTL/ GPIO-P4)

| Pin# | Single Name | Pin # | Single Name |
|---|---|---|---|
| 1. | DCD1/1RS485- | 2 | RXD1/1RS485+ |
| 3 | TXD1 | 4 | DTR1 |
| 5 | GND | 6 | DSR1 |
| 7 | RTS1 | 8 | CTS1 |
| 9 | RI1 | 10 | NC |

## J18: COM2 RS232/485 (Optional: TTL/ GPIO-P5)

| Pin# | Single Name | Pin # | Single Name |
|---|---|---|---|
| 1. | DCD2/2RS485- | 2 | RXD2/2RS485+ |
| 3 | TXD2 | 4 | DTR2 |
| 5 | GND | 6 | DSR2 |
| 7 | RTS2 | 8 | CTS2 |
| 9 | RI2 | 10 | NC |

## J20: COM5 RS232 (Optional: TTL/ GPIO-P0)

| Pin# | Single Name | Pin # | Single Name |
|---|---|---|---|
| 1. | DCD5 | 2 | RXD5 |
| 3 | TXD5 | 4 | DTR5 |
| 5 | GND | 6 | DSR5 |
| 7 | RTS5 | 8 | CTS5 |
| 9 | RI5 | 10 | NC |

## J22: COM6 RS232 (Optional: TTL/ GPIO-P1)

| Pin# | Single Name | Pin # | Single Name |
|---|---|---|---|
| 1. | DCD6 | 2 | RXD6 |
| 3 | TXD6 | 4 | DTR6 |
| 5 | GND | 6 | DSR6 |
| 7 | RTS6 | 8 | CTS6 |
| 9 | RI6 | 10 | NC |

## J24A: PC/104 Connector – 64 pin

| Pin# | Single Name | Pin # | Single Name |
|---|---|---|---|
| 1. | IOCHCHK* | 2 | GND |
| 3 | SD7 | 4 | RESETDRV |
| 5 | SD6 | 6 | VCC |
| 7 | SD5 | 8 | IRQ9 |
| 9 | SD4 | 10 | -5V |
| 11 | SD3 | 12 | RDQ2 |
| 13 | SD2 | 14 | -12V |
| 15 | SD1 | 16 | OWS |
| 17 | SD0 | 18 | +12V |
| 19 | IOCHRDY | 20 | GND |
| 21 | AEN | 22 | SMEMW* |
| 23 | SA19 | 24 | SMEMR* |
| 25 | SA18 | 26 | IOW* |
| 27 | SA17 | 28 | IOR* |
| 29 | SA16 | 30 | DACK3* |
| 31 | SA15 | 32 | DRQ3 |
| 33 | SA14 | 34 | DACK1* |
| 35 | SA13 | 36 | DRQ1* |
| 37 | SA12 | 38 | REFRESH* |
| 39 | SA11 | 40 | SYSCLK |
| 41 | SA10 | 42 | IRQ7 |
| 43 | SA9 | 44 | IRQ6 |
| 45 | SA8 | 46 | IRQ5 |
| 47 | SA7 | 48 | IRQ4 |
| 49 | SA6 | 50 | IRQ3 |
| 51 | SA5 | 52 | DACK2* |
| 53 | SA4 | 54 | TC |
| 55 | SA3 | 56 | BALE |
| 57 | SA2 | 58 | VCC |
| 59 | SA1 | 60 | OSC |
| 61 | SA0 | 62 | GND |
| 63 | GND | 64 | GND |

## J24B: PC/104 Connector – 40 pin

| Pin# | Single Name | Pin # | Single Name |
|---|---|---|---|
| 1. | GND | 2 | GND |
| 3 | MEMCS16* | 4 | SBHE* |
| 5 | IOCS16* | 6 | SA23 |
| 7 | IRQ10 | 8 | SA22 |
| 9 | IRQ11 | 10 | SA21 |
| 11 | IRQ12 | 12 | SA20 |
| 13 | IRQ15 | 14 | SA19 |
| 15 | IRQ14 | 16 | SA18 |
| 17 | DACK0* | 18 | SA17 |
| 19 | DRQ0 | 20 | MEMR* |
| 21 | DACK5* | 22 | MEMW* |
| 23 | DRQ5 | 24 | SD8 |
| 25 | DACK6* | 26 | SD9 |
| 27 | DRQ6 | 28 | SD10 |
| 29 | DACK7 | 30 | SD11 |
| 31 | DRQ7 | 32 | SD12 |
| 33 | VCC | 34 | SD13 |
| 35 | MASTER* | 36 | SD14 |
| 37 | GND | 38 | SD15 |
| 39 | GND | 40 | NC |

## J28: Line-Out

| Pin# | Single Name |
|---|---|
| 1. | LOUTR |
| 2 | GND |
| 3 | GND |
| 4 | LOUTL |

## J29: MIN-In

| Pin# | Single Name |
|---|---|
| 1 | MICVREF |
| 2 | GND |
| 3 | GND |
| 4 | MIC-IN |

## J30: Touch screen (Optional)

| Pin# | Single Name |
|---|---|
| 1 | Y- |
| 2 | X- |
| 3 | Y+ |
| 4 | X+ |

****If touchscreen function is enabled, SPI ROM will be disabled.**

## J31: Print

| Pin# | Single Name | Pin # | Single Name |
|---|---|---|---|
| 1 | STB- | 14 | AFD- |
| 2 | PD0 | 15 | ERR- |
| 3 | PD1 | 16 | INIT- |
| 4 | PD2 | 17 | SLIN- |
| 5 | PD3 | 18 | GND |
| 6 | PD4 | 19 | GND |
| 7 | PD5 | 20 | GND |
| 8 | PD6 | 21 | GND |
| 9 | PD7 | 22 | GND |
| 10 | ACK- | 23 | GND |
| 11 | BUSY | 24 | GND |
| 12 | PE | 25 | GND |
| 13 | SLCT | 26 | NC |

****Not available on VDX3-6724-CF**

# 3 Software Resources

## 3.1 ICOP Technical Resource Website

In the following website, you will find our latest user manuals, including OS support resources systems such as evaluation images for Windows Embedded Compact 7, Windows Embedded CE6.0, and Windows XP Embedded (Win XPe), etc. For details, please visit the link below:
http://tech.icop.com.tw/

# 4 Basic BIOS Setting

## 4.1 Introduction

Featuring AMI BIOS, the VDX3-6724 module is a one stable module board for your applications. In this section, we will introduce you some basic AMI BIOS setting such as CPU speed adjusting, console redirection, and IDE configuration, etc.

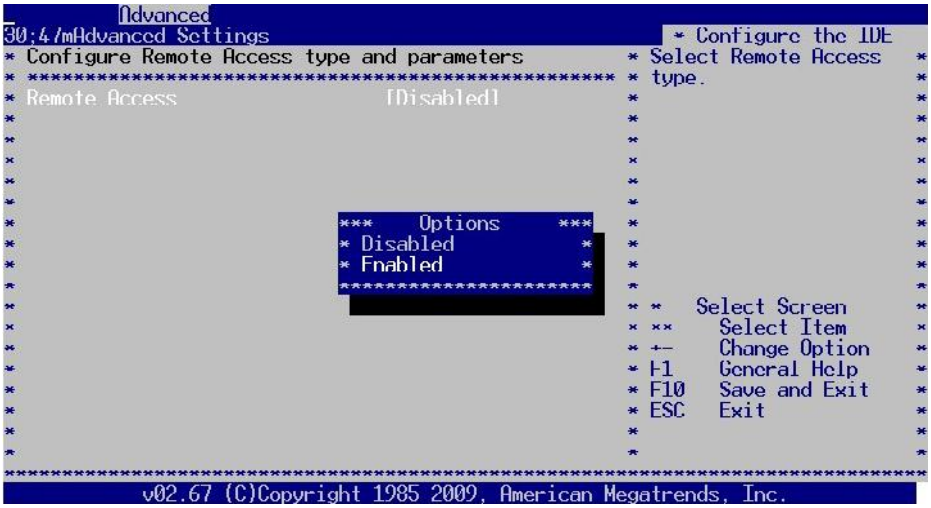
## 4.2 CPU Clock Adjusting

For CPU clock adjusting, please contact your contact window directly or mail info@icop.com.tw.

## 4.3 Console Redirection

Access to computer board through serial port, you can work on VDX3-6724 without VGA display or monitor. The default access port is COM1 and disabled. If you would like to use this function, please go to the path below to enable Console Redirection.

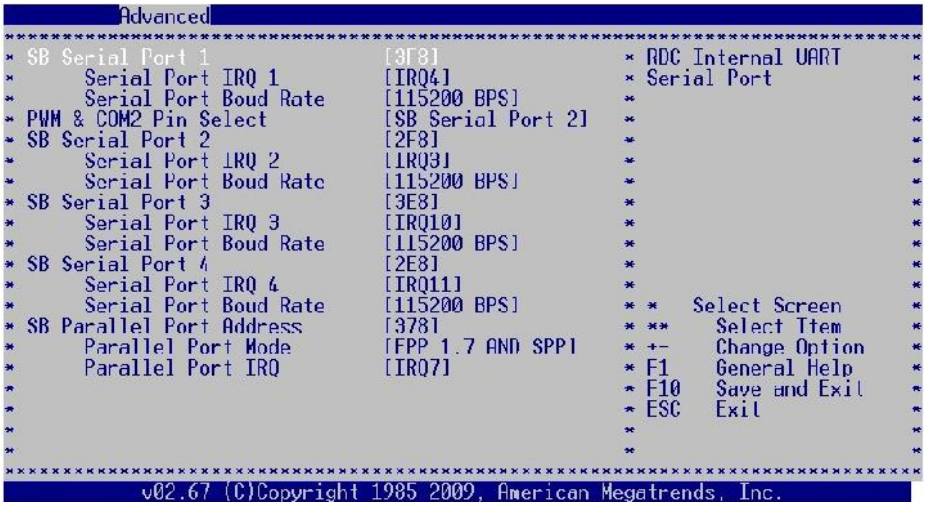
**Path: Advanced >Remote Access Configuration >Remote Access [Enabled]**



# 4.4 Serial Ports Switching

Serial ports on VDX3-6724 are set RS232 as default. If you need RS485 be your default serial ports. Please contact your contact window directly or mail info@icop.com.tw. And you can refer to the below instruction to select the IRQ mode according to your demands.

**Path: Advanced >Serial/Parallel Port Configuration**



# 4.5 IDE Configuration

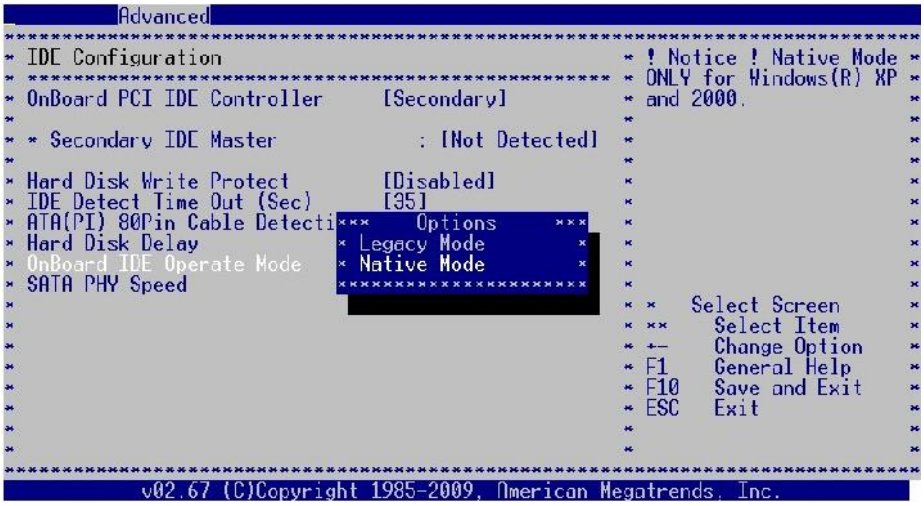
The default IDE configuration is for Windows Operating System, and the setting as below:

**Onboard IDE Operate Mode: [Legacy Mode]**
**IDE Compatibility: [Disabled]**.

If you would like to use Linux on VDX3-6724, please follow below instructions:

**Onboard IDE Operate Mode: [Native Mode]**
**IDE Compatibility: [Enabled]**.

**Path of Onboard IDE Operate Mode:**
**Advanced >IDE Configuration >Onboard IDE Operate Mode [Native Mode]**

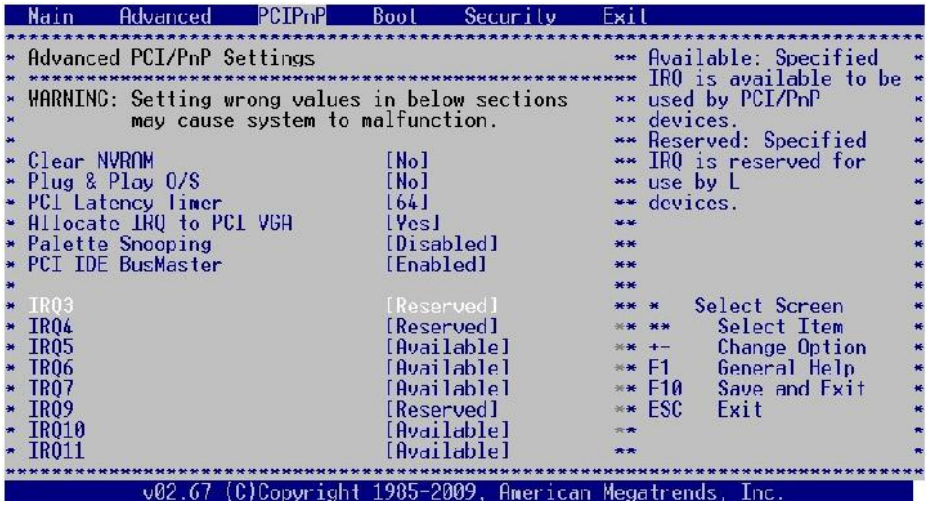


# 4.6 Advanced PCI-PnP Setting

Two statuses for IRQ setting:

[Reserved]: IRQ will free to be allocated by PnP BIOS.
[Available]: IRQ will not free to be allocated by PnP BIOS.

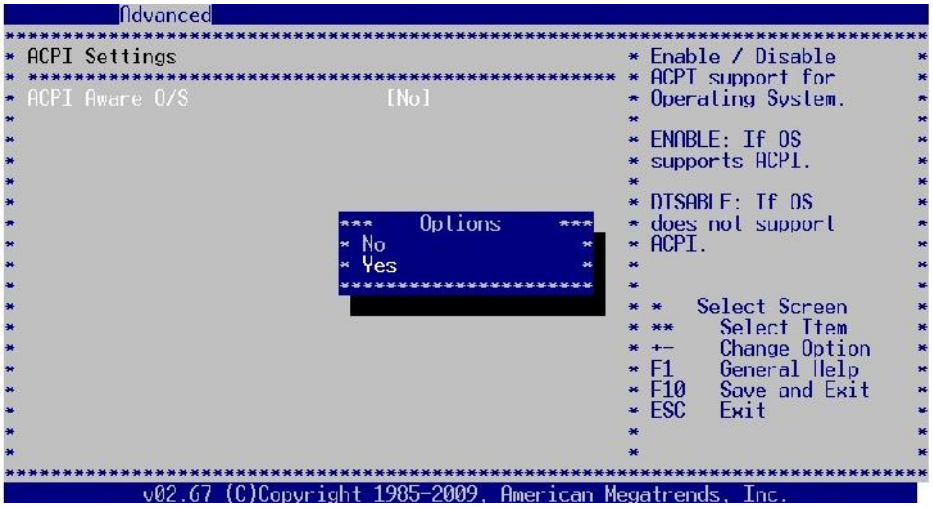
**Path: PCIPnP >IRQ**



# 4.7 ACPI Enable

To install Windows 7 on ICOP computer boards, please enable ACPI as the following instruction.

**Path: Advanced >Power Management Configuration > ACPI Configuration >ACPI Aware O/S**



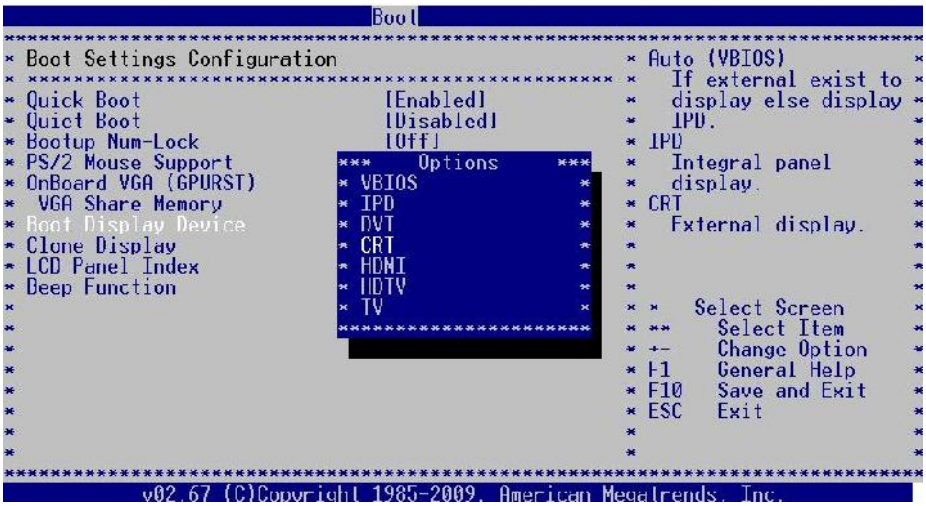
# 5 Basic LCD Panel Setting

## 5.1 Introduction

The VDX3-6724 offers two different interfaces which support maximum resolution up to 1920 x 1080 (at 60 MHz) connecting to VGA and LCD Flat Panel with 18-bit/24bit LVDS.

The default setting of **Boot Display Device [VBIOS]** and **LCD Panel Index [VBIOS]** with **Clone Display [ENBALED]** support dual display (LCD and VGA) on VDX3-6726.

If your VGA display shifts because of the above setting, please switch **Boot Display Device [VBIOS] to [CRT]** as the following image:




**Boot Display Device [VBIOS]: LCD and VGA display supported with display setting based on your required LCD specification.

[CRT]: VGA display supported

## 5.2 Pin Assignment of LVDS

Please refer Page 20 for LVDS pin assignment.

# 5.3 Basic BIOS Setting for LCD

If you would like to use LCD panel with VDX3-6726, please follow below instruction:

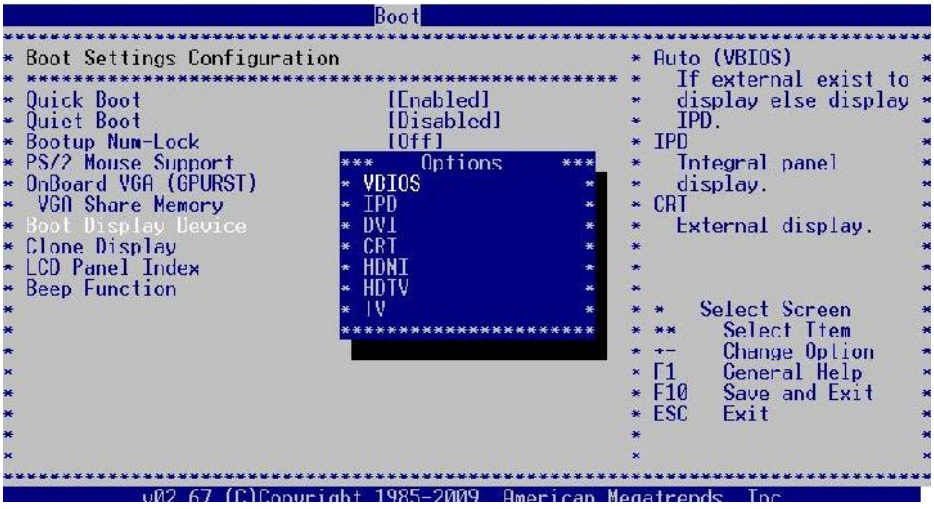
**Boot Display Device [VBIOS]**

**LCD Panel Index** according to your LCD resolution from VBIOS to 5.

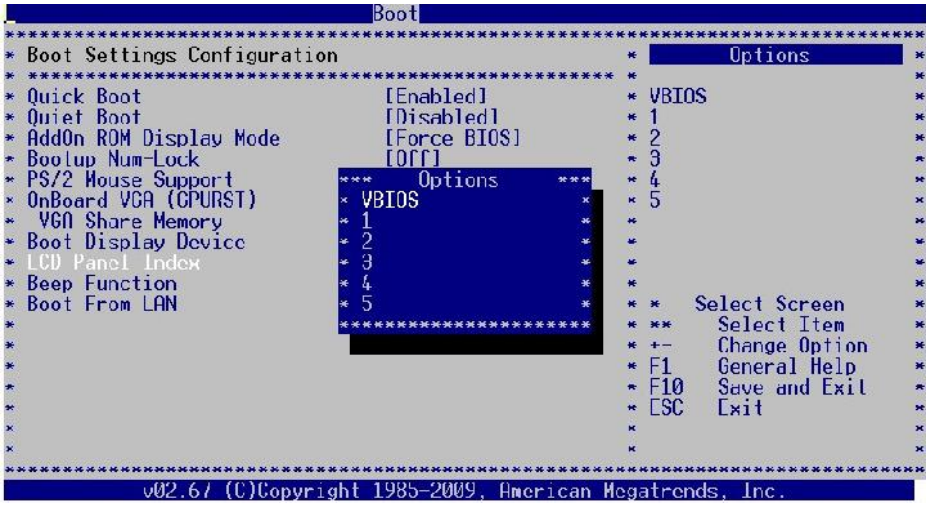
| Options | Resolution of the LCD Panel |
|---|---|
| VBIOS | the Required LCD Specification |
| 1 | 640 x 480 |
| 2 | 800 x 480 |
| 3 | 800 x 600 |
| 4 | 1024 x 600 |
| 5 | 1024 x 768 |

**Path of Boot Display Device setting:**

**Boot >Boot Settings Configuration >Boot Display Device [VBIOS]**



## Path of LCD Panel Index setting:
## Boot >Boot Settings Configuration >LCD Panel Index [ ]




***The **[VBIOS]** difference between **Boot Display Device** and **LCD Panel Index**:

**Boot Display Device [VBIOS]**: Display Output Setting

**LCD Panel Index [VBIOS]**: Display Resolution Setting

# Technical Support Directly from ICOP

To offer you more accurate and specific solutions for the technical situations you have, please prepare the information below before contacting ICOP:

—Product name and serial number

—Description of the H/W environment ( i.e.: working temperature, I/O board information, information of connection between main board and IO boards, and/or other devices, etc)

—Description of the S/W environment (i.e: operating system, version, application software, and/or other related information, etc.)

—A detailed description and photos of the technical situation

—Any complement or technical situations you want ICOP more focusing on

# User Manual Feedback

To make this user manual more complete, if you have any comments or feedbacks to this manual, please feel free to write to info@icop.com.tw or contact your ICOP sales representative.

# Appendix TFT Panel Data Output

| LCD Pin# | Single Name | Digital 18 Bits | RGB 24 Bits |
|---|---|---|---|
| 1 | LCDVCC (+3.3) | VDD | VDD |
| 2 | LCDVCC (+3.3) | VDD | VDD |
| 3 | FPD12 | G2 | G4 |
| 4 | FPD13 | G3 | G5 |
| 5 | FPD14 | G4 | G6 |
| 6 | FPD15 | G5 | 7 |
| 7 | FPD16 | / | R0 |
| 8 | FPD17 | / | R1 |
| 9 | FPD18 | R0 | R2 |
| 10 | FPD19 | R1 | R3 |
| 11 | FPD20 | R2 | R4 |
| 12 | FPD21 | R3 | R5 |
| 13 | FPD22 | R4 | R6 |
| 14 | FPD23 | R5 | R7 |
| 15 | GND | VSS | VSS |
| 16 | NC | / | / |
| 17 | NC | / | / |
| 18 | NC | / | / |
| 19 | NC | / | / |
| 20 | GND | VSS | VSS |
| 21 | FPD0 | / | B0 |
| 22 | FPD1 | / | B1 |
| 23 | FPD2 | B0 | B2 |
| 24 | FPD3 | B1 | B3 |
| 25 | FPD4 | B2 | B4 |
| 26 | FPD5 | B3 | B5 |
| 27 | FPD6 | B4 | B6 |
| 28 | FPD7 | B5 | B7 |
| 29 | FPD8 | / | G0 |
| 30 | FPD9 | / | G1 |
| 31 | FPD10 | G0 | G2 |
| 32 | FPD11 | G1 | G3 |
| 33 | GND | VSS | VSS |

| LCD# | Single Name | Digital 18 Bits | RGB 24 Bits |
|---|---|---|---|
| 34 | GND | VSS | VSS |
| 35 | NC | / | / |
| 36 | FP1CLK | XCLK | XCLK |
| 37 | NC | / | / |
| 38 | FP1DE | DEN | DEN |
| 39 | NC | / | / |
| 40 | FP1HS | HSYNC | HSYNC |
| 41 | NC | / | / |
| 42 | FP1VS | VSYNC | VSYNC |
| 43 | FPENBLT | ADJ | ADJ |
| 44 | FPENVDD | VDDEN | VDDEN |

# Warranty

This product is warranted to be in good working order for a period of one year (12 months) from the date of purchase. Should this product fail to be in good working order at any time during this period, we will, at our option, replace or repair it without additional charge except as set forth in the following terms. This warranty does not apply to products damaged by misuse, modifications, accident or disaster. Vendor assumes no liability for any damages, lost profits, lost savings or any other incidental or consequential damage resulting from the use, misuse of, originality to use this product. Vendor will not be liable for any claim made by any other related party. Return authorization must be obtained from the vendor before returned merchandise is accepted. Authorization can be obtained by calling or faxing the vendor and requesting a Return Merchandise Authorization (RMA) number. Returned goods should always be accompanied by a clear problem description. Should you have questions about warranty and RMA service, please contact us directly.

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