TPC6000-A192

Industrial Panel PC
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DECLARATION OF CONFORMITY

This restriction is subject to provide protection for system operation in business environment, which will produce, use and transmit radio frequency energy. Without notice of the instructions of the correct installation and use, it may cause harmful interference to radio communication. The interference prevention cannot be guaranteed even with proper installation according to the manual. If the device gets bad affect on the signal of radio / TV. User could insure by turn device on/off.

When this device produces some harmful interference, user can use the following measure to solve interference problem:

Setting the receiving antenna’s direction or location
Increase the distance between this device and receiver.
Plug in this device’s power connector into different circuits of the power outlet with receiver.

If you need technical support, please inform the dealer or experienced radio/TV technical personnel.

**Warning:**
If user changes the setting unauthorized or repairs the device without any approval of the relevant authority, then user’s rights of controlling this device will be canceled.

## ORDERING INFORMATION

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TPC6000-A192-T</td>
<td>19” XGA TFT LED / 2.0 GHz CPU / 1 x SODIMM / 2 x GLAN / 4 x USB / 6 x RS232 (COM1 can set to RS485, default: RS232) / HDMI / VGA</td>
</tr>
<tr>
<td>TPC6000-A192-TA</td>
<td>19” XGA TFT LED / 2.0 GHz CPU / 1 x SODIMM / 2 x GLAN / 4 x USB / 5 x RS232 (COM1 can set to RS485) / 1 x RS485 (COM5 or COM6 can set to RS485 with module) / HDMI / VGA</td>
</tr>
<tr>
<td>TPC6000-A192-TB</td>
<td>19” XGA TFT LED / 2.0 GHz CPU / 1 x SODIMM / 2 x GLAN / 4 x USB / 4 x RS232 (COM1 can set to RS485) / 2 x RS485 (COM5 and COM6: with module) / HDMI / VGA</td>
</tr>
<tr>
<td>TPC6000-A192-T-DC24V</td>
<td>19” XGA TFT LED / 2.0 GHz CPU / 1 x SODIMM / 2 x GLAN / 4 x USB / 4 x RS232 / no speaker / HDMI / VGA</td>
</tr>
</tbody>
</table>

## TECHNICAL SUPPORT AND SERVICE

Please visit: [en.nodka.com](http://en.nodka.com) to get the details.

User should collect the product information following:
- Product name and serial number.
- Attached device’s description
- User’s software’s description (operational system, vision, application software and so on)
- Full description of the product’s problem
- Full details of every error information

**Warning:**
1. DC 12V input power;
2. Package: be careful, please take the device by two hands;
3. Maintenance: please clean and maintain the surface by correct ways, only can use the certificated or dry product to clean up.

SAFETY INTRODUCTION

1. Please read the safety operating introduction very carefully.
2. Please store this manual so that refers it again.
3. Before clean up the device by wet cloth, please confirm that power connector is out of outlet, DO NOT use any liquid or decontamination spray to clean it up!
4. There must be a easy touched power outlet.
5. Please confirm that the device is be put on a stable platform before installation, accident fall may cause damages of device.
6. Please confirm that the voltage which is come from power outlet is fit on the requirement, before you connect the device to outlet.
7. Please arrange the power cable in a hiding place and do not cover anything on the cable.
8. Please be cautious of the warnings and notices on the device.
9. If the device is not used for a long time, shut off the power to avoid the damages by transient overvoltage.
10. DO NOT allow any liquid flow into the device so that cause fire or short circuit.
11. DO NOT pull the device up by yourself, please let any certificated engineer to do that for your safety.

If you meet the following situations, please repair it by professional person:

- Power cable or connector is broken;
- Liquid flow into the device.
- Device doesn’t work properly. Or you can’t make it work through the user manual.
- This device falls or any damage;
- Some obvious damage;

12. DO NOT store the device in out of the temperature range what we suggested, NOT less then -30°C or higher than 70°C, or may damage the device.
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Chapter 1

OVERVIEW
1.1 Introductions

![Figure 1-1: TPC6000-A192-T](image)

TPC6000-A192-T is low-power consumption fanless panel PC, it equipped with the latest Intel Bay trail J1900 processor and it also has excellent computational performance and low-consumption, Data storage supports mSATA and 2.5 inch SSD or HDD; It has been designed with various of communication interface and 2 x 1000Mbps Ethernet port, 3 x USB 2.0 ports, 1 x USB 3.0 ports, 6 x RS232 (COM1, COM5, COM6 optional RS485); Power input 12V DC.

Using sealed box structure, prevent dust from floating into the device, large area of aluminum fin heat sink, It can distributes the internal device’s heat quickly and effectively, make sure that the PC’s reliability and longer service life. TPC6000-A192-T can be used in a long-term running and industrial field in harsh environment, is widely used in intelligent traffic, machine vision, medical equipment, textile machine, railway and industrial automation etc.

TPC6000-A192-T compatible with Windows 7, Windows 8, Windows 10, Android and Linux operating system and other embedded operating system.

1.2 Features

- Aluminum Magnesium alloy die-casting, IP65 enabled in front panel;
- High temperature 5-wires analog resistive type touch screen;
- Support 2.5” SSD or mSATA.
- Intel Bay trail J1900 2.0GHz dual processor;
- 2 x Realtek RTL8111F 10 / 100 / 1000Mbps Ethernet interface;
- 6 x RS-232 serial port (COM1, COM5, COM6 can be set to RS-485 optional), with magnetic-coupling isolation and surge protection;
- Interfaces: VGA / HDMI / 2 x GLAN / 4 x USB / 6 x COM;

1.3 External Overview

The TPC6000-A192-T consists of a screen and a rear panel that covers the back, side and top. The rear panel contains a smaller access panel, all the cable connections and mounting holes.

1.3.1 Front panel

The front side of the TPC6000-A192-T is flat panel LCD screen surrounded by an aluminum magnesium alloy die-cast frame.

Figure 1-2: Front panel
1.3.2 Rear panel

![Rear panel diagram]

<p>| | | | | | | | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
<td>E</td>
<td>F</td>
<td>G</td>
<td>H</td>
<td>I</td>
<td>J</td>
<td>K</td>
<td>L</td>
</tr>
<tr>
<td></td>
<td>COM6</td>
<td>COM5</td>
<td>ATX</td>
<td>DC IN</td>
<td>COM1</td>
<td>COM2</td>
<td>COM3</td>
<td>COM4</td>
<td>LAN</td>
<td>VGA</td>
<td>HDMI</td>
</tr>
</tbody>
</table>

Figure 1-3: Rear panel

1.4 Internal overview

All components are contained under the rear panel. The internal components include the touch panel module and the motherboard. The motherboard has memory, a wireless module and a hard drive. Optionally, an HSDPA module can be installed in any of the models.
# 1.5 Specifications

<table>
<thead>
<tr>
<th>Type</th>
<th>TPC6000-A192-T</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hardware</strong></td>
<td></td>
</tr>
<tr>
<td>Processor</td>
<td>Onboard Intel Bay trail J1900 quad-core processor (TDP10W)</td>
</tr>
<tr>
<td>CPU clock speed</td>
<td>2.0GHz</td>
</tr>
<tr>
<td>2nd Cache</td>
<td>2MB</td>
</tr>
<tr>
<td>RAM</td>
<td>Support DDR3L 1333 MHz, 1 * SO-DIMM Slot, Up to 8GB</td>
</tr>
<tr>
<td>Hard drive</td>
<td>Support mSATA, SATA 2.5&quot;SSD, HDD</td>
</tr>
<tr>
<td>Graphics</td>
<td>Intel® HD Graphics</td>
</tr>
<tr>
<td>Ethernet port</td>
<td>2 x Realtek RTL 8111F 1000Mbps RJ-45 Ethernet port with surge, lighting, 15KV ESD protections</td>
</tr>
<tr>
<td>Wireless network</td>
<td>1 x Mini-PCle slot, expandable 3G, WIFI wireless network card</td>
</tr>
<tr>
<td>USB</td>
<td>3 x USB2.0, 1 x USB3.0 ports with 8KV electrostatic protection</td>
</tr>
<tr>
<td>Serial port</td>
<td>6 x RS-232 / RS-485 serial ports (COM1, COM5, COM6 selectable) with magnetic- coupling isolation and surge protection, RS485 supports data transfer direction control</td>
</tr>
<tr>
<td>Watchdog</td>
<td>1~255 second programmable setting</td>
</tr>
<tr>
<td>Interfaces</td>
<td>VGA / HDMI / 2 x GLAN / 4 x USB 2.0 / 6 x COM</td>
</tr>
</tbody>
</table>

## LCD and touch panel

<table>
<thead>
<tr>
<th>Size</th>
<th>19’’ TFT LCD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. resolution</td>
<td>1280 x 1024</td>
</tr>
<tr>
<td>Display area</td>
<td>376.32 (H) x 301.06 (V)</td>
</tr>
<tr>
<td>Backlight</td>
<td>LED</td>
</tr>
<tr>
<td>Backlight MTBF (Hours)</td>
<td>30,000</td>
</tr>
<tr>
<td>Luminance</td>
<td>250cd/m²</td>
</tr>
</tbody>
</table>

## Touch screen

<table>
<thead>
<tr>
<th>Touch screen style</th>
<th>5-wires analog resistive type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Touch lifetime</td>
<td>250g / 35,000,000 times</td>
</tr>
<tr>
<td>Stroke lifetime</td>
<td>250g / 5,000,000 times</td>
</tr>
<tr>
<td>Luminousness</td>
<td>More than 81%</td>
</tr>
</tbody>
</table>

## Structure

<p>| Front panel                 | Aluminum magnesium alloy die-casting panel frame, PET pat on              |</p>
<table>
<thead>
<tr>
<th>Structure</th>
<th>Steel box, high temperature painting, large area of finned heat sinks on back shell.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mounting method</td>
<td>Support desktop and panel-mounting, fix it by hooks; Or VESA-mounting with racks.</td>
</tr>
<tr>
<td>Interface color</td>
<td>Silver</td>
</tr>
<tr>
<td>Total dimension</td>
<td>466<em>370</em>81mm (W x H x D)</td>
</tr>
<tr>
<td>Cut dimension</td>
<td>443*352mm (W x H)</td>
</tr>
<tr>
<td>Structure dimension</td>
<td>440<em>349</em>75 (W x H x D)</td>
</tr>
<tr>
<td>Net weight</td>
<td>6.84kg</td>
</tr>
</tbody>
</table>

**Environment**

| Work temperature             | 0-50°C (SSD-Free)                                                                 |
| Storage temperature          | -30-70°C                                                                          |
| Power supply                 | DC 12V                                                                            |
| Power consumption            | 27W                                                                               |
| Constant temperature / wet test | 40°C 95%RH / 1000hrs                   |
| High temperature test        | 60°C / 1000hrs                                                                    |
| Relative humidity            | 10-95% (Non-condensing)                                                           |
| Vibration                    | 50-500Hz, 1.5G, 0.19mm peak-peak value                                             |
| Shock                        | 10G / peak (11ms duration)                                                        |

*Table 1-1: Specification*
1.6 Dimensions

Figure 1-5: TPC6000-A192-T dimensions
Chapter 2

INSTALLATIONS
Warning:
When installing the TPC6000-A192-T, make sure to:

- **Turn the power off:** chance of electrocution. Turn off the monitor and unplug it from the power supply.
- **Only let certified engineer change the hardware settings:** Incorrect settings can cause irreparable damage to the product.
- **Install the monitor with assistance:** The product is very heavy and maybe damage by drops and bumps. Two or more people should install the panel PC.
- **Take anti-static precautions:** Electrostatic discharge can destroy electrical components and injure the user. Users must ground themselves using an anti-static wristband or similar device.

The installation steps below should be followed in order:

**Step 1:** Unpack the flat panel PC;
**Step 2:** Check all the required parts are included;
**Step 3:** Install the hard drive;
**Step 4:** Install the compact flash card;
**Step 5:** Mount the flat panel PC;
**Step 6:** Connect peripheral devices to the bottom panel of the flat panel PC;
**Step 7:** Connect the power cable;
**Step 8:** configure the system;

### 2.1 Unpack the flat panel PC

Unpack the flat panel PC, follow the step below:

**Step 1:** Carefully cut the tape stealing the outside box. Only cut deep enough to break the tape.
**Step 2:** Open the outside box.
**Step 3:** Carefully cut the tape stealing the inside box. Only cut deep enough to break the tape.
**Step 4:** Open the inside box.
**Step 5:** Lift the monitor out the box.
**Step 6:** Remove the peripheral box from the main box.
2.2 Packing list:

Please check out all items by following list when you open the package:

<table>
<thead>
<tr>
<th>Item</th>
<th>Image</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>TPC6000-A192-T</td>
<td><img src="image1.png" alt="Image" /></td>
<td>1</td>
</tr>
<tr>
<td>Touch screen pen</td>
<td><img src="image2.png" alt="Image" /></td>
<td>1</td>
</tr>
<tr>
<td>Utility CD</td>
<td><img src="image3.png" alt="Image" /></td>
<td>1</td>
</tr>
<tr>
<td>Power cord</td>
<td><img src="image4.png" alt="Image" /></td>
<td>1</td>
</tr>
<tr>
<td>Power adapter</td>
<td><img src="image5.png" alt="Image" /></td>
<td>1</td>
</tr>
<tr>
<td>Mounting Clamps</td>
<td><img src="image6.png" alt="Image" /></td>
<td>4</td>
</tr>
</tbody>
</table>

Table 2-1: Packing list

If any items are missing or damaged, contact the distributor or sales representative immediately.
2.3 Hard drive installation

This section outlines the installation of the hard drive in the TPC6000-A192-T. To install the hard drive, please follow the steps below:

Step 1: Flip over this device and you can see its back.
Step 2: Unfasten the 4 silver retention screws on the left and right side. (Figure 2-1)
Step 3: Lift the cover to remove.
Step 4: Locate the HDD bracket.
Step 5: Insert the SATA connector at the end of the HDD into the bracket to connect the motherboard SATA connector to the hard drive SATA connector as shown in the figure below.
Step 6: Plant the screw on the HDD bracket.
Step 7: Replace the covers and screws.

2.4 SSD installation by using mSATA

The installation for a SSD is described in this section.

Step 1: Remove the HDD bracket just like mentioned on the “Hard drive installation steps”.
Step 2: Insert the mSATA SSD into the mSATA slot as shown in the Figure 2-4 below:
2.5 Memory installation

This section outlines the installation of the memory in the TPC6000-A192-T. To install the memory, please follow the steps below:

**Step 1:** Flip over this device and you can see its back.

**Step 2:** Unfasten the 4 silver retention screws on the left and right side. (Figure 2-5)

**Step 4:** Lift the cover to remove.

**Step 5:** Locate the memory bracket.

**Step 6:** Plug the DDR3L memory bar into the DDR3L slot in the angle of 45 degrees then push lightly down till the two metal clips vise the memory bar with a sound “pa”, and done safety.

**Step 7:** Plant the cover on back of the device.

2.6 Mounting system

**Warning:**

The panel PC is very heavy, two or more people should mount the panel PC. Dropping or bumping the panel PC during installation can cause serious or irreparable damage to the panel PC.

The following installation options are available:
2.6.1 Monitor stand

The monitor stand allows the monitor to be used on a desk or table. For instructions on installing the monitor stand, please refer to the manual that come with the stand.

![Monitor stand](image)

Figure 2-6: Monitor stand

2.6.2 Arm mounting

The TPC6000-A192-T can be installed on any arm that supports the standard VESA mounting interface. An example wall arm is shown below:

![Wall arm](image)

Figure 2-7: Wall arm
To install the TPC6000-A192-T on the arm, follow the direction below:

**Notice:** Make sure the arm supports standard VESA mounting. The TPC6000-A192-T uses a VESA mounting to attach to the arm.

**Step 1:** The arm purchased separately, follow the instructions in the arm’s user manual to securely attach the arm to the wall.

**Step 2:** Once the mounting arm has been firmly attached to the surface, lift the flat panel PC onto the interface pad of the mounting.

**Step 3:** Align the retention screw holes on the mounting arm interface with those in the flat panel PC.

**Step 4:** Secure the flat panel PC to the interface pad by inserting four retention screws through the bottom of the mounting arm interface pad and into the flat panel PC.

### 2.6.3 Wall mounting

To mount the flat panel PC onto the wall, please follow the steps below:

*Figure 2-9: Wall mount*

**Step 1:** Select the location on the wall for the wall-mounting bracket.

**Step 2:** Carefully mark the locations of the four bracket screw holes on the wall.

**Step 3:** Drill four pilot holes at the marked locations on the wall, for the bracket retention screws.

**Step 4:** Align the wall-mounting bracket screw holes with the pilot holes.
Step 5: Secure the mounting-bracket to the wall by inserting the retention screws into the four pilot holes and tightening them.

Step 6: Insert the four monitor mounting screws provided in the wall mounting kit into the four screw holes on the real panel of the flat panel PC and tighten until the screw shank is secured against the rear panel.

Step 7: Align the mounting screws on the monitor rear panel with the mounting holes on the bracket.

Step 8: Carefully insert the screws through the holes and gently pull the monitor downwards until the monitor rests securely in the slotted holes. And ensure that all four of the mounting screws fit snugly into their respective slotted holes.

Step 9: Secure the panel PC by fastening the retention screw of the wall-mounting bracket.

2.6.4 Panel mounting

To mount the TPC6000-A192-T flat panel PC into a panel (not standard attached), please follow the steps below:

Step 1: Select the location on the panel to mount the flat panel PC.

Step 2: Cut out a section from the panel that corresponds to the rear panel dimensions of the flat panel PC. Take care that the panel section that is cut out is smaller than the overall size of the metal frame that surrounds the flat panel PC but just large enough for the rear panel of the flat panel PC to fit through. Recommended cutout size as shown below:

![Figure 2-10: TPC6000-A192-T cut out.](image)
**Step 3:** Slide the flat panel PC through the hole until the frame is flush against the panel.

**Step 4:** Insert the panel mounting clamps into the pre-formed holes along the edges of the chassis, on the two side of the frame.

**Step 5:** Tighten the screws that pass through the panel mounting clamps until the caps at the front of all the screws are firmly secured to the panel.

![Figure 2-11: Tighten the panel mounting clamp screws.](image)
2.7 Bottom panel connectors

The bottom panel connectors extend the capabilities of the panel PC but are not essential for operation (except power).

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>A:</td>
<td>COM6</td>
<td>G:</td>
<td>COM3</td>
</tr>
<tr>
<td>B:</td>
<td>COM5</td>
<td>H:</td>
<td>COM4</td>
</tr>
<tr>
<td>C:</td>
<td>ATX</td>
<td>I:</td>
<td>LAN</td>
</tr>
<tr>
<td>D:</td>
<td>DC IN</td>
<td>J:</td>
<td>USB 2.0<em>3/USB 3.0</em>1</td>
</tr>
<tr>
<td>E:</td>
<td>COM1</td>
<td>K:</td>
<td>VGA</td>
</tr>
<tr>
<td>F:</td>
<td>COM2</td>
<td>L:</td>
<td>HDMI</td>
</tr>
</tbody>
</table>

Figure 2-12: Connectors

2.7.1 LAN connection

The RJ-45 connectors enable connection to an extend network. To connect a LAN cable with a RJ-45 connector, please follow the instructions below.

**Step 1:** Locate the RJ-45 connector on the bottom panel of the TPC6000-A192-T.

**Step 2:** Align the connectors. Align the RJ-45 connector on the LAN cable with one of the RJ-45 connector on the bottom panel of the TPC6000-A192-T. Please See Figure 2-13
Step 3: Insert the LAN cable RJ-45 connector. Once aligned, gently insert the LAN cable RJ-45 connector into the onboard RJ-45 port.

2.7.2 Serial device connection

The serial device connectors are for connecting serial devices to the TPC6000-A192-T. Follow the steps below to connect a serial device to the TPC6000-A192-T panel PC.

Step 1: Locate the DB-9 connector. The location of the DB-9 connector is shown in chapter 2.

Step 2: Insert the serial connector. Insert the DB-9 connector of a serial device into the DB-9 connector on bottom panel. Please see Figure 2-14.

Step 3: Secure the connector. Secure the serial device connector to the external interface by tightening the two retention screws on either side of the connector.
2.7.3 USB connection

To connect USB device to the TPC6000-A192-T, please follow the instruction below:

**Step 1:** Located the USB connectors. The locations of the USB connectors are shown in Chapter 2.

**Step 2:** Align the connectors. Align the USB device connector with one of the connector on the bottom panel. Please See Figure 2-15

![USB Device connector](image)

**Step 3:** Insert the device connector. Once aligned, gently insert the USB device connector into the onboard connector.

2.7.4 VGA monitor connection

The VGA output can be connected to an external VGA monitor. To connect the VGA monitor to the TPC6000-A192-T, please follow the instruction below:

**Step 1:** Located the female DB-15 connectors. The locations of the VGA connectors are shown above.

**Step 2:** Align the connectors. Align the male DB-15 connector on VGA screen cable with the female DB-15 connector on the external peripheral interface.

**Step 3:** Insert the VGA connector. Once the connectors are properly aligned with the insert the male connector from the VGA screen into female connector on the TPC6000-A192-T, please see the figure 2-16:
Step 4: Secure the VGA connector. Secure the DB-15 VGA connector from the VGA monitor to the external interface by tightening the two retention screws on either side of the connector.

2.8 Power connector

The power cable connects the panel PC to power supply. The power cable is required for operation of the panel PC.

Step 1: Connect one end to the panel PC.
Step 2: Connect the other end to the included power supply.
2.9 Connectors Definition

- **COM port**

COM1~6 are DB9 connector and its definition is:

<table>
<thead>
<tr>
<th>PIN</th>
<th>SIGNAL</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>DCD</td>
<td>Data-</td>
</tr>
<tr>
<td>2</td>
<td>RXD</td>
<td>Data+</td>
</tr>
<tr>
<td>3</td>
<td>TXD</td>
<td>N/A</td>
</tr>
<tr>
<td>4</td>
<td>DTR</td>
<td>N/A</td>
</tr>
<tr>
<td>5</td>
<td>GND</td>
<td>GND</td>
</tr>
<tr>
<td>6</td>
<td>DSR</td>
<td>N/A</td>
</tr>
<tr>
<td>7</td>
<td>RTS</td>
<td>N/A</td>
</tr>
<tr>
<td>8</td>
<td>CTS</td>
<td>N/A</td>
</tr>
<tr>
<td>9</td>
<td>RI</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Table 2-2: COM1~6 DB9 connector

COM1 optional RS232 or RS485, Select Jumper:

<table>
<thead>
<tr>
<th>Jumper</th>
<th>Settings</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>JC_1</td>
<td>1-3,2,4 (Default)</td>
<td>COM1 RS232</td>
</tr>
<tr>
<td></td>
<td>3-5,4-6</td>
<td>COM1 RS485</td>
</tr>
<tr>
<td>J1</td>
<td>1-3,2,4 (Default)</td>
<td>COM1 RS232</td>
</tr>
<tr>
<td></td>
<td>3-5,4-6</td>
<td>COM1 RS485</td>
</tr>
</tbody>
</table>
PIN9 on DB9 defaults RI, you can set to 5V or 12V by jumpers here is the definitions:

<table>
<thead>
<tr>
<th>SETTING</th>
<th>FUNCTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1-2)</td>
<td>+5V</td>
</tr>
<tr>
<td>(3-4)</td>
<td>+12V</td>
</tr>
<tr>
<td>(5-6)</td>
<td>Ring (Default)</td>
</tr>
</tbody>
</table>

Table 2-3: Jumper of PIN9 on DB9

- **USB**

  We provide a standard single deck USB port in front panel and 2 x 2 standard double-deck USB interface on I/O interfaces, you can use the 5 USB interfaces at the same time, and here is the interface definition:

<table>
<thead>
<tr>
<th>PIN</th>
<th>SIGNAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>+5V</td>
</tr>
<tr>
<td>2</td>
<td>Date-</td>
</tr>
<tr>
<td>3</td>
<td>Date+</td>
</tr>
<tr>
<td>4</td>
<td>GND</td>
</tr>
</tbody>
</table>

Table 2-5: USB

- **Audio interface (LINE_OUT)**

  We provide a standard Ø3.5 PhoneJack audio output interface (LINE_OUT), you can use it directly.

- **Ethernet Interfaces (LAN1, LAN2)**

  We provide two 10 / 100 / 1000Mbps RJ-45 Ethernet interfaces, you can use it directly. There are two status indicators, links status on the left side, data transmission status on the right side.

<table>
<thead>
<tr>
<th>PIN</th>
<th>SIGNAL</th>
<th>PIN</th>
<th>SIGNAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>TX0+</td>
<td>5</td>
<td>TX2+</td>
</tr>
<tr>
<td>2</td>
<td>TX0-</td>
<td>6</td>
<td>TX2-</td>
</tr>
<tr>
<td>3</td>
<td>TX1+</td>
<td>7</td>
<td>TX3+</td>
</tr>
<tr>
<td>4</td>
<td>TX1-</td>
<td>8</td>
<td>TX3-</td>
</tr>
</tbody>
</table>
### Table 2-6: LAN connector

<table>
<thead>
<tr>
<th>Network status</th>
<th>Left (LILED) double colors (Orange / Green)</th>
<th>Right (ACTLED) single color (Yellow)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1000M</td>
<td>N/A</td>
<td>Flash</td>
</tr>
<tr>
<td>100M</td>
<td>Constant ON</td>
<td>Flash</td>
</tr>
<tr>
<td>10M</td>
<td>OFF</td>
<td>Flash</td>
</tr>
<tr>
<td></td>
<td>Active description</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Green</td>
<td>Data Transferring</td>
</tr>
<tr>
<td></td>
<td>Orange</td>
<td>No Data Transferring</td>
</tr>
</tbody>
</table>

**Linking indicator**
- Active status indicator

### Table 2-7: Indicator of LAN connector
VGA monitor interface

We provide a standard DB15 monitor interface, you can connect it directly. Here is the definition:

<table>
<thead>
<tr>
<th>PIN</th>
<th>SIGNAL</th>
<th>PIN</th>
<th>SIGNAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Red</td>
<td>9</td>
<td>5V</td>
</tr>
<tr>
<td>2</td>
<td>Green</td>
<td>10</td>
<td>GND</td>
</tr>
<tr>
<td>3</td>
<td>Blue</td>
<td>11</td>
<td>GND</td>
</tr>
<tr>
<td>4</td>
<td>NC</td>
<td>12</td>
<td>DDC_Data</td>
</tr>
<tr>
<td>5</td>
<td>GND</td>
<td>13</td>
<td>HS</td>
</tr>
<tr>
<td>6</td>
<td>GND_R</td>
<td>14</td>
<td>VS</td>
</tr>
<tr>
<td>7</td>
<td>GND_G</td>
<td>15</td>
<td>DDC_Clock</td>
</tr>
<tr>
<td>8</td>
<td>GND_B</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 2-8: VGA monitor
Switch button (PWR)

We provide a ATX power touch switch button (PWR) to power up on rear panel.

Power connector interface:

TPC6000-A192-T offers a 3-pins power input interface:

<table>
<thead>
<tr>
<th>PIN</th>
<th>SIGNAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>GND</td>
</tr>
<tr>
<td>2</td>
<td>12V</td>
</tr>
</tbody>
</table>

Table 2-10: Power connector

PWR, hard drive status indicators

We provide a set of power, hard drive status indicators, you can know the procedure status by these indicators, green light constantly is for power-up. Red light flashing on hard drive indicator is shows that the hard drive is reading/writing data for now.

2.10 Driver installation

Notice:
The content of the CD may vary throughout the life cycle of the product and is subject to change without prior notice. Visit the NODKA website or contact technical support for the latest updates.

When you finish the system setup, user should setup the driver of chipset, network card, audio card, display card.

All drivers’ program will be store in an optical disc in accessory box, That will helps user to install the driver and know the functions.

Installation steps: First step is chipset’s driver (INF), then the other driver, it’s better that once you finish a installation, reboot the system, now let’s talk about method of Intel EMGD display card driver installation in Windows 7.

The following drivers can be installed on the system, each driver is in its own directory on the driver CD:

- Chipset driver
- Graphics driver
- LAN driver
Audio driver
- Touch screen driver
- Intel TXE driver

2.10.1 Chipset driver

Browse the product’s driver disc or D:\Backup\Drivers\1.chipset\infinst.autol, you will see the driver file as following figure.
Double click the Chipset driver program

<table>
<thead>
<tr>
<th>Name</th>
<th>Date modified</th>
<th>Type</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>infinst_autol</td>
<td>5/19/2012 2:32 PM</td>
<td>Application</td>
<td>2.875 KB</td>
</tr>
<tr>
<td>VER</td>
<td>5/19/2012 2:32 PM</td>
<td>Text Document</td>
<td>1 KB</td>
</tr>
</tbody>
</table>

Wait for its loading:
Press <NEXT> then go to the next step.

Press <YES> to agree the License agreement then go to the next step:
Press <NEXT> to continue.
Wait for the installation: if it done completely, then the <NEXT> key will been set to active, then press <NEXT> to continue.

After finish this installation, you should restart the computer immediately then you can install other device’s driver. Select the <Yes, I want to restart this computer now> and press <Finish> to reboot the computer.
2.10.2 Graphics driver

Browse the product’s driver disc or D:\Backup\Drivers\2.graphics\Win7_32_8.14.1091, you will see the driver file as following figure.

Double click the graphics driver program

Press <NEXT> to get to the next step:
Please select “Automatically run WinSAT and enable the Windows Aero desktop theme (if supported)” then press <NEXT> to go to the next install page.
Press <YES> to agree the license agreement then go to the next step:

Press <NEXT> to go on.
Press <YES> to agree the License agreement then go to the next step:
After finish this installation, you should restart the computer immediately then you can install other device’s driver. Select the <Yes, I want to restart this computer now> and press <Finish> to reboot the computer.

2.10.3 Audio driver

Browse the product’s driver disc or
D:\Backup\Drivers\3.audio\32bit_Vista_Win7_Win8_R269, you will see the driver file as following figure.

Double click the graphics driver program

Wait for loading preparations
Press <YES> to continue
Wait for its installation and after finish this installation, you should restart the computer immediately then you can install other device’s driver. Select the <Yes, I want to restart this computer now> and press <OK> to reboot the computer.
2.10.4 LAN driver

Browse the product's driver disc or D:\Backup\Drivers\4_LAN\Setup.exe, you will see the driver file as following figure.

Double click the LAN driver program

Wait for preparing setup.
Press <NEXT> to continue
All Selected should be installed into the computer, then press <NEXT>.

Press <INSTALL> to start this installation and wait for its finished:
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.
Please click the <Install this driver software anyway> selection when the Windows security message windows shows. And press <FINISH> to finish the installation.
2.10.5 Touch screen driver

Browse the product's driver disc or D:\Backup\Drivers\5.touch\RisintechSetup.exe, you will see the driver file as following figure.

Double click the touch screen driver program

![Driver file list]

Press <NEXT> to continue

![Wizard window]

Press <NEXT> to continue
Press <NEXT> to continue

Press <INSTALL> to continue
Wait for its installation and after finish this installation, you should restart the computer immediately then you can install other device’s driver. Select the <Yes, I want to restart this computer now> and press <OK> to reboot the computer.
All drivers are been installed into this computer so far.

### 2.10.6 Intel TXE installation

This app supports the system that Intel Trusted Execution Engine Interface driver program. The “Intel Trusted Execution Engine” supports the safety booted and provides us the services that using Intel Platform Trust Technology (Intel PPT) and other platforms’ safety function needs.

Browse the product’s driver disc or D:\Backup\Drivers\6.txe\setup.exe, you will see the driver file as figure below.

![Driver File](image)

Double click the touch screen driver program then shows like this:
Press <Next> to continue and don’t forget to agree with the license agreement.
Then press <Next> to continue.

If you meet this windows message tip, please select the second selection <Install this driver software anyway>.
If you encounter this message tip, please select <No, I will restart the computer later> and click <Finish> to finish the driver installation completely.
3.1 Introduction

The BIOS is programmed onto the BIOS chip, the BIOS setup program allows changes to certain system settings. This chapter outlines the options that can be changed.

3.1.1 Starting setup

The AMI is activated when the computer is turned on. The setup program can be activated in one of two ways:

1. Press the <DEL> key as soon as the system is turned on.
2. Press the <DEL> key when the “Press Del to enter SETUP” tips appears on the screen.

If the message disappears before the <DEL> key is pressed, restarted the computer and try again.

3.1.2 Using setup

Use the arrow keys to highlight items. Press <ENTER> to select, use the <PAGE UP> and <PAGE DOWN> keys to change entries. Press <F1> for help and press <ESC> to quit. Navigation keys are shown in.

<table>
<thead>
<tr>
<th>Key</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up arrow</td>
<td>Move to previous item</td>
</tr>
<tr>
<td>Down arrow</td>
<td>Move to next item</td>
</tr>
<tr>
<td>Left arrow</td>
<td>Move to the item on the left side</td>
</tr>
<tr>
<td>Right arrow</td>
<td>Move to the item on the right side</td>
</tr>
<tr>
<td>ESC</td>
<td>Reset</td>
</tr>
<tr>
<td>+</td>
<td>Increase the numeric value or make changes</td>
</tr>
<tr>
<td>-</td>
<td>Decrease the numeric value make changes</td>
</tr>
<tr>
<td>F1</td>
<td>General help, only for the status page setup menu and option page setup menu</td>
</tr>
<tr>
<td>F2</td>
<td>Previous value</td>
</tr>
<tr>
<td>F3</td>
<td>Optimized defaults</td>
</tr>
<tr>
<td>F4</td>
<td>Save all the CMOS changes and reset</td>
</tr>
</tbody>
</table>

Table 3-1: BIOS navigation keys
3.1.3 Getting help

When <F1> is pressed a small help window describing the appropriate keys to use and the possible selection for the highlight item appears. To exit the help Windows press <ESC> or the <F1> key again.

3.1.4 Unable to reboot after configuration changes

If the computer cannot boot after changes to the system configuration is made, CMOS defaults.

Please refer to the CMOS clear Jumper:

![CMOS Clear Jumper](image)

<table>
<thead>
<tr>
<th>Jumper</th>
<th>Setting</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLR_CMOS1</td>
<td>1-2 (Default)</td>
<td>Normal</td>
</tr>
<tr>
<td></td>
<td>2-3</td>
<td>Clear CMOS</td>
</tr>
</tbody>
</table>

3.1.5 BIOS menu bar

The menu bar on the top of the BIOS screen has the following main items:

- Main – Changes the basic system configuration.
- Advanced – Changes the advanced system settings
- PCI / PnP – Changes the advanced PCI / PnP settings
- Boot – Changes the system boot configuration.
- Security – Sets user and supervisor passwords.
- Chipset – Changes the chipset settings.
- Exit – Selects exit options and loads default settings.

The following sections completely describe the configuration options found in the menu items at the top of the BIOS screen and listed above.
3.2 Main

When you first enter the BIOS Setup Utility, you will enter the Main setup screen. You can always return to the Main setup screen by selecting the Main tab. There are two Main Setup options. They are described in this section. The Main BIOS Setup screen is shown below.

The Main BIOS setup screen has two main frames. The left frame displays all the options that can be configured. Grayed-out options cannot be configured; options in blue can. The right frame displays the key legend.

Above the key legend is an area reserved for a text message. When an option is selected in the left frame, it is highlighted in white. Often a text message will accompany it.

3.2.1 System Time / System Date

Use this option to change the system time and date. Highlight System Time or System Date using the <Arrow> keys. Enter new values through the keyboard. Press the <Tab> key or the <Arrow> keys to move between fields. The date must be entered in MM / DD / YY format. The time must be entered in HH : MM : SS format.
3.3 Advanced BIOS features setup

Select the Advanced tab from the TPC6000-A192-T setup screen to enter the Advanced BIOS Setup screen. You can select any of the items in the left frame of the screen, such as CPU Configuration, to go to the sub menu for that item. You can display an Advanced BIOS Setup option by highlighting it using the <Arrow> keys. All Advanced BIOS Setup options are described in this section. The Advanced BIOS Setup screens is shown below. The sub menus are described on the following pages.

![Advanced BIOS Features Setup Screen](image)

Figure 3.3 Advanced BIOS Features Setup Screen
3.3.1 PCI Subsystem Setting

FIGURE 3.3.1 PCI SUBSYSTEM CONFIGURATION SETTING

[Diagram showing PCI configuration options]

**TPC6000-A192 User Manual**
### 3.3.2 ACPI Setting

<table>
<thead>
<tr>
<th>ACPI Settings</th>
<th>[Disabled]</th>
<th>Enables or Disables System ability to Hibernate (OS/S4 Sleep State). This option may be not effective with some OS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enable Hibernation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACPI Sleep State</td>
<td>[Suspend Disabled]</td>
<td></td>
</tr>
<tr>
<td>Lock Legacy Resources</td>
<td>[Disabled]</td>
<td></td>
</tr>
<tr>
<td>SS Video Re-post</td>
<td>[Enabled]</td>
<td></td>
</tr>
</tbody>
</table>

*Figure 3.3.2 ACPI Configuration Setting*
### 3.3.3 CPU Configuration Setting

<table>
<thead>
<tr>
<th>CPU Configuration</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Processor Type</td>
<td>Intel Atom CPU D2500</td>
</tr>
<tr>
<td>EMT64</td>
<td>Supported</td>
</tr>
<tr>
<td>Processor Speed</td>
<td>1865 MHz</td>
</tr>
<tr>
<td>System BUS Speed</td>
<td>533 MHz</td>
</tr>
<tr>
<td>Ratio Status</td>
<td>14</td>
</tr>
<tr>
<td>Actual Ratio</td>
<td>14</td>
</tr>
<tr>
<td>System BUS Speed</td>
<td>533 MHz</td>
</tr>
<tr>
<td>Processor Stepping</td>
<td>30661</td>
</tr>
<tr>
<td>Microcode Revision</td>
<td>263</td>
</tr>
<tr>
<td>L1 Cache RAM</td>
<td>2x56 k</td>
</tr>
<tr>
<td>L2 Cache RAM</td>
<td>2x512 k</td>
</tr>
<tr>
<td>Processor Core</td>
<td>Dual</td>
</tr>
<tr>
<td>Hyper-Threading</td>
<td>Not Supported</td>
</tr>
<tr>
<td>Execute Disable Bit</td>
<td>[Enabled]</td>
</tr>
</tbody>
</table>

**Figure 3.3.3 CPU Configuration Setting**
3.3.4 SATA Configuration

This item allows you to select Disabled / IDE / AHCI.
## 3.3.5 USB Configuration

<table>
<thead>
<tr>
<th>USB Configuration</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>USB Devices:</td>
<td>1 Drive, 1 Keyboard, 2 mice, 1 Point</td>
</tr>
<tr>
<td>Legacy USB Support</td>
<td>Enabled</td>
</tr>
<tr>
<td>EHCI Hand-off</td>
<td>Disabled</td>
</tr>
<tr>
<td>USB Mass Storage Driver Support</td>
<td>Enabled</td>
</tr>
<tr>
<td>USB hardware delays and time-outs:</td>
<td></td>
</tr>
<tr>
<td>USB transfer time-out</td>
<td>20 sec</td>
</tr>
<tr>
<td>Device reset time-out</td>
<td>20 sec</td>
</tr>
<tr>
<td>Device power-up delay</td>
<td>Auto</td>
</tr>
<tr>
<td>Mass Storage Devices:</td>
<td></td>
</tr>
<tr>
<td>SanDisk</td>
<td>Auto</td>
</tr>
</tbody>
</table>

Enables Legacy USB support. AUTO option disables legacy support if no USB devices are connected. DISABLE option will keep USB devices available only for EFI applications.

**Figure 3.3.5 USB Configuration**
3.3.6 Super I/O Configuration

This item allows you set parameters of COM1~COM6, LPT interface and watch dogs.
### 3.3.7 PC Health Status

The image shows the PC Health Status screen of the TPC6000-A192 User Manual. The screen displays various parameters with their respective values:

- **CPU Temperature**: +42°C
- **SYS Temperature**: +36°C
- **CPU_FAN1 Speed**: N/A
- **CPU CORE**: +1.216 V
- **1.5V**: +1.556 V
- **3.3V**: +3.264 V
- **5V**: +4.892 V
- **12V**: +11.712 V

There are also options for selecting screens, selecting items, changing options, accessing general help, accessing previous values, accessing optimized defaults, saving and resetting settings.

**Figure 3.3.7 PC Health status**
### 3.3.8 PPM Configuration

<table>
<thead>
<tr>
<th>PPM Configuration</th>
<th>Enable/disable Intel SpeedStep</th>
</tr>
</thead>
<tbody>
<tr>
<td>EIST</td>
<td>[Enabled]</td>
</tr>
<tr>
<td>CPU C state Report</td>
<td>[Disabled]</td>
</tr>
</tbody>
</table>

**Figure 3.3.8 PPM Configuration**

**Keys:**
- `PgUp`: Select Screen
- `PgDn`: Select Item
- `Enter`: Select
- `+/-`: Change Opt.
- `F1`: General Help
- `F2`: Previous Values
- `F3`: Optimized Defaults
- `F4`: Save & Reset
- `ESC`: Reset

---

**TPC6000-A192 User Manual**
3.4 Chipset Settings / host bridge

Figure 3.4 Chipset Settings
### 3.4.1 Intel graphic configuration

**Graphics Configuration**

<table>
<thead>
<tr>
<th>Memory Information</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Memory Frequency</td>
<td>1067 MHz(DDR3)</td>
</tr>
<tr>
<td>Total Memory</td>
<td>2048 MB</td>
</tr>
<tr>
<td>DIMM#0</td>
<td>Not Present</td>
</tr>
<tr>
<td>DIMM#1</td>
<td>2048 MB</td>
</tr>
</tbody>
</table>

- **Config Display Devices, e.g.**
  - VGA, LVDS, HDMI, DP, eDP...

**Graphics Configuration**

<table>
<thead>
<tr>
<th>DoFX - Boot Type</th>
<th>[VIOS Default]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graphic Memory</td>
<td></td>
</tr>
<tr>
<td>Fixed Graphics Memory Size</td>
<td>[128MB]</td>
</tr>
</tbody>
</table>

- **Select the Video Device which will be activated during POST.**

**Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.**
This selection item mainly for display application configuration.

IGFX–Boot Type is for configuration of boot-up main display: VGA / LVDS / VBIOS Default.

**Figure 3.4.1 Intel graphic configuration**
3.5 Chipset settings / south bridge

![Chipset Settings](image)

**Figure 3.5 Chipset Settings**
### 3.5.1 NM10 Chip Configuration

<table>
<thead>
<tr>
<th>LAN</th>
<th>[Enabled]</th>
<th>Enable or Disable onboard ( \text{LAN1(RJ45_USB1)} )</th>
</tr>
</thead>
<tbody>
<tr>
<td>LAN1</td>
<td>[Enabled]</td>
<td></td>
</tr>
<tr>
<td>LAN2</td>
<td>[Enabled]</td>
<td></td>
</tr>
<tr>
<td>MINI_PCIE1</td>
<td>[Enabled]</td>
<td></td>
</tr>
<tr>
<td>Wake On Lan</td>
<td>[Enabled]</td>
<td></td>
</tr>
<tr>
<td>Audio</td>
<td>[HD Audio]</td>
<td></td>
</tr>
<tr>
<td>Azalia Controller</td>
<td>[Disabled]</td>
<td></td>
</tr>
<tr>
<td>USB</td>
<td>[By Ports]</td>
<td></td>
</tr>
<tr>
<td>Select USB Mode</td>
<td>[0 USB Ports]</td>
<td></td>
</tr>
<tr>
<td>USB Function</td>
<td>[Disabled]</td>
<td></td>
</tr>
<tr>
<td>USB 2.0(EMI) Support</td>
<td>[Disabled]</td>
<td></td>
</tr>
<tr>
<td>SMBus</td>
<td>[Disabled]</td>
<td></td>
</tr>
<tr>
<td>SMBus Controller</td>
<td>[Disabled]</td>
<td></td>
</tr>
</tbody>
</table>

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---

**Figure 3.5.1 NM10 Chip Settings**

- This selection item is for Audio / NM10 Chip integrated network card / SMBus / USB configurations.
- **LAN controller**
  TPC6000-A192-T does not apply Intel NM10 chipset built-in Realtek RTL8111E LAN controller, so the default setting is “Disabled”.
- **SMBUS Controller**
  Enables or disables the SMBUS controller.
3.5.2 Power on configuration

![Diagram of power on configuration settings]

**Figure 3.5.3 Power on Settings**
Power OFF: After accidental power-off, the device won’t automatically boot-up when power-on again.

Power ON: After accidental power-off, the device will automatically boot-up when power-on again.

Last State: After accidental power-off, the device will recover to the state of the former state before power-off. i.e.: If the former state is "Power On", then the device will automatically boot-up when power-on again; if the former state is "Power off", then the device will remain power-off when the power-on again.

3.5.3 BOOT Configuration

<table>
<thead>
<tr>
<th>Setting</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Setup Prompt Timeout</td>
<td>3</td>
</tr>
<tr>
<td>Bootup NumLock State</td>
<td>[On]</td>
</tr>
<tr>
<td>Fullscreen Logo</td>
<td>[Disabled]</td>
</tr>
</tbody>
</table>

CSM parameters

<table>
<thead>
<tr>
<th>Setting</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Launch PXE DROM policy</td>
<td>[Do not launch]</td>
</tr>
<tr>
<td>Launch Storage DROM policy</td>
<td>[Legacy only]</td>
</tr>
<tr>
<td>Other PCI Device ROM priority</td>
<td>[Legacy DROM]</td>
</tr>
</tbody>
</table>

Boot Option Priorities

<table>
<thead>
<tr>
<th>Setting</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boot Option #1</td>
<td>[UEFI: SanDisk]</td>
</tr>
<tr>
<td>Boot Option #2</td>
<td>[SanDisk]</td>
</tr>
</tbody>
</table>

Number of seconds to wait for setup activation key. 0x5555(0xFFFF) means Indefinite waiting.

++: Select Screen
T1: Select Item
Enter: Select
+-/: Change Opt.
F1: General Help
F2: Previous Values
F3: Optimized Defaults
F4: Save & Reset
ESC: Reset
### Boot Configuration

<table>
<thead>
<tr>
<th>Option</th>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Setup Prompt Timeout</td>
<td>3</td>
</tr>
<tr>
<td>Bootup NumLock State</td>
<td>[On]</td>
</tr>
<tr>
<td>Fullscreen Logo</td>
<td>[Disabled]</td>
</tr>
</tbody>
</table>

**CSM parameters**

<table>
<thead>
<tr>
<th>Option</th>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Launch PXE OpROM policy</td>
<td>[Do not launch]</td>
</tr>
<tr>
<td>Launch Storage OpROM policy</td>
<td>[Legacy only]</td>
</tr>
<tr>
<td>Other PCI device ROM priority</td>
<td>[Legacy OpROM]</td>
</tr>
</tbody>
</table>

**Boot Option Priorities**

<table>
<thead>
<tr>
<th>Option #1</th>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boot Option #1</td>
<td>[SanDisk]</td>
</tr>
<tr>
<td>Boot Option #2</td>
<td>[Disabled]</td>
</tr>
</tbody>
</table>

*Sets the system boot order*

**Key shortcuts:**

- `←/→`: Select Screen
- `↑`: Select Item
- `Enter`: Select
- `+/-`: Change Opt.
- `F1`: General Help
- `F2`: Previous Values
- `F3`: Optimized Defaults
- `F4`: Save & Reset
- `ESC`: Reset

---

**Figure 3.5.3 Boot configuration**
3.6 Security settings

Password Description

If ONLY the Administrator's password is set, then this only limits access to Setup and is only asked for when entering Setup.
If ONLY the User's password is set, then this is a password on password and must be entered to boot or enter Setup. In Setup the User will have Administrator Rights.
The password length must be
Minimum length 3
Maximum length 20

Set Administrator Password

+/-: Select Screen
F1: Select Item
Enter: Select
F2: Change Opt.
F3: General Help
F4: Previous Values
F5: Optimized Defaults
F6: Save & Reset
ESC: Exit

Figure 3.6 Security settings
3.7 Exit Option

3.7.1 Save Changes and Exit

When you have completed system configuration, select this option to save your changes, exit BIOS setup and reboot the computer so the new system configuration parameters can take effect.

1. Select Exit Saving Changes from the Exit menu and press <Enter>. The following message appears: Save Configuration Changes and Exit Now? [Ok] [Cancel]
2. Select Ok or cancel.

3.7.2 Discard Changes and Exit

Select this option to quit Setup without making any permanent changes to the system configuration.

1. Select Exit Discarding Changes from the Exit menu and press <Enter>. The following message appears: Discard Changes and Exit Setup Now? [Ok] [Cancel]
2. Select Ok to discard changes and exit. Discard Changes
2. Select Discard Changes from the Exit menu and press <Enter>. 

Figure 3.6 Exit Option
3.7.3 Load Optimized Defaults

The TPC6000-A192-T automatically configures all setup items to optimal settings when you select this option. Optimized Defaults are designed for maximum system performance, but may not work best for all computer applications. In particular, do not use the Optimal Defaults if your computer is experiencing system configuration problems. Select Load Optimal Defaults from the Exit menu and press <Enter>.
Chapter 4

System Maintenance
4.1 System Maintenance Introduction

If the components of the TPC6000-A192-T fail they must be replaced, such as the wireless LAN module or the motherboard. Please contact the system reseller or vendor to purchase the replacement parts. Back cover removal instructions and jumper settings for the TPC6000-A192-T are described below.

4.2 Motherboard Replacement

In the case of motherboard failure, please contact an NODKA sales representative, reseller or system vendor. The motherboard is accessible after opening the rear cover.

4.3 Cover Removal

Warning:
**Turn off the power before removing the back cover.** Risk of electrocution. Severe damage to the product and injury to the body may occur if internal parts are touched while the power is still on.

Warning:
**Take antistatic precautions when working on the internal components.** Some internal components are easily damaged or destroyed by electrostatic discharge. Take antistatic precautions to prevent electrostatic discharge.

To replace any of the following components,
- Memory module
- Wireless LAN module
- Inverter

The back cover of the TPC6000-A192-T must be removed. To remove the back cover, loosen the four silver screws, slide the cover down and then lift to remove.
Warning:
The precautions outlined in this chapter should be strictly followed. Failure to follow these precautions may result in permanent damage to the TPC6000-A192-T:

A.1 Safety Precautions
Please follow the safety precautions outlined in the sections that follow:

A.1.1 General Safety Precautions
Please ensure the following safety precautions are adhered to at all times.

- Follow the electrostatic precautions outlined below whenever the TPC6000-A192-T is opened.
- Make sure the power is turned off and the power cord is disconnected whenever the TPC6000-A192-T is being installed, moved or modified.
- Do not apply voltage levels that exceed the specified voltage range. Doing so may cause fire and/or an electrical shock.
- Electric shocks can occur if the TPC6000-A192-T chassis is opened when the TPC6000-A192-T is running.
- Do not drop or insert any objects into the ventilation openings of the TPC6000-A192-T.
- If considerable amounts of dust, water, or fluids enter the TPC6000-A192-T, turn off the power supply immediately, unplug the power cord, and contact the TPC6000-A192-T vendor.

DO NOT do the following:

- DO NOT drop the TPC6000-A192-T against a hard surface.
- DO NOT strike or exert excessive force onto the LCD panel.
- DO NOT touch any of the LCD panels with a sharp object.
- DO NOT use the TPC6000-A192-T in a site where the ambient temperature exceeds the rated temperature

A.1.2 Anti-static Precautions

Warning:
Failure to take ESD precautions during the installation of the TPC6000-A192-T may result in permanent damage to the TPC6000-A192-T and sever injury to the user.

Electrostatic discharge (ESD) can cause serious damage to electronic components, including the TPC6000-A192-T. Dry climates are especially susceptible to ESD. It is therefore critical
that whenever the TPC6000-A192-T is opened and any of the electrical components are handled, the following anti-static precautions are strictly adhered to.

- **Wear an anti-static wristband**: Wearing a simple anti-static wristband can help to prevent ESD from damaging any electrical component.
- **Self-grounding**: Before handling any electrical component, touch any grounded conducting material. During the time the electrical component is handled, frequently touch any conducting materials that are connected to the ground.
- **Use an anti-static pad**: When configuring or working with an electrical component, place it on an anti-static pad. This reduces the possibility of ESD damage.
- **Only handle the edges of the electrical component**: When handling the electrical component, hold the electrical component by its edges.

### A.1.3 Product Disposal

**CAUTION:**

Risk of explosion if battery is replaced by and incorrect type, only certified engineers should replace the on-board battery.

Dispose of used batteries according to instructions and local regulations.

Outside the European Union - If you wish to dispose of used electrical and electronic products outside the European Union, please contact your local authority so as to comply with the correct disposal method. Within the European Union:

![EU-wide legislation](image)

EU-wide legislation, as implemented in each Member State, requires that waste electrical and electronic products carrying the mark (left) must be disposed of separately from normal household waste. This includes monitors and electrical accessories, such as signal cables or power cords. When you need to dispose of your display products, please follow the guidance of your local authority, or ask the shop where you purchased the product. The mark on electrical and electronic products only applies to the current European Union Member States. Please follow the national guidelines for electrical and electronic product disposal.

### A.2 Maintenance and Cleaning Precautions

When maintaining or cleaning the TPC6000-A192-T, please follow the guidelines below.
A.2.1 Maintenance and Cleaning

Prior to cleaning any part or component of the TPC6000-A192-T, please read the details below.

- Except for the LCD panel, never spray or squirt liquids directly onto any other components. To clean the LCD panel, gently wipe it with a piece of soft dry cloth or a slightly moistened cloth.
- The interior does not require cleaning. Keep fluids away from the interior.
- Be careful not to damage the small, removable components inside.
- Turn off before cleaning.
- Never drop any objects or liquids through the openings.
- Be cautious of any possible allergic reactions to solvents or chemicals used when cleaning.
- Avoid eating, drinking and smoking nearby.

A.2.2 Cleaning Tools

Some components may only be cleaned using a product specifically designed for the purpose. In such case, the product will be explicitly mentioned in the cleaning tips. Below is a list of items to use for cleaning.

- **Cloth** – Although paper towels or tissues can be used, a soft, clean piece of cloth is recommended.
- **Water or rubbing alcohol** – A cloth moistened with water or rubbing alcohol should be used.
- **Using solvents** – The use of solvents is not recommended as they may damage the plastic parts.
- **Vacuum cleaner** – Using a vacuum specifically designed for computers is one of the best methods of cleaning. Dust and dirt can restrict the airflow and cause circuitry to corrode.
- **Cotton swabs** - Cotton swaps moistened with rubbing alcohol or water are excellent tools for wiping hard to reach areas.
- **Foam swabs** - Whenever possible, it is best to use lint free swabs such as foam swabs for cleaning.
B

ALC662 Digital Microphone Configuration
B.1 ALC662 Digital Microphone Configuration

To enable the ALC662 digital microphone function, follow the steps below.

**Step 1:** Make sure the Realtek ALC662 high definition audio driver has been installed on the system.

**Step 2:** To launch the Realtek ALC662 HD Audio Manager, double click either:
- The Realtek HD Audio Manager icon in the Notification Area of the system task bar (Figure B-1), or
- The Realtek HD Audio Manager icon in the Control Panel.

**Step 3:** The Realtek HD Audio Manager appears (Figure B-2).

**Step 4:** Click the Mixer tab.

**Step 5:** Select Mic Volume in the Record section (Figure B-3). The digital microphone function is now enabled.
Figure B-3: Enabling the Digital Microphone Function

**Step 6:** Move the slide bar to adjust the microphone volume (Figure B-4).

Figure B-4: Adjusting the Microphone Volume

**Step 7:** Click the **Advanced** icon (Figure B-5) to display the **advanced setting** screen.
Step 8: In the Advanced setting screen (Figure B-6), the user may turn on the Microphone Boost function.

![Figure B-5: Mixer ToolBox Screen](image)

![Figure B-6: Advanced Setting Screen](image)
Watchdog Timer
NOTE:
The following discussion applies to DOS environment. NODKA support is contacted or the NODKA website visited for specific drivers for more sophisticated operating systems, e.g., Windows and Linux.

The Watchdog Timer is provided to ensure that standalone systems can always recover from catastrophic conditions that cause the CPU to crash. This condition may have occurred by external EMIs or a software bug. When the CPU stops working correctly, Watchdog Timer either performs a hardware reset (cold boot) or a Non-Maskable Interrupt (NMI) to bring the system back to a known state. A BIOS function call (INT 15H) is used to control the Watchdog Timer.

INT 15H:

<table>
<thead>
<tr>
<th>AH-6FH Sub-function</th>
</tr>
</thead>
<tbody>
<tr>
<td>AL – 2: Sets the Watchdog Timer’s period.</td>
</tr>
<tr>
<td>BL: Time-out value (Its unit-second is dependent on the item “Watchdog Timer unit select” in CMOS setup).</td>
</tr>
</tbody>
</table>

Table C-1: AH-6FH Sub-function

Call sub-function 2 to set the time-out period of Watchdog Timer first. If the time-out value is not zero, the Watchdog Timer starts counting down. When the timer value reaches zero, the system resets. To ensure that this reset condition does not occur, calling sub-function 2 must periodically refresh the Watchdog Timer. However, the watchdog timer is disabled if the time-out value is set to zero.

A tolerance of at least 10% must be maintained to avoid unknown routines within the operating system (DOS), such as disk I/O that can be very time-consuming.

NOTE:
When exiting a program it is necessary to disable the Watchdog Timer, otherwise the system resets.

Example program:

INITIAL TIMER PERIOD COUNTER
;
W_LOOP:
MOV AX, 6F02H ; //setting the time-out value
MOV BL, 30 ; //time-out value is 48 seconds
INT 15H
;

ADD THE APPLICATION PROGRAM HERE
;

CMP EXIT_AP, 1;  // is the application over?
JNE W_LOOP;      // No, restart the application
MOV AX, 6F02H;   // disable Watchdog Timer
MOV BL, 0;
INT 15H
;
;
EXIT
;
D

Hazardous Materials

Disclosure
D.1 Hazardous Materials Disclosure Table for IPB Products Certified as RoHS Compliant Under 2002/95/EC without Mercury

The details provided in this appendix are to ensure that the product is compliant with the Peoples Republic of China (China) RoHS standards. The table below acknowledges the presences of small quantities of certain materials in the product, and is applicable to China RoHS only.

A label will be placed on each product to indicate the estimated “Environmentally Friendly Use Period” (EFUP). This is an estimate of the number of years that these substances would “not leak out or undergo abrupt change.” This product may contain replaceable sub-assemblies/components which have a shorter EFUP such as batteries and lamps. These components will be separately marked.

Please refer to the table below.
<table>
<thead>
<tr>
<th>Part Name</th>
<th>Toxic or Hazardous Substances and Elements</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Lead (Pb)</td>
</tr>
<tr>
<td>Housing</td>
<td>X</td>
</tr>
<tr>
<td>Housing</td>
<td>X</td>
</tr>
<tr>
<td>Printed Circuit Board</td>
<td>X</td>
</tr>
<tr>
<td>Metal Fasteners</td>
<td>X</td>
</tr>
<tr>
<td>Cable Assembly</td>
<td>X</td>
</tr>
<tr>
<td>Fan Assembly</td>
<td>X</td>
</tr>
<tr>
<td>Fan Assembly</td>
<td>X</td>
</tr>
<tr>
<td>Battery</td>
<td>O</td>
</tr>
</tbody>
</table>

O: This toxic or hazardous substance is contained in all of the homogeneous materials for the part is below the limit requirement in SJ/T11363-2006

X: This toxic or hazardous substance is contained in at least one of the homogeneous materials for this part is above the limit requirement in SJ/T11363-2006

Table D-1