# Rugged Tablet PC

# T70C

# User's Guide

## FEDERAL COMMUNICATIONS COMMISSION INTERFERENCE STATEMENT

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
-Reorient or relocate the receiving antenna.
-Increase the separation between the equipment and receiver.
-Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
-Consult the dealer or an experienced radio/ TV technician for help.

**CAUTION:**

Any changes or modifications not expressly approved by the grantee of this device could void the user's authority to operate the equipment.

This device is operation in 5.15 – 5.25GHz frequency range, then restricted in indoor use only, Outdoor operations in the 5150~5250MHz is prohibit.

This device is slave equipment, the device is not radar detection and not ad-hoc operation in the DFS band.

**Labeling requirements**

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

**RF exposure warning**

This equipment must be installed and operated in accordance with provided instructions and must not be co-located or operating in conjunction with any other antenna or transmitter. End-users and installers must be providing with antenna installation instructions and transmitter operating conditions for satisfying RF exposure compliance.
SAR Value: **1.298** W/kg

# *Features*

- Platform:

   Intel® Cedar Trail Platform (N2600+NM10)

- GPU:

   Intel ATOM N2600 1.6GHz Dual core

- Chipset:

   Intel® NM10 Express Chipset

- System Memory:

   2GB DDRIII 800 SO-DIMMM

- Storage:

   - 1 x 32G SATA Slim Half-Size Solid State Disk

- LCD Panel:

   7-inch LED Backlight Screen

   7" XGA (1280x800) 400nits LCD, or 500nits LCD (option)

- Touch Panel

   5-wire Resistive Touch Screen

- Audio:

   -1 x High Quality Speaker (2W)

   -Internal Microphone : 1 x in front Bezel

- TPM:

   1 x Compatible with TPM1.2 (option)

- Communication :

   - 10/100Mbps Ethernet

   - Wi-Fi IEEE 802.11 a/b/g/n ; Bluetooth 4.0

- GPS Positioning:

   - GPS/QZSS, GLONASS

   - 50 channel all-in-view tracking

- Webcam:

   Front - 2 Mega-pixel Camera

   Rear - 5 Mega-pixel Camera with LED Flash light

- External I/O:

   2 x USB 2.0 (type-A), 1x MicroSD slot, 1x RS232

- Power Adapter :

   AC Input, 100V ~ 240VAC, 50~60Hz

   DC Output, 19VDC@3.42A, 65W

- Battery

   Internal Battery - Smart Lithium Polymer Battery, 2900mAH, 7.5V

# Mechanical & Environmental

- **Physical Characteristics :**
  - < **Dimension & Weight :**
    - 225 x 168 x 26.5mm ; 850g
- **Rugged Design**
  - < **Drop :**
    - 5ft drop (MIL-STD-810G Method 516.6 Procedure IV) METAL
  - < **Vibration :**
    - Operating : MIL-STD-810G Method 514.6 Category 4 Fig 514.6C-1、C-2、C-3
    - Non-Operating : MIL-STD-810G Method 514.6 Category 24, Fig 514.6E-1
  - < **Mechanical Shock :**
    - Operating : 40g, 11ms, Terminal sawtooth
    - Non-operating : 75g, 8~13ms, Terminal sawtooth
  - < **Water/Dust Resistance :**
    - IP65
- **Environment :**
  - Operation temperature : -20°C to +50°C
  - Storage Temperature : -30°C to +70°C
  - Humidity : 5-95% without condensation

# Optional : External Accessories

- **External Battery Kits :**
  - < **External Battery Pack :**
    - Hot-swappable Lithium Polymer battery pack - doubles duration of mobile operation, 4200mAh (2S1P), 7.4V
  - < **External Battery Charger :**
    - Recharges external battery pack
- **MSR :**
  - < **Reference Standards :**
    - ANSI/ISO Standards 7810,7811-1/6, 7813
    - JIS II
  - < **Decoding Method :**
    - ISO Track1 - IATA , Track2 - ABA and Track3 – THRIFT
- **Barcode Scanner :**
  - < **Decoded Mode :**
    - 1D Symbologies : EAN/UPC, RSS, Code 39, Code 128, UCC/EAN 128, ISBN, ISBT, Interleaved, Matrix, Industrial and Standard 2 of 5, Codabar, Code 93/93i, Code 11, MSI, Plessey, Telepen, postal codes.

- 2D Symbologies: Data Matrix, PDF417, Micro PDF 417, Maxicode, QR, Aztec, EAN.UCC composite.

# *Getting to know your tablet*

Before starting to set up the T70C, get familiar with the locations and purpose of controls, connectors and I/O ports, which are illustrated in the figures below. When placed upright, the front panel of the T70C appears as shown in below.



| | |
|---|---|
| F1 Button | F1 = Windows File explorer |
| F2 Button | F2 = Windows Media Player |
| F3 Button | F3 = On Screen keyboard (osk) |
| F4 Button | F4 = Task Manager |
| Fn Button | Fn = Hotkey Utility |
| Enter Button | Enter or Return key |
| Fn Button ✚ F3 Button | Implement Secure Attention Sequence (SAS), similar function as pressing **Ctrl-Alt-Delete** combination keys. |
| or Trigger Button | F1 or F4 acts as trigger button when optional barcode scanner is installed. |

- **Camera / 2 Mega-pixel (Front-facing)**
  The built-in camera can be used as a communication device for allowing you to capture images, record videos, and have video chats. It is 2M pixels and can be used for transmitting live image through network for video conference.

- **Camera / 5 Mega-pixel (Rear-facing)**

  The built-in high resolution camera can be used as a communication device for allowing you to capture images, record videos, and have video chats.

- **Power / Storage / RF status LED Indicator**
  Keeps you informed of your system's current power status, storage access status, and RF wireless devices ON/OFF status.
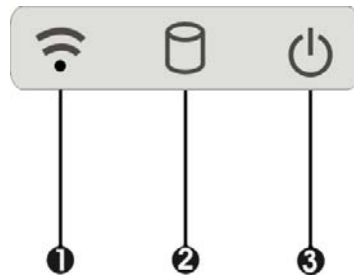


  **1**. RF ON/OFF          **2**. Storage Access

  **3**. Power LED Indicator

  - **RF ON/OFF Indicator**
    When LED turns on, white LED indicates that a wireless device (Wifi / Bluetooth / WWAN) is activated. When LED turns off, it indicates that all RF devices are being disabled.

  - **Storage Access**
    When LED blinking white indicates that the system is accessing the internal storage drive.

  - **Power LED Indicator**
    Letting you know that system is turned on and indicate the battery charging status.

    < Lights green when the system is powered on and battery is discharging

    < Lights amber when the system is powered on and battery is charging

    < Lights blinking amber when the system is in S3 sleep mode and battery is charging or lights blinking green when the system is in S3 sleep mode and battery is fully charged

    < Lights off when system is powered off or the battery is fully charged.

- **Power Button**

  Switch the computer power on and off, or resumes whenever it is in Suspend mode (by OS define).

- **USB Ports**

  The two USB (type-A) ports allows you to connect USB 2.0-compliant devices (for example, mouse, keyboard and so on) to your Tablet PC.

- **3.5mm Headphone Jack**

  Allows you to connect an external 3.5mm 4-conductor TRRS (stereo-plus-mic) headphone for personal listening and sound recording.

- **MicroSD Card Slot**

  The MicroSD (SDHC) card slot allows you to transfer/record video and pictures to your tablet, while adding extra storage capacity.

- **Ethernet Port**

  The 10/100Mbps Ethernet port allows you to connect to other computers/networks through a local area network (LAN).

- **RS-232 Serial Port**

  RS-232 serial port allows connections to modems, printers, mice, barcode readers, data acquisition equipment, and other peripheral devices.

- **Accessory Door**

  By removing the two long screws on top side of the system, allows you to install optional snap-on module.

- **External Battery Connector**
  To install the external battery pack, install external battery holder first and remove the cover of external battery connector before snap the battery pack into the external battery connector.

- **Speaker**
  Integrated stereo speaker for sound and audio output for your multimedia presentations or listening pleasure.

- **Protective Rubber**
  To prevent system harm from vibration or shock, the system is designed with installing protective rubber on four corners.

- **Programmable Function Buttons (F1~F4)**

  These buttons is programmable to execute specific software application. When you program the application to launch, please write this directory as listed below into the configuration file, then the system will aware and execute this application.

  [Setup]

```
F1_EXE="c:\windows\explorer.exe"
F1_PARA=""
F1_PATH=""

F2_EXE="C:\Program Files\Windows Media Player\wmplayer.exe"
F2_PARA="/prefetch: 1"
F2_PATH=""

F3_EXE="C:\WINDOWS\system32\osk.exe"
F3_PARA=""
F3_PATH=""

F4_EXE="C:\WINDOWS\system32\taskmgr.exe"
F4_PARA=""
F4_PATH=""
```

> The configuration file is located under drive C: root directory as "c:\FKeySet.txt"

- **Trigger Buttons (F1 / F4)**
  Please press F1 or F4 function keys to trigger to scan the barcode when the optional barcode scanner snap-on module is installed.

  If your system does not install this module, these buttons can be programmable to execute specific software application. When you program your application, please write this directory as listed below into your configuration file, then the system will aware and execute this application.

  ```
  F1_EXE="c:\windows\explorer.exe"
  F1_PARA=""
  F1_PATH=""

  F4_EXE="C:\WINDOWS\system32\taskmgr.exe"
  F4_PARA=""
  F4_PATH=""
  ```

- **DC-Jack**

  Lets you connect the AC power adapter in supplying continuous power to your Tablet PC and recharging the battery.

The AC adapter provides external power source to your system and charges the internal battery pack at the same time. The AC adapter also has an auto-switching design that can connect to any 100VAC ~ 240VAC power outlets.

 To connect the power adapter:

1. Plug the AC adapter connector to the DC-Jack socket on the left side of the system.
2. Plug the power cord to the AC adapter.
     Plug the other end of the power cord to a live wall outlet, at the same time, the Power LED at front panel lights up.

-- *For the power supply of this equipment, an approved power cord has*

   *to be used.*

-- *Make sure the socket and any extension cord(s) you use can support*

   *the total current load of all the connected devices.*

-- *Remove all power from the device prior to installing or removing any*

   *accessories, hardware, or cables*

-- *Before cleaning the system, make sure it is disconnected from*

   *any external power supplies (i.e. AC adapter).*

- **Docking Connector**

  Lets you connect the system to docking station to dock the tablet PC when you are at home or office desk.

# *Using the Hotkey Utility Application*

Your T70C tablet has numbers of applications on the control panel for executing

specific command. It provides you to adjust brightness, volume, launch webcam, switch monitor (via docking) and RF device ON/OFF.

This user interface provides specific mobile utility to let you easily setup some helpful functions and aware the system status directly.

This utility also let you adjust some function to fit the requirements, such as brightness and volume adjustment, webcam launch, monitor switching and RF device ON/OFF.

Furthermore, it also provides system information for your reference, such as battery status, RF setting with its signal strength, firmware (BIOS & EC) version information. Besides these features, you can press the soft button to hibernate this system.

## *About the User Interface*

### Enable or disable the User Interface

To display the User Interface, please press the Fn button or point the Hotkey Utility icon located on Windows desktop.

To close the User Interface function, please press the X button on the top right corner on this User Interface for disabling this utility from the screen.

If there is no action within this utility in 5 seconds, the UI screen will close automatically.



### System Status Information

This utility shows you the battery capacity status, RF status with its signal strength and system information, and provides the control panel for the function setting.
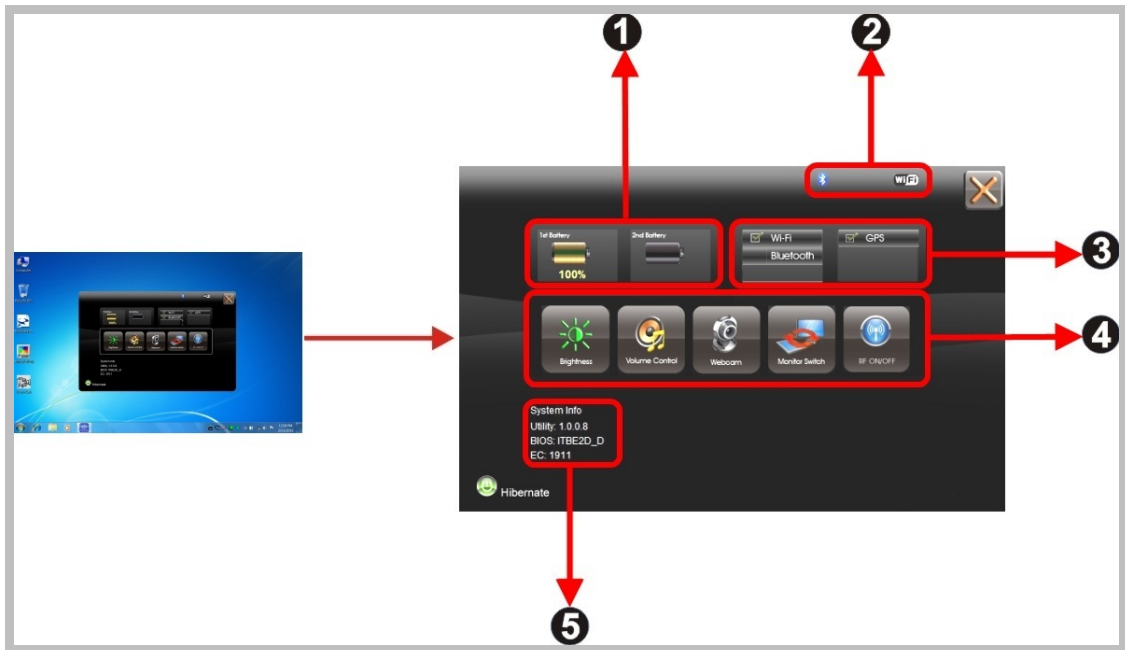
**For battery capacity status:**

The  T70C is equipped with one internal battery and one optional external battery.

The battery capacity status shown below advises you, that only one internal battery is embedded with the system which is fully charged, and there is no 2$^{nd}$ optional battery installed in the system.



If the system installs both the 1st internal battery and 2nd optional battery, the illustration shown below indicates its current charging status and capacity.



If 1st battery capacity drops to 15%, the system will display the following warning message for 5 seconds.
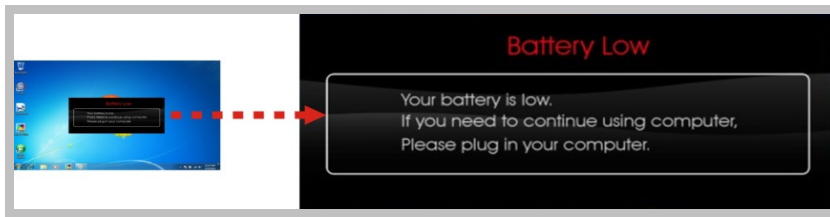
**For RF status:**

The following RF status shows you that the system is equipped with Wi-Fi, or Bluetooth functions. Either Wi-Fi or Bluetooth function is operation in the T70C, if you want to close the function, please refer section for how to disable it.
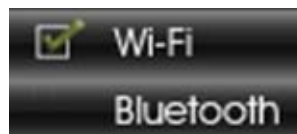


The following signal strength shows you that the Wi-Fi function is connecting currently, the stronger the signal strength, the more scale will show on the bar. If there is no module in the system, there will be no status scale in the following status bar.



**For System Information :**

The system information shown on the left shows you the hotkey utility version, BIOS and EC version and you can use them for customer service when asked.
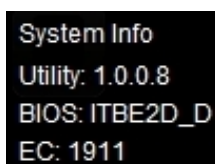
## Brightness Control

For brightness adjustment, press the **Brightness**  icon.



When you press it, the brightness control panel is appeared as follows:



- You can click  or  to reduce or increase the LCD brightness.
- Also, you can slide the scale bar  to set the brightness.

## Volume Control

For Volume adjustment, press the **Volume**  icon.



When you press it, the Volume control panel is appeared as follows:



- You can click  or  to reduce or increase the audio volume

incrementally.

- Also, you can slide the scale bar ![scale bar] to set the audio volume.
- You can tick the **Mute** ![Mute button] to mute the audio.

## Launch Webcam Utility

For Webcam Launch, press the **Webcam** ![Webcam icon] icon to launch the Webcam utility.
Or can access the **Webcam** ![Webcam desktop icon] icon located on desktop.
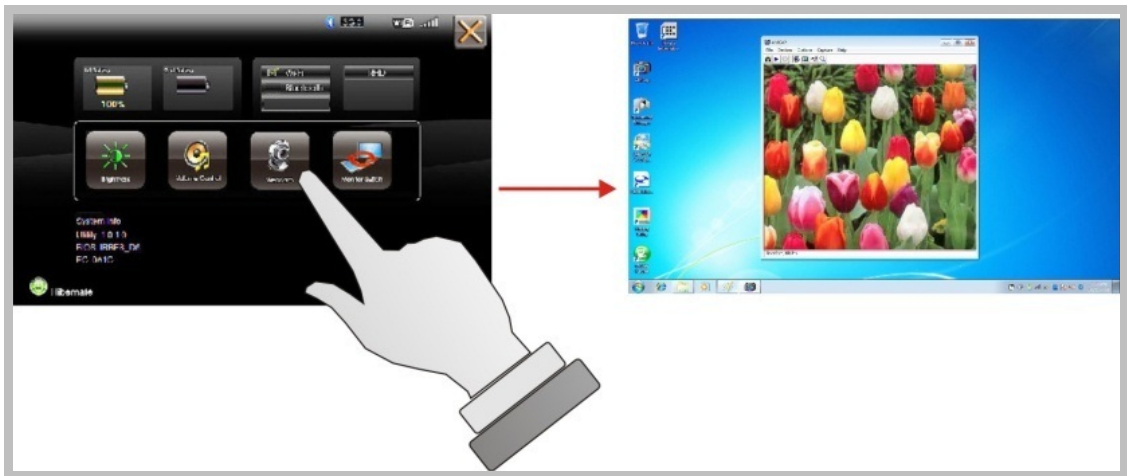


## Monitor Switch

For Monitor switch, press the Monitor Switch ![Monitor Switch icon] to pop-up the selection bar
for choosing the display mode within following four options.
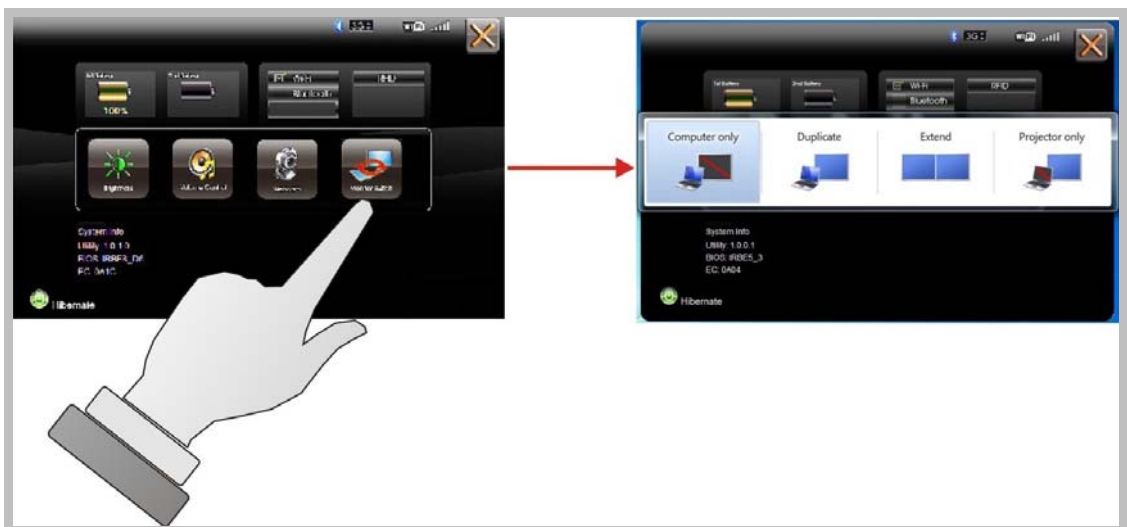


- You can click **Duplicate** ![Duplicate icon] to display the same contents both on the

screen and external display device. The resolution on these two display modes are same, it is not available to adjust the resolution on the external display mode.
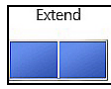
- You can click **Extend**  to display the different contents on the screen and external display device. You only can adjust the resolution on the external display device.

- You can click **Projector only**  to display on external projector/monitor only.

# *Powering on for the first time*

The Power/Resume button is found on the left side of the Tablet PC. Press the Power/Resume button to start your system and check that if the Power LED turns on.

After a few seconds, the system's display will turn on and your system will begin to execute the Power On Self Test or POST to check if all system components are running properly. Any error found during the test will be displayed on the screen.

After the test, the screen will also display a message "**press <F2> to enter SETUP**". You don't need to run this program at the moment as your dealer already made the necessary settings for your computer optimal operation.

After the test has completed, your computer will start to search and boot up the operating system from your hard drive.

Before setting up the system, please make sure the following items are available.

- Keyboard
- Mouse (for system software installation)

A keyboard is an input device; a mouse is a pointing device. Please connect these two devices as graphics shown below to interact with your system.

# *Using the USB Ports*

USB (Universal Serial Bus) is a hardware interface that enables you to connect multiple devices (such as printers, mice, keyboards, storage devices, joysticks, digital cameras, and video conference cameras, etc.) to your tablet pc and up to 127 devices can be attached.    Besides, USB's hot swap capability allows everything to be plugged in and unplugged without turning the system off.

USB 2.0 is fully backward compatible, you will be able to use an USB 1.1 device in

an USB 2.0 compliant system.

1. Connect the external device to the system.

2. The USB ports support hot plug-in connections. Install the device driver before using the device.

## *Using the External Audio System*

At the right side of your Tablet PC, you will find the headphone jack for connecting 3.5mm 4-conductor TRRS (stereo-plus-mic) headphone jack.
To connect to a headphone jack:

1. Locate the headphone jack that you want to use to the target device.

2. Plug the jack into the port on the right side of the tablet.

## *Bios Setup Program*

This system comes with a chip from Phoenix BIOS that contains the ROM Setup information for your system. (This chip serves as an interface between the processor and the rest of the system components.) This section explains the information contained in the Setup program and tells you how to modify the settings according to your system configuration.

The Setup utility program allows updates to the main board configuration settings. The BIOS setup values will be saved in the CMOS. It is executed when you change the system configuration, you change the system backup battery, or the system detects a configuration error and asks you to run the Setup program. You must have connected a USB type of keyboard, and Use the arrow keys to select, and press Enter to run the selected program.

### Function Key

Please check the following table for the function description of each direction key.

| Function Key (s) | Function Description |
|---|---|
| ← / → | Moves cursor left or right to select menu on menu bar. |
| ↑ / ↓ | Moves cursor up or down to select items |
| + / − | To change option for the selected items |
| <Tab> | To bring up the selected screen |
| <F1> | To display the General Help screen |
| <F9> | To load bios setup defaults value. |

| Function Key (s) | Function Description |
|---|---|
| <F10> | To save changes and exit the BIOS SETUP UTILITY |
| <ESC> | To jump to the Exit Screen or exit the current screen |

## *Main Screen Setup Utility*

When you enter the BIOS SETUP UTILITY, the Main screen will appear and display the system overview.
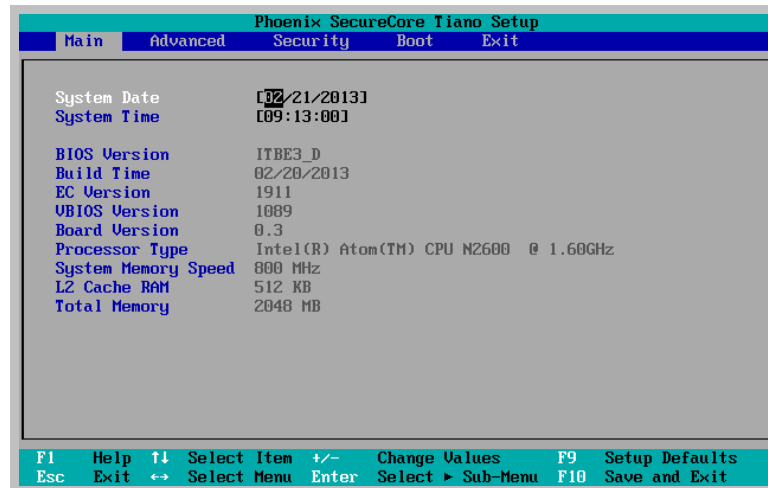


The Standard CMOS Setup screen is displayed above. Each feature may have one or more option settings. Use the arrow keys to highlight the feature you want to change and then use "↑"or "↓" to select the value you want for that feature.

**NOTE**: The system BIOS automatically detects EC version, board version, Processor, memory size, thus no changes are necessary.

- **System Date**
  To set the date, highlight the Date field and then press +/- keys to set the current date. Follow the month, day and year format.

- **System Time**
  To set the time, highlight the Time field and then press +/- keys to set the current time. Follow the hour, minute, and second format.

- **BIOS Version**
  The system will automatically displays the information of BIOS version.

- **Build Time**
  The system will automatically displays the build time of BIOS.

- **EC Version**
  The system will automatically displays the information of EC (Embedded Controller) firmware version.

- **VBIOS Version**
  The system will automatically displays the information of VBIOS version of internal graphics.

- **Board Version**
  The system will automatically displays the information of PCB version of mainboard.

- **Processor Type**
  The system will automatically displays the information of Processor Type and speed.

- **System Memory Speed**
  The system will automatically displays the information of System Memory Speed.

- **L2 Cache RAM**
  The system will automatically displays the information of L2 Cache RAM.

- **Total Memory**
  The system will automatically displays the information of Total Memory.

# Advanced BIOS Features

For Advanced Settings, it lets you define the device configuration when system booting.

```
                    Phoenix SecureCore Tiano Setup
     Main      Advanced     Security     Boot     Exit
   ┌─────────────────────────────────────┬──────────────────────┐
   │                                      │  Item Specific Help  │
   │  SATA Controller Mode   [AHCI]       │                      │
   │  Azalia                 [Enabled]    │                      │
   │  WLAN (Half card)       [Enabled]    │  Select the SATA     │
   │  WWAN (Full card)       [Enabled]    │  controllers operation│
   │  Bluetooth              [Enabled]    │  mode.               │
   │  Front Camera           [Enabled]    │                      │
   │  Rear Camera            [Enabled]    │                      │
   │  MSR                    [Enabled]    │                      │
   │  Barcode scanner        [Enabled]    │                      │
   │  GPS                    [Enabled]    │                      │
   │  Onboard LAN            [Enabled]    │                      │
   │  LAN OPROM Selection    [Disabled]   │                      │
   │  Energy Star            [Enabled]    │                      │
   │                                      │                      │
   │                                      │                      │
   │                                      │                      │
   │                                      │                      │
   ├──────────────────────────────────────┴──────────────────────┤
   │ F1   Help  ↑↓  Select Item  +/-   Change Values  F9  Setup Defaults│
   │ Esc  Exit  ↔   Select Menu  Enter Select ► Sub-Menu F10 Save and Exit│
   └──────────────────────────────────────────────────────────────┘
```

# Security Configuration

```
                    Phoenix SecureCore Tiano Setup
     Main      Advanced     Security     Boot     Exit
   ┌─────────────────────────────────────┬──────────────────────┐
   │                                      │  Item Specific Help  │
   │  Supervisor Password is:   Cleared ▲ │                      │
   │  User Password is:         Cleared   │                      │
   │                                      │  Set or clear the    │
   │  Set Supervisor Password   [Enter]   │  Supervisor account's│
   │                                      │  password.           │
   │  Set user Password         [Enter]   │                      │
   │                                      │                      │
   │  Authenticate User on Boot [Disabled]│                      │
   │                                      │                      │
   │  HDD Password Select       [User Only]│                     │
   │  HDD Security Status                 │                      │
   │  HDD00 Password State      Cleared   │                      │
   │  Set HDD00 User Password   [Enter]   │                      │
   │                                      │                      │
   │  Trusted Platform Module (TPM)       │                      │
   │  TPM Support               [Enabled] │                      │
   │► TPM Configuration               ▼   │                      │
   ├──────────────────────────────────────┴──────────────────────┤
   │ F1   Help  ↑↓  Select Item  +/-   Change Values  F9  Setup Defaults│
   │ Esc  Exit  ↔   Select Menu  Enter Select ► Sub-Menu F10 Save and Exit│
   └──────────────────────────────────────────────────────────────┘
```

- **Set Supervisor Password**
  This field let you set or clear the Supervisor account's password.

- **Set User Password**
  This field let you set or clear the User account's password.

- **TPM Support**
  Lets you activate or de-activate the TPM function by selecting Enabled or Disabled option. (For the non-TPM SKU, this item will display "no detected".)

# Boot Management Setup

This page allows you to set the search drive sequence where the system will try to boot up first.

To select the boot device, you can use the up or down arrow key, then press **<+>** to move up the device in the list or press **<->** to move down the device in the list. To exit from this menu, press **<Esc>**.
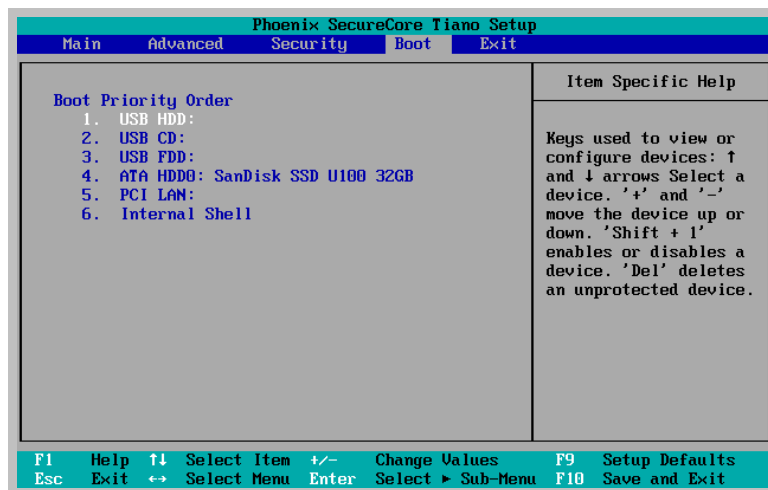
```
                    Phoenix SecureCore Tiano Setup
      Main      Advanced      Security      Boot      Exit

                                                Item Specific Help
       Boot Priority Order
          1.  USB HDD:
          2.  USB CD:                     Keys used to view or
          3.  USB FDD:                    configure devices: ↑
          4.  ATA HDD0: SanDisk SSD U100 32GB   and ↓ arrows Select a
          5.  PCI LAN:                    device. '+' and '-'
          6.  Internal Shell              move the device up or
                                          down. 'Shift + 1'
                                          enables or disables a
                                          device. 'Del' deletes
                                          an unprotected device.




       F1    Help   ↑↓  Select Item  +/-    Change Values    F9   Setup Defaults
       Esc   Exit   ↔   Select Menu  Enter  Select ▶ Sub-Menu F10  Save and Exit
```

# Exit Control

```
                   Phoenix SecureCore Tiano Setup
    Main      Advanced      Security      Boot      Exit

                                              Item Specific Help
   Exit Saving Changes
   Exit Discarding Changes
   Load Setup Defaults                     Equal to F10,  save
   Discard Changes                         all changes of all
   Save Changes                            menus, then exit
                                           setup configure
                                           driver. Finally
                                           resets the system
                                           automatically.




   F1    Help  ↑↓  Select Item  +/-   Change Values    F9   Setup Defaults
   Esc   Exit  ↔   Select Menu  Enter Select ► Sub-Menu F10  Save and Exit
```

- **Exit Saving Changes**
  When you select this option, it will pop-out the following message, "Save configuration changes and exit setup?" Select [OK] to save the changes and exit the BIOS SETUP UTILITY.

- **Exit Discarding Changes**
  When you select this option, it will pop-out the following message, "Discard changes and exit setup?". Select [OK] to exit the BIOS SETUP UTILITY without saving any changes.

- **Load Setup Defaults**
  When you select this option, it will pop-out the following message, "Load optimal defaults?" Select [OK] to load the default values for all the setup configurations.

- **Save Changes**
  When you select this option, it will pop-out the following message, "Save changes?" Select [OK] to save all changes.

# Maintaining the Battery

- Do not expose heat or attempt to disassemble the battery, and do not place the battery in water or in a fire.
- Do not subject the battery to strong impact, such as a blow from a hammer, or stepping on or dropping it.
- Do not puncture or disassemble the battery.
- Do not attempt to open or service the battery.
- Replace only with batteries designed specifically for this product.
- Keep the battery out of reach of children.
- Dispose of used batteries according to local regulations.

## *Maintaining the LCD Display*

- Only operate touch panel using a polyacetal stylus pen (tip R0.8 mm or more) or a finger.
- Do not scratch the surface of the screen with any hard objects.
- Do not operate touch panel with hard or sharp tips such as a ball point pen or a mechanical pencil as it would make permanent scratch to the surface of touch screen.
- Do not spray corrosive liquid directly on the screen or allow excess liquid to drip down inside the device.
- Do not place anything, such as food and drink, on the screen at any time to prevent damage to the screen.
- Clean the LCD display only with a soft cloth dampened with denatured alcohol or a proprietary LCD screen cleaner.

## *Cleaning the Tablet*

- Turn off the tablet and unplug the power cord.
- Wipe the screen and exterior with a soft, damp cloth moistened only with water. Do not use liquid or aerosol cleaners on the screen, as these will discolor the finish and damage the screen.