
Gladius G1220

12.1" Rugged Tablet PC with Intel® Atom™ N2600

User's Manual

Version 1.0

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Revision History

Version	Release Time	Description
1.0	March 2013	Initial release

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Copyright Notice

All Rights Reserved.

The information in this document is subject to change without prior notice in order to improve the reliability, design and function. It does not represent a commitment on the part of the manufacturer.

Under no circumstances will the manufacturer be liable for any direct, indirect, special, incidental, or consequential damages arising from the use or inability to use the product or documentation, even if advised of the possibility of such damages.

This document contains proprietary information protected by copyright. All rights are reserved. No part of this manual may be reproduced by any mechanical, electronic, or other means in any form without prior written permission of the manufacturer.

Declaration of Conformity

CE

The CE symbol on your product indicates that it is in compliance with the directives of the Union European (EU). A Certificate of Compliance is available by contacting Technical Support.

This product has passed the CE test for environmental specifications when shielded cables are used for external wiring. We recommend the use of shielded cables. This kind of cable is available from ARBOR. Please contact your local supplier for ordering information.

FCC Class B

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.

NOTE:

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.

RoHS

ARBOR Technology Corp. certifies that all components in its products are in compliance and conform to the European Union's Restriction of Use of Hazardous Substances in Electrical and Electronic Equipment (RoHS) Directive 2002/95/EC.

The above mentioned directive was published on 2/13/2003. The main purpose of the directive is to prohibit the use of lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls (PBB), and polybrominated diphenyl ethers (PBDE) in electrical and electronic products. Member states of the EU are to enforce by 7/1/2006.

ARBOR Technology Corp. hereby states that the listed products do not contain unintentional additions of lead, mercury, hex chrome, PBB or PBDB that exceed a maximum concentration value of 0.1% by weight or for cadmium exceed 0.01% by weight, per homogenous material. Homogenous material is defined as a substance or mixture of substances with uniform composition (such as solders, resins, plating, etc.). Lead-free solder is used for all terminations (Sn(96-96.5%), Ag(3.0-3.5%) and Cu(0.5%)).

SVHC / REACH

To minimize the environmental impact and take more responsibility to the earth we live, Arbor hereby confirms all products comply with the restriction of SVHC (Substances of Very High Concern) in (EC) 1907/2006 (REACH --Registration, Evaluation, Authorization, and Restriction of Chemicals) regulated by the European Union.

All substances listed in SVHC < 0.1 % by weight (1000 ppm)

Important Safety Instructions

Read these safety instructions carefully:

1. Read all cautions and warnings on the equipment.
2. Place this equipment on a reliable surface when installing. Dropping it or letting it fall may cause damage
3. Make sure the correct voltage is connected to the equipment.
4. For pluggable equipment, the socket outlet should be near the equipment and should be easily accessible.
5. Keep this equipment away from humidity.
6. Disconnect this equipment from the A/C outlet before cleaning it. Use a moist cloth. Do not use liquid or sprayed detergent for cleaning.
7. To fully disengage the power to the unit, please disconnect the power from the AC outlet.
8. Do not scratch or rub the screen with a hard object.
9. Never use any of the solvents, such as Thinner Spray-type cleaner, Wax, Benzene, Abrasive cleaner, Acid or Alkaline solvent, on the display. Harsh chemicals may cause damage to the cabinet and the touch sensor.
10. Remove dirt with a lightly moistened cloth and a mild solvent detergent. Then wipe the cabinet with a soft dry cloth.
11. The openings on the enclosure are for air convection and protect the equipment from overheating. **DO NOT COVER THE OPENINGS.**
12. Position the power cord so that people cannot step on it. Do not place anything over the power cord.
13. If the equipment will not be used for a long time, disconnect it from the power source to avoid damage by transient overvoltage.
14. Never pour any liquid into openings. This may cause fire or electrical shock.
15. Never open the equipment. For safety reasons, the equipment should be opened only by qualified service personnel.
16. If one of the following situations arises, get the equipment checked by service personnel:
 - a. The power cord or plug is damaged.
 - b. Liquid has penetrated into the equipment.
 - c. The equipment has been exposed to moisture.

- d. The equipment does not work well, or you cannot get it to work according to the user's manual.
 - e. The equipment has been dropped or damaged.
 - f. The equipment has obvious signs of breakage.
17. The sound pressure level at the operator's position, according to IEC 704-1:1982, is no more than 70dB(A).
18. Keep this User's Manual for later reference.
19. DO NOT LEAVE THIS EQUIPMENT IN AN UNCONTROLLED ENVIRONMENT WHERE THE STORAGE TEMPERATURE IS BELOW -20° C (-4° F) OR ABOVE 60° C (140° F). THIS MAY DAMAGE THE EQUIPMENT.

Symbols Description



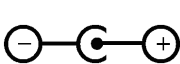
This symbol of "CAUTION" indicates that there is a danger of injury to the user or a risk of damage to the product, should warning notices be disregarded.



Battery Recycle



This symbol indicates electrical warning.



Change of electric current:
Internal: positive current
External: negative current

Warning

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

Introducing the Rechargeable Battery Pack

With very little care, you can optimize the battery life and maximize the lifespan of the battery. Most importantly, use only the computer in its ideal operating temperature (as described in [1.3. Specifications](#) on page 3) – do not leave it in a hot trunk during the summer.

- **Important Terms to Understand**

“Battery life” means the time the computer will run before it must be recharged (sometimes this is also called “playtime” or “runtime”).

“Battery lifespan” means the total amount of time your battery will last before it must be replaced.

- **Using the Computer for the First Time**

Be sure to fully charge (approx. 4 hours) the computer when charging the computer for the first time.

- **Long-Term Storage & Maintenance**

If you are putting away the battery for more than three months, it is recommended that the battery should be stored separately and fully charged, and get recharged every three months. If you store an uncharged battery, it could fall into a deep worn-out state which would render it incapable of holding any charge. Be sure to store your the computer and battery at the proper temperature (as described in [1.3. Specifications](#) on page 3).

- **Battery Lifespan**

The removable batteries for the computer are designed to retain up to 80% of their original capacity after 300 charging and recharging cycles when properly maintained. You may choose to purchase new battery when it no longer holds the sufficient charge that meets your needs.

General Cleaning Tips


You may need the following precautions before you begin to clean the device. When you clean any single part or component for the device, please thoroughly read and understand the details below.

1. We strongly recommended that you should shut down the system before you start to clean any single components.
2. When you need to clean the device, please rub it with a piece of dry cloth.
3. Be cautious of the tiny removable components when you use a vacuum cleaner to absorb the dirt on the floor.
4. Never drop the components inside the device or get circuit board damp or wet.

5. Be cautious of all kinds of cleaning solvents or chemicals when you use it for the sake of cleaning. Some individuals may be allergic to the ingredients.
6. Try not to put any food, drink or cigarette around the device.

Cleaning Tools

Although many companies have created products to help improve the process of cleaning your devices and peripherals, users can also use household items to clean their devices and peripherals. Below is a listing of items you may need or want to use while cleaning your devices or peripherals. Keep in mind that some components in your device may only be able to be cleaned using a product designed for cleaning that component, if this is the case it will be mentioned in the cleaning.

- **Cloth:** A piece of cloth is the best tool to use when rubbing up a component.  Although paper towels or tissues can be used on most hardware as well, we still recommend you to rub it with a piece of cloth.
- **Water or rubbing alcohol:** You may moisten a piece of cloth a bit with some water or rubbing alcohol and rub it on the device. Unknown solvents may be harmful to the plastics parts.
- **Vacuum cleaner:** Absorb the dust, dirt, hair, cigarette particles, and other particles out of the device can be one of the best cleaning methods. Over time, these items can restrict the airflow in a device and cause circuitry to corrode.
- **Cotton swabs:** Cotton swaps moistened with rubbing alcohol or water are excellent tools for wiping hard to reach areas in your keyboard, mouse, and other locations.
- **Foam swabs:** Whenever possible, it is better to use lint-free swabs such as foam swabs.

Recommended Cleaning Procedures:

1. Close all application programs
2. Close operating software
3. Turn off the computer
4. Remove all peripherals
5. Disconnect the power cable
6. Proceed to clean.

Disposing of the Computer

- **Within the European Union**

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, or if applicable, follow any agreements made between yourself. The mark on electrical and electronic products only applies to the current European Union Member States.

- **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.

Additional Information & Technical Support

You can download the related technical documents such as datasheet and user's manual as well as driver on our website.

Please do not hesitate to call or e-mail our customer service when you still cannot get the information you need.

<http://www.arbor.com.tw>

E-mail: info@arbor.com.tw

Warranty

This product is warranted to be in good working order for a period of one year 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 at no 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, or inability to use this product. Vendor will not be liable for any claim made by any other related party.

Vendors disclaim all other warranties, either expressed or implied, including but not limited to implied warranties of merchantability and fitness for a particular purpose, with respect to the hardware, the accompanying product's manual(s) and written materials, and any accompanying hardware. This limited warranty gives you specific legal rights.

Return authorization must be obtained from the vendor before returned merchandise will be 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.

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Chapter 1

Introduction

1.1. The Computer

The **G1220** is a powerful mobile computer made for retail activities including sophisticated mobile POS application. The computer packs a Wi-Fi module to deliver efficient data connection. The **G1220** is a productivity enhancer for store associates by supporting a variety of applications from stock, price check, article mark-downs to line busting.



Product Highlights

- 12.1" TFT active matrix with resistive touch
- Ultra low power consumption for 6-hour battery life
- Fully rugged for mobile POS or warehousing application
- Meeting MIL-STD-810F, IP54, 3ft. drop resistance
- Good mobility with multiple data connections (Bluetooth/Wi-Fi)
- Hot-swappable dual batteries design

1.2. About this Manual

This user's manual provides the general information and installation instructions for the computer. The manual is meant for the experienced users and integrators with hardware knowledge of personal computers. If you are not sure about any description in this manual, consult your vendor before further handling.

We recommend that you keep one copy of this manual for the quick reference for any necessary maintenance in the future. Thank you for choosing ARBOR products.

1.3. Specifications

System	
CPU	Intel® Atom™ N2600 1.6GHz processor
Chipset	Intel® NM10
Graphics Controller	Intel® GMA3600 integrated
Memory	2GB 1333MHz DDR3 SDRAM installed
BIOS	AMI Aptio® UEFI BIOS
Storage	1 x 32GB MLC SSD (installed)
	1 x 2.5" HDD/SSD drive (optional)
Audio	1 x Integrated microphone
	2 x Integrated 2W speakers
	1 x Headphone jack
	1 x Microphone jack
OS support	Windows 7 Embedded / Windows 7 Professional
	Ubuntu and Fedora Linux compliant
Peripherals & Devices	
Camera	1 x 5.0 megapixels Auto Focus COMS camera w/o LED (optional)
NFC	1 x 13.56MHz ISO15963/14443A/14443B NFC Reader (optional)
Wi-Fi	1 x 802.11 a/b/g/n wireless module integrated
Bluetooth	1 x Bluetooth 4.0 BLE integrated
Hand Strap	1 x Gray elastic hand strap
I/O interface	
USB Port	4 x USB 2.0 ports
SD Card	1 x SDHC/SD card slot
Expansion	1 x 35-pin pogo contact port for the connection with a desktop cradle
	1 x 20-pin proprietary connector for two RS-232 ports
Ethernet	1 x RJ45 GbE LAN
Button & Indicator	
Function Key	4 x Function keys
Power Button	1 x Power on/off button
LED Indicator	2 x Battery status LED
	1 x HDD/SSD activity LED

Introduction

LCD Display	
Size/Type	12.1" TFT Active Matrix Panel
Max. Resolution	1024 x 768 (XGA) with 16.2M colors
Luminance	500 cd/m ² (typ.)
Contrast Ratio	700:1
Viewing Angle	80° (R), 80° (L), 70° (U), 70° (D)
Backlight Type	LED
Touch Screen	
Type	Analog resistive single-touch
Light Transparency	80% (typ.)
Controller Interface	USB interface
Power Requirement	
Adapter Input	100 ~ 240 VAC (Full Range)
Adapter Output	19VDC, 4.74A, 90W (Max.)
Battery Type	Li-battery pack
Battery Capacity	2 x 1880 mAh 4-cell external battery pack
Battery Operating Time	6 hours
Environmental & Mechanical	
Operating Temp.	-20 ~ 40°C (-4 ~ 104°F)
Charging Temp.	0 ~ 40°C (32 ~ 104°F)
Storage Temperature	-20 ~ 60°C (-4 ~ 140°F)
Storage Humidity	10 ~ 80% (non-condensing)
Dimensions (W x D x H)	320 x 246 x 29.5 mm (12.60" x 9.96" x 1.16")
Gross Weight	1.9 kg (4.19 lb) (with one battery)
Vibration	3 Grms/ 5~500Hz/ random operation
Shock	40G peak acceleration (11ms duration)
Transit Drop	3 feet, except the front side, with analoge resistive single-touch
Regulation	CE, FCC Class B, VCCI, PSE and TELEC
IP Rating	(Whole unit) IP54

1.4. Scope of Delivery

Upon opening the package, carefully inspect the contents. If any of the items is missing or appears damaged, contact your local dealer or distributor. The package should contain the following items:

1 x G1220 Rugged Tablet PC



1 x User's Manual
1 x Driver CD



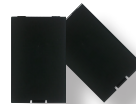
PAC-G090W

20VDC, 4.5A, 90W
AC/DC Adapter Kit



BAT-G1220

2 x Gray 1880mAh
External Battery Kit



Stylus

Touch Screen Stylus
(with rope)



RS232 COM Cable

1-to-2 RS232 Cable



1.5. Ordering Information

G1220R	12.1" Intel® Cedar Trail N2600 Rugged Tablet PC with dual external battery packs, Bluetooth, Wi-Fi, and resistive touch
---------------	-------------------------------------------------------------------------------------------------------------------------

1.5.1. Optional Accessories

The following items are normally optional, but some vendors may include them as a standard package, or some vendors may not carry all the items.

PAC-G090W	20VDC, 4.5A, 90W AC/DC Adapter Kit	
eBAT-1220	Battery Kit for G1220 (2 packs)	
Stylus	Touch Screen Stylus	
Stand-1220	Desktop Stand	
HST-1220	For one-handed hold of the computer	
SST-1220	Shoulder Strap, 128 x 3.7cm	
RS232 COM Cable	1-to-2 RS232 Cable	

1.5.2. Configure-to-Order Service

Make the computer more tailored to your needs by selecting one or more components from the list below to be fabricated to the computer.

HDD320G-1220

320GB HDD Kit



CAM-1220

5.0M Rear CMOS Camera Kit



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Chapter 2

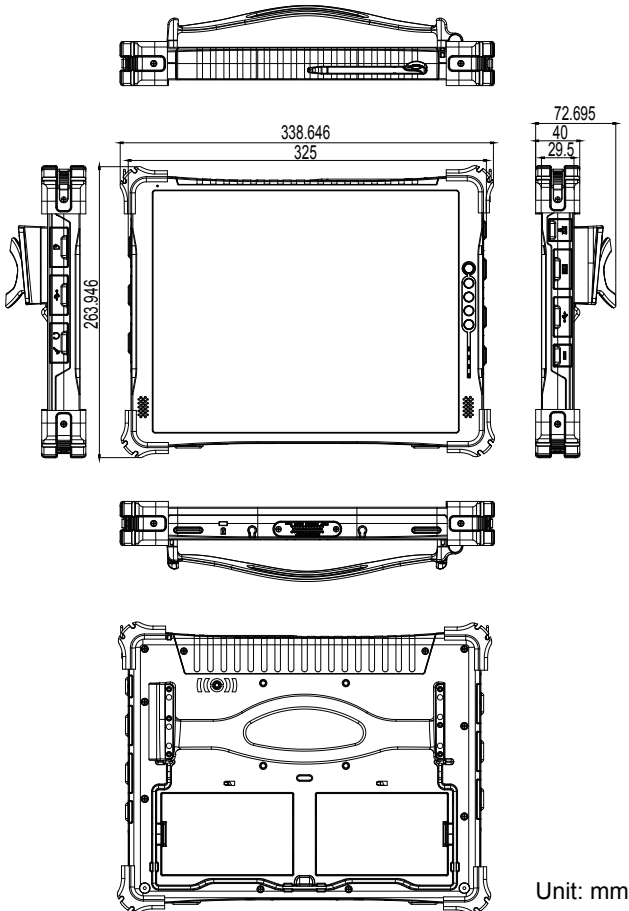
Getting Started

2.1. System Overview

Understanding the computer help you jump seamlessly from component to component when using the computer. This section will quickly familiarize you with the computer.

2.1.1. Dimensions

The following illustration shows the dimensions of the G1220, with the measurements of width, depth, and height called out.



2.1.2. Tour the Computer



The computer has some controls, I/O ports, mechanical parts and status LED lights on its enclosure. The following illustration shows the computer in different views, with all the said components called out.

2.1.2.1. Front Side



- Power Button**

Use the **Power Button** to power on the computer, or to put the computer to **Sleep** or **Hibernate** mode. Take the following actions to take the said controls:

Control	Action Required
To power on the computer	Press-and-hold the Power Button  until the LED lights green.
To enter the computer to Sleep	Press (without holding) the Power Button  .
To resume the computer from Sleep or Hibernate	




- **(Physical) Function Keys**

By default, the four function keys are set to turn on/off some features of the computer. However, users can re-define them to launch some other application programs installed on the computer. See [4.1.3. Customize Function Keys](#) on page [67](#).

- **Status LED**

Four status LED lights are recessed on the front side of the computer to draw users' prompt awareness of the computer's contiguous events such as power charging, storage activity and so on.

The status LED lights and the notifications delivered are summarized as below:

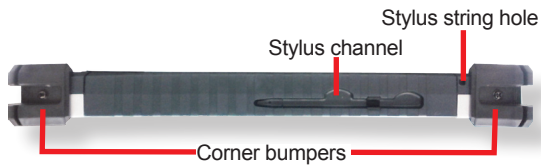
Printed Graphic	Matter	State	Color	Description	
	Power status	on	green	The computer is powered on.	
		blinking	green	The computer is in Sleep .	
		off	N/A	The computer is powered off or in Hibernate .	
	Storage activity	blinking	green	The storage is being accessed.	
 Battery One / Two	Battery charging	off	N/A	When battery is being charged	When battery is discharging
				Charging stops for battery protection.	The battery drains between 15%~99%.
		on	orange	When battery is being charged	When battery is discharging
				The battery is charging from external power.	N/A
		on	green	The battery is fully charged.	
		blinking	orange	The battery level drops under 15% and needs immediate charging .	

To know how to charge the batteries, see [2.4.5. Charge the Batteries for the 1st Time](#) on page [23](#).

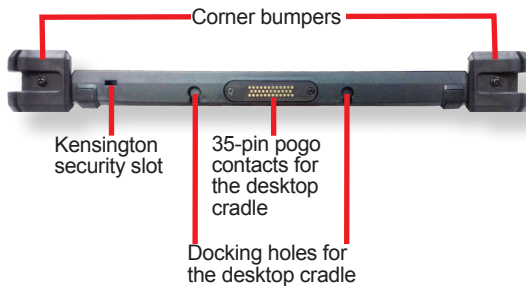
- **Touch Screen**

The computer comes with a resistive touch screen to register the touch of a fingertip or stylus for input. It allows a user to interact with the computer without a mouse or keyboard. See [3.1. Use Touch Screen](#) to know how to do the touch control and text input on a touch screen.

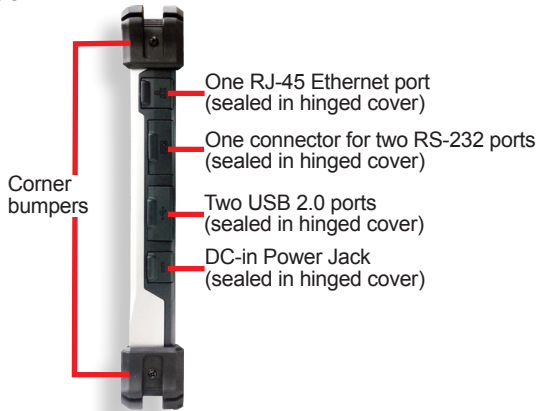
2.1.2.2. Top Side



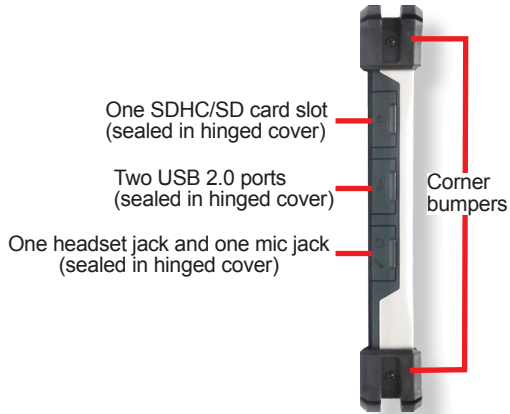
2.1.2.3. Bottom Side



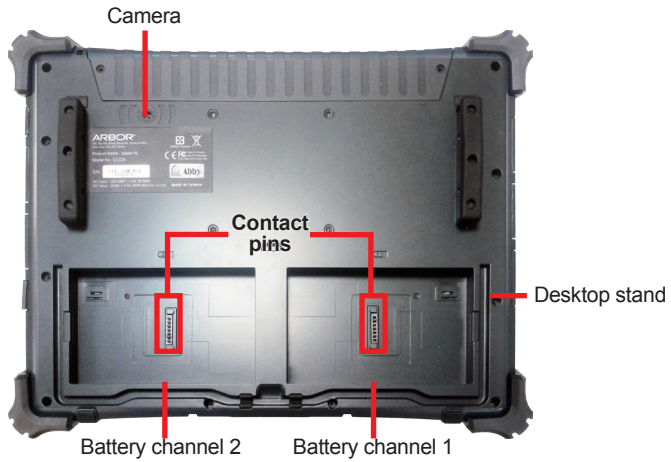
2.1.2.4. Right Side



2.1.2.5. Left Side



2.1.2.6. Rear Side



To install batteries, see [2.4.3. Install Batteries](#) on page [21](#)

To use the camera, see [3.5. Use Camera \(Configure-to-Order\)](#) on page [54](#).

To install the desktop stand, see [2.2. Desktop Stand](#) on page [16](#).

2.2. Desktop Stand

The computer's desktop stand is a hinged stand to hold the computer in an apt viewing angle on the desk. The desktop stand is also an integrated stand that can be snapped to the computer's chassis when it isn't used.

2.2.1. Install Desktop Stand

When the computer ships, the desktop stand isn't installed but stored separately in the package. To install the desktop stand:

1. Place the computer on a flat surface, with the rear facing up.



2. Loosen and remove the screws as marked in the picture above. Save the screws for later use.
3. Remove both finishing rubber.



The two metal adapters previously hidden under the finishing rubber come to view.



4. Have the desktop stand, which is an aluminum shelf. Thread the aluminum shelf through the lower hole on the metal adapter.



While threading the aluminum shelf, make sure it is threaded in the direction that it can snap into the groove on the computer's chassis. Do not thread it upside down.



5. Reinstall the finishing rubber to the metal adapter.
6. Dismount the other metal adapter from the computer by removing the six screws that fix it. Then thread the other end of the aluminum shelf through the lower hole on the metal adapter.



Thread the other end of the aluminum shelf through the metal adapter

7. Reinstall the metal adapter and the finishing rubber by refastening the aforementioned six screws.



To use the desktop stand, see [3.6. Use Desktop Stand](#) on page [56](#)

2.3. Hand Strap

A hand strap is provided for users to hold the computer comfortably and securely in one hand. Install the hand strap and use the hand strap so the computer doesn't easily slip out of your hand when it is used carried around.

2.3.1. Install Hand Strap

When the computer ships, the hand strap isn't installed but stored separately in the package. To install the hand strap:

1. Place the computer on a flat surface, with the rear facing up.



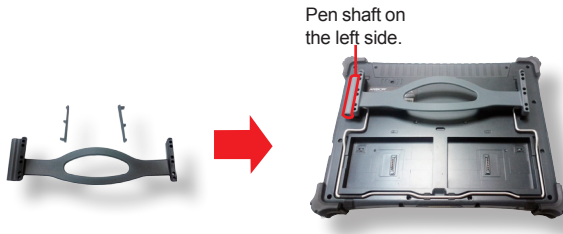
2. Loosen and remove the screws as marked in the picture above. Save the screws for later use.
3. Remove both finishing rubber.



The two metal adapters previously hidden under the finishing rubber come to view.



4. Have the hand strap kit, which comes with the computer. Mount the hand strap to the rear of the computer, with the pen shaft on the left side.



5. Reinstall the previously mentioned six screws.



6. Put on the two finishing stuffers.



2.4. Batteries

The computer is powered by twin batteries to support hot-swapping batteries, which means the batteries can be replaced without the computer being turned off.

When the computer ships, these twin batteries aren't installed but stored separately to keep in good condition for future use.

The batteries are both 14.8V / 1880mAh Li-ion batteries to be installed to the computer's battery channels. Typically it takes about 4 hours to charge each battery to full. And two fully charged batteries support the computer to work up to 6 hours. (However the actual working time depend on the computer's working state.)

Take a look at the battery pack. Each battery pack comes with a lock bolt to hold itself in the battery channel, and each comes with a few contact pins to tap power from charging.



2.4.1. Extend Battery Lifespan

If the computer is working in an environment where external power supply is available and handy, it is suggested that you let the computer work merely on the external power without batteries installed to maximize the lifespan of the batteries.

Save for the aforementioned, the computer's BIOS Setup utility presents the setting of [Battery Charge/Discharge Mode](#) to further extend battery lifespan by allowing users to define the maximum battery level and the timing to recharge batteries. See [Battery Charge/Discharge Mode](#) on page [88](#) for the setting.

2.4.2. Optimize Battery Life

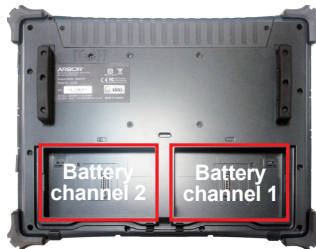
Power is a critical issue for portable devices. Always turn off the features that aren't used on the computer to save power. To extend the battery life as much as possible, it is recommended that you turn down the LCD brightness, set a shorter LCD timeout, or suspend the computer (i.e. enter the computer to **Sleep**) when the computer isn't actively used.

2.4.3. Install Batteries

When the computer is delivered, the batteries aren't installed. This is in order to keep the battery in good condition for future use.

To install the batteries:

1. Place the computer on a flat surface, with the rear side facing up.
2. Find the two battery channels. (See the picture below.)



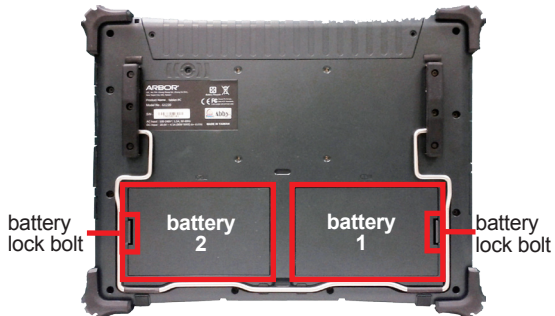
3. Click one battery into one vacant battery channel by an angle that the contact pins on the battery and those inside the battery channel can meet.



4. Click the other battery into the other battery channel as mentioned above.

2.4.4. Replace Batteries

1. Place the computer on a flat surface, with the rear facing up.
2. Find the battery to replace, either battery 1 or battery 2.



3. Pull at the battery's lock bolt to release the battery from the battery channel.
4. Totally remove the battery.
5. Have another battery, mostly a fully charged one. Click it in to the vacant channel by an angle that the contact pins on the battery and those in the battery channel can meet.







Note: In case needing to remove both batteries, power off the computer before battery removal.

2.4.5. Charge the Batteries for the 1st Time

Due to shipment, the batteries are partially drained when the package is delivered to you. Be sure to charge the batteries to full when you are charging them for the 1st time. To charge the batteries:

1. Install the batteries to the computer as described in [2.4.3. Install Batteries](#) on page [21](#).
2. Connect the computer to external power source.

The battery status LED on the computer 's front bezel, either  or , will light orange to signify the battery is being charged. See also [Status LED](#) on page [12](#) to monitor the battery charging status.

Normally it takes 4 hours to charge the battery to full. When the charging finishes, the battery status LED on the computer's front bezel, either  or , will light green to signify the battery is fully charged. See also [Status LED](#) on page [12](#) to monitor the battery charging status.

And also note the following:

- It's recommended not to charge intermittently, which means not to plug and unplug the power adapter frequently in short period of time.
- Be sure to read [2.4.6.1. Instructions for Rechargeable Battery Pack](#) to know how to store and use the batteries

2.4.6. Re-Charge the Batteries

When the battery gets low, recharge the battery to prevent possible data loss. Follow [2.4.5. Charge the Batteries for the 1st Time](#) on page [24](#) to re-charge the batteries.

2.4.6.1. Instructions for Rechargeable Battery Pack



Do not use the power adapter that isn't made for the computer. Supplying the computer with inappropriate voltage may cause harm to the battery or, even worse, burn the computer.

How to use:

- It's recommended to supply power via the adapter without the battery installed when you are using the computer for a very long time. Reinstall the battery in the contrary situation.
- The lithium-ion battery is currently one of the most popular battery packs. The best advantage is that it has no memory effect, so users needn't worry about that issue. Users can charge the battery anytime whether it is fully drained or not. However, it's recommended that users drain the battery until the system shows power shortage warning and then recharge the battery. Doing so is helpful to the reliability of your battery.
- Don't use the battery pack as a power supply for other equipment.

How to store:

- Don't expose the battery to elevated heat situations such as under direct sunlight in a car or near fire.
- Don't disassemble the battery, or the battery leakage might cause skin or eye injury. If electrolyte leaking from the battery contacts your skin or clothing, immediately flush it with running water. If it splashes into eye, rinse the eye at least 15 minutes with clean water and then seek medical attention.
- To avoid battery leakage or explosion, don't discard the battery into water or fire, or put them near a heat source such as a gas stove or an oven.
- If you are putting away the battery for more than three months, it is recommended that the battery should be stored separately and fully charged, and get recharged every three months. If you store an uncharged battery, it could fall into a deep worn-out state which would render it incapable of holding any charge. Be sure to store your the computer and battery at the proper temperature (as described in [1.3. Specifications](#) on page [3](#)).

- Use the appropriate container to store the battery such as a paper box. Do not allow a metal object to touch the terminal of the battery.
- The battery consists of precise electrical components and cells. Do not drop or hit the battery.

2.5. Driver Installation

The **G1220** supports **Windows 7** and comes pre-installed with **Windows 7**. Find the necessary device drivers on the CD that comes with your purchase.

2.5.1. Installation Sequence

Always follow the sequence below to install the drivers to prevent errors:

Chipset → Graphics → Audio → LAN → Touch Screen → Wi-Fi

The other drivers and software can be installed by random sequence as long as the aforesaid drivers are installed first.

Please note the touch screen driver, function-keys driver and camera driver need your special handling, please see the following sections:

To install the touch screen driver, see [2.5.7. Install Touch Screen Driver](#) on page [32](#).

To install the function-keys driver, see [2.5.9. Install Function-Keys Driver](#) on page [34](#).

To install the camera driver, see [2.5.13. Install Camera Driver](#) on page [37](#).

2.5.2. Start to Install

Before installing the drivers (and utilities), prepare the following:

1. a USB keyboard

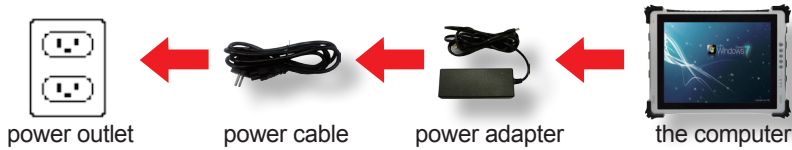


2. a USB CD-ROM drive

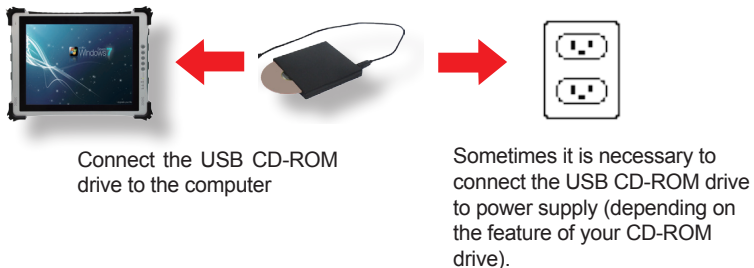


Follow the guideline below to install device drivers and utilities:

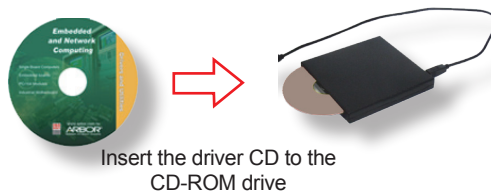
1. Connect the computer to external power by the power cable and adapter included in the accessory box.



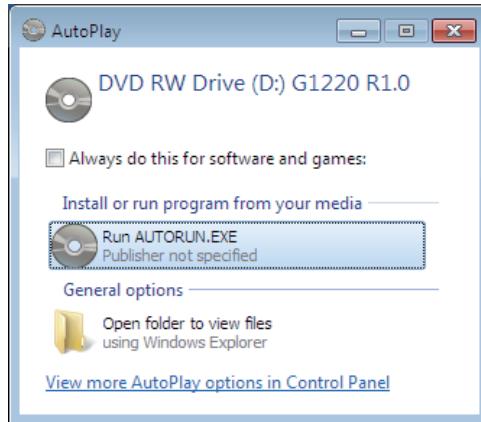
2. Have the USB CD-ROM drive. Connect the CD-ROM drive to the computer (, and sometimes the connection to power supply is also needed depending on the feature of your CD-ROM drive).



3. Power on the computer if it isn't powered on yet.
4. Insert the driver CD to the CD-ROM drive.



In a few seconds, a dialog opens asking whether to auto-run the driver CD or open the CD contents in **Windows Explorer**.



5. Click/tap **Run AUTORUN.EXE** to auto-run the driver CD, which allows easier installation of drivers.

The installer then opens.



6. Click/tap **Win7 Driver Install**.

OR

Click/tap the **Browse CD** button to view the CD contents in **Windows Explorer**.

A list of device drivers then opens onscreen.



7. Click on the title of a driver to install it. **Always** follow the sequence described in [2.5.1. Installation Sequence](#) on page [26](#) to install the drivers.

2.5.3. Install Chipset Driver

To install the chipset driver:

1. Launch the driver installer as described in [2.5.2. Start to Install](#) on page [26](#) and open the driver list.

The driver list then opens onscreen.

2. Click/tap the **Chipset** icon .



3. Follow the onscreen instructions to proceed.

2.5.4. Install Graphics Driver

To install the graphics driver:

1. Launch the driver installer as described in [2.5.2. Start to Install](#) on page [26](#) and open the driver list.

The driver list then opens onscreen.

2. Click/tap the **VGA** icon .



3. Follow the onscreen instructions to proceed.

2.5.5. Install Audio Driver

To install the audio driver:

1. Launch the driver installer as described in [2.5.2. Start to Install](#) on page [26](#) and open the driver list.

The driver list then opens onscreen.

2. Click/tap the **Audio** icon .



3. Follow the onscreen instructions to proceed.

2.5.6. Install LAN Driver

To install the LAN driver:

1. Launch the driver installer as described in [2.5.2. Start to Install](#) on page [26](#) and open the driver list.

The driver list then opens onscreen.

2. Click/tap the **LAN** icon .



3. Follow the onscreen instructions to proceed.

2.5.7. Install Touch Screen Driver

To install the touch screen driver:

1. Launch the driver installer as described in [2.5.2. Start to Install](#) on page [26](#) and open the driver list.

The driver list then opens onscreen.

2. Click/tap the **Touch Screen** icon .



3. Follow the onscreen instructions to proceed.

Note: When installing the touch screen driver, if you think the installation stops progressing, check the task bar of the operating system to see if there is any dialog to be managed. See the illustration below:



After the touch screen driver is installed, the touch screen is ready-to-use. See [3.1. Use Touch Screen](#) on page [42](#) to know how to use the touch screen.

2.5.8. Install WiFi Driver

To install the WiFi driver:

1. Launch the driver installer as described in [2.5.2. Start to Install](#) on page [26](#) and open the driver list.

The driver list then opens onscreen.

2. Click/tap the **WiFi** icon  .



3. Follow the onscreen instructions to proceed.

2.5.9. Install Function-Keys Driver

The function key driver cannot be installed without **.NET Framework 4.0**. Be sure to install **.NET Framework 4.0** first to be able to install the function-keys driver.


To install **.NET Framework 4.0**:

1. Launch the driver installer as described in [2.5.2. Start to Install](#) on page [26](#) and open the driver list.

The driver list then opens onscreen.

2. Click/tap the **.NET Framework 4.0** icon .



3. Follow the onscreen instructions to proceed.
4. Once the **.NET Framework 4.0** is successfully installed, click/tap the Function keys icon  from the driver list.



5. Follow the onscreen instructions to proceed.

After the function-keys driver is installed, the four physical function keys are ready-to-use. See [3.2. Use \(Physical\) Function Keys](#) on page [46](#) to know how to use them.

2.5.10. Install Bluetooth Driver

To install the Bluetooth driver:


1. Launch the driver installer as described in [2.5.2. Start to Install](#) on page [26](#) and open the driver list.


The driver list then opens onscreen.

2. Click/tap the **Bluetooth** icon .



3. Follow the onscreen instructions to proceed.

Once the Bluetooth driver is installed, a Bluetooth icon  will show up in the notification area with the Bluetooth feature enabled. See [3.4. Use Bluetooth](#) on page [49](#) to know how to use Bluetooth.

4. Proceed to install **BlueSoleil**, the utility for Bluetooth connection. Click/tap the **BlueSoleil** icon  from the driver list.



5. Follow the onscreen instructions to install the utility.

See [3.4.4. Use BlueSoleil](#) on page [53](#) to know how to use **BlueSoleil**.

2.5.11. Install RS-232 Driver

To install the RS-232 driver:

1. Launch the driver installer as described in [2.5.2. Start to Install](#) on page [26](#) and open the driver list.

The driver list then opens onscreen.

2. Click/tap the **RS-232** icon .



3. Follow the onscreen instructions to proceed.

2.5.12. Install SATA Driver

To install the SATA driver:

1. Launch the driver installer as described in [2.5.2. Start to Install](#) on page [26](#) and open the driver list.

The driver list then opens onscreen.

2. Click/tap the **SATA** icon .




3. Follow the onscreen instructions to proceed.

2.5.13. Install Camera Driver

The camera's application program is installed along with the function-keys driver. However for the camera to run, an additional decoder has to be installed after the function-keys driver is installed.

To install the camera driver:

1. Install the function-keys driver as described in [2.5.9. Install Function-Keys Driver](#) on page [34](#).
2. Once the function-keys driver is successfully installed, click/tap the **Camera** icon  from the driver list.



3. Follow the onscreen instructions to proceed.

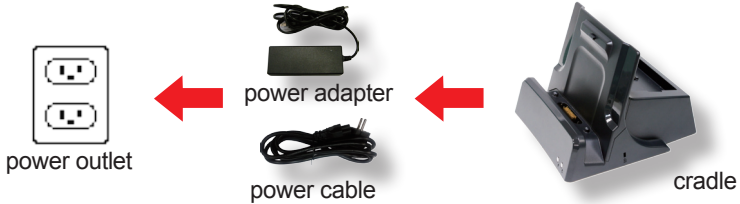
See [3.5. Use Camera \(Configure-to-Order\)](#) on page [54](#) to know how to use the camera.

2.5.14. Install Cradle LAN Driver

If you have purchased a cradle for the computer, install the cradle LAN driver on the computer so the computer is able to network with the cradle's LAN port.

To install the cradle LAN driver:

1. Connect the cradle to power supply.



The cradle's power status LED  then lights green to signify that power is connected.

2. Seat the computer in the cradle.



3. Power on the computer. Launch the driver installer onscreen as described in [2.5.2. Start to Install](#) on page [26](#) and open the driver list.

The driver list then opens onscreen.

-
4. Click/tap the **LAN (Cradle)** icon 



5. Follow the onscreen instructions to proceed.

Once the driver is installed, the computer is able to connect to a local area network (LAN) by the cradle's LAN port. See also [3.7.5. Network with Other Devices](#) on page [64](#).

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Chapter 3

Use the Computer

3.1. Use Touch Screen

The computer comes with a resistive touch screen, which locates user's touch by the force applied on it. As a resistive touch screen, it needs the operation with a pointed object such as a stylus or simply your fingertip so it takes the minimum force to trigger actions from the touch screen.

Touch control is the main way and an intuitive way to interact with the computer. Users are able to manipulate icons, graphic buttons, menus, property sheets, the onscreen keyboard or any onscreen items with touch control.

When the computer is delivered, the touch screen is likely to work imprecisely because the driver isn't installed and the touch screen hasn't been calibrated yet. Follow [2.5.7. Install Touch Screen Driver](#) on page [32](#) to install the driver for the touch screen when the touch screen is used for the first time, and follow [Proceed to Calibrate](#) on page [73](#) to calibrate the touch screen.

Save for the 1st use, the touch screen may also need calibration after serving for a period of time to recover accuracy due to its resistive nature. Follow [Proceed to Calibrate](#) on page [73](#) to calibrate the touch screen.

3.1.1. Text Input

The computer doesn't have a physical keyboard to receive user's text input. To input text on the computer, it relies on either an external USB keyboard, the "onscreen keyboard", or the O.S.-featured handwriting recognition.

3.1.2.1 Onscreen Keyboards

An "onscreen keyboard" is a virtual keyboard with all the standard keys. On the computer, two onscreen keyboards are available, one is the operating system's native onscreen keyboard, the other is a software keyboard powered by ARBOR.

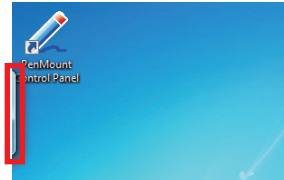
- **The O.S.-featured onscreen keyboard:**

To open the O.S.-featured onscreen keyboard, there are two approaches:

► **Approach 1**

1. Open the desktop. Tap any vacancy on the screen.

The **Input Panel** shows and docks at the left edge of the screen.



2. Double-tap the "input panel".

The **Input Panel** opens showing the onscreen keyboard.



► **Approach 2**


1. Tap **Start** button | **All Programs** | **Accessories** | **Ease of Access** | **Onscreen Keyboard**.

The (extended) onscreen keyboard opens.



- **ARBOR's onscreen keyboard:**

To open ARBOR's onscreen keyboard:

1. Make sure the driver for the physical function keys are installed as described in [2.5.9. Install Function-Keys Driver](#) on page 34.
2. Assign a physical function key to launch ARBOR's onscreen keyboard () as described in [4.1.3. Customize Function Keys](#) on page 67.
3. Hit the physical function key that is just assigned.

ARBOR's onscreen keyboard then opens.



3.1.2.2. Handwriting Recognition

"Handwriting Recognition" is an input method that interprets and converts handwriting to text. The O.S. features a "writing pad" to get the job done.

To launch the O.S.-featured "writing pad":

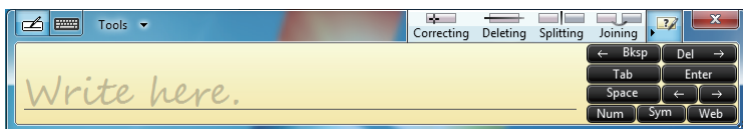
1. Open the onscreen keyboard as mentioned in [Approach 1](#) on page 43.

The onscreen keyboard opens.

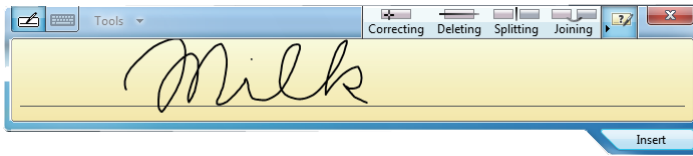
2. From the tool bar of the onscreen keyboard, tap the "writing pad" graphic .



The writing pad then opens onscreen.



3. Write in the writing area. Then tap the bottom-right **Insert** to enter the text to an text editor.




3.2. Use (Physical) Function Keys

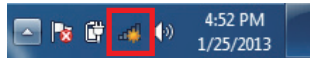
Four function keys, **P1** through **P4**, are recessed on the front bezel of the computer. As long as the driver for these physical function keys is installed as described in [2.5.9. Install Function-Keys Driver](#) on page [34](#), these keys are able to turn on/off some features of the computer (by default). However, these keys can be re-defined to launch certain application program installed on the computer. See [4.1. ARBOR System Suite](#) on page [64](#) for details.

After the driver is installed as described in [2.5.9. Install Function-Keys Driver](#) on page [34](#), the function keys are to perform the following functions by default:

Key	Default Function
P1	Turns on/off Wi-Fi
P2	Turns on/off Touch Screen
P3	Displays/hides battery level and Wi-Fi signal strength
P4	Opens/closes ARBOR System Suite , an application program to control the physical function keys P1 through P4 . <ul style="list-style-type: none">▶ ARBOR System Suite allows users to associate a function key with a specific application program installed on the computer to launch the application program when the function key is hit. See 4.1.3. Customize Function Keys on page 67 for the setting.

3.3. Use Wi-Fi

The computer is built-in with a WiFi module for Wi-Fi networking. Once the driver is installed (as described in [2.5.8. Install WiFi Driver](#) on page 33) and the system is restarted, a wireless network icon  will show in the notification area to mean the Wi-Fi module is enabled and one or more Wi-Fi network(s) are available for connection.

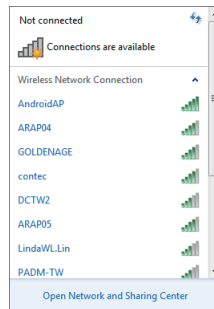


Wi-Fi network icon in the notification area

Follow the guide below to connect the computer to your wireless local area network (WLAN):

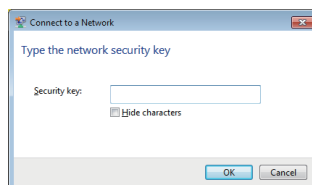
1. Tap the Wi-Fi network icon  in the notification area.

A list opens and shows every Wi-Fi hotspot available within the wireless coverage of the computer.



2. Tap a desired network to connect it.

If the network to connect is a secured network, a dialog will open and request for the password. If it is an open network, it will be connected in a few seconds.




Use the Computer

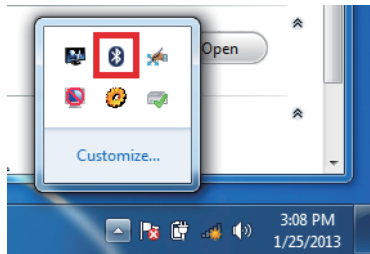
3. Enter the password to access the Wi-Fi network.

The selected Wi-Fi network will be connected in a few seconds if the entered password is valid.

3.4. Use Bluetooth

Bluetooth enables the wireless connection over a short distance about 8 meters. It is specified as a "wireless personal area network" (WPAN). The computer is Bluetooth-enabled to synchronize data with other Bluetooth-capable devices such as PCs, laptops, hands-free, headsets, printers, PDAs and cell phones.

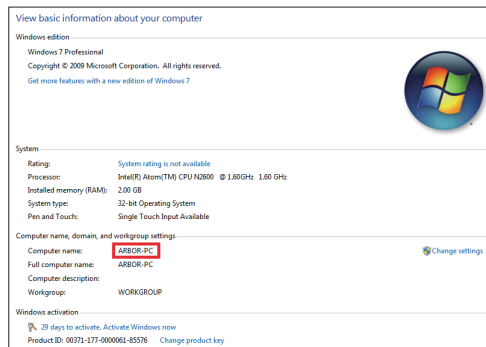
On the computer, as long as the driver is installed for Bluetooth as described in [2.5.10. Install Bluetooth Driver](#) on page [35](#), a Bluetooth icon  shows up in the notification area and the Bluetooth module is activated and enabled.



Bluetooth is enabled by default


3.4.1. Bluetooth Device Name

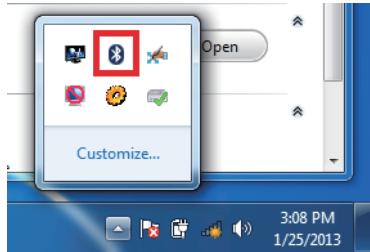
By default, the computer's Bluetooth device name is the computer name that is viewable at **Control Panel | System and Security | System**.



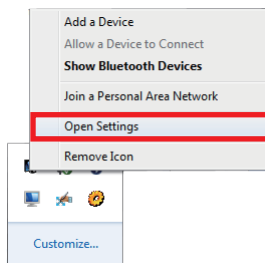
3.4.2. Hide/Expose Computer

By default, the computer is NOT discoverable by other Bluetooth-enabled devices. To hide or expose the computer from/to them:

1. From the notification area, click the Bluetooth icon .

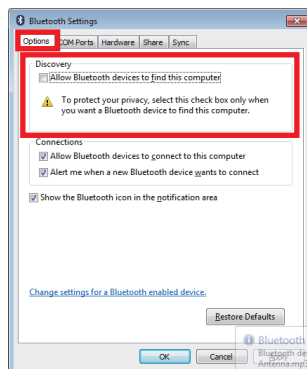


A context menu opens.



2. Select **Open Settings** from the context menu.


The O.S.-featured **Bluetooth Settings** then open and show the **Options** tabbed page.

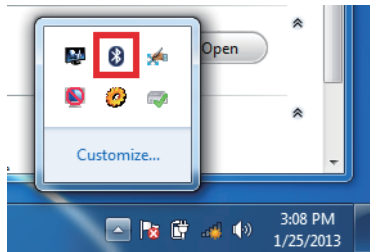


3. On the **Options** tabbed page, find the **Discovery** group box.
4. Select/deselect **All Bluetooth devices to find this computer**.

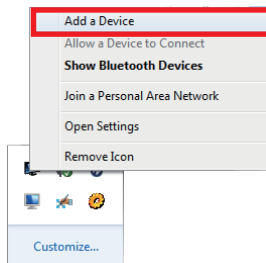
3.4.3. Pair/Connect with Other Bluetooth Devices

Before the computer can connect with other Bluetooth devices, it has to pair with them. To pair/connect with other Bluetooth devices:

1. From the notification area, click the Bluetooth icon .

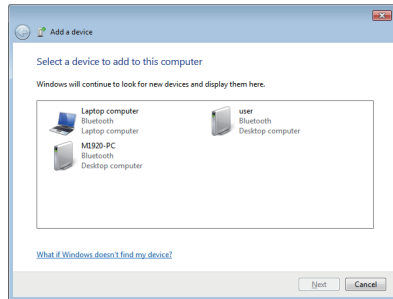


A context menu opens.



2. Select **Add a Device** from the context menu that opens.

An **Add a device** window opens.



3. Select the Bluetooth device to connect, (sometimes it is necessary to see the document of the Bluetooth device to connect.), and follow the onscreen instructions to proceed.

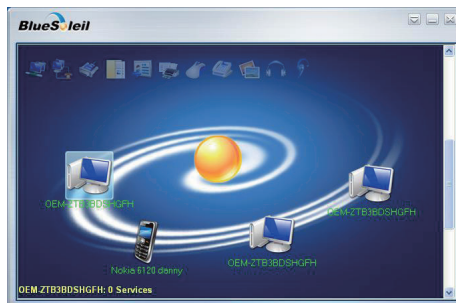
Note: On the computer, the Bluetooth-exchanged files are save to **local disk** (e.g. **C:**) | **Users** | (**your username**) | **My Documents** | **Bluetooth Folder**.

3.4.4. Use BlueSoleil

The application program **BlueSoleil** is bundled with the computer to facilitate users' use of the computer's **Bluetooth** features by its very easy-to-use GUI. Install the application program from the CD that comes with your purchase:



Double-tap the "soleil" (☀, which means "sun",) in the center of the **BlueSoleil** window to trigger the search for the Bluetooth devices within the wireless coverage of the computer. If any device is discovered, its icon will show around the "soleil" within a few seconds. Tap and hold the icon for further pairing and data exchange with this device.



3.5. Use Camera (Configure-to-Order)

For a configurable-to-order item, the computer can have a 5.0 mega-pixel camera that doubles as a camcorder. Due to the location in the computer's rear, the camera supports user's photos/video documenting while they are working on the computer's screen.

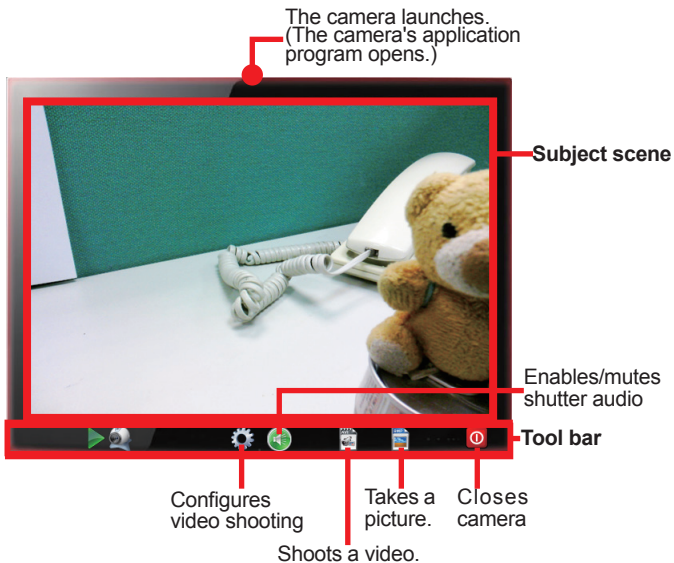
3.5.1. Launch Camera

On the computer, to launch the camera is to open the camera's application program. The camera's application program is included in **ARBOR System Suite**. As long as the function key driver is installed as described in [2.5.13. Install Camera Driver](#) on page [37](#), the camera's application program is accessible by the O.S.-featured **All Programs**.

To launch the camera:


1. Tap **Start** button | **All Programs** | **ArborFunKey** |  **ccdc**.

The camera's application program then opens onscreen.



3.5.2. Take A Picture


To take a picture:

1. Launch the camera as described in [3.5. Use Camera \(Configure-to-Order\)](#) on page [54](#).
2. Tap the take-a-picture icon 

The camera then proceeds to take a picture and save it to **local disk** (e.g. **C:**) | **Users** | **(your username)** | **My Documents** | **ccd**.

3.5.3. Shoot A Video

To shoot a video:

1. Launch the camera (also the camcorder) as described in [3.5. Use Camera \(Configure-to-Order\)](#) on page [54](#).
2. Tap the shoot-a-video icon 

The  icon then changes to an in-shoot button , and video shooting starts.

3. Tap the in-shoot button  again to stop shooting.

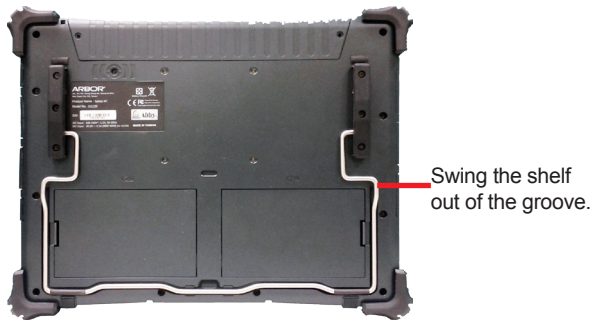
The video shot is saved to **local disk** (e.g. **C:**) | **Users** | **(your username)** | **My Documents** | **ccd**.

3.6. Use Desktop Stand

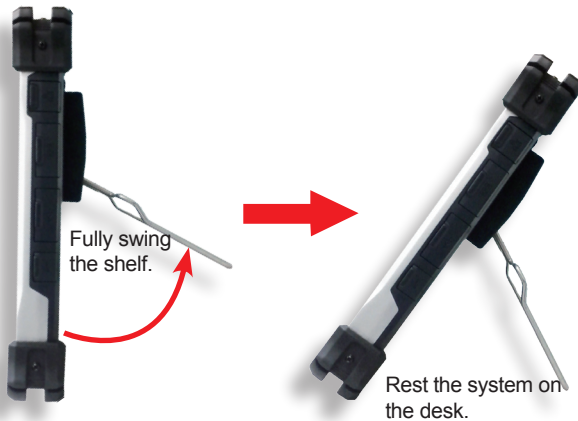
As long as the desktop stand is installed as described in [2.2.1. Install Desktop Stand](#) on page [16](#). It is ready to use. The stand is a hinged stand to hold the computer in an apt viewing angle on the desk. The stand is also an integrated stand that can be snapped to the computer's chassis when it isn't used.

To use the desktop stand:

1. From the rear of the computer, find the aluminum shelf of the desktop stand. Swing it out of the groove.



2. Fully swing the aluminum shelf until it cannot be swung any more.



3. Rest the whole system on the desk.

3.7. Use Desktop Cradle (Optional)

The (optional) desktop cradle is developed for **G1220** computer to extend the computer's battery charging and networking features. The desktop cradle features the following connectors:

- An additional battery charging channel (for an spare battery)
- Four USB 2.0 (host) ports
- Two RS-232 ports
- One (D-sub) VGA port
- One RJ-45 Ethernet port

Front-right View





Rear View



No.	Description	No.	Description
1	Docking bolt (for the computer)	8	Battery charging contacts
2	Battery charging channel	9	Power Jack
3	Kensington security slot	10	D-Sub VGA port
4	Docking bolts (for the computer)	11	Two RS-232 ports
5	Battery charging status LED	12	Four USB 2.0 host ports
6	Cradle's power status LED	13	RJ-45 Ethernet port
7	Contact pins for the computer		

3.7.1. Status LED

The desktop cradle is provided with two status LED lights to help users monitor the status of the desktop cradle.

Printed Graphic	Subject	State	LED color	Description
	Cradle power status	on	green	The cradle is connected to external power.
	Battery charging status	on	green	The battery in the cradle's charging channel is fully charged.
		on	orange	The battery in the cradle's charging channel is being charged.
		off	N/A	Charging stops for battery protection.

3.7.2. Seat/Dismount the Computer

To use the desktop cradle to charge the batteries or to network with other devices, seat the computer into the desktop first:



To dismantle the computer from the cradle:

1. By the top side of the computer, swing the computer forth so the computer is released from the docking bolt on the cradle.



2. Dismount the computer from the cradle.

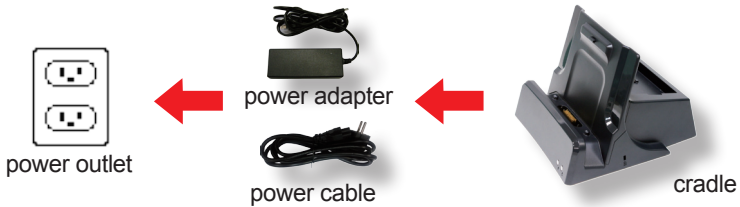
3.7.3. Charge Batteries

To use the desktop cradle to charge the batteries installed on the computer:

1. Install one or both batteries to the computer.



2. Connect the desktop cradle to power supply.





The cradle's power status LED  then lights green to signify that power is connected.

3. Seat the computer into the desktop cradle as described in [3.7.2. Seat/Dismount the Computer](#) on page [58](#).



Seat the computer.

The computer's battery charging status LED  and/or  then lights orange to signify the batteries are being charged. Normally it takes 4 hours to charge the battery to full.

When the charging finishes, the said status LED light green to signify the battery is fully charged. See also [Status LED](#) on page [12](#) to monitor the computer's battery charging.

3.7.4. Charge A Spare Battery

To charge a spare battery using the desktop cradle:

1. Connect the cradle to external power by the power adapter and power cable.




The cradle's power status LED  then lights green to signify that power is connected.

2. Click a spare battery into the cradle's battery channel. Note the contact pins on the battery should meet the contact pins inside the charging channel.



The cradle's battery charging status LED  then lights orange to signify the battery is being charged. Normally it takes 4 hours to charge the battery to full.

When the charging finishes, the cradle's battery charging status LED  will light green to signify the battery is fully charged. See also [3.7.1. Status LED](#) on page [58](#) to monitor the cradle's battery charging.

And also note the following:

- It's recommended not to recharge intermittently, which means not to plug and unplug the power adapter frequently in a short period of time.
- See also [2.4.6.1. Instructions for Rechargeable Battery Pack](#) on page [24](#) to know how to store and use the batteries.

3.7.5. Network with Other Devices

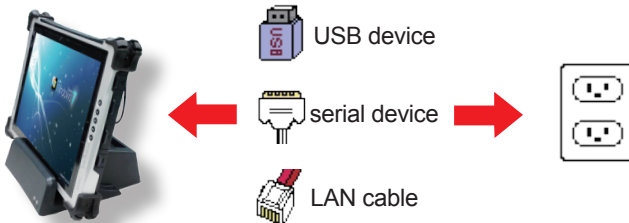
Using the cradle to network with other devices saves you from the perpetual plugging and unplugging of devices/cables.

To use the desktop cradle to network with other devices:

1. Seat the computer into the desktop cradle as described in [3.7.2. Seat/Dismount the Computer](#) on page 58.



2. Connect the serial device, USB device or LAN cable to the cradle's rear ports.



Depending on the feature of the peripheral device, sometimes it is necessary to connect the device to external power.

To ensure nonstop computing, connect the cradle (or the computer) to power supply.

Chapter 4

Utilities

4.1. ARBOR System Suite

The **ARBOR System Suite** is an application program to control the computer's physical function keys **P1** through **P4**. With this **ARBOR System Suite**, users can associate a function key with a specific application program installed on the computer so the application program can be launched when the function key is hit.

As long as the driver is installed for the function keys as described in [2.5.9. Install Function-Keys Driver](#) on page [34](#), the **ARBOR System Suite** is accessible from the operating system's **All Programs**.

4.1.1. Launch ARBOR System Suite

To launch **ARBOR System Suite**:

1. Tap **Start** button | **All Programs** | **ArborFunKey** | **ArborFunKey** .

The **ARBOR System Suite** then opens onscreen.






















See [3.2. Use \(Physical\) Function Keys](#) on page [46](#) to know the default functions the function keys are set to.

4.1.2. User Interface

The **ARBOR System Suite** is based on Graphic User Interface to present a handful of graphic buttons and bars that are tabulated below:



Graphic / Facility	Description
Title bar	Delivers the title and version of the application program.
Status bar	Delivers the on/off status of various devices. When a device is on, its icons is highlighted in blue.
	Closes ARBOR System Suite .
	Associates a function key to turn on/off Wi-Fi. ▶ When the function key is associated with Wi-Fi, the Wi-Fi graphic becomes highlighted in blue. 
	Associates a function key to turn on/off the touch panel. ▶ When the function key is associated with the touch panel, the graphic of touch control becomes highlighted in blue. 
	Associates a function key to enable/mute the speakers. ▶ When the function key is associated with the speaker control, the speaker graphic becomes highlighted in blue. 

	<p>Associates a function key to turn on/off the camera.</p> <ul style="list-style-type: none"> ▶ When the function key is associated with camera control, the camera graphic becomes highlighted in blue. 
	<p>Associates a function key to lock/unlock the screen.</p> <ul style="list-style-type: none"> ▶ When the function key is associated with screen lock, the graphic of screen lock becomes highlighted in blue. 
	<p>Associates a function key to show/hide battery levels and Wi-Fi signal strength.</p> <ul style="list-style-type: none"> ▶ When the function key is associated to deliver battery levels and Wi-Fi signal strength, the graphic becomes highlighted in blue. 
	<p>Associates a function key to open/close ARBOR System Suite.</p> <ul style="list-style-type: none"> ▶ When the function key is associated to launch ARBOR System Suite, the graphic becomes highlighted in blue. 
	<p>Associates a function key to open/close the onscreen keyboard.</p> <ul style="list-style-type: none"> ▶ When the function key is associated with onscreen keyboard control, the graphic becomes highlighted in blue. 
	<p>Associates a function key to a specific application program installed on the computer.</p> <ul style="list-style-type: none"> ▶ When the function key is associated to launch a specific application program, the graphic becomes highlighted in blue.  ▶ See 4.1.3. Customize Function Keys on page 67 for the detailed setting.

4.1.3. Customize Function Keys

To customize a (physical) function key is to associate it to an application program installed on the computer.

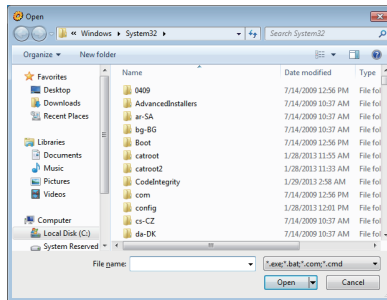
To associate a function key to a specific application program:

1. Launch **ARBOR System Suite** as described in [4.1.1. Launch ARBOR System Suite](#) on page [64](#).

The **ARBOR System Suite** then opens onscreen.

2. From the user interface, tap the button .

An **Explorer** window opens.





3. Browse for the executable file of the application program to associate.

When the setting is done, the function key is able to launch that application program when the function key is hit.

4.2. PenMount Utilities

The computer's touch screen is powered by **PenMount's** touch panel. **PenMount** features two utilities to configure the touch system:

	Utility	Description
	PenMount Control Panel	Tunes the touch screen such as calibration and "edge compensation" (edge sensitivity optimization). See 4.2.1. PenMount Control Panel for more.
	PenMount Gesture	Enables the touch screen to recognize a series of gestures and sets the gestures to launch a variety of functions within the operating system. See 4.2.2. PenMount Gesture for more.

After the driver is installed for the touch panel as described in [2.5.7. Install Touch Screen Driver](#) on page [32](#), both utilities are accessible from the operating system's **All Programs**.

4.2.1. PenMount Control Panel


Access **PenMount Control Panel** to tune the computer's touch screen such as calibration and "edge compensation" (edge sensitivity optimization).

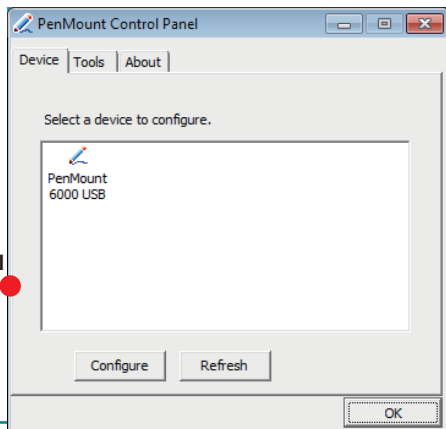
4.2.1.1. Launch PenMount Control Panel

To launch **PenMount Control Panel**:

1. Tap **Start** button | **All Programs** | **PenMount Windows Universal Driver** | **Utilities** | **PenMount Control Panel** 

The **PenMount Control Panel** then opens and shows the **Device** tabbed page while hiding the **Tools** and **About** tabbed pages.

PenMount Control Panel opens. 



A summary of these three tabbed pages:

Tabbed Page	Description
Device	Configures the touch device selected on the Device tabbed page. See 4.2.1.2. Device tabbed page on page 70 for the settings.
Tool	Presents the tool(s) to test the performance of the touch screen.
About	Delivers the developer, version and others of the software.

The following sections will guide you to the available tabbed pages.

4.2.1.2. Device tabbed page

Access the **Device** tabbed page to calibrate the touch screen. The available calibration is **Standard Calibration** and **Advanced Calibrations**.

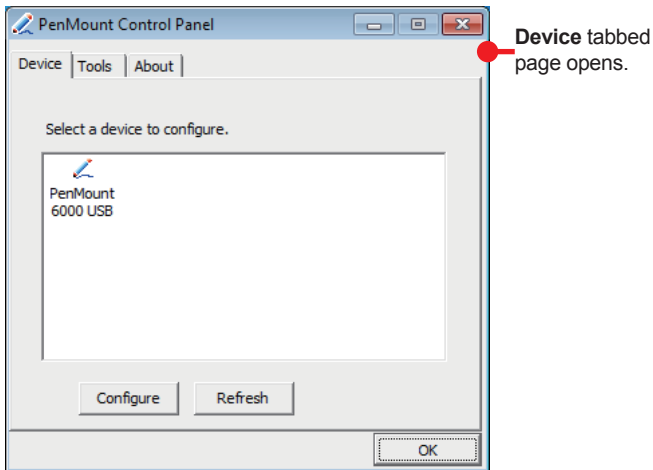
To open the **Device** tabbed page:

1. Open **PenMount Control Panel** as described in [4.2.1.1. Launch PenMount Control Panel](#) on page [68](#).

The **PenMount Control Panel** opens.

2. Tap the **Device** tab.

The **Device** tabbed page opens showing **PenMount's** touch devices present on the computer. (Normally there is only on **PenMount** touch device on the computer, i.e. the resistive touch panel.) The page also features two GUI buttons **Configure** and **Refresh**, which can be summarized below:



A summary of the available GUI buttons:

GUI Button	Description
Configure	Configures the selected touch device. See 4.2.1.2.1. Device # Window on page 71 for the configuration.
Refresh	Refreshes the Device tabbed page.

4.2.1.2.1. Device # Window

Access this **Device #** window to perform **Calibration** and **Edge Compensation** for the touch screen. **Calibration** helps the touch screen recover accuracy after serving for a period of time while **Edge Compensation** optimizes the mouse pointer's accuracy at the edges of the touch screen.

The number sign # presents how many **PenMount** touch device are present on the computer. Normally there is only one **PenMount** touch device on the computer, i.e. the resistive touch screen, and hence the number is normally a zero "0".

To open **Device 0** window:

1. Open the **Device** tabbed page as described in [4.2.1.2. Device tabbed page](#) on page [70](#).

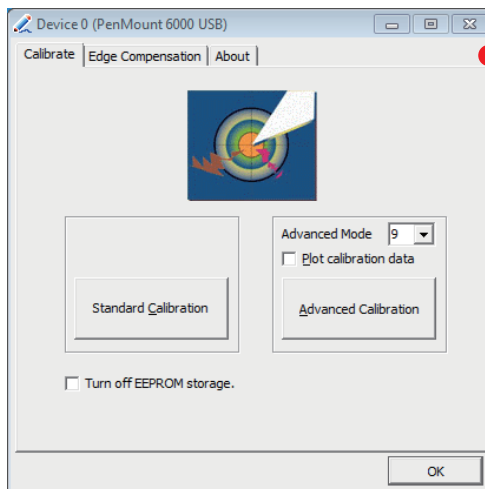
The **Device** tabbed page opens.

2. Tap the touch device to configure. (Normally the **PenMount 6000 USB**.)

The touch device is selected by a highlight.

3. Tap the **Configure** button.

The **Device 0** window then opens and shows the **Calibrate** tabbed page while hiding the **Edge Compensation** and **About** tabbed pages.



Device 0 window opens.

The available tabbed pages on **Device 0** window are summarized below:

Tabbed Page	Description
Calibrate	Calibrates the touch screen by aligning the coordinates of the touch screen and those of the display underneath. See Calibrate tabbed page on page 72.
Edge Compensation	Optimizes the mouse pointer's accuracy at the edges of the touch screen. See Edge Compensation tabbed page on page 74.
About	Delivers the version of PenMount controller board and driver.

- **Calibrate tabbed page**

Since the touch screen is a resistive one, it may also need calibration after serving for a period of time to recover accuracy. It relies on the **Calibrate** tabbed page to perform the calibration, which aligns the coordinates of the touch screen and those of the display underneath.

To open the **Calibrate** tabbed page:

1. Open **Device 0** window as described in [4.2.1.2.1. Device # Window](#) on page 71.

The **Device 0** window opens.

2. Tap the **Calibrate** tab.

The **Calibrate** tabbed page opens.

The UI on the **Calibrate** tabbed page are summarized below:

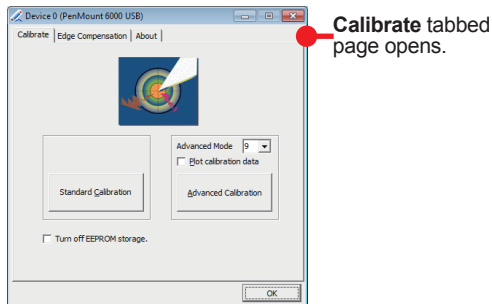
Group Box	Setting	Description
Standard Calibration	Standard Calibration	Performs 4-point calibration, which is detailed in Proceed to Calibrate on page 73.
Advanced Calibration	Advanced Calibration	Performs 9-point, 16-point or 25-point Advanced Calibration .
	Plot calibration data	Enables/disables showing a "linearity comparison graph" when the Advanced Calibration finishes. The graph presents both black lines and blue lines. The black lines reflect the software-assumed ideal linearity while the blue lines show the software-calculated rough linearity.
	Advanced Mode	Sets the Advanced Calibration to 9-point, 16-point or 25-point calibration.
Turn off EEPROM Storage		Enables/disables writing calibration data to the touch screen's control board.

Proceed to Calibrate

Basically the more points are calibrated, the more accuracy is promised. Since different point of calibration are similar, the following will demonstrate the 4-point **Standard Calibration** only.

1. Open the **Calibrate** tabbed page as described in [Calibrate tabbed page](#) on page [72](#).

The **Calibrate** tabbed page opens.



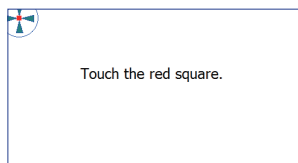
2. Tap the **Standard Calibration** button to run standard calibration.

OR

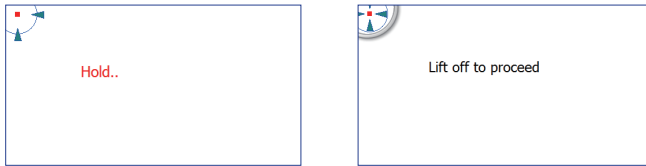
Tap the **Advanced Calibration** button to run the advanced calibration.

(The following will demonstrate the standard calibration only.)

A blank screen then opens and shows a tiny red square in the upper-left corner of the screen, surrounded by a blue circle and arrows.



- Use a stylus to accurately tap-and-hold the said red square until a message **Lift off to proceed** prompts onscreen.



- Repeat the same action for the other four red squares which are to consecutively show onscreen.

Note: If no action is taken within 12 seconds, the calibration will auto-abort. The utility may start over the countdown for an ineffective tap-and-hold.

- Edge Compensation tabbed page**

Access **Edge Compensation** tabbed page to improve the accuracy of mouse pointer at the edges of the touch screen. Note **Edge Compensation** is supported by **Advanced Calibrations** only.

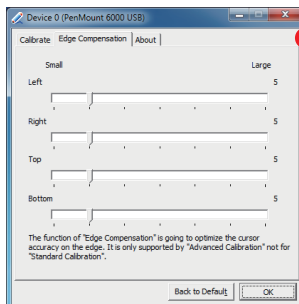
To access the **Edge Compensation** tabbed page:

- Open **Device 0** window as described in [4.2.1.2.1. Device # Window](#) on page [71](#).

The **Device 0** window opens.

- Tap the **Edge Compensation** tab.

The **Edge Compensation** tabbed page opens.



Edge Compensation tabbed page opens.

- Adjust the mouse pointer accuracy at the screen's four edges.
0 to 30 configurable. 5 is the default.
- Tap the **OK** button to apply the change and quit the setting, or tap **Back to Default** to recover the defaults.

- About tabbed page**

Open the **About** tabbed page to view the version of **PenMount** controller board and the driver.

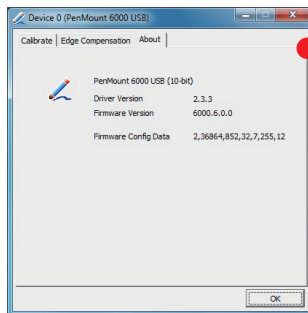
To access the **About** tabbed page:

- Open the **Device 0** window as described in [4.2.1.2.1. Device # Window](#) on page [71](#).

The **Device 0** window opens.

- Tap the **About** tab.

The **About** tabbed page opens.



About tabbed page opens.

4.2.1.3. Tools tabbed page

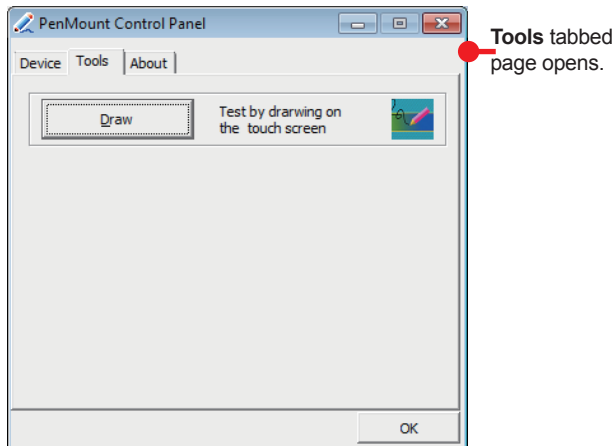
The **Tools** tabbed page features the tool(s) to test the performance of the touch screen. On the computer, only drawing test is featured.

1. Open **PenMount Control Panel** as described in [4.2.1.1. Launch PenMount Control Panel](#) on page [68](#).

The **PenMount Control Panel** opens.

2. Tap the **Tools** tab.

The **Tools** tabbed page then opens and shows a **Draw** button.



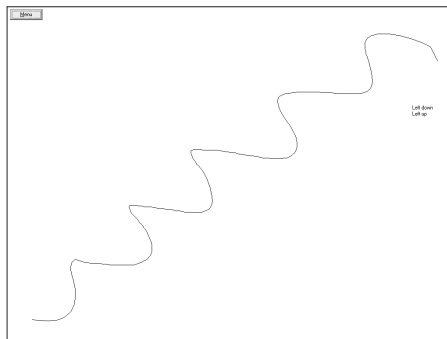
3. Tap the **Draw** button.

A blank screen opens.

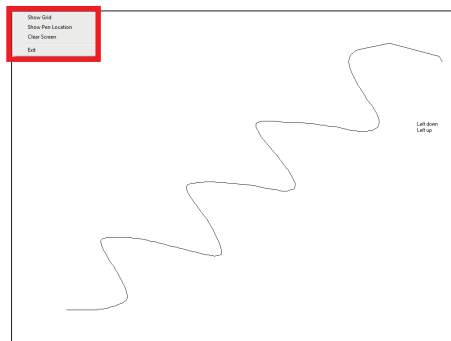


Drawing tool opens.

4. Draw on the touch screen with a stylus or simply your fingertip.

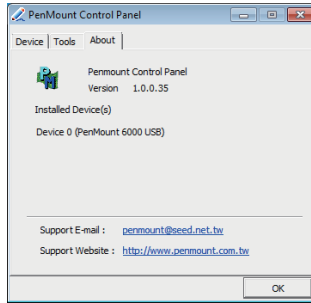


5. Tap the upper left **Menu | Exit** to quit the test.



4.2.1.4. About tabbed page

Access this **About** tabbed page to view the software's title, version, and support contact info.



About tabbed page

4.2.2. PenMount Gesture

PenMount Gesture enables the touch screen to recognize a series of gestures and sets the gestures to launch a variety of functions within the operating system.

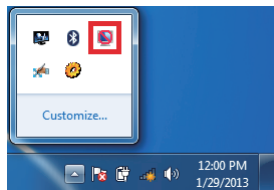
4.2.2.1. Launch PenMount Gesture

To launch **PenMount Gesture**:

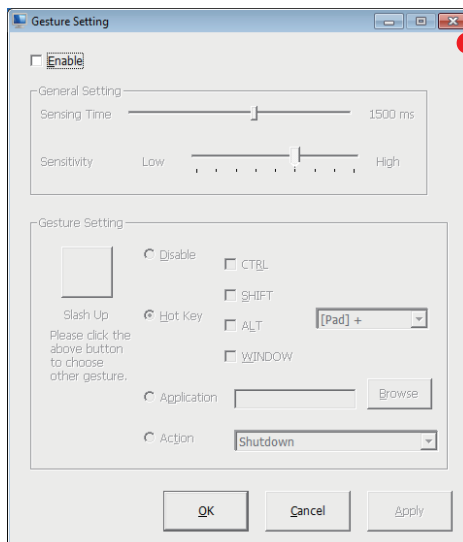
The **PenMount Gesture** is a utility installed with the touch screen driver. As long as the touch screen driver is installed as described in [2.5.7. Install Touch Screen Driver](#) on page [32](#), the **PenMount Gesture** is accessible from the operating system's notification area.

To launch the **PenMount Gesture**:

1. From the notification area, tap **PenMount Gesture** icon .

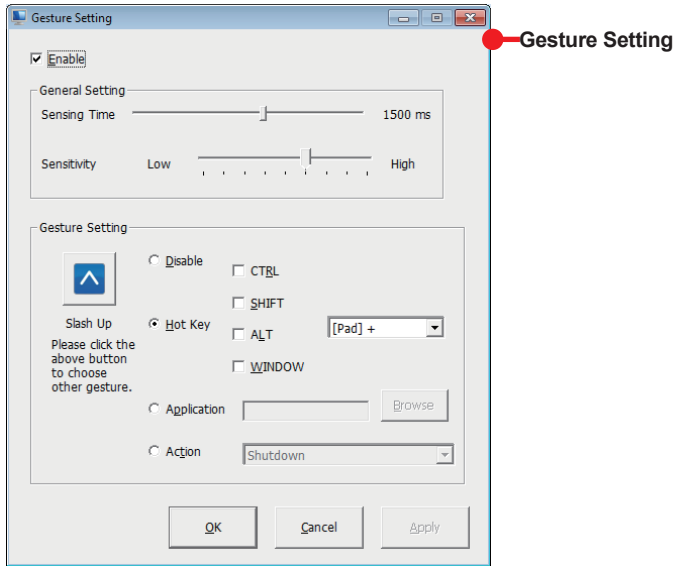


The **Gesture Setting** then opens. (In default state, all settings are unavailable.)


























Gesture Setting opens.

2. Select **Enable** to make all settings available.



The user interface of **PenMount Gesture** is explicated as below:

Group Box	Setting	Description	Default
N/A	Enable	Enables/disables the touch screen to recognize PenMount -supported gestures.	Deselected (Disabled)
General Setting	Sensing Time	Adjusts the gesture sensing time between 200 ms (0.2 ms) and 2500 ms (2.5 sec). ▶ The shorter the sensing time is set to, the faster a gesture has to be made.	1500 ms
	Sensitivity	Adjusts how sensitive is a gesture detected on the touch screen.	Mid-to-high

Gesture Setting		<p>Selects a gesture.</p> <ul style="list-style-type: none"> The available gestures are: <table border="1"> <thead> <tr> <th>Gesture</th> <th>Description (Default values in Windows 7)</th> </tr> </thead> <tbody> <tr> <td> Slash up</td> <td>Zooms in ([Pad] +)</td> </tr> <tr> <td> Slash down</td> <td>Zooms out ([Pad] -)</td> </tr> <tr> <td> Slash left</td> <td>Rotates counter-clockwise (Ctrl + .)</td> </tr> <tr> <td> Slash right</td> <td>Rotates clockwise (Ctrl + .)</td> </tr> <tr> <td> Triangle</td> <td>Opens the onscreen keyboard (Runs OSK.EXE)</td> </tr> <tr> <td> Circle</td> <td>Saves files (Ctrl + S)</td> </tr> <tr> <td> Cross</td> <td>Quits program (Alt + F4)</td> </tr> </tbody> </table>	Gesture	Description (Default values in Windows 7)	 Slash up	Zooms in ([Pad] +)	 Slash down	Zooms out ([Pad] -)	 Slash left	Rotates counter-clockwise (Ctrl + .)	 Slash right	Rotates clockwise (Ctrl + .)	 Triangle	Opens the onscreen keyboard (Runs OSK.EXE)	 Circle	Saves files (Ctrl + S)	 Cross	Quits program (Alt + F4)	 Slash-up
	Gesture	Description (Default values in Windows 7)																	
	 Slash up	Zooms in ([Pad] +)																	
	 Slash down	Zooms out ([Pad] -)																	
 Slash left	Rotates counter-clockwise (Ctrl + .)																		
 Slash right	Rotates clockwise (Ctrl + .)																		
 Triangle	Opens the onscreen keyboard (Runs OSK.EXE)																		
 Circle	Saves files (Ctrl + S)																		
 Cross	Quits program (Alt + F4)																		
Disable	Disables the selected gesture.	Deselected (Gesture enabled.)																	
Hot Key	<p>Associates the selected gesture with a hot-key, which normally involves hitting two keys, usually a modifier key (Ctrl, Shift, Alt or Windows key) plus a character key.</p> <ul style="list-style-type: none"> A gesture can be associated with up to 5 hot-keys. 	Selected (Enabled)																	
Application	Sets the selected gesture to launch an application program installed on the computer.	Deselected (Disabled)																	

	<p>Action</p>	<p>Associates the selected gesture to launch an action from the O.S.</p> <ul style="list-style-type: none"> ▶ The available actions are: <div data-bbox="483 252 754 411" style="border: 1px solid black; padding: 2px; margin: 5px 0;"> <div style="background-color: #e0e0e0; padding: 2px;">Shutdown ▾</div> <div style="background-color: #c0c0c0; padding: 2px;">Shutdown</div> <div style="padding: 2px;">Send Right Mouse Click</div> <div style="padding: 2px;">Send Middle Mouse Click</div> <div style="padding: 2px;">Mouse Scroll Forward</div> <div style="padding: 2px;">Mouse Scroll Backward</div> <div style="padding: 2px;">Disable touch function</div> <div style="padding: 2px;">Enable touch function</div> </div> <ul style="list-style-type: none"> • Shutdown (system shutdown), • Send Right Mouse Click • Send Middle Mouse Click (Click mouse scroll wheel) • Mouse Scroll Forward • Mouse Scroll Backward • Disable touch function (Disables the touch screen) • Enable touch function (Enables the touch screen) ▶ When set to Disable touch function, the mouse pointer onscreen won't react to any touch but gesture recognition will still work. 	<p>Deselected (Disabled)</p>
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Chapter 5

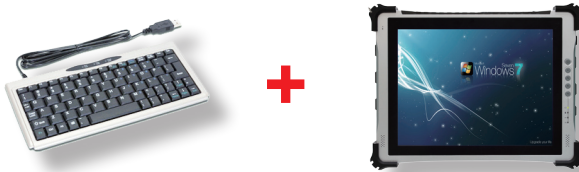
BIOS

BIOS

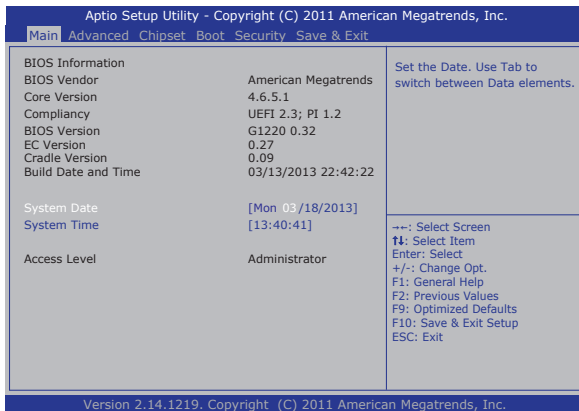
The BIOS Setup utility for the computer is featured by American Megatrends Inc to configure the system settings stored in the system's BIOS ROM. The BIOS is activated once the computer powers on. When the computer is off, the battery on the main board supplies power to BIOS RAM.

To access the BIOS Setup utility:

1. Have a USB keyboard and connect it to the computer.



2. Power on the computer.
3. When seeing POST (Power-on Self Test) message onscreen, keep hitting "Delete" key until the BIOS Setup utility opens onscreen:



The featured menus are:

Menu	Description
Main	See 5.1. Main on page 86 .
Advanced	See 5.2. Advanced on page 87 .
Chipset	See 5.3. Chipset on page 92 .
Boot	See 5.4. Boot on page 93 .
Security	See 5.5. Security on page 95 .
Save & Exit	See 5.6. Save & Exit on page 97 .

Key Commands

The BIOS Setup utility relies on a keyboard to work. Hit the following keys to navigate within the utility and change settings.

Keystroke	Function
← →	Moves left/right between the top menus.
↓ ↑	Moves up/down between highlight items.
Enter	Selects an highlighted item/field.
Esc	<ul style="list-style-type: none"> ▶ On the top menus: Use Esc to quit the utility without saving changes to CMOS. (The screen will prompt a message asking you to select OK or Cancel to exit discarding changes. ▶ On the submenus: Use Esc to quit current screen and return to the top menu.
Page Up / +	Increases current value to the next higher value or switches between available options.
Page Down / -	Decreases current value to the next lower value or switches between available options.
F1	Opens the Help of the BIOS Setup utility.
F10	Exits the utility saving the changes that have been made. (The screen then prompts a message asking you to select OK or Cancel to exit saving changes.)

Note: Pay attention to the “WARNING” that shows at the left pane onscreen when making any change to the BIOS settings.

5.1. Main

The **Main** menu features **System Date** and **System Time** settings and displays some BIOS info.

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Main | Advanced | Chipset | Boot | Security | Save & Exit

BIOS Information BIOS Vendor Core Version Compliancy BIOS Version EC Version Cradle Version Build Date and Time	American Megatrends 4.6.5.1 UEFI 2.3; PI 1.2 G1220 0.32 0.27 0.09 03/13/2013 22:42:22	Set the Date. Use Tab to switch between Data elements.
System Date System Time	[Mon 03/18/2013] [13:40:41]	→+: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F9: Optimized Defaults F10: Save & Exit Setup ESC: Exit
Access Level	Administrator	

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The BIOS info displayed is tabulated as below:

Info	Description
BIOS Vendor	Delivers the provider of the BIOS Setup utility.
Core Version	Delivers the version of the core.
Compliancy	Delivers the UEFI support.
BIOS Version	Delivers the computer's BIOS version.
EC Version	Delivers the computer's EC (embedded control) version.
Cradle Version	Delivers the cradle's firmware version. ▶ This info is only available when the computer is seated in the cradle.
Build Date and Time	Delivers the date and time when the BIOS Setup utility was made/updated.
Access Level	Delivers the level that the BIOS is being accessed at the moment. ▶ Two levels are available: the Administrator level and User level. See 5.5. Security on page 95 for details.

The featured settings are:

Setting	Description
System Time	Sets system time.
System Date	Sets system date.

5.2. Advanced

Access the **Advanced** menu to configure the system’s CPU, IDE, USB, Super IO chip, battery charging and thermal settings.

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Main **Advanced** Chipset Boot Security Save & Exit

Wake ON LAN [Enabled] CPU C6 state [Enabled] Battery Charge/Discharge Mode [Full Battery Mode] ▶ CPU Configuration ▶ Thermal Configuration ▶ IDE Configuration ▶ USB Configuration ▶ Super IO Configuration	Wake ON LAN Enable/Disable →+: Select Screen ↓ ↑: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F9: Optimized Defaults F10: Save & Exit Setup ESC: Exit
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The featured settings and submenus are:

Setting / Submenu	Description
Wake ON LAN	Enables/disables Wake ON LAN , which allows turning on the computer over the network. ▶ Enabled is the default.
CPU C6 State	Enables/disables CPU C6 state , a “deep down” power state of CPU. ▶ Enabled is the default.

<p>Battery Charge/ Discharge Mode</p>	<p>Defines battery recharge timing to help extend battery lifespan. This function is particularly helpful if the computer often works connected to external power supply.</p> <ul style="list-style-type: none"> ▶ Options available are: <table border="1" data-bbox="387 272 1013 451"> <thead> <tr> <th data-bbox="387 272 524 308">Setting</th> <th data-bbox="524 272 1013 308">Description</th> </tr> </thead> <tbody> <tr> <td data-bbox="387 308 524 395"> <p>Full Battery Mode</p> </td> <td data-bbox="524 308 1013 395"> <p>The maximum battery level is 100%, and the time to recharge is when the battery level drops to 80%. (The default.)</p> </td> </tr> <tr> <td data-bbox="387 395 524 451"> <p>UPS Mode</p> </td> <td data-bbox="524 395 1013 451"> <p>The maximum battery level is 50%, and the time to recharge is when the battery level drops to 20%.</p> </td> </tr> </tbody> </table> <ul style="list-style-type: none"> ▶ See also 2.4.1. Extend Battery Lifespan on page 20. 	Setting	Description	<p>Full Battery Mode</p>	<p>The maximum battery level is 100%, and the time to recharge is when the battery level drops to 80%. (The default.)</p>	<p>UPS Mode</p>	<p>The maximum battery level is 50%, and the time to recharge is when the battery level drops to 20%.</p>
Setting	Description						
<p>Full Battery Mode</p>	<p>The maximum battery level is 100%, and the time to recharge is when the battery level drops to 80%. (The default.)</p>						
<p>UPS Mode</p>	<p>The maximum battery level is 50%, and the time to recharge is when the battery level drops to 20%.</p>						
<p>CPU Configuration</p>	<p>Delivers CPU details and configures the CPU. See 5.2.1. CPU Configuration on page 89 for more details.</p>						
<p>Thermal Configuration</p>	<p>Configures the system's thermal parameters. See 5.2.2. Thermal Configuration on page 90 for more details</p>						

5.2.1. CPU Configuration

Select **CPU Configuration** to run a report of CPU features such as: the processor's model name, speed, microcode revision, the amount of processor core(s), CPU caches and so on.

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Main **Advanced** Chipset Boot Security Save & Exit

CPU Configuration		Enabled for Windows XP and Linux (OS optimized for Hyper-Threading Technology) and Disabled for other OS (OS not optimized for Hyper-Threading Technology).
Processor Type	Intel(R) Atom(TM) CPU	
EMT64	Supported	
Processor Speed	1600 MHz	
System Bus Speed	400 MHz	
Ratio Status	16	
Actual Ratio	16	
System Bus Speed	400 MHz	
Processor Stepping	30661	
Microcode Revision	269	
L1 Cache RAM	2x56 k	→←: Select Screen ↓↑: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F9: Optimized Defaults F10: Save & Exit Setup ESC: Exit
L2 Cache RAM	2x512 k	
Processor Core	Dual	
Hyper-Threading	[Enabled]	

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CPU Configuration also features the following setting:

Setting	Description
Hyper-Threading	Enables/disables Hyper-Threading, which allows the processor to work more efficiently by processing two sets of instructions at the same time. <ul style="list-style-type: none"> ▶ Select Enabled for Windows XP and Linux, which are optimized for Hyper-Threading technology. (This is the default setting.) ▶ Select Disabled for other OS that are not optimized for Hyper-Threading. ▶ When disabled, only one thread per enabled core is enabled.

5.2.2. Thermal Configuration

The **Thermal Configuration** features the following submenu to configure the system's thermal parameters:

Submenu	Description											
CPU Thermal Configuration	Configures the CPU's thermal parameters by the following setting:											
	<table border="1"> <thead> <tr> <th data-bbox="300 373 420 405">Setting</th> <th data-bbox="420 373 1009 405">Description</th> </tr> </thead> <tbody> <tr> <td data-bbox="300 405 420 730">DTS SMM</td> <td data-bbox="420 405 1009 730"> <p>Sets how to obtain the CPU temperature.</p> <ul style="list-style-type: none"> ▶ DTS means the on-die "Digital Thermal Sensor", and SMM means "System Management Mode", a real-mode environment with 32-bit data access which is activated in response to an interrupt type or using the System Management Interrupt (SMI) pin. ▶ Select Disabled to have ACPI thermal management use EC reported temperature values. (The default setting.) ▶ Select Enabled to have ACPI thermal management use DTS SMM mechanism to obtain CPU temperature values. ▶ Select Critical Temp Reporting (Out of Spec) to have ACPI management use EC reported temperature values and have DTS SMM handle the out-of-spec. </td> </tr> </tbody> </table>	Setting	Description	DTS SMM	<p>Sets how to obtain the CPU temperature.</p> <ul style="list-style-type: none"> ▶ DTS means the on-die "Digital Thermal Sensor", and SMM means "System Management Mode", a real-mode environment with 32-bit data access which is activated in response to an interrupt type or using the System Management Interrupt (SMI) pin. ▶ Select Disabled to have ACPI thermal management use EC reported temperature values. (The default setting.) ▶ Select Enabled to have ACPI thermal management use DTS SMM mechanism to obtain CPU temperature values. ▶ Select Critical Temp Reporting (Out of Spec) to have ACPI management use EC reported temperature values and have DTS SMM handle the out-of-spec. 							
Setting	Description											
DTS SMM	<p>Sets how to obtain the CPU temperature.</p> <ul style="list-style-type: none"> ▶ DTS means the on-die "Digital Thermal Sensor", and SMM means "System Management Mode", a real-mode environment with 32-bit data access which is activated in response to an interrupt type or using the System Management Interrupt (SMI) pin. ▶ Select Disabled to have ACPI thermal management use EC reported temperature values. (The default setting.) ▶ Select Enabled to have ACPI thermal management use DTS SMM mechanism to obtain CPU temperature values. ▶ Select Critical Temp Reporting (Out of Spec) to have ACPI management use EC reported temperature values and have DTS SMM handle the out-of-spec. 											
Platform Thermal Configuration	Configures the platform's thermal parameters by the following settings:											
	<table border="1"> <thead> <tr> <th data-bbox="300 772 490 804">Setting</th> <th data-bbox="490 772 1009 804">Description</th> </tr> </thead> <tbody> <tr> <td data-bbox="300 804 490 954">Critical Trip Point</td> <td data-bbox="490 804 1009 954"> <p>Sets the "Critical Trip Point", the threshold temperatures at which the OS will shut off the system.</p> <ul style="list-style-type: none"> ▶ Options available are: POR (meaning "Plan of Record", the default setting), 15 C, 23 C, 31 C, 39 C, 47 C, 55 C, 63 C, 71 C, 79 C, 87 C, 95 C, 103 C, 111 C, 119 C, 127 C. </td> </tr> <tr> <td data-bbox="300 954 490 1082">Active Trip Point Lo Fan Speed</td> <td data-bbox="490 954 1009 1082"> <p>Sets the ACPI "active trip point" temperature for the OS to turn on the CPU fan low, or disables the feature.</p> <ul style="list-style-type: none"> ▶ Options available are: Disabled, 15 C, 23 C, 31 C, 39 C, 47 C, 55 C (the default), 63 C, 71 C, 79 C, 87 C, 95 C, 103 C, 111 C, 119 C. </td> </tr> <tr> <td data-bbox="300 1082 490 1209">Active Trip Point Hi Fan Speed</td> <td data-bbox="490 1082 1009 1209"> <p>Sets the ACPI "active trip point" temperature for the OS to turn on the CPU fan high, or disables the feature.</p> <ul style="list-style-type: none"> ▶ Options available are: Disabled, 15 C, 23 C, 31 C, 39 C, 47 C, 55 C, 63 C, 71 C (the default), 79 C, 87 C, 95 C, 103 C, 111 C, 119 C. </td> </tr> <tr> <td data-bbox="300 1209 490 1345">Passive Trip Point</td> <td data-bbox="490 1209 1009 1345"> <p>Sets the ACPI "passive trip point" temperature for the OS to start throttling the CPU, or disables the feature.</p> <ul style="list-style-type: none"> ▶ Options available are: Disabled, 15 C, 23 C, 31 C, 39 C, 47 C, 55 C, 63 C, 71 C, 79 C, 87 C, 95 C (the default), 103 C, 111 C, 119 C. </td> </tr> </tbody> </table>	Setting	Description	Critical Trip Point	<p>Sets the "Critical Trip Point", the threshold temperatures at which the OS will shut off the system.</p> <ul style="list-style-type: none"> ▶ Options available are: POR (meaning "Plan of Record", the default setting), 15 C, 23 C, 31 C, 39 C, 47 C, 55 C, 63 C, 71 C, 79 C, 87 C, 95 C, 103 C, 111 C, 119 C, 127 C. 	Active Trip Point Lo Fan Speed	<p>Sets the ACPI "active trip point" temperature for the OS to turn on the CPU fan low, or disables the feature.</p> <ul style="list-style-type: none"> ▶ Options available are: Disabled, 15 C, 23 C, 31 C, 39 C, 47 C, 55 C (the default), 63 C, 71 C, 79 C, 87 C, 95 C, 103 C, 111 C, 119 C. 	Active Trip Point Hi Fan Speed	<p>Sets the ACPI "active trip point" temperature for the OS to turn on the CPU fan high, or disables the feature.</p> <ul style="list-style-type: none"> ▶ Options available are: Disabled, 15 C, 23 C, 31 C, 39 C, 47 C, 55 C, 63 C, 71 C (the default), 79 C, 87 C, 95 C, 103 C, 111 C, 119 C. 	Passive Trip Point	<p>Sets the ACPI "passive trip point" temperature for the OS to start throttling the CPU, or disables the feature.</p> <ul style="list-style-type: none"> ▶ Options available are: Disabled, 15 C, 23 C, 31 C, 39 C, 47 C, 55 C, 63 C, 71 C, 79 C, 87 C, 95 C (the default), 103 C, 111 C, 119 C. 	
	Setting	Description										
	Critical Trip Point	<p>Sets the "Critical Trip Point", the threshold temperatures at which the OS will shut off the system.</p> <ul style="list-style-type: none"> ▶ Options available are: POR (meaning "Plan of Record", the default setting), 15 C, 23 C, 31 C, 39 C, 47 C, 55 C, 63 C, 71 C, 79 C, 87 C, 95 C, 103 C, 111 C, 119 C, 127 C. 										
	Active Trip Point Lo Fan Speed	<p>Sets the ACPI "active trip point" temperature for the OS to turn on the CPU fan low, or disables the feature.</p> <ul style="list-style-type: none"> ▶ Options available are: Disabled, 15 C, 23 C, 31 C, 39 C, 47 C, 55 C (the default), 63 C, 71 C, 79 C, 87 C, 95 C, 103 C, 111 C, 119 C. 										
Active Trip Point Hi Fan Speed	<p>Sets the ACPI "active trip point" temperature for the OS to turn on the CPU fan high, or disables the feature.</p> <ul style="list-style-type: none"> ▶ Options available are: Disabled, 15 C, 23 C, 31 C, 39 C, 47 C, 55 C, 63 C, 71 C (the default), 79 C, 87 C, 95 C, 103 C, 111 C, 119 C. 											
Passive Trip Point	<p>Sets the ACPI "passive trip point" temperature for the OS to start throttling the CPU, or disables the feature.</p> <ul style="list-style-type: none"> ▶ Options available are: Disabled, 15 C, 23 C, 31 C, 39 C, 47 C, 55 C, 63 C, 71 C, 79 C, 87 C, 95 C (the default), 103 C, 111 C, 119 C. 											

	Passive TC1 Value	Sets the TC1 value, a "thermal constant" for ACPI passive cooling formula. <ul style="list-style-type: none">▶ 1 to 16 configurable.▶ 1 is the default.
	Passive TC2 Value	Sets the TC2 value, a "thermal constant" for ACPI passive cooling formula. <ul style="list-style-type: none">▶ 1 to 16 configurable.▶ 5 is the default.
	Passive TSP Value	Sets the TSP ("thermal sampling period", in tenths of seconds), which means how often the OS reads the temperature when passive cooling is enabled. <ul style="list-style-type: none">▶ 2 to 32 configurable.▶ 10 is the default.

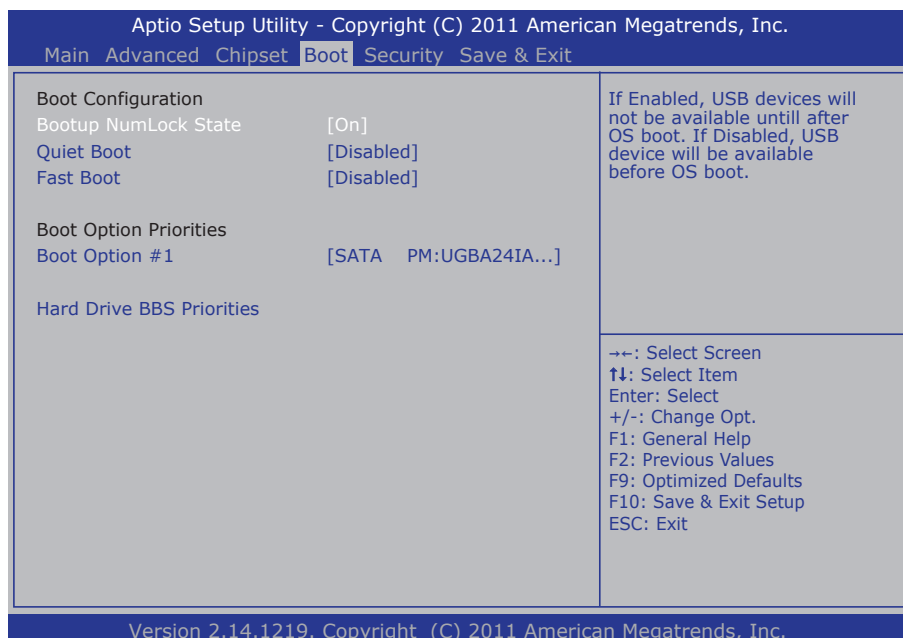
5.3. Chipset

Access the **Chipset** menu to view memory frequency and memory capacity.

The screenshot displays the Aptio Setup Utility interface. At the top, the title bar reads "Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc." Below this, a navigation bar contains the following menu items: "Main", "Advanced", "Chipset" (which is highlighted with a blue background), "Boot", "Security", and "Save & Exit". The main content area is divided into two sections. The upper section, titled "***** Memory Information *****", displays the following data: "Memory Frequency" is set to "800 MHz (DDR3)", and "Total Memory" is "2048 MB". The lower section contains a list of navigation instructions: "→←: Select Screen", "↓↑: Select Item", "Enter: Select", "+/-: Change Opt.", "F1: General Help", "F2: Previous Values", "F9: Optimized Defaults", "F10: Save & Exit Setup", and "ESC: Exit". At the bottom of the screen, a footer bar indicates "Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc."

5.4. Boot

The **Boot** menu configures how to boot up the system such as boot device priority.



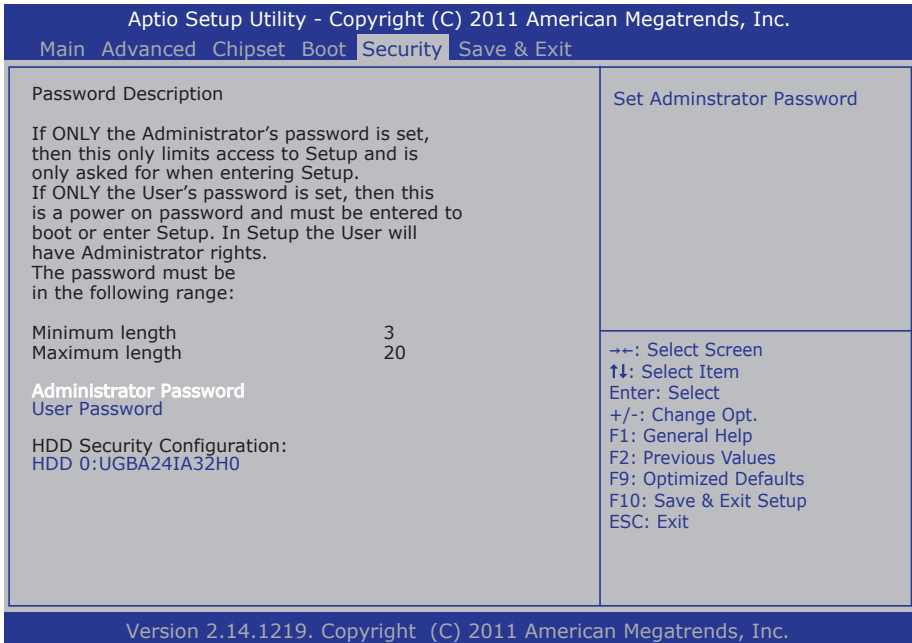
The featured settings and submenu are:

Group	Setting	Description
Boot Configuration	Bootup NumLock State	Sets the keyboard's NumLock state when the system boots up. <ul style="list-style-type: none"> Options available are On (default) and Off.
	Quiet Boot	Sets whether to display the POST (power on self tests) message during booting. <ul style="list-style-type: none"> Select Disabled to display the POST message, which is the default. Select Enabled to display the logo of the BIOS provider (AMI) only.
	Fast Boot	Enables/disables initializing only a minimal set of devices required to launch the active boot options when booting up the system. <ul style="list-style-type: none"> Disabled is the default. This setting has no effect on BBS (BIOS Boot Specification) options. When enabled, the following settings become available:

		Setting	Description
		Skip VGA	This setting isn't available.
		Skip USB	<p>Enables/disables skipping USB devices when booting up the system.</p> <ul style="list-style-type: none"> ▶ When enabled, the USB devices won't be available until OS startup. ▶ When disabled, the USB devices are available before OS startup. This is the default.
		Skip PS2	<p>Enables/disables skipping PS2 (keyboard and mouse) devices when booting up the system.</p> <ul style="list-style-type: none"> ▶ Disabled is the default.
Boot Option Priorities	Boot Option #1	Sets the very 1st boot device among the available device types. <ul style="list-style-type: none"> ▶ Option(s) available are the available device type(s). 	
Hard Drive BBS Priorities		Sets the very 1st boot device among the available storage drives. <ul style="list-style-type: none"> ▶ The computer's built-in mSATA storage is the default. 	

5.5. Security

The **Security** menu sets up the passwords for the system’s user account and the administrator account.



The featured setting is:

Group	Setting	Description
Administrator Password		Sets up an administrator password. To set up an administrator password: <ol style="list-style-type: none"> 1. Select Administrator Password. An Create New Password dialog then opens onscreen. 2. Enter your desired password that is no less than 3 characters and no more than 20 characters 3. Hit [Enter] key to submit. <p>▶ Once the administrator password is set up, this BIOS Setup utility is limited to access and will ask for the password each time any access is attempted.</p>
User Password		Sets up a generic user's password. Follow the guide above to set it up. <p>▶ Once the user password is set up, the computer will ask for the password before the operating system can start.</p>

HDD Security Configuration	Storage device name	Enables the security to protect the storage device from unauthorized access by creating the following passwords:	
		Password	Description
		User Password	This password will be requested during the POST.
		Master Password	This password is only requested if the User Password is wrongly entered for three times during the POST. Use the Master Password to delete the User Password .

5.6. Save & Exit

The **Save & Exit** menu features a few commands to launch actions from the BIOS Setup utility regarding saving changes, quitting the utility and recovering defaults.

Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc.	
Main Advanced Chipset Boot Security Save & Exit	
Save Changes and Reset Discard Changes and Exit Restore Defaults Boot Override SATA PM:UGBA24IA32HDT1X	Exit system setup after saving the changes.
	→←: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F9: Optimized Defaults F10: Save & Exit Setup ESC: Exit
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Features settings are:

Setting	Description
Save Changes and Reset	Saves the changes and quits the BIOS Setup utility.
Discard Changes and Exit	Quits the BIOS Setup utility without saving the change(s).
Restore Defaults	Restores all settings to defaults. ▶ This is a command to launch an action from the BIOS Setup utility rather than a setting.
Boot Override	Reboots the system by one of the device listed thereunder, regardless of the currently configured boot priority. ▶ This is a command to launch an action from the BIOS Setup utility rather than a setting.