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## **Certification Exhibit**

**FCC ID: UGL633ANH  
IC: 7888B-633ANH**

**FCC Rule Part: 15C, 15E  
IC Radio Standards Specification: RSS-210**

**ACS Project Number: 11-2044**

**Manufacturer: DRS Tactical Systems  
Model: 633ANHMW**

## **User Manual**

# ARMOR

USER'S GUIDE | REVISION D

## MODEL X10gx TABLET COMPUTER

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## ARMOR X10gx Tablet Computer



RF  
DOCK



UNIVERSAL DOCK WITH  
KEYBOARD TRAY



BATTERY  
CHARGER



DESK DOCK



BREAKOUT BOX



VEHICLE  
POWER SUPPLY



COMPACT  
KEYBOARD

To learn more about ARMOR accessories, please call 1-888-872-1100

## ARMOR X10gx Tablet Computer

### Trade Compliance Statement

THIS DOCUMENT CONTAINS TECHNOLOGY CONTROLLED UNDER THE U.S. EXPORT ADMINISTRATION REGULATIONS (EAR) AND MAY NOT BE EXPORTED OR TRANSFERRED TO ANY FOREIGN PERSON, FOREIGN COUNTRY OR FOREIGN ENTITY, BY ANY MEANS, WITHOUT PRIOR WRITTEN APPROVAL FROM THE U.S. DEPARTMENT OF COMMERCE, BUREAU OF INDUSTRY AND SECURITY (BIS) AND DRS TECHNOLOGIES.

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### Other Compliance:

#### United States

- 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.
- 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.
- CAUTION: Changes or modifications not expressly approved by DRS Tactical Systems could void the user's authority to operate the equipment.
- For body-worn operation, this computer has been tested and meets the FCC RF exposure guidelines set forth for a portable device in an uncontrolled environment when used with ARMOR supplied accessories, or accessories designed specifically for this product. Use of other accessories may not ensure compliance with FCC RF exposure guidelines.
- When used with an external antenna, the antenna should have an impedance of 50 ohms and a gain not to exceed +5dBi. To comply with FCC RF exposure requirements, separation distance of at least 20 cm (8 in) should be maintained between the external antenna and all persons.
- Within the 5.15 – 5.25 GHz band, operation is restricted to indoors operations.
- 

#### Canada

- This Class B digital apparatus complies with Canada ICES-003, Issue 4 June 7, 2004 and license-exempt RSS standards RSS-210, Issue No 8 (December 2010), RSS-132 Issue No. 2 (September 2005), and RSS-133 Issue No. 5 (February 2009). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference that may cause undesired operation of the device.

## ARMOR X10gx Tablet Computer

- Cet appareil numérique de classe B est conforme à Industrie Canada ICES-003, numéro 4 Juin 7, 2004 et exempts de licence normes RSS RSS-210, Issue n ° 8 (Décembre 2010), CNR-132 fascicule n o 2 (Septembre 2005), et RSS-133 fascicule n ° 5 (Février 2009). Son fonctionnement est soumis aux deux conditions suivantes: (1) cet appareil ne peut pas provoquer d'interférences et (2) cet appareil doit accepter toute interférence pouvant causer un fonctionnement indésirable de l'appareil.
- This product is restricted to indoor use when operating in the 5.15 to 5.25-GHz frequency range. Industry Canada requires this product to be used indoors to reduce the potential for harmful interference to co-channel mobile satellite systems.
- Operation in the 2.4 GHz band: To prevent radio interference to the licensed service, this device is intended to be operated indoors and away from windows to provide maximum shielding. Equipment (or its transmit antenna) that is installed outdoors is subject to licensing.
- Pour empêcher que cet appareil cause du brouillage au service faisant l'objet d'une licence, il doit être utilisé à l'intérieur et devrait être placé loin des fenêtres afin de fournir un écran de blindage maximal. Si le matériel (ou son antenne d'émission) est installé à l'extérieur, il doit faire l'objet d'une licence.
- Be advised that high-power radars are allocated as primary users (i.e. priority users) of the bands 5250 – 5350 MHz and 5650 – 5850 MHz and that these radars could cause interference and/or damage to WLAN devices.
- Under Industry Canada regulations, the WLAN radio transmitter may only be operated using an antenna of a type and maximum gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (EIRP) is not more than that necessary for successful communication.
- This radio transmitter 7888B-633ANH has been approved by Industry Canada to operate with the antenna types listed below with the maximum permissible gain and required antenna impedance for each antenna type indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.
  - Mobile Mark SMW-301-xxxx, MGW-301-xxxx  
Gain: =5dBi in 2.4 GHz and 5 GHz bands  
Impedance: 50 ohms

### Europe

- This X10gx tablet computer has been tested for compliance with ATEX directive 94/9/EC.
-  This equipment complies with the essential requirements of the European Union directive 1999/5/EC
- 
- This equipment may be operated in AT, BE, BG, CY, CZ, DK, EE, FI, FR, DE, GR, HU, IS, IE, IT, LV, LT, LU, MT, NL, NO, PL, PT, RO, SK, SI, ES, SE, CH, LE, UK, HR, MK, TR.
- The frequency band 5150 – 5350 MHz is restricted to indoor use
- FR: The 2400 – 2483.5 MHz frequency band is restricted to indoor use
- IT: For private use, a general authorization is required if RLAN is used outside of own premises. For public use, a general authorization is required.
- NO: 2400 – 2483.5 MHz band use is not allowed within the geographical area within a radius of 20 km from the centre of Ny-Ålesund.

## ARMOR X10gx Tablet Computer



## ENERGY STAR® Compliance

DRS Tactical Systems is proud to be an ENERGY STAR partner with the US Environmental Protection Agency. We are dedicated to helping you conserve energy whenever you use this product. Your ARMOR X10gx has power management settings that will reduce its overall energy use. By using energy more efficiently, you will extend the life of your batteries and your computer. Not only will you save money, but far more importantly, you will help reduce the overall demand for energy and benefit not only our economy but our environment as well.

For instructions on how to select a power plan that fits your operating needs but also helps conserve energy, please refer to [How to Optimize Energy Use](#). For a description of the default power management settings for this computer, see [The Default Power Plan for your X10gx](#).



### NOTE

*The default power management settings for this computer comply with the ENERGY STAR program recommendations for optimum energy savings.*

If you would like more information about the ENERGY STAR program, please visit [www.energystar.gov/powermanagement](http://www.energystar.gov/powermanagement).

## ARMOR X10gx Tablet Computer



### DECLARATION OF CONFORMITY

We, DRS Tactical Systems, Inc., 1110 West Hibiscus Blvd., Melbourne, FL 32901, USA Phone: 321-727-3672, declare under our sole responsibility that the product,

**Model** Armor X10gx / T2130

**Type** Tablet PC

To which this declaration relates to is in conformity with the following standards, specifications and directives:

#### Standards

- EN60950-1:2006 + A11:2009 + A1:2010 Safety of Information Technology Equipment, EU
- Council Recommendation 1999/519/EC of 12 July 1999 Limitation of exposure to the general public to electromagnetic fields (0Hz to 300 GHz)
- EN 301 893: V1.5.1 (2008-12) Broadband Radio Access Networks (BRAN); 5 GHz high performance RLAN
- EN 300 328: V1.7.1 (2006-10) Electromagnetic compatibility and Radio spectrum Matters (ERM); Wideband transmission systems
- EN 301 908-1 V3.2.1 Part 1: Harmonized EN for IMT-2000, introduction and common requirements, covering essential requirements of Article 3.2 of the R&TTE Directive
- EN 301 908-2 V3.2.1 Part 2: Harmonized EN for IMT-2000, CDMA Direct Spread (UTRA FDD) (UE) covering essential requirements of Article 3.2 of the R&TTE Directive
- EN 301 511 V9.0.2 Global System for Mobile communications (GSM); Harmonized EN for mobile stations in the GSM 900 and GSM 1800 bands covering essential requirements under Article 3.2 of the R&TTE Directive (1999/5/EC)
- EN55022:2006+A1:2007 Information Technology Equipment-Radio disturbance characteristics-Limits and methods of measurements
- EN55024:1998+A1:2001+A2:2003 Information Technology Equipment-General Immunity characteristics-Limits and methods of measurements
- EN 61000-3-2:2006 Limits for Harmonic Current Emissions
- EN 61000-3-3:2008 Limits, Limitations of Voltage Fluctuations and Harmonic Flicker
- EN 60079-0: 2009 Explosive atmospheres. Equipment. General requirements.
- EN 60079-15: 2005 Equipment protection by type of protection "n"
- E/ECE Regulation No. 10 Rev. 3: 2008

#### Directives

- DIRECTIVE 2006/95/EC (Low Voltage Directive)
- DIRECTIVE 2004/108/EC (EMC Directive)
- DIRECTIVE 2002/96/EC (Waste of Electrical and Electronic Equipment)
- DIRECTIVE 2002/95/EC (Restriction of Hazardous Substances)
- DIRECTIVE 1999/5/EC (Radio and Telecommunications Terminal Equipment)
- DIRECTIVE 94/9/EC (Potentially Explosive Atmospheres (ATEX))
- DIRECTIVE 2004/104/EC as last updated by 2009/19/EC (Automotive)

Lary Beaulieu, Senior Vice President

2/23/2011

Date Melbourne, FL, USA

## ARMOR X10gx Tablet Computer

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## ARMOR X10gx Tablet Computer

### WARNING SUMMARY

This device is a Class I, Division 2, Groups A-D, T5 product. The ARMOR X10gx complies with all applicable industrial health and safety requirements. However there are certain safety considerations such as battery safety that you need to be aware of. Please read and comply with all warnings and cautions in this guide and in all other X10gx documentation.

A “ **Warning!**” notice indicates a condition or action that could possibly result in injury or death to the user. A “ **Caution!**” notice indicates a condition or action that could result in loss of data or damage to equipment.



#### **WARNING!**

*EXPLOSION HAZARD – DO NOT CONNECT OR DISCONNECT ANY EXTERNAL CABLE OR POWER CONNECTOR, OR DOCK OR UNDOCK TABLET, UNLESS AREA IS KNOWN TO BE NON-HAZARDOUS.*

*AVERTISSEMENT - RISQUE D'EXPLOSION - NE PAS CONNECTER OU DÉCONNECTER UN DÉCODEUR PAR CÂBLE OU CONNECTEUR D'ALIMENTATION, OU DOCK OU TABLET UNDOCK, SAUF ZONE EST CONNUE POUR ÊTRE D'AUCUN DANGER.*



#### **WARNING!**

*EXPLOSION HAZARD – DO NOT DISCONNECT WHILE CIRCUIT IS LIVE UNLESS AREA IS KNOWN TO BE NON-HAZARDOUS.*

*AVERTISSEMENT-RISQUE D'EXPLOSION. NE PAS DÉBRANCHER TANT QUE LE CIRCUIT EST SOUS TENSION, À MOINS QU'IL NE S'AGISSE D'UN EMPLACEMENT NON DANGEREUX.*



#### **WARNING!**

*EXPLOSION HAZARD – BATTERIES MUST ONLY BE CHANGED IN AN AREA KNOWN TO BE NON-HAZARDOUS.*

*AVERTISSEMENT-RISQUE D'EXPLOSION - AFIN D'ÉVITER TOUT RISQUE D'EXPLOSION, S'ASSURER QUE L'EMPLACEMENT EST DÉSIGNÉ NON DANGEREUX AVANT DE CHANGER LA BATTERIE.*

## ARMOR X10gx Tablet Computer



### WARNING!

*FOR HAZARDOUS LOCATIONS, USE ONLY THE 2400 MAH BATTERY P/N 0300-15663-2400 THAT CAME WITH YOUR COMPUTER.*



### WARNING!

*Do not drop or mishandle the batteries, immerse them in water, or subject them to high heat. Doing so could increase the risk of explosion or leakage, and possibly cause injury.*



### WARNING!

*The lithium-ion batteries used in this equipment contain material that is hazardous to your health. If battery contents come in contact with the eyes, IMMEDIATELY flush the affected area with clean water for 15 minutes and have someone else summon medical attention for you. Unaffected persons should assist the affected individual in the vital first flushing of the eyes.*



### WARNING!

*If battery material comes in contact with the skin, flush the affected area with clean water and seek immediate medical treatment.*



### WARNING!

*Disposed lithium-ion batteries that are not fully discharged contain active salts that can result in an explosion if suddenly exposed to moisture or water in the environment. To prevent possible injury to someone finding the battery, please ensure it is fully discharged before disposing in a domestic or commercial garbage receptacle.*



### WARNING!

*Do not disable the power switching function if the X10gx will be used in a hazardous location (HAZLOC), regardless of the docking station used.*

## ARMOR X10gx Tablet Computer



### WARNING!

*Changes or modifications not performed by, or expressly authorized by, DRS Tactical Systems, Inc could be hazardous to your health, could cause damage to the equipment, could void your warranty or could result in all of the above.*



### WARNING!

*Place all shipping bags and packing materials safely out of the reach of small children, especially infants and toddlers. These items may pose a choking or suffocation hazard.*



### CAUTION!

*Use this product only in vehicles that can supply a constant source voltage of 11 to 28 VDC (16 VDC nominal) ± 2% at 6 amps. Voltage sources outside this range could cause unstable operation or result in permanent damage to the computer.*



### CAUTION!

*DO NOT connect the DC power supply from a Rapid Battery Charger into the computer or docking mechanism. This power supply is 24 VDC and will cause permanent damage to the computer.*



### CAUTION!

*DO NOT connect the computer to more than one power source at a time such as with the AC adapter connected to the computer and vehicle power connected to the docking station. Permanent damage to the X10gx batteries or to the computer itself may result.*



### CAUTION!

*Use only the battery originally supplied with your ARMOR X10gx or one recommended by DRS. The use of any other battery could create a hazardous condition and possibly damage your computer. Dispose of used batteries according to the instructions in [Disposing Of Your Used Batteries](#).*

## ARMOR X10gx Tablet Computer



### CAUTION!

*Recharging batteries must only be carried out in a non-hazardous area using the supplied AC adapter. The definition of hazardous areas can be found in Standard EN 60079-10.*



### CAUTION!

*DO NOT use this unit in classified areas unsuitable for its safety ratings.*

*NE PAS UTILISER CETTE UNITÉ EN ZONES AINSI CLASSÉES IMPROPRES À SA COTE DE SÉCURITÉ*



### CAUTION!

*When using IEEE 802.11a wireless LAN [in Canada], this product is restricted to indoor use due to its operation in the 5.15- to 5.25-GHz frequency range. Industry Canada requires this product to be used indoors for the frequency range of 5.15 GHz to 5.25 GHz to reduce the potential for harmful interference to co-channel mobile satellite systems. High power radar is allocated as the primary user of the 5.25- to 5.35-GHz and 5.65 to 5.85-GHz bands. These radar stations can cause interference with and/or damage to this device.*

## ARMOR X10gx Tablet Computer

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# 1. WELCOME AND INTRODUCTION

Thank you for purchasing the ARMOR X10gx Rugged Tablet with Intel® Core Duo™ Mobile technology. Your X10gx is the latest addition to the ARMOR line of durable, reliable, and easy-to-use tablet computers.

The X10gx is housed in our new magnesium alloy chassis and has sealed external connectors that are rated IP 67 level protection from dust, dirt, water and other damaging elements. Its hot-swappable battery access means you can change the batteries without the need for tools and without interrupting normal computer operations. In addition, you now have the functionality of both a touch screen and an active pen screen at your fingertips.



The ARMOR X10gx gives you the power of a desktop computer in a rugged portable tablet computer. The X10gx can be mounted in a vehicle or it can be used on a desktop, on the ground, held on the lap, or held in the crook of the arm. You can write and perform operations directly on the screen, work with a virtual on-screen keyboard, or attach a USB keyboard (compact keyboard, standard-sized USB keyboard, or Bluetooth keyboard).

**We take pride in providing high-quality products and superior customer service. Thank you for choosing the ARMOR X10gx Tablet Computer, and for your trust in the ARMOR line of products.**

**The ARMOR Team**

## ARMOR X10gx Tablet Computer

### Your ARMOR X10gx Purchase

Your purchase includes the items and accessories shown below. Please confirm that all of these items are present and in good condition. **NOTE:** Your hard drive is shipped already installed in the computer.

Contact your ARMOR sales representative if any item is missing or damaged.



### **ARMOR X10gx Included Components and Accessories**

## ARMOR X10gx Tablet Computer

### About This Guide

This user's guide contains virtually all of the information required to setup and maintain your ARMOR X10gx tablet computer. However, should you need additional technical information, please visit our web site at: [www.drsarmor.com](http://www.drsarmor.com), or call DRS Technical Support toll-free at 1-888-872-1100.

This guide is written for the Windows 7® operating system except where noted.

### Viewing, Navigating, and Printing this Guide

This User's Guide is installed on your ARMOR X10gx solid-state drive in PDF format. It is primarily designed for on-screen viewing but it can also be printed in 2-sided book format. The pdf file is located in C:/Guides.

Double-click on the **ARMOR X10gx User's Guide icon** on the desktop to open the guide in your Adobe® PDF Reader™. The latest version of Adobe PDF Reader is available for downloading free from [www.adobe.com](http://www.adobe.com).

While viewing this guide, you can click on any Figure or Table reference and on any blue underlined text to navigate within the guide or to access resources on the Internet.

**NOTE:** Blue underlined links to websites may change color after visiting depending on your, browser settings; internal blue underlined links will not change color.

### Viewing the X10gx Quick Start Guide

A pdf version of the printed Quick Start Guide that was packed with your computer is also included in C:/Guides for reference purposes. Double-click on the file to open it. **NOTE:** Because this document is designed for printing in a special format, the last page appears first and upside down.

### Please Help Us Maintain Top Quality Documentation

This user's guide was produced with the latest information available and verified for accuracy at the time of its release. However, mistakes are still possible and product updates may supersede the information in this guide.

We encourage you to contact DRS Technical Support toll-free at 1-888-872-1100 for information on how to obtain the latest version of this document, or if you have corrections or suggestions to improve this guide.

**ARMOR X10gx Tablet Computer**

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## ARMOR X10gx Tablet Computer

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## 2. LEARNING ABOUT YOUR ARMOR X10GX

The X10gx is the latest addition to the ARMOR line of full-size rugged, reliable, and easy-to-use tablet computers. It is housed in our new lower-weight magnesium alloy chassis and has sealed external connectors that are rated IP 67 level protection from dust, dirt, water and other damaging elements.

Its hot-swappable battery access means you can change the batteries without the need for tools and without interrupting normal computer operations. In addition, you now have the functionality of both a touch screen and an active pen screen at your fingertips.

The following paragraphs describe the principal components, controls, indicators, connectors and accessories of the ARMOR X10gx.



## ARMOR X10gx Tablet Computer

### Front and Top Panel Features



#### NOTE

*All references to front/back, top/bottom and left/right are relative to the face-on view as shown in Figure 1.*



Figure 1. Front Panel Features

## ARMOR X10gx Tablet Computer

### Display

The X10gx display is a high-brightness, high-contrast LCD display with anti-glare filtering that ensures your screen can be clearly viewed even in bright sunlight. A replaceable screen protector is attached at the factory to reduce glare and protect the touch screen surface.

The X10gx comes equipped with a dual display that has both an active pen (digitizer) screen and a touch screen as standard; an optional pen-only version is also available. The pen digitizer screen permits precise data entry and accurate handwriting conversion while the touch screen provides quick and accurate operation using just a fingertip. A passive stylus (not supplied) will provide even more precision with the touch screen. If you have the standard display, you can choose to operate with both screens (Dual Mode) or with only one screen (Touch Only or Pen Only). Both screens have the same clear, crisp viewing quality in any lighting situation.

In Dual Mode, the touch screen is normally enabled and the pen screen is disabled. When the active pen is detected within about  $\frac{1}{4}$  inch of the screen, the touch screen is disabled and the pen screen is enabled. When the active pen is moved away from the screen, the pen screen is disabled and the touch screen is enabled. Switching between the two screens is automatic and instantaneous.

### Controls

There are 6 buttons and a fingerprint sensor located on the control panel on the right side of the X10gx display, as shown in Figure 2.

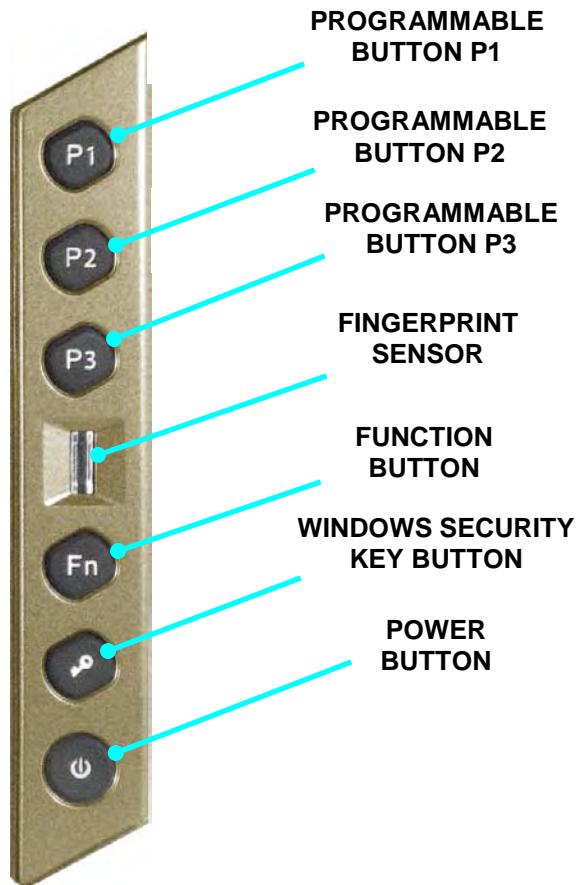


Figure 2. X10gx Control Panel

## ARMOR X10gx Tablet Computer

### Programmable Buttons (PBs) P1, P2, P3

The PBs can be programmed to activate different functions such as controlling brightness, changing volume level or activating an application with just a single press. Refer to the [Buttons Setup Dialog](#) for information on how to program available options. These buttons are also used to manually activate the battery fuel gauges (see [Manually Activating the Fuel Gauges](#)). **NOTE:** The PB functions are only available while ARMORutils is running.

Each programmable button has a built-in LED that varies in intensity with the screen brightness.

### Fingerprint Sensor (FPS)

The fingerprint sensor is used with security software to allow you to log into your account on this computer or secure your access to specific applications and online websites. Refer to [TrueSuite™ Fingerprint Recognition Software](#) for instructions on how to setup and use the FPS.

### Fn (Function) Button

This button is used with PBs P1, P2 and P3 (button “combos”) to activate three additional functions. Press and release the **Fn** button and then press and release **P1**, **P2** or **P3** to activate the combo function. Refer to [Buttons Setup Dialog](#) for information on how to program available functions for each button and button combo.

The **Fn** button has a built-in LED that lights for approximately 5 seconds when the button is pressed.

### Windows Security Key Button

Pressing this button invokes the **CTRL-ALT-DEL** command, which opens a menu on the desktop. From this menu, you have the following options:

- Lock this computer
- Switch User
- Log off
- Change password
- Start Task Manager

The Windows security key button is also known as the Security Attention Sequence (SAS) button and the OEM Button.

### Power Button

The Power button is primarily used to turn the computer on, but it also performs other functions when the computer is running and when the computer is in sleep or hibernate mode. Table 1 lists the default actions of the power button when you first receive your X10gx.

**NOTE:** To turn the computer off, refer to the instructions in [Turning the Computer Off Normally](#) and [Emergency Shutdown](#).

## ARMOR X10gx Tablet Computer

**Table 1. Power Button Actions**

Operating State	Power Button Action	Result
Computer powered off	Press and hold for at least 1 second and then release	Computer turns on and boots up into new Windows session.
Computer powered on and awake	Press and release	Computer goes into Sleep mode and saves your current session to memory.
Computer in Sleep mode (powered on)	Press and hold for at least 1 second and then release	Computer wakes up and restores your current session.
Computer in Hibernate mode (powered off)	Press and hold for at least 1 second and then release	Computer turns on and restores your previous session.
Computer powered on and awake	To shut down the computer normally, select <b>Start → Shut down</b> from the Windows desktop.	The computer will perform a normal shutdown.
Computer powered on and awake	Press and hold for 5 or more seconds (emergency shutdown)	Computer shuts down immediately and does not save your session.
Computer off and batteries exhausted	Press and hold for at least 1 second and then release	Charging/Fault indicator blinks 5 times to indicate batteries exhausted.

### Changing the Default Power Button Action

When you receive your X1, the default action for pressing the Power button during normal operation is to put the computer in Sleep mode. You can change the default actions of the **Power** button through the **Power Options** settings in Windows Control Panel. The actions that are available are: Do Nothing, Sleep, Hibernate or Shut Down. Refer to [Changing the Power Button Default Action](#) for instructions.

**NOTE:** This change will only affect the action of the Power button during the operating state; it will still work the same as described in Table 1 when the computer is powered off or is in sleep or hibernate mode.

## ARMOR X10gx Tablet Computer

### Indicator Panel

There are six LED status indicators located on the indicator panel at the upper right of the X10gx display as shown in Figure 3 (**NOTE:** The seventh object to the far right of the panel is the ambient light sensor (ALS), not an LED). The functions of these indicators and the function of the ALS are described below (see [Indicator State Summary](#) for a complete description of each indicator state).



**Figure 3. Indicator Panel**

#### WI-FI Indicator

A blue LED that indicates when the WI-FI radio is connected to a network

#### GPS Indicator

A blue LED that indicates when the GPS module is powered on and enabled.

#### Wireless Wide Area Network (WWAN) Indicator

A blue LED that is on steady when the WWAN radio is connected to a network.

#### Storage Indicator

A blue LED that is on intermittently when any storage media such as the solid-state drive or an optional flash drive is accessed.

#### Charging/Fault Indicator

This amber/red LED has the following conditions:

- Off when the tablet is powered up and external power is not connected.
- On steady amber when external power is connected and batteries are fully charged.
- Flashing amber at a 1-second rate when either or both batteries are charging.
- On steady red if a power system error occurs, such as an overvoltage, undervoltage or overcurrent condition or a battery failure.

#### Power On Indicator

A blue LED that indicates when the X10gx is in the powered on state. It also flashes slowly in sync with the Power button LED when the tablet is in Sleep mode.

## ARMOR X10gx Tablet Computer

### Ambient Light Sensor (ALS)

When the X10gx display is in automatic brightness mode, the ALS senses changes in surrounding light levels and adjusts the display brightness accordingly. If the ambient light level increases, the display brightness will increase proportionally; if the light level decreases, the display brightness will decrease proportionally.

### Speakers

The X10gx has two sealed internal speakers located under the antenna covers at the top of the computer (see Figure 1). The speakers broadcast audible alerts generated by the operating system and application software and can be used to play back music or video sound tracks, although at a considerably reduced sound quality.

If a headset or external speakers are plugged into the right-side panel audio jack (Figure 9), the internal speakers are disabled. The sound quality through a pair of headset speakers or external speakers meets the Microsoft Windows 7 requirements for a PC audio system.

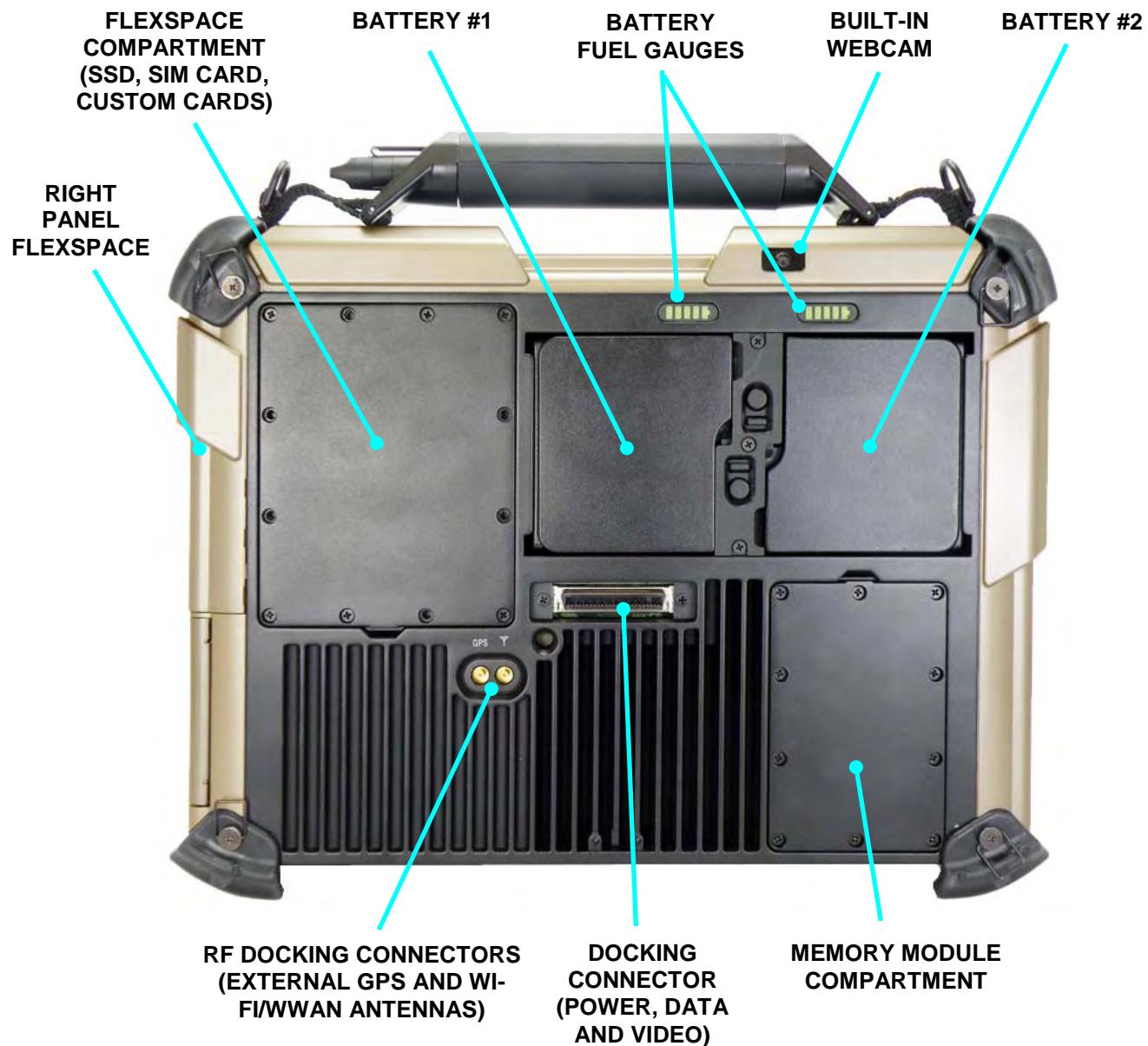
### Microphones

The X10gx is equipped with two sets of noise-cancelling microphones (see Figure 1). These microphones support simultaneous analog and 4-channel digital recording. They are activated in pairs depending on the orientation of the screen. In the landscape (default) position, the tablet is oriented with the long axes of the screen horizontal and the short axes vertical. In this position, the two active microphones will be at the top or bottom of the long axis. If you rotate the screen to the portrait mode, the active pair on the short axis will be active.

If you plug an external microphone into the audio jack on the right side of the computer, the internal microphones are disabled.

**ARMOR X10gx Tablet Computer****Rear Panel Features**

The rear panel of the X10gx houses compartments for two batteries, a solid-state drive, wireless and custom cards, and 1 or 2 RAM memory modules, as shown in Figure 4. There is also a built-in webcam, a 50-pin docking connector and two RF docking connectors to connect external wireless and/or GPS antennas through the X10gx docking station.

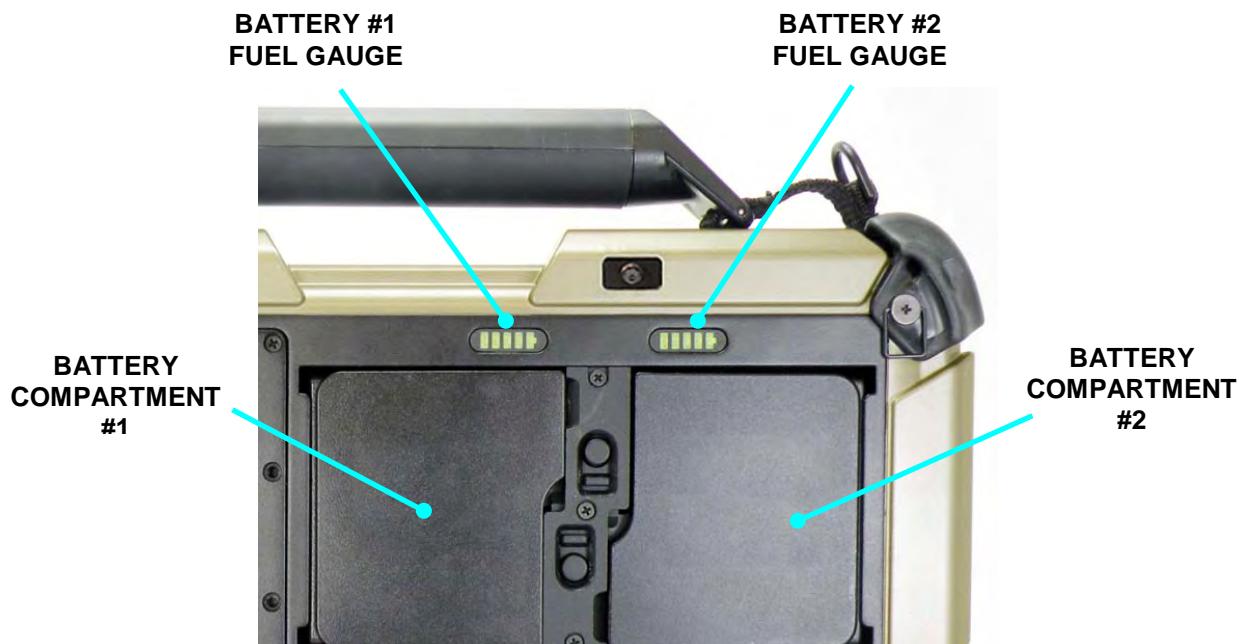


**Figure 4. Rear Panel Features**

## ARMOR X10gx Tablet Computer

### Battery Compartments

There are two battery compartments on the rear panel, as indicated in Figure 5. These compartments are sealed against moisture and dirt and provide quick and easy access for battery replacement. A battery “fuel” gauge (LED array) is provided for each battery to indicate the current charge level.



**Figure 5. Battery Fuel Gauge Indicators**

### Fuel Gauge LEDs

Each fuel gauge array consists of 5 LEDs and each LED represents approximately 20% of the total charge of the battery as follows:

		1	2	3	4	5
<b>LED #5</b>	81-100%					
<b>#4</b>	61-80%					
<b>#3</b>	41-60%					
<b>#2</b>	21-40%					
<b>#1</b>	01-20%					

The fuel gauge LEDs are active whenever power is applied to the tablet and the tablet is not in sleep or hibernation mode. The LEDs in each array turn on from *left to right* as the charge increases. When all five LEDs are on steady, the battery is fully charged. If a battery is not installed, the fuel gauge for that battery will be off.

As the battery is used, the LEDs will turn off from *right to left*. If the battery charge drops below 10%, LEDs 2-5 will be off and LED #1 will flash.

## ARMOR X10gx Tablet Computer

### Manually Activating the Fuel Gauges

When the tablet is powered up and in a normal operating state, the fuel gauges are always active. When the tablet is turned off or is in low-power mode (sleep/standby) and external power is not connected, the fuel gauge LEDs are not normally active. When the tablet is in one of these states, you can manually activate the gauges for a period of 5 seconds by pressing and releasing any of the programmable buttons (P1 – P3) on the control panel.

Manual fuel gauge activation can only occur when the tablet is powered off or is in sleep mode. This activation is independent of any programmable functions assigned to the buttons.

### Webcam

The X10gx has a built-in 2-megapixel camera located on the back side of the top left antenna cover (Figure 6). The camera is equipped with an autofocus lens and can be used to capture still images, movies and barcodes. The camera saves still images in JPEG format at 1280x1024, 800x600 and 640x480 pixel resolutions. Movies are saved in Windows Media Video (.wmv) format.

For information on using the webcam to capture still and video images or for reading bar codes, refer to [Using the Webcam](#).



Figure 6. Built-in Camera

### Docking Connectors

The X10gx can be connected to a number of docking stations including desk docks and vehicle docks. While docked, the tablet receives external power and data through the 50-pin docking connector shown in Figure 7. Two RF docking connectors are provided to connect external GPS and/or WWAN antennas through a vehicle dock to the tablet. **NOTE:** This external antenna support is only available with the X10gx RF vehicle dock shown in Figure 27.

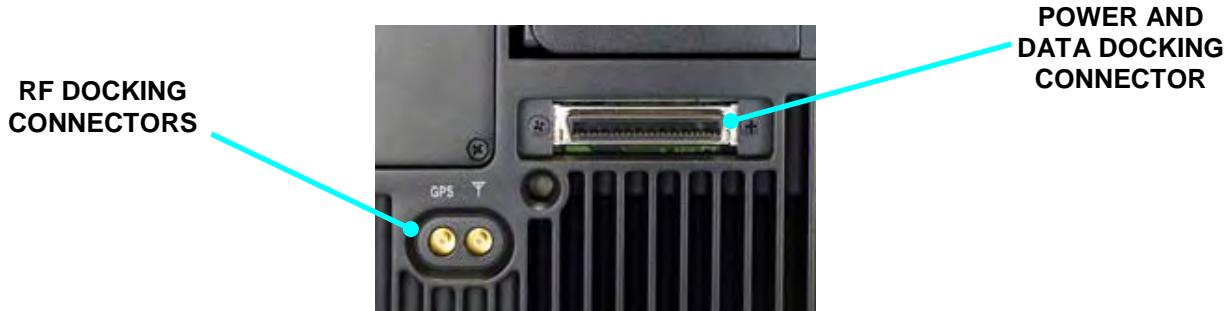


Figure 7. X10gx Docking Connectors

## ARMOR X10gx Tablet Computer

### Left Side Panel Features

On the left side of the tablet, support for a second display is provided with a DisplayPort® connector. There is also an RJ-45 10/100/1000 Ethernet port and two USB 2.0 ports. A DC power input jack is provided to connect an external power source.

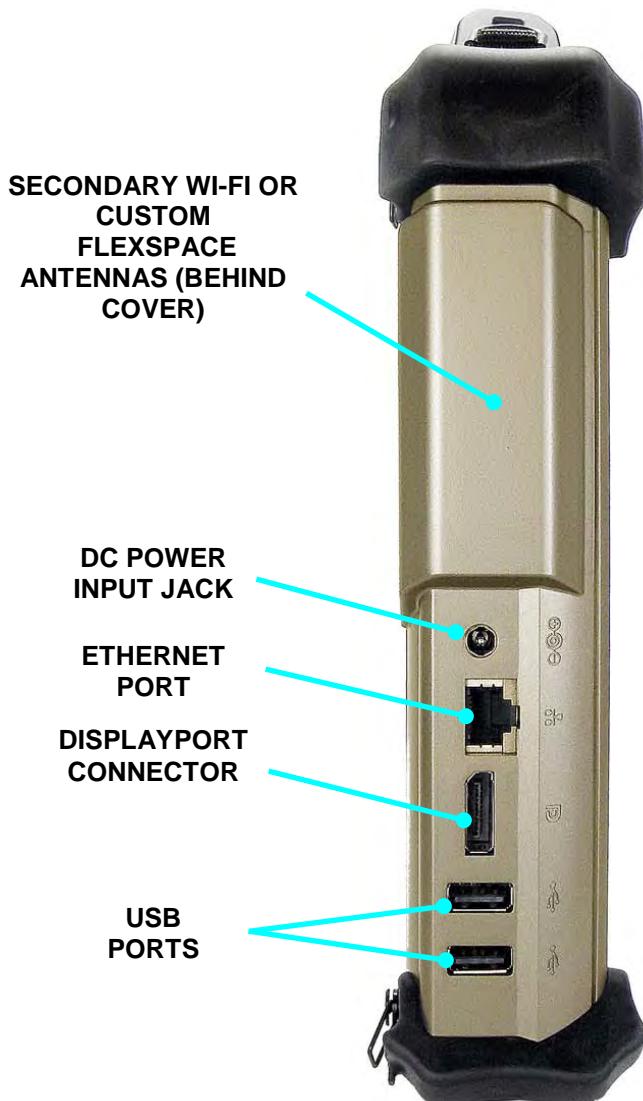


Figure 8. Left Side Panel Features

## ARMOR X10gx Tablet Computer

### Right Side Panel Features

On the right side of the tablet, there is an audio jack that can accommodate a pair of headphones, a pair of external speakers or an external microphone. There is also a 9-pin serial port connector for RS-232 serial data and a standard USB connector.

### Removable Card Support

The bottom cover opens to reveal a compartment for three different types of removable digital cards: a 26-pin 34/54 mm ExpressCard, an ISO/IEC 7810 FIPS 201 compliant Smart Card and a high capacity Secure Digital (SDHC) card. As a factory installed option, a single Type I/II PC/PCMCIA card slot can be substituted for the ExpressCard slot.

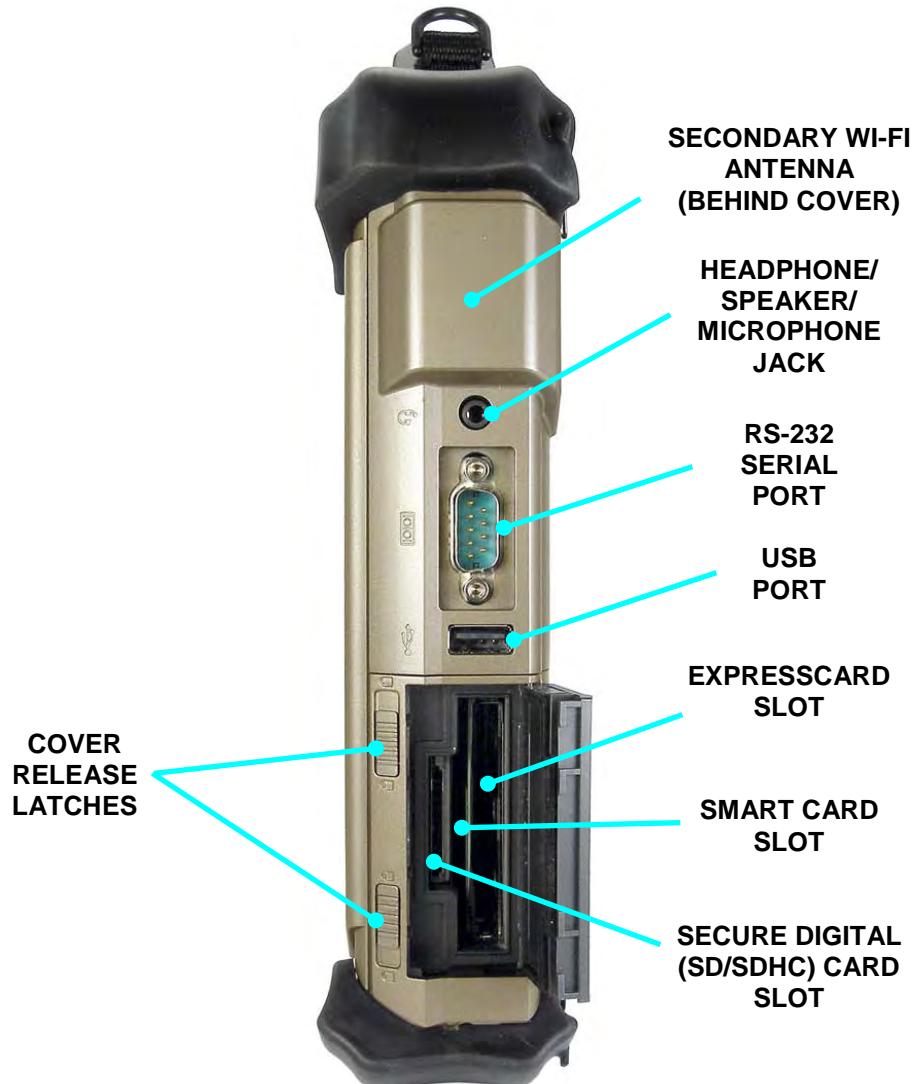
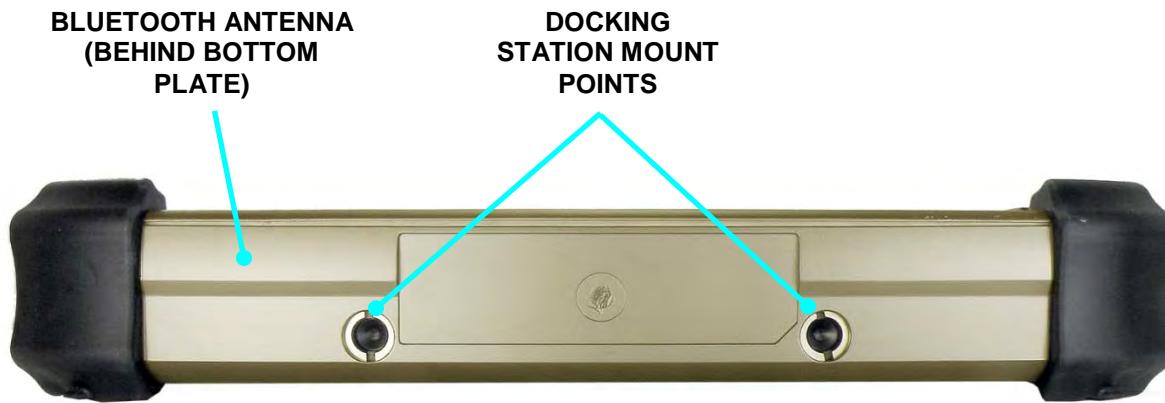


Figure 9. Right Side Panel Features

**ARMOR X10gx Tablet Computer****Bottom Panel Features**

The bottom panel of the tablet houses two docking station mount points and the Bluetooth antenna.



**Figure 10. Bottom Panel Features**

## ARMOR X10gx Tablet Computer

### Included Components, Accessories and Support

#### Batteries

The ARMOR X10gx ships with two 2400 mAh rechargeable batteries (P/N 0300-15663-2400). A single battery is shown in Figure 11. These are high efficiency lithium-ion batteries that are “hot swappable.” That is, if you have two batteries installed, you can replace one battery while the tablet operates on the other battery. With this capability, you do not have to shut down the computer or interrupt your current operating session in order to replace a battery.

The X10gx can operate as long as 4 hours on two fully charged batteries and up to 2.5 hours on a single battery.



Figure 11. ARMOR X10gx Battery

#### Solid State Drive (SSD)

Your ARMOR X10gx normally comes equipped with a 32 GB 1.8" solid-state drive (P/N 0000F49855-0032) that is mounted inside the sealed Flexspace compartment (see Figure 4 for location). An optional 80 GB drive (P/N 0000F49855-0080) is also available. Both drives are shown in Figure 12.



Figure 12. X10gx 32 GB and Optional 80 GB Solid-State Hard Drives

## ARMOR X10gx Tablet Computer

### RAM Memory Module

Your X10gx contains 2 GB of random-access memory (RAM) in a single 2 GB 200-pin mini SODIMM module (P/N 4000F49878-0002) located in a separate compartment on the rear panel (see Figure 4). An additional memory module can be added for a total of 4 GB of RAM memory. A single memory module is shown in Figure 13.



**Figure 13. RAM Memory Module**

### Active Pen with Tether

The active pen (P/N 0000F49968-0000) that comes with your X10gx (Figure 14) has circuitry that interacts with the digitizer assembly built into the tablet display. The digitizer detects the pen tip close to the screen and activates certain functions like steering the cursor or performing a right click action if the pen is allowed to hover for a few seconds. Pressing the tip to the screen activates a tip switch that performs a left-click action.

The pen also has a side button that can be programmed for a number of different functions (refer to [Pen Tablet Properties Utility](#)). Its default function is right-click. The pen is stored in the tablet's carrying handle and is secured to the handle by a flexible tether (P/N 0000F48456-0000).



**Figure 14. The ARMOR X10gx Pen**

## ARMOR X10gx Tablet Computer

### AC Adapter

The AC Adapter (P/N 5700F50075-0000) is a +15 VDC, 4.8A power supply (Figure 15) that is primarily used to recharge the batteries but can be used to power your X10gx with the batteries removed. It consists of a power supply, a DC power cable and an AC power cord. The model shown has a US-type power cord. A European power cord is also available.



Figure 15. AC Adapter

### Display Cloth

This microfiber cloth (P/N 0410F49938-0000) is specially designed to clean the display screen of dust and fingerprints. See [Caring For the Display Screen](#) for important information about using this cloth with the X10gx display.



Figure 16. Microfiber Display Cloth

### Shoulder Strap

A sturdy nylon shoulder strap (P/N 5650F16779-0000) is included with your X10gx. This strap is adjustable and attaches to either of the two "D" rings sewn into the carrying handle.



Figure 17. Shoulder Strap

## ARMOR X10gx Tablet Computer

### Subscriber Identity Module (SIM) Card Support

The X10gx is equipped with a SIM card socket for use with some WWAN network providers. A SIM card is a small electronic card that contains your GSM subscriber ID, billing information, and network permissions. The card allows you to easily transport your subscriber information to another computer or subscriber device. SIM cards are used by GSM-based networks such as AT&T® and T-Mobile®, as well as most European WWAN providers.

Figure 18 shows the size of the SIM card compared to a quarter (**NOTE:** The SIM card shown is blank - a valid card has the customer's account code printed on it).

You must have a SIM card installed in order to use your Gobi radio to connect to a GSM WWAN network in Europe and to certain providers in the United States. To install your SIM card, refer to [Installing a SIM Card](#).



Figure 18. SIM Card Example

### Secure Digital (SD) Card Reader Support

The ARMOR X10gx also provides a card reader for a micro SD or SDHC card in capacities of 8, 16, or 32 GB. These cards are about half the size of a SIM card and are used as removable flash drives. The socket for the micro SD card is located inside the X10gx case, as shown in Figure 19. The Windows operating system recognizes the card as a removable drive, just like a USB memory stick.



Figure 19. SD Card Example

### Smart Card Support

Your X10gx also has a slot for an embedded chip smart card, as shown in Figure 20. A smart card has an embedded computer or memory chip that stores transaction data. The cards can be used for applications such as banking, healthcare, entertainment and transportation.

## ARMOR X10gx Tablet Computer

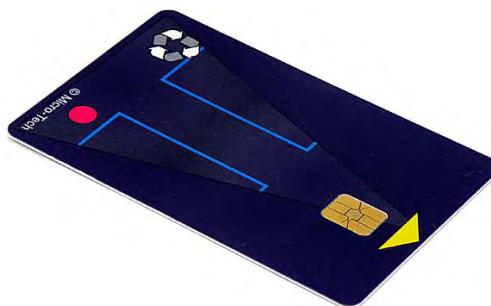


Figure 20. Smart Card Example

## ExpressCard® Support

The X10gx also has a slot for an ExpressCard®. Figure 21 shows two examples of express cards. These hot-pluggable cards can be used for many different functions including adding memory, wireless communications, multimedia and security enhancements and many more.



Figure 21. ExpressCard Examples

## ARMOR X10gx Tablet Computer

### Flexspace™ Expansion

**NOTE**

*This section provides general information about the potential use and capabilities of the X10gx Flexspace. Please contact DRS Tactical Systems toll free at 800-872-1100 for detailed information and engineering assistance.*

The X10gx contains two dedicated areas equipped with special I/O connectors to allow the installation of custom cards and modules: an internal flexspace located inside the upper right rear panel, and the right side panel flexspace, located inside the upper right side panel (see Figure 4).

Custom modules for the X10gx might include a radio frequency identity (RFID) tag reader, contactless card reader, or an additional smart card reader. Two of these custom concepts are shown in Figure 22.



**Figure 22. X10gx Flexspace™ Concepts**

#### Internal Flexspace

The internal flexspace normally houses the solid-state drive (SSD), Wi-Fi card and embedded Bluetooth module that come standard with the X10gx. But it also has provisions for an optional WWAN card and GPS module. The internal flexspace interface provides:

- Three PCIe card slots
  - 1x Full Function PCIe
  - 2x Power & USB 2.0
- Three USB 2.0 Ports
  - Routed to PCIe card slots
  - One routed to 4-pin Molex if card slot not used
- Six GPIO to Docking connector
- Two GPIO to EC Processor allowing custom triggers & sense
- DOCK\_PRESENT and DOCK\_ENABLED discrete
- +5V, 1A & +3.3V, 1A power for active modules

## ARMOR X10gx Tablet Computer

The current flexspace devices are mounted on an interface board called the “flexboard.” This board has connections to accept the included and optional X10gx wireless cards or it can accept other custom cards that fit the PCI and mini-PCI connectors. The entire flexboard can be redesigned or it can be replaced with a customer-designed card that fits the interface connector.

Figure 23 shows the flexboard with included Wi-Fi radio card, an optional GPS card and the SIM card socket. The optional Gobi® WWAN card mounts in a PCIe slot on the back of the flexboard. Figure 24 shows the internal flexspace with the flexboard removed.

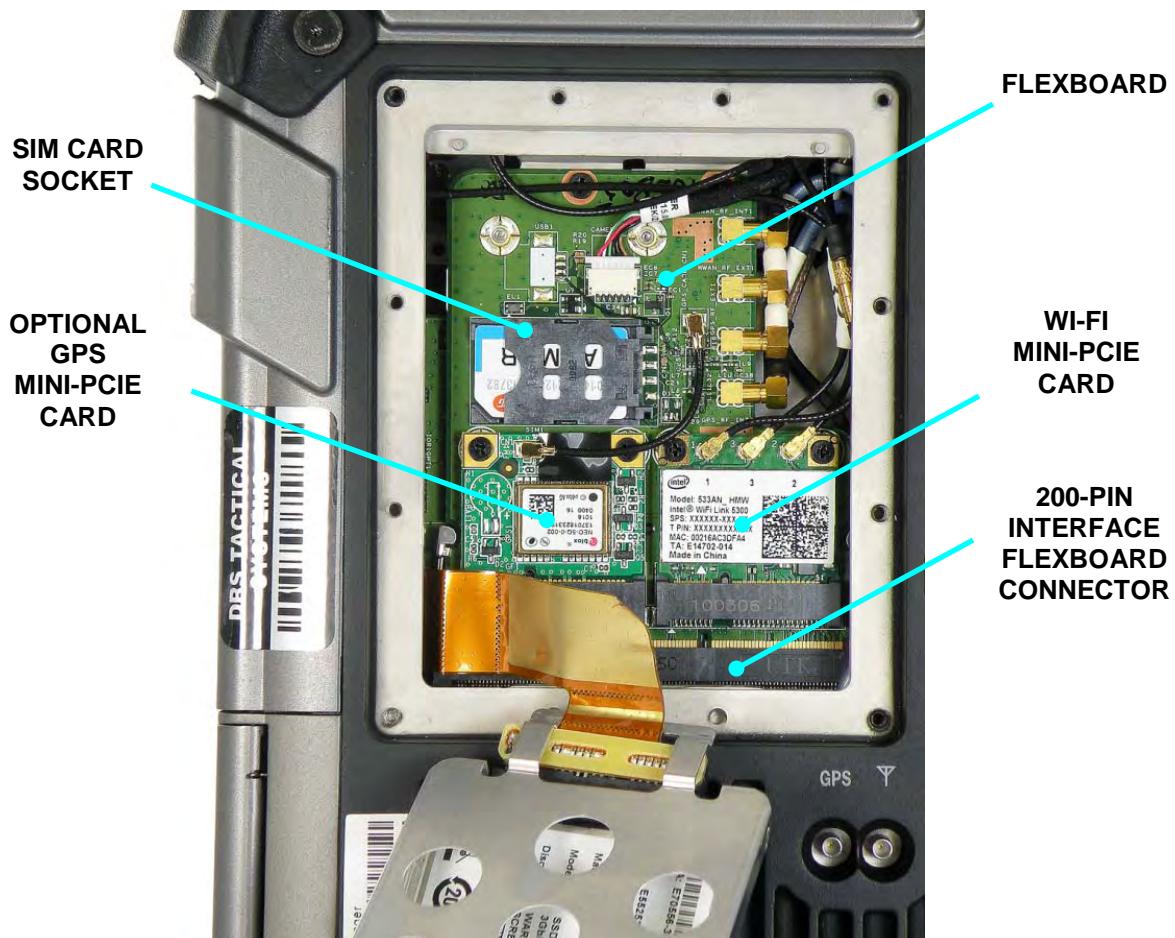


Figure 23. Internal Flexspace with SSD Removed

## ARMOR X10gx Tablet Computer



**Figure 24. Internal Flexspace with the SSD and Flexboard Removed**

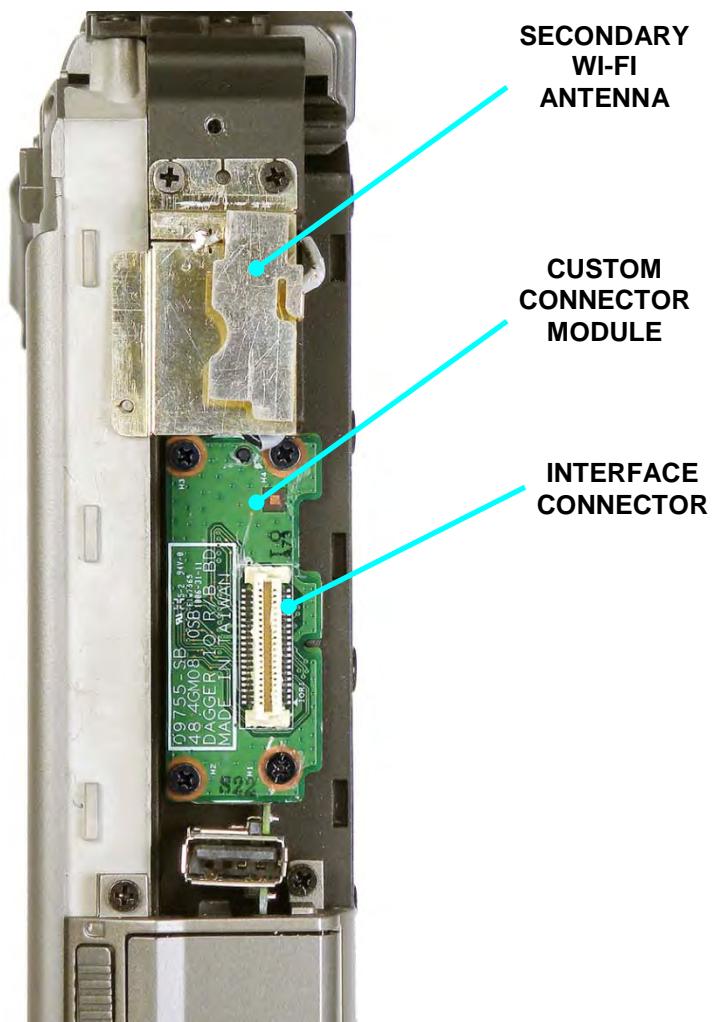
### Right Side Panel Flexspace

Figure 25 shows the flexspace area inside the upper right side panel. The flexspace interface provides:

- +5V at 1A
- +3.3V at 1A
- One USB 2.0 Port
- One RS-232 Port, with full hardware handshaking
- Stereo Audio Output Port
- Microphone Input
- 5V/Ground/Open GPIO Discretes to EC Processor
- Six spare discretes wired to the FlexBoard

Any custom module will plug into an interface adapter which then plugs into the interface connector. Currently, this flexspace area is occupied with a custom connector module.

The right side flexspace antenna is currently the secondary Wi-Fi antenna. This antenna can be replaced with a custom antenna.

**ARMOR X10gx Tablet Computer**

**Figure 25. Right Side Panel Flexspace**

## ARMOR X10gx Tablet Computer

### Optional Add-ons and Accessories for Your X10gx

There are a number of optional add-ons and accessories that extend the capabilities of the X10gx or make it easier for you to use.

#### Gobi® Wireless Wide Area Network (WWAN) Radio

We offer the Gobi 2000 WWAN radio. This wireless networking device communicates over cell phone networks and can provide internet or company-specific coverage while on the road or in areas that don't provide Wi-Fi access. It can be used in the US or overseas. Adding WWAN service to your imbedded Wi-Fi capability means you have 24/7 connection to the internet virtually anywhere in the world.

#### u-blox® GPS Satellite Receiver

The u-blox® GPS receiver is capable of downloading position data from the GPS or Galileo satellite networks and enables you to pinpoint your position anywhere in the world within 2.0 – 2.5 meters.

#### PC/PCMCIA Card Support

The ExpressCard slot included with your X10gx can be replaced at our factory with a Type I/II PC/PCMCIA card slot. Please contact DRS Tactical Systems toll free at 1-888-872-1100 for information about this conversion.

#### Compact Keyboard

A reduced-size USB keyboard is available for use with the ARMOR X10gx computer. The keyboard is approximately half the size of a standard keyboard and can be mounted on a special platform for use with a vehicle docking station or connected to a desk docking station to conserve space on a table or desktop.



#### Two-Bay External Battery

#### Charger

A two-bay battery charger is available for faster and more convenient battery charging. Each battery bay has a charging time of approximately 2.5 hours. The external charger is also handy for recharging spare battery packs or batteries kept in storage.

Two types of external battery chargers are available from DRS: a standard sequential charger and a SMBUS "smart" charger with a calibration (conditioning) feature.



## ARMOR X10gx Tablet Computer

A European power cord is available for both types, and a DC power cable is also available for use in a vehicle or other mobile environments.

### Vehicle Power Supplies

Two styles of regulated vehicle power supplies are available from DRS for use in the United States: a hard-wired version (P/N 0000F46675-0000) that can be directly connected to the vehicle fuse panel, and a plug-in version (P/N 0000F46675-1000) that can be plugged into the lighter socket.

These power supplies convert 11-16 VDC vehicle power to a regulated 15VDC, 5 amp output.



### Screen Protector

A flexible but tough screen protector is available that reduces glare and protects the touch screen surface from wear and scratching. It is also resistant to a wide variety of toxic chemicals including acetone, toluene, ethyl acetate, gasoline and concentrated hydrochloric acid. **NOTE:** This screen protector may slightly reduce outdoor viewability.

Screen protectors are available in a package of 5 (DRS P/N 9850F48847-0000).



## ARMOR X10gx Tablet Computer

### Docking Stations

There are a number of new docking stations available to support and enhance the X10gx, either for the desktop or for use in a vehicle.

#### NOTE

*The parallel port is not supported by the X10gx on any docking station.*

#### Desk Dock

The X10gx desk dock holds the X10gx at a comfortable viewing angle on a desktop or table. The computer can be quickly undocked for portable use. Two types of desk docks are available, as shown in Figure 26: one with a top locking clamp to secure the X10gx tablet, and one without the clamp. Either can be ordered with or without a breakout box. The breakout box is mounted on the back of each type and provides the following additional capabilities:

- One VGA connector
- Three USB 2.0 ports
- Three RS-232 serial ports (one with handshake)
- An RJ-45 connector for a 10/100 LAN connection
- An audio jack for headphones or speakers
- A microphone jack
- An external DC power jack



Figure 26. ARMOR X10gx Desk Dock

## ARMOR X10gx Tablet Computer

### ARMOR X10gx Vehicle Docks

Two vehicle docks are available that are specially designed for the X10gx: an **RF dock** (P/N 9800F26200-0000) and a **Non-RF dock** (P/N 9800F26200-1000). The RF dock is equipped with two RF docking connectors to allow the X10gx to use an external WWAN antenna and an external GPS antenna. The non-RF dock does not have the RF connectors. Both vehicle docks utilize a remote breakout box that provides external cable connections.

Figure 27 shows the X10gx RF dock, breakout box (P/N 9800F45795-0000) and six-foot 50-pin cable (P/N 8900F51236-0000). The breakout box separates the various signal lines from the docking connector and routes them to standard interface connectors on the box. It is connected by the cable to the docking connector at the back of the vehicle dock. Two RF cables are connected to two RF docking ports on the face of the dock. These cables are then connected to external antennas in a vehicle.

The X10gx dock can be mounted on a vehicle cab wall, console or on a ball mount assembly. There are four mounting holes in the dock that meet the VESA 100 mm hole pattern, as shown in Figure 27. There is also a mounting bracket (DRS P/N 0410F49462-0000) that can be attached to the back of the dock so it can be mounted vertically on a horizontal surface or on a ram ball plate, as shown in Figure 28 and Figure 29.

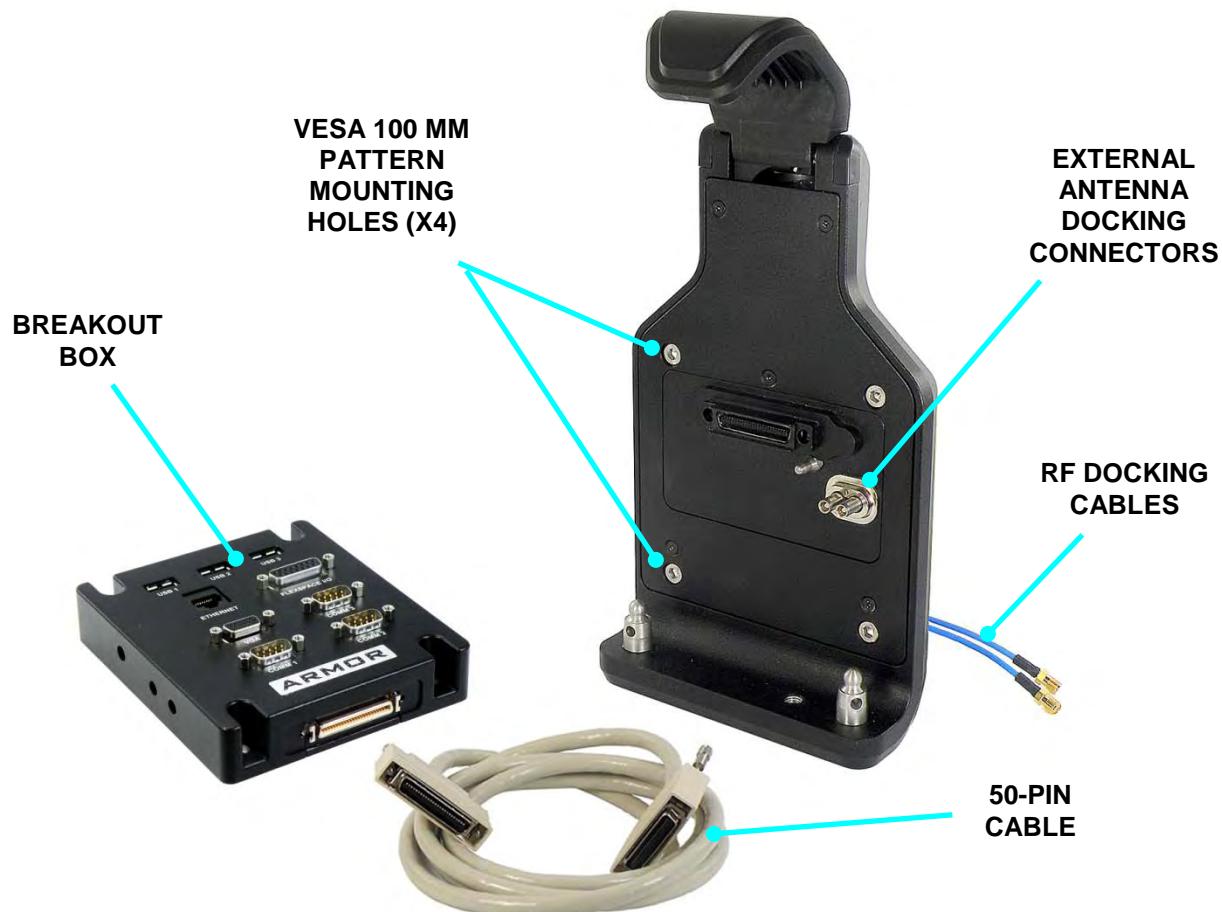


Figure 27. X10gx RF Dock, Breakout Box and Cable

**ARMOR X10gx Tablet Computer**

Figure 28. X10gx Vehicle Dock on a Ball Mount Assembly



Figure 29. X10gx Docking Station Attached to Ball Mount Assembly

## ARMOR X10gx Tablet Computer

### ARMOR Legacy Vehicle Docks

The X10gx can also be used with the Universal, Swivel and Aviation docks (Figure 30) that were designed for the original ARMOR X10 tablet. However, these docks do not provide connections to external RF antennas.

The Universal dock can be equipped with a platform to support a compact keyboard and/or joystick to make it easier to perform functions while operating in a vehicle. A variety of mounting systems are also available. Figure 31 shows the X10gx mounted in a universal dock on a ball mount assembly with keyboard tray attached.



Figure 30. ARMOR Legacy Vehicle Docks

## ARMOR X10gx Tablet Computer



Figure 31. X10gx Mounted in a Universal Dock with Keyboard Tray and Keyboard

For information on these and any other ARMOR X10gx accessories, please contact your ARMOR sales representative or call DRS Tactical Systems toll free at 1-888-872-1100.

**ARMOR X10gx Tablet Computer**

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## ARMOR X10gx Tablet Computer

### X10gx Specifications

**NOTE:** These specifications are subject to change. Please contact DRS Tactical Systems toll free at 1-888-872-1100 for updates of a particular specification.

#### General Specifications

<b>Operating System</b>	Windows® 7™ Ultimate or Windows 7 Professional, 64 bit. NOTE: Due to new Microsoft restrictions on providing XP operating system software, DRS can only provide driver support for Windows XP.
<b>Processor</b>	Intel® Core 2 Duo, ultra low-voltage SU9300, 1.2 GHz, Montevina chipset, 3 MB L2 Cache (U9300), 800 MHz front side bus (FSB), 64-bit instruction set
<b>Memory</b>	Supports up to 4GB with two 2GB DDR3 800 MHz SODIMM modules
<b>Storage Device</b>	80 GB Intel® Mainstream SATA 1.8 inch solid-state drive; support for optional SD flash memory card
<b>Display</b>	DRS ® 10.4 inch (diag.) high brightness transmissive color TFT LCD display model HX104X01-211 with optically bonded pen digitizer and touch screen Dual screen (active pen and touch screen) or optional pen-only display XGA (1024 x 768) and SVGA (800 x 600) @ 6 bpp resolution; <5nits to 700nits (manual or automatic brightness control); Direct sunlight viewable; External digital video available at DisplayPort connector, external analog RGB video available only with a docking device Hor 90°; Vert 90° up and 90° down viewing angle
<b>Graphics Support</b>	Supports Intel's Generation 5 GMA graphics as provided by the Intel Gx4x Express Chipset, Microsoft® DirectX10 support, Supports both LVDS and VGA video standards, Internal resolutions of 1024x768 @ 6 bpp and 800x600 pixels @ 32bpp with color depth External graphics support is available at the DisplayPort connector or through the docking connector to a VGA connector on the docking station breakout box. The following resolutions are supported with at least 32bpp color depth: SVGA (800x600) XGA (1024x768) WXGA (1280x720, 1280x800) SXGA (1280x1024) WXGA+ (1440x900) WSXGA+ (1680x1050) UXGA (1600x1200) WUXGA (1920x1200)
<b>Audio</b>	Meets Microsoft Windows 7 requirements for PC audio system Two internal speakers @ 8 ohms ± 15%; Response: 100Hz – 20kHz; Distortion: <10% at 1.5kHz, 0.3w External audio support through the external headphone/microphone/speaker jack or at a docking station breakout box. Two pair of noise-cancelling microphones; each pair activated according to screen rotation (portrait/landscape); THD+N: <= -65 dB FS; Dynamic range: >= -80 dB FS A-weight @ 20-20kHz
<b>Keyboard Support</b>	Supports any standard size or compact USB keyboard (optional); on-screen (virtual) keyboard included with Microsoft Windows
<b>Cursor Control</b>	Touch screen controlled by passive stylus or fingertip; pen screen controlled by inductive (active) pen; supports an external USB mouse (optional)

## ARMOR X10gx Tablet Computer

<b>Fingerprint Scanner</b>	AuthenTec® AES1660 fingerprint sensor with TrueNav™ cursor and menu navigation; Interface: USB 2.0 full speed, fully encrypted, suspend and remote wakeup, selective suspend support;
<b>Camera</b>	2.0 mega-pixel camera, SXGA 4:3 format, 1280 x 1024 pixels resolution, F2.0 lens, auto-focus with enable/disable, still pin interface for high speed still image capture; Sensitivity: 0.7 V/lux-sec minimum  Frame rates: (ambient light @ 250 nits): SXGA (1280 x 1024) - 25 fps, SVGA (800 x 600) - 30 fps, VGA (640 x 480) - 35+ fps; Interface: USB 2.0 with selective suspend; Output formats: JPEG (still), MPEG (movie)
<b>Expansion Slots</b>	Single ExpressCard® 26-pin 34/54 mm slot or optional (factory installed) single PC/PCMCIA Type I/II card slot  Single ISO/IEC 7810 compatible Smart Card slot. Supports ISO/IEC 7816 interface protocol and PC/SC specification version 2.0.1.5. Driver software certifiable to Microsoft WHQL, EMV 2000, USB CCIE and ISO 7816 standards (Door designed to close with standard card inserted.)  Single Secure Digital (SD) card reader accepting industry standard cards with capacities up to 32GB.
<b>TPM Module Support</b>	Supports installation of a TPM controller module that meets the requirements of the Trusted Computing Group (TCG) Trusted Platform Module Specification 1.2. Supports the TPM 1.2 solutions provided by Intel and Infineon.
<b>External Interface</b>	One (1) Power Input jack: 12.0 – 28VDC (16VDC nominal); can be powered through external DC power jack or input power pins on the docking connector  Three (3) USB 2.0 external port connectors (three additional USB ports available through optional docking device); supports externally powered 4-port hub  One (1) 10/100/100 Gigabit Ethernet LAN RJ45 external connector  One (1) external RS-232 serial port D-Sub 9-pin connector  One (1) DisplayPort video output connector  One (1) headphone/microphone/external speaker jack
<b>Docking Interface</b>	One (1) Power Input : 12.0 – 28VDC (16VDC nominal)  One (1) Power Output: 5VDC ± 5% to power downstream devices  Two (2) ground/open discrete GPIO inputs pulled up to 5V inside the X10gx and wired to GPIO on the EC controller to allow for custom applications requiring discrete input; source impedance <10k and no more than 100k; both pins ESD protected  Three (3) USB 2.0 ports  Six (6) Flex I/O bi-directional discrete wired directly to the Flexboard inside the X10gx to be used for custom applications; all pins are ESD protected  One (1) VGA port  One (1) RS-232 serial port  One (1) RJ-45 Ethernet port  One (1) microphone input line  One (1) audio jack with Left and right channel audio outputs  Two (2) discrete coaxial RF connectors - one for an external GPS antenna and one for an external wireless antenna; 50ohm female BMMA-style push on/pull off connectors
<b>Flexspace™ Interface</b>	Flexible I/O for custom circuit cards and modules; space available in the rear flexspace compartment and the right side panel. Refer to the "ARMOR X10gx Flexspace Utilization Guide", P/N 9711-26020-0100 for detailed information.
<b>Power</b>	Internal: One or two 11.1 VDC 2400 mAh lithium-ion rechargeable batteries; approximately 4

## ARMOR X10gx Tablet Computer

hours operating time with two fully charged batteries; up to 2.5 hours with 1 battery; battery charging time is approximately three hours with two batteries, 1 year warranty

External : 12 – 28VDC (19VDC nominal), AC adapter or vehicle power source

**Weight and Dimensions** Weight: 2.4 kg (5.3 lbs) with 1 battery installed

Dimensions: See Dimensional drawing at end of sheet.

### Wireless\*

<b>Wi-Fi® (WLAN)</b>	Integrated Intel® Centrino® Ultimate-N6300 Wi-Fi (WLAN) PCIe mini card (IEEE 802.11a/b/g/n, 802.11d, 802.11e, 802.11i, 802.11h), with MIMO 3x3 integrated antennas on two different planes; 2.4GHz and 5GHz card for US and European operation
<b>Bluetooth®</b>	Class 2 Bluetooth 2.1 installable module with EDR, piconet and scatternet capability; interface is HCI USB compliant; Max output power: +4 dBm; -80 dBm @ 1% BER, 10 meters Sensitivity:
<b>Ethernet LAN</b>	Embedded Atheros® AR8131 PCIe 10/100/1000 Gigabit Ethernet LAN controller; Supports IEEE P802.3 1000BASE-T, 100BASE-T and 10BASE-T connection speeds; Meets IEEE P802.3 signal requirements when driving 100 meter of Category 5 Enhanced (CAT 5e) or Category 6 (CAT 6) cable Port access via external RJ45 connector on tablet and at vehicle dock breakout box
<b>Optional WWAN</b>	Qualcomm® Gobi™ 2000 Wireless WAN (WWAN), mini-PCIe card, UICC compliant to GSM TS11.11, GSM 11.12 and ISO/IEC 7816 standards; Sierra® OneClickInternet™ connection manager; Interface: USB 2.0 High Speed; Supports the following frequency bands: <ul style="list-style-type: none"> <li>• HSPA/UMTS – 800/850/900/1900/2100 MHz</li> <li>• Quad-band EDGE/GPRS/GSM – 850/900/1800/1900 MHz</li> <li>• Dual-band EV-DO/CDMA – 800/1900 MHz</li> </ul>
<b>Optional GPS</b>	Advantech® GPS-107HE half-size mini-PCIe card with u-blox® NEO-5 GPS receiver module with 50 channels and 2.0-2.5 m accuracy; receives GPS and Galileo signals; Supports: WAAS, EGNOS, MSAS, GAGAN; integrated GPS antenna or external GPS antenna support through optional RF vehicle dock

\*Wireless connectivity and some features may require the purchase of additional software, services, or external hardware. Wireless availability and options may vary by country.

### Environmental Specifications

<b>Operating and Storage Temperatures</b>	Operating: -20°C to +60°C IAW MIL-STD-810F Method 501.4 (High Temp), Method 502.4 (Low Temp) Storage: -40°C to +70°C IAW MIL-STD-810F Methods 501.4, Method 501.4 (High Temp), Method 502.4 (Low Temp) <b>NOTE:</b> Using this product in a high-temperature environment may cause non-uniform brightness.
<b>Thermal Shock</b>	-40°C to +70°C, >10°C / minute transition IAW MIL-STD-810F, Method 503.4.
<b>Solar Radiation</b>	50°C, 1120 ± 47 W/m² IAW MIL_STD_810F, Method 505.4, Procedure II
<b>Humidity</b>	+5°C to +60°C, IAW MIL-STD_810F, Method 507.4 With docking station: 15 days Cycle B3 (Natural) and 15 days Cycle B3 (Induced) IAW MIL-STD_810G, Tables I and II

## ARMOR X10gx Tablet Computer

**SPECIAL TEST** – Tablet soaked at +40°C, 95% RH for a period of at least 4 hours in the OFF condition. The tablet was then booted to the OS. At the completion of system boot, the tablet was removed from the high humidity environment and moved to a -10°C environment for a period of 30 minutes.

<b>Altitude</b>	20,000 feet for both operating and non-operating (storage) IAW MIL-STD-810F, Method 500.4
<b>Shock</b>	Operating: 30g, 11ms, 3 pulses per axis (3), per direction +/- pulse, total pulses 18 IAW MIL_STD_810F, Method 516.5, Procedure I. Non-operating: 50g, 11ms, 3 pulses per axis (3), per direction +/- pulse, total pulses 18 IAW MIL-STD-810F, Method 516.5, Procedure I
<b>Crash Hazard Shock</b>	75g, SRS IAW MIL_STD_810F, Method 516.6, Procedure V, Figure 516.6-8
<b>Transit Drop Shock</b>	4 feet to plywood over concrete IAW MIL-STD-810F, Method 516.4
<b>Vibration</b>	Operating: IAW MIL-STD-810F, Method 514.4, Figure 514.5C-3 Composite Wheeled Vehicle Storage: MIL-STD-810F, Method 514.5, Figure 514.5C-17 Minimum Integrity and Figure 514.5-C2, Composite Two Wheeled Trailer
<b>Dust and Waterproofing</b>	Meets IP67 dust and water ingress protection IAW IEC 60529 with all seals in place
<b>Compatibility with Fluids</b>	Complies with MIL-STD-810F, Method 504, Table 504.1-I
<b>ESD</b>	Withstands a contact discharge of $\pm 8$ kV and an air discharge of $\pm 22$ kV, docked or undocked IAW IEC/EN 61000-4-
<b>Hazardous Location (HAZLOC) Option</b>	X10gx can be optionally configured to meet the Hazardous Location requirements of the following: UL 1604 for Class I, Division 2, Groups A, B, C, and D CSA C22.2 No. 213-M1987 EN60079-0:2006, EN60079-15:2005; Group II, Equip Category 3, Explosive atmosphere G
<b>Regulatory Compliance</b>	The X10gx is certified to the following regulations: <ul style="list-style-type: none"><li>UL/TUV</li><li>CSA</li><li>FCC Part 15</li><li>CE Mark</li><li>E-Mark</li><li>ENERGY STAR®</li><li>EPEAT (Silver Level)</li><li>HAZARDOUS LOCATION/ATEX</li></ul>
<b>Reliability</b>	Calculated Mean-Time-Between-Failures (MTBF) of 4000 Hrs IAW ANSI/VITA 51.1

## ARMOR X10gx Tablet Computer

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### 3. GETTING STARTED

The information in this section will help you get your X10gx set up and configured for operation. Please read all warnings, cautions and notes prior to each procedure or step.



#### CAUTION!

*Use this product only in vehicles with a regulated voltage supply of +11-28 VDC ± 2%. Voltages outside this range could cause unstable operation or result in permanent damage to the computer.*



#### CAUTION!

*Use only the external AC Adapter provided with your ARMOR X10gx or an equivalent model approved by DRS. Attempting to use a different model power supply could result in equipment damage.*



#### CAUTION!

*DO NOT connect the computer to more than one power source at a time (such as both an AC adapter and docking station) or permanent damage to the battery and/or computer may result.*

### Installing the Batteries



#### CAUTION!

*When using your AC adapter, the maximum safe ambient operating temperature is 40°C.*



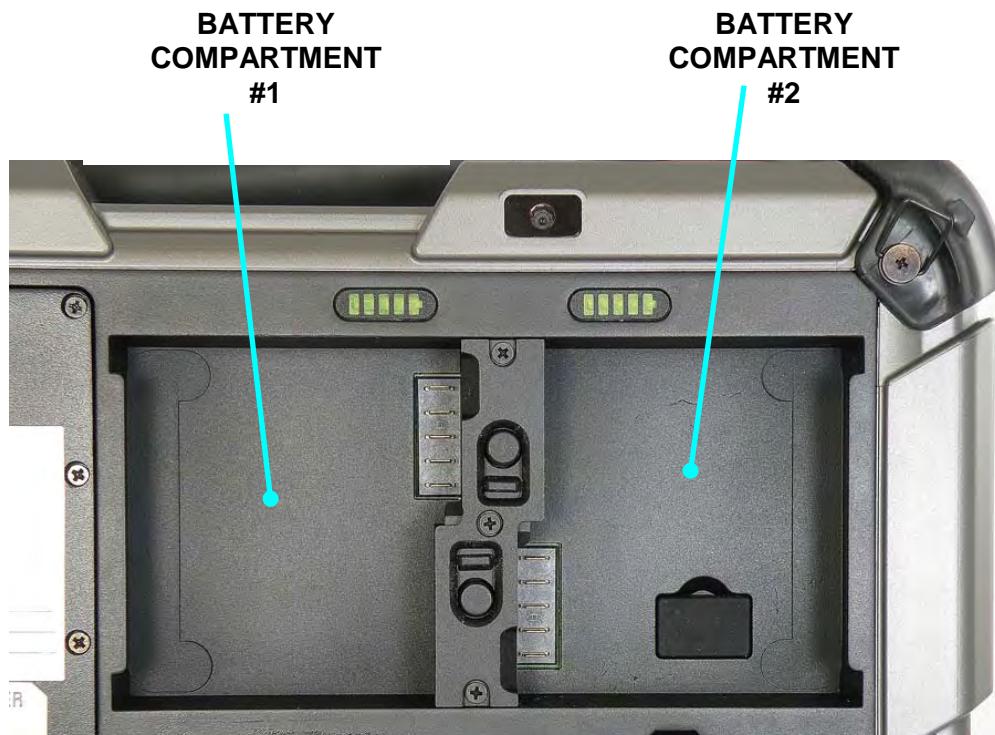
#### NOTE

*If your X10gx has only one battery pack, it can be installed in either compartment.*

## ARMOR X10gx Tablet Computer

The first step to getting your X10gx operating is to install and charge the batteries. If you do not plan to use your computer immediately, we recommend you store the batteries in a safe place until needed (see [How to Store Batteries When Not in Use](#)).

The battery compartments are located on the rear of the unit, as shown in Figure 32. Follow the procedure in Table 2 to install the batteries.



**Figure 32. ARMOR X10gx Battery Compartments**

## ARMOR X10gx Tablet Computer

Table 2. Installing an X10gx Battery

STEP	ACTION	COMMENTS
1.	Locate the latch between the two battery compartments on the back of the unit, as shown in Figure 33.	Battery #2's latch is the top latch. The battery can be installed in either compartment.
2.	Press in and hold the button while sliding the latch down.	
3.	<p><b>CAUTION!</b></p> <p><i>Do not force the battery into position. If the battery will not slip easily onto the connector, pull it slightly toward the center wall and press in gently.</i></p>	

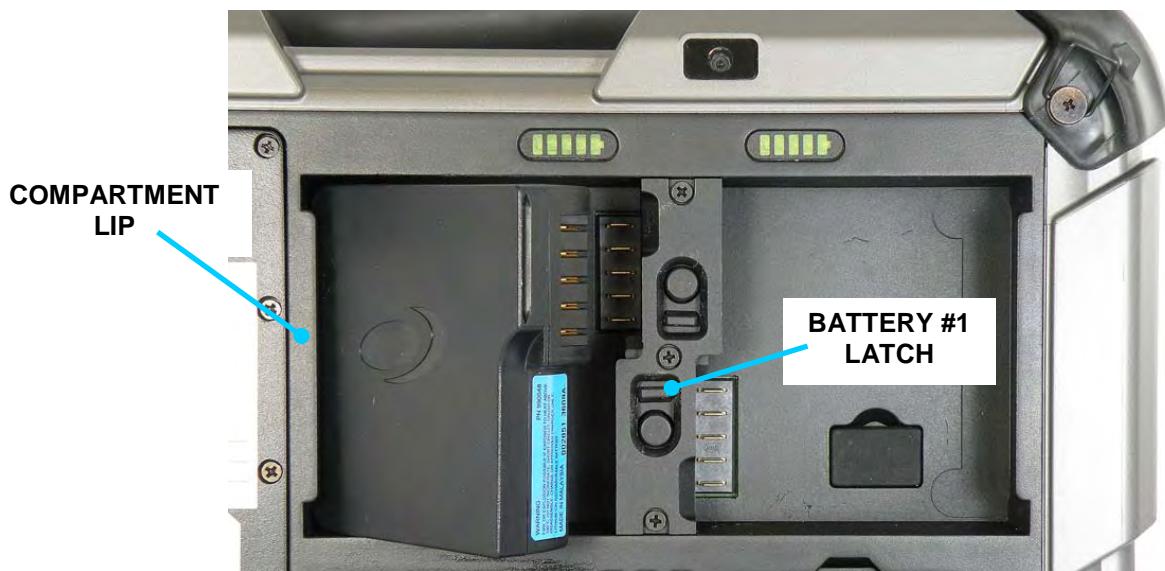


Figure 33. Battery Positioned for Insertion

**ARMOR X10gx Tablet Computer**

STEP	ACTION	COMMENTS
<b>4.</b>	Slide the latch up until the button pops out. The battery is now locked in place.	
<b>5.</b>	If your X10gx has only one battery, go to Step 9.	
<b>6.</b>	If your X10gx has two battery packs, slide the top latch open.	
<b>7.</b>	Install the second battery and press down until the connector seats.	
<b>8.</b>	Slide the latch down until the button pops out.	
<b>9.</b>	Connect the AC adapter to the DC power input jack on the left side of the tablet and allow the batteries to charge until all fuel gauge LEDs are on steady and the Charging/Fault LED on the front panel is on steady. This will take from 2–4 hours.	You can power up and operate the X10gx while the batteries charge, but the total charging time may be longer depending on the initial charge of the batteries and the power demands of the computer.

**ARMOR X10gx Tablet Computer****Turning on your X10gx for the First Time**

Follow the procedure in Table 3 to configure your Windows operating system.

**Table 3. Performing the Microsoft Out-of-Box-Experience (OOBE)**

STEP	ACTION	COMMENTS
1.	If you have a USB keyboard available, connect it to any USB port at this time.	If you do not have an external keyboard connected, you will need to activate the on-screen keyboard later in the OOBE setup procedure.
2.	Press and hold the <b>Power</b> button on the control panel for 1-2 seconds and then release.	When the computer boots up, the Microsoft Out of Box Experience (OOBE) screen will open. <b>NOTE:</b> If a Sysprep window opens, click on the down arrow and select Microsoft Out-of-Box-Experience.
	 <b>NOTE</b> <i>Touch and pen screen calibration will degrade slightly during OOBE but will return to normal after the OOBE process is complete.</i>	
3.	Follow the OOBE instructions. If you need to use the on-screen keyboard, wait until the OOBE process reaches the <b>User Account setup screen</b> , then click on the Accessibility icon  in the lower left corner and select <b>Start On-Screen Keyboard</b> .	Once the keyboard is started, you can use it like a regular keyboard to select options and enter data. If you have any questions about using the virtual keyboard, click on the <b>Options</b> key.
	 <b>NOTE</b> <i>If you used the OOBE on-screen keyboard, you must manually turn it off or it will appear each time you restart the computer.</i>	

## ARMOR X10gx Tablet Computer

STEP	ACTION	COMMENTS
4.	Once you finish the OOBE, if you do not want the on-screen keyboard to appear each time you log on, click on the virtual keyboard <b>Options</b> key and Select <b>Control whether the On-Screen Keyboard starts when I log on.</b>	
5.	Un-check <b>Use the On-Screen keyboard.</b>	

### Turning the X10gx On Normally

Turn the computer on by pressing the **Power** button for 1-2 seconds and releasing it. The ARMOR X10gx will perform self-checking routines during the start-up process. All units are configured at the factory to automatically boot to the Microsoft Windows desktop unless a custom configuration has been requested.

### Turning the Computer Off Normally

To turn the computer off normally, select **Start → Shut Down** from the Windows desktop. The computer will perform a normal shutdown. **NOTE:** There is a 5-10 second delay before you can restart the computer after a complete shutdown.



#### NOTE

*Unless you have changed the default action of the Power button, pressing the Power button when the computer is running will not cause it to shut down but will put the computer into Sleep mode and the screen will go dark. This could be mistaken for a power off condition while the computer is actually still running and consuming battery power. When the computer is in sleep mode, the blue Power LED on the indicator panel will flash slowly.*

You can re-program the power button to shut down the computer when pressed while the computer is running. Refer to [Changing the Power Button Default Action](#).

### Emergency Shutdown

If an emergency condition occurs where the computer needs to be shut down immediately, press and hold the **Power** button for more than 5 seconds. The computer will bypass the normal Windows shutdown sequence and turn off.

## ARMOR X10gx Tablet Computer

This procedure should only be used in emergencies because improperly shutting down Windows may result in corruption of the operating system and/or the loss of data.

### Putting the Computer into Sleep Mode

To put the computer into Sleep mode (also called “Standby”), press and release the **Power** button while the tablet is operating. **NOTE:** This is the default action of the Power button when you first receive your X10gx, but this can be changed in Windows Control Panel (see [Changing the Power Button Default Action](#) for instructions).

You can also put the computer into Sleep mode from the Windows desktop. Click on the **Start** button and click the down arrow next to the **Shut down** button in the lower right corner of the Start menu, then select **Sleep** from the drop-down menu.

To “wake up” the computer, press and hold the **Power** button for 1-2 seconds and then release. This will take you back to the desktop and you can resume your session where you left off.

### Indications that your X10gx is Asleep

In Sleep mode, your session is saved to RAM memory and the screen is turned off. All LEDs will initially be off (except for the Charging/Fault LED if external power is applied). Once the session has been suspended by the computer, the Power indicator LED and the Power button LED will flash in sync at a 1 sec on/2 sec off rate to indicate you are in sleep mode.

### Putting the Computer into Hibernate Mode

From the Windows 7 desktop, click on the **Start** button and then click on the **down arrow** next to the **Shut down** button in the lower right corner of the Start menu, then select “**Hibernate**” from the drop-down menu.

When you place the computer in hibernate mode, your current session is saved to your solid-state drive or mSATA memory and the computer is powered down. There are no visual indications that the computer is in hibernation; the computer is powered down and all led's will be off, with the exception of the Charging/Fault indicator if you have external power connected.

To wake up the computer, press and hold the **Power** button for 1-2 seconds and then release. This time, the computer will wake up to the locked user account selection screen. Click on the current icon to resume your previous session. You may have to enter a password or swipe your fingerprint, depending on how you have your login set up.

**ARMOR X10gx Tablet Computer**

## Indicator State Summary

Table 4 lists all states for the various X10gx indicators. **NOTE:** Indications involving battery power are the same for one or two batteries.

**Table 4. LED Indication Summary**

LED	IF THE INDICATION IS:	AND THE POWER MODE IS:	AND EXTERNAL POWER IS:	AND BATTERY IS:	THIS MEANS:
<b>Wi-Fi Activity (blue)</b>	On steady	Power on	N/A	Installed	Radio is connected to a network
	Flashing at 1/2 sec on/4 sec off	Power off	N/A	Installed	Radio is trying to connect to network
	Off	Power on	N/A	N/A	No valid network in range, tablet is in Sleep mode or radio is disabled in ARMORutils
<b>GPS Enabled (blue)</b>	On steady	Power on	N/A	N/A	Radio is connected to a network
	Off	Power on	N/A	N/A	Tablet is in Sleep mode or radio is disabled in ARMORutils
<b>WWAN Activity (blue)</b>	On steady	Power on	N/A	N/A	Radio is connected to a network
	Flashing at 1/2 sec on/4 sec off	Power off	N/A	N/A	Radio is trying to connect to network
	Off	Power on	N/A	N/A	No valid network in range, tablet is in Sleep mode or radio is disabled in ARMORutils
<b>Storage Activity (blue)</b>	Flashing intermittently	Power on	N/A	N/A	Processor is accessing a storage device
<b>Charging/ Fault</b>	Off	Power on	Disconnected	Installed	External power is disconnected

## ARMOR X10gx Tablet Computer

LED	IF THE INDICATION IS:	AND THE POWER MODE IS:	AND EXTERNAL POWER IS:	AND BATTERY IS:	THIS MEANS:
(amb/red)	On steady amber	N/A	Connected	Installed	Battery is fully charged
	Flashing amber at 1 sec rate	N/A	Connected	Installed	Battery is charging
	Flashing amber at 1/2 sec rate	Power on or off	Connected	Installed	Battery charging has been suspended due to extreme battery temperature (above 45°C or below 0°C). Charging will resume when temperature is between 0°C and 45°C.
	On steady red	Power on or off	Connected	Installed	<p>Power system fault (overvoltage, undervoltage or overcurrent condition or battery failure).</p> <p><b>NOTE:</b> The LED will turn off when the fault condition is removed.</p>
Power On/Off (blue)	On steady	Power on	N/A	N/A	Power is on
	Flashing 1 sec on/2 sec off.	Power on	N/A	N/A	Tablet is in Sleep mode
	Off	Power off	N/A	N/A	Power is off
	Flashes 5 times when Power button is pressed	Power off	Disconnected	Installed	Battery is fully depleted (overly discharged).
Fuel Gauge (green)	Single LED on steady	Power on	Disconnected	Installed	Total charge is maximum for that level
	Single LED on steady	Power off	Connected	Installed	Total charge is maximum at that level
	Single LED off	Power on	N/A	Installed	Total charge is less than half for this level

**ARMOR X10gx Tablet Computer**

LED	IF THE INDICATION IS:	AND THE POWER MODE IS:	AND EXTERNAL POWER IS:	AND BATTERY IS:	THIS MEANS:
	LED # 1 (far left) blinking at 1 second rate	Power on	Disconnected	Installed	Battery is below 10% charge level (depleted). Recharge or replace immediately
	All LEDs off	Power off	Disconnected	Installed	No status <b>NOTE:</b> Press any of the PBs to activate the fuel gauge LEDs for 5 seconds
	All LEDs off	Power on or off	Disconnected	Installed	Battery is fully depleted (overly discharged).

## Configuring and Controlling your Wireless Radios

For instructions on configuring and controlling your wireless radios, including the optional WWAN radio and optional GPS receiver, refer to Section 4, [Networking](#). You will also find instructions for connecting to a cabled LAN.

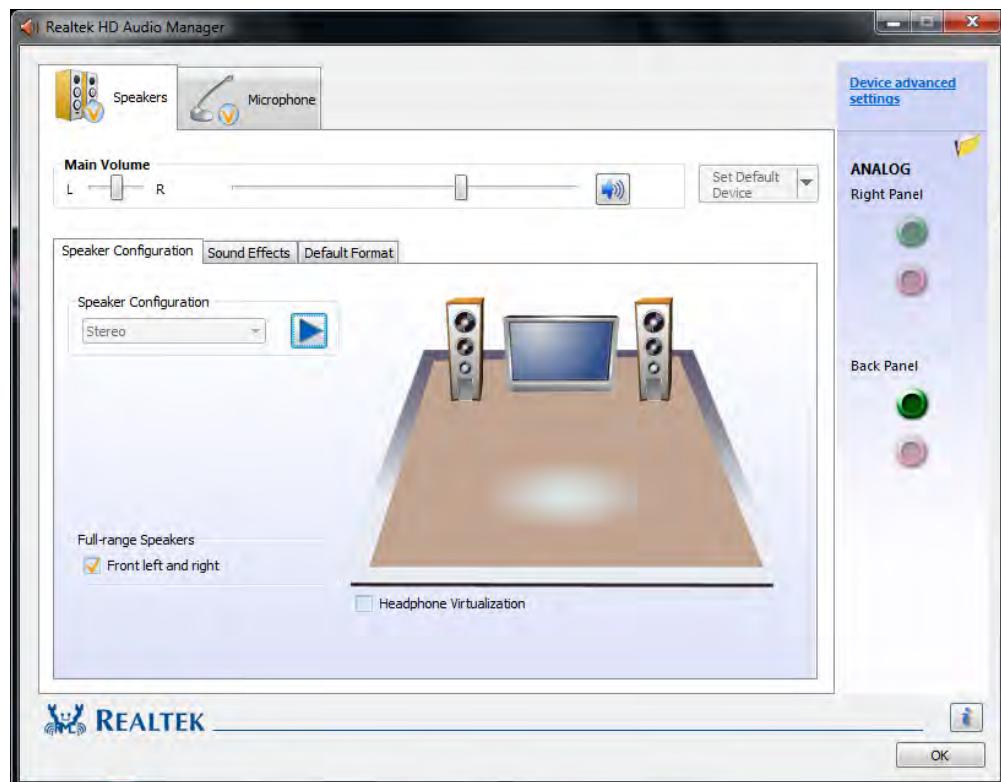
**ARMOR X10gx Tablet Computer**

## Configuring your Audio System

Follow the procedure in Table 5 to configure your speakers. Follow the procedure in Table 6 to configure your microphones.

**Table 5. Configuring the Speakers**

STEP	ACTION	COMMENTS
1.	Double-click on the <u>orange</u> speaker icon  in the systray.	The Realtek® HD Audio Manager window opens with the <b>Speakers</b> main tab (top of page) open and the <b>Speaker Configuration</b> sub-tab displayed, as shown in Figure 34
2.	Adjust your speaker/headset volumes as desired.	
3.	Select the <b>Sound Effects</b> sub-tab to select special effects.	
4.	Select the <b>Default Format</b> sub-tab to choose your default sound format.	



**Figure 34. Realtek HD Audio Manager - Speakers Main Tab**

## ARMOR X10gx Tablet Computer

Table 6. Configuring your Microphones

STEP	ACTION	COMMENTS
1.	Click on the <b>Microphone</b> main tab at the top of the page.	The Microphone main tab opens with the <b>Microphone Effects</b> sub-tab displayed, as shown in Figure 35.
2.	Set up and adjust your microphones.	
3.	Click on the <b>Default Format</b> sub-tab to select a default sound format for your microphones.	

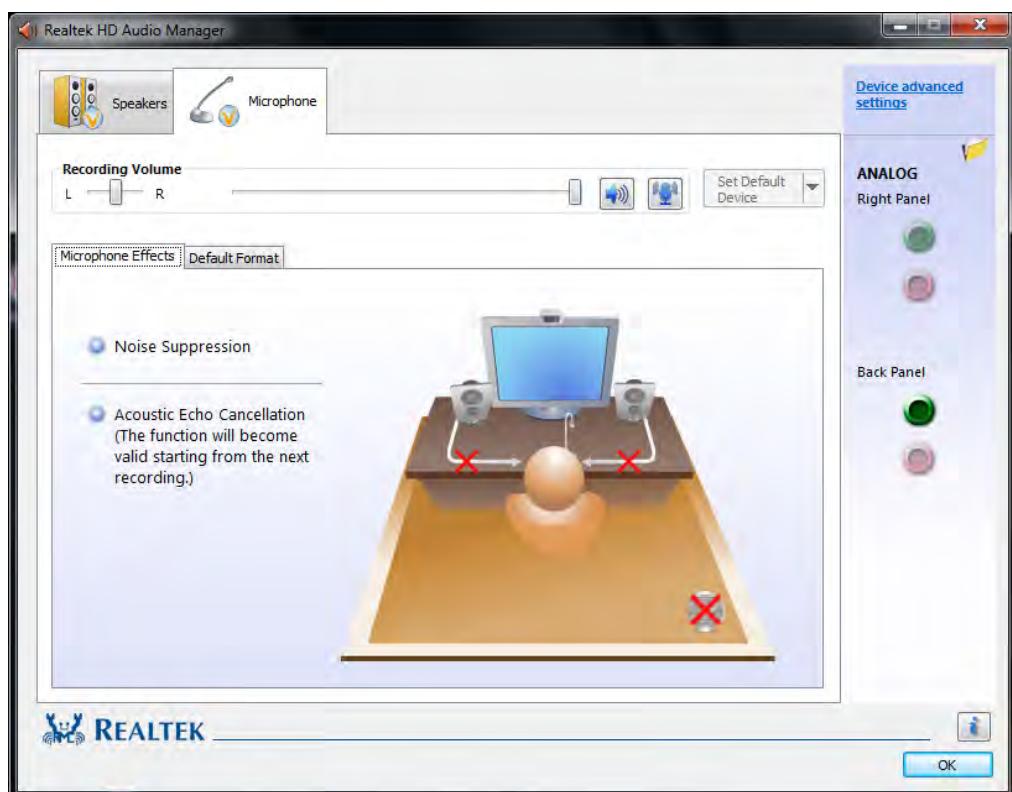


Figure 35. Microphone Main Tab

## ARMOR X10gx Tablet Computer

### Operating the X10gx Display

#### Selecting the Display Mode

If you have the 32-bit version of Windows 7, your X10gx has the capability to operate with both a touch screen and a pen screen enabled (Dual mode), or you can select Touch screen only or Pen screen only mode. The default display mode is “Dual Mode”.



#### NOTE

*If you have the Windows 7 64-bit operating system, you will not be able to select Touch Only or Pen Only mode due to a conflict in the WACOM drivers for the display. DRS is working to correct this problem. Please contact DRS Technical Support toll free at 1-800-872-1100 for current status and a possible fix.*

To select touch or pen screen only operation, click on the **ARMORutils** icon in the systray menu, then select the **Screen Setup** option from the Main screen. The Screen Setup dialog will open as shown in Figure 36.



#### CAUTION!

*If you change to Pen Only mode using the touch screen and then save this as the default configuration, and you do not have an active pen, you will not be able to access the screen or switch back to Dual or Touch Only modes unless you attach an external USB mouse or obtain an active pen. Restarting the computer will not change anything.*

Click on **Touch Only** to deactivate the pen screen, or click on **Pen Only** to deactivate the touch screen. The screen option that is selected will appear grayed out with a line around it. Click on **Dual** to re-enable both screens.

**NOTE:** Any change you make will only affect the current session unless you click on **SAVE AS DFLT** to make the latest change the new default display configuration.

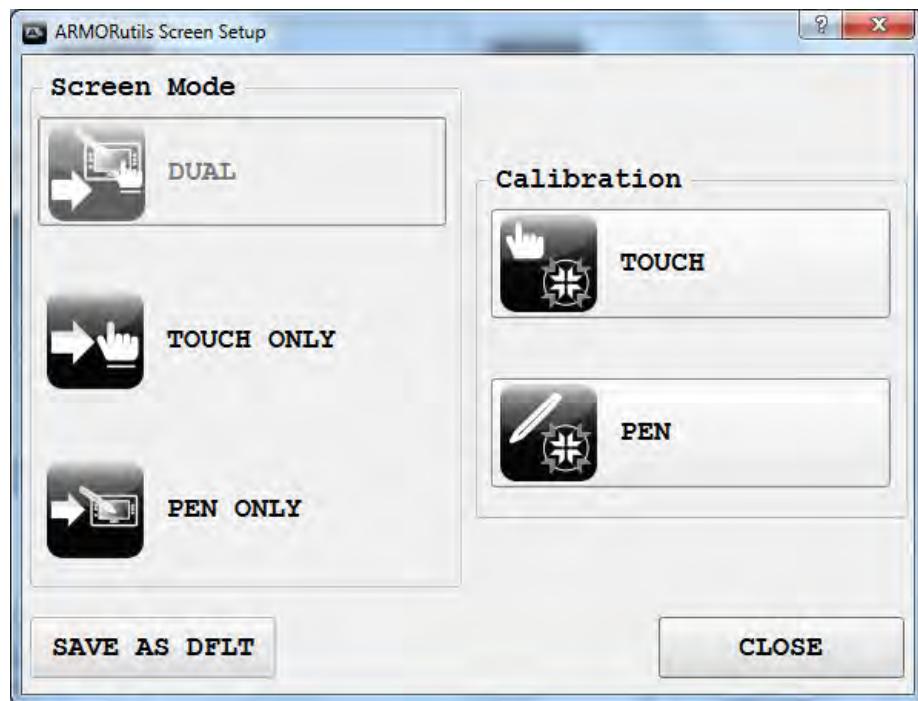
**ARMOR X10gx Tablet Computer**

Figure 36. ARMORutils Screen Setup

## ARMOR X10gx Tablet Computer

### Adjusting Screen Brightness

The brightness of the LCD display is controlled by adjusting the backlight intensity either automatically or manually. When you first receive your ARMOR X10gx, the brightness mode is set to Automatic. To switch to Manual brightness control, or switch back to Automatic mode, open ARMORutils and click on the **Backlight Setup** option in the ARMORutils Main dialog window. This will open the Backlight Setup dialog window shown in Figure 37.

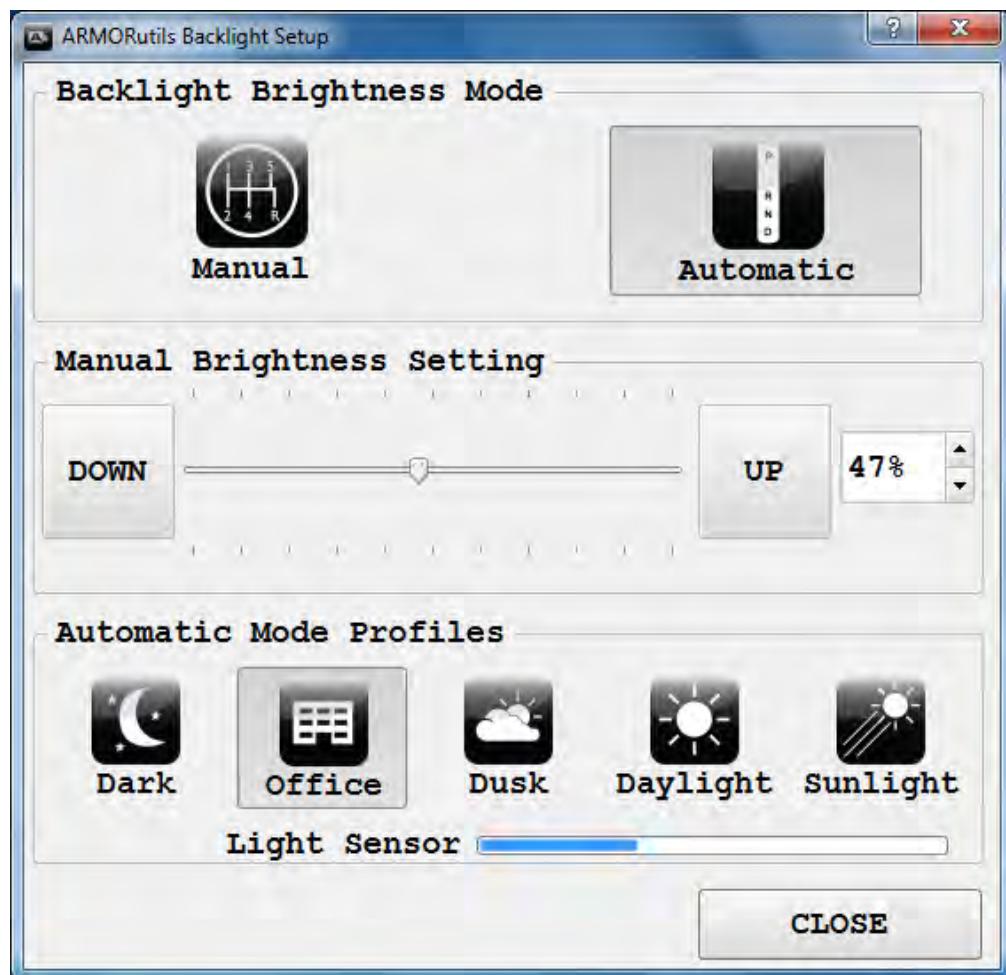


Figure 37. ARMORutils Backlight Setup Dialog Window

### Automatic Brightness Adjustment

In Automatic mode, the backlight level is controlled by the ambient light sensor (ALS) located on the indicator panel. If the surrounding light decreases, the brightness will *decrease* proportionally; if the surrounding light increases, the brightness will *increase* proportionally.

## ARMOR X10gx Tablet Computer



### NOTE

*You must keep the ALS uncovered to allow proper automatic brightness adjustment.*

#### Selecting an Automatic Mode Profile

You can tailor the automatic brightness adjustment by selecting one of the 5 pre-configured brightness profiles. DRS has researched typical lighting environments and has created these adjustment profiles that respond more precisely to changing light levels within a particular environment.

For example, if the automatic brightness doesn't keep the display bright enough for you under surrounding lighting conditions, you can select the Dusk, Daylight or Sunlight profile to increase the brightness range proportionally. Similarly, if the normal brightness control results in light levels that are consistently too bright, you can select the Office or Dark profile to reduce the brightness range.

#### Manual Brightness Adjustment

Click on the **Manual** button to change to manual brightness mode. You can manually adjust screen brightness in two ways: by using pre-programmed buttons (PBs) **P1**, **P2** and **P3** or by using options and buttons in the **Backlight Setup** dialog.

#### Using P1, P2 and P3 to Adjust Brightness

When you first receive your X10gx, the **P1** button is programmed to increase screen brightness in 10% steps, **P2** is programmed to decrease brightness in 10% steps and **P3** is programmed to toggle the display off and on.

Press and release **P1** repeatedly to increase the brightness to its maximum level (100%); press **P2** repeatedly to decrease the brightness to its minimum level (10%). Press **P3** to turn the screen completely off; press it again to turn the screen back on to its previously set level.



### NOTE

*When handling the tablet, it is easy to accidentally hit the P3 button, which will turn off the display and it may appear that the tablet is in Sleep mode. Before pressing the Power button, check if the wireless indicators are active. If they are, your tablet is not asleep. Press the P3 button to restore the display.*

P1, P2 and P3 are initially programmed to adjust screen brightness; however, you can change each button's programming as described in [Buttons Setup Dialog](#).

#### Using the Backlight Setup Dialog to Adjust Brightness

Drag the **slider** or press the **UP** or **DOWN** buttons repeatedly with the pen or a fingertip to move the slider and adjust the brightness level. The % brightness is displayed in a field on the right. You can also use the up and down arrows next to this field to adjust the slider.

## ARMOR X10gx Tablet Computer

### Working with the Pen Screen

When the pen screen is active, you can steer the cursor and perform many functions by simply hovering close to the screen without actually touching it. Other functions are initiated by pressing the tip to the screen surface to activate the tip switch or by pressing the side button switch (see Table 7).

#### Your X10gx Pen

The pen that comes with your X10gx (Figure 14) is stored in the tablet's carrying handle and has circuitry that interacts with the digitizer assembly built into the pen screen. The digitizer detects the pen tip close to the screen and activates certain functions like steering the cursor or performing a right click action if the pen is allowed to hover for a few seconds.

The pen also has a side button that can be programmed for a number of different functions. Its default function is right-click.



#### NOTE

*The actual actions of the active pen may vary slightly depending on the current version of the pen drivers.*

#### Using the X10gx Pen with the Pen Screen

Table 7 lists mouse-type objectives you can perform using the X10gx pen with the pen screen.



#### NOTE

*This description assumes the side button is programmed for the right-click function. Refer to [Pen Tablet Properties Utility](#) to learn how to re-program the side button.*

**Table 7. Pen Screen Actions**

MOUSE OBJECTIVE	PEN ACTION
Select option or tab or open submenus. Fill selection boxes. Activate buttons. Deselect highlighted objects (touch next to the object).	Tap once
Select multiple objects.	Touch pen tip to display and drag box around objects
Highlight the object or option.	Hover over object or option

## ARMOR X10gx Tablet Computer

MOUSE OBJECTIVE	PEN ACTION
Move an object on the desktop.	Touch an object and move it with the pen.
Start an application or open a folder.	Tap twice
Open menu options (right-click).	Press and hold pen tip to screen until a circle appears, then release – or - Press side switch and touch object or option

### Pen Adjustments

You can change attributes related to use of the pen (e.g. side switch action, enabling a click sound, etc.). Refer to the [Pen Tablet Properties Utility](#) for an explanation of these attributes.

### Pen Screen Calibration

After a period of normal usage, the screen may need to be calibrated with the pen to ensure the pen tip is aligned with the cursor over the entire screen area. To perform this calibration, refer to [Calibrating the Display](#).

## ARMOR X10gx Tablet Computer

### Working with the Touch Screen

When the touch screen is active, the pressure of a stylus tip or fingertip against the screen is used to duplicate actions with a two-button mouse.



#### NOTE

*Tapping with a passive stylus requires only light to moderate pressure. It is possible to damage the display by pounding the tip against the surface with too much force.*

#### Using a Fingertip or Passive Stylus with the Touch Screen

Table 8 lists mouse-type objectives you can perform using a fingertip or passive stylus with the touch screen.

**Table 8. Fingertip Actions**

MOUSE OBJECTIVE	STYLUS ACTION
Select tabs or open sub-menus. Highlight a label or option. Fill selection boxes. Activate buttons. Deselect highlighted objects or release multiple objects	Tap once  Tap outside the object(s)
Start an application or open a folder.	Tap twice
Move an object on the desktop.	Press over an object, hold contact with display, drag fingertip and release pressure.
Open menu options.	Press over icon or option and hold contact with display without moving fingertip.
Select multiple objects.	Press and hold contact with display, drag box around objects.

## ARMOR X10gx Tablet Computer

### Touch Screen Adjustments

You can change touch attributes related to use of the pen (e.g. touch area and tap speed.). Refer to the descriptions in [Windows Display Utilities](#) for an explanation of these attributes.

### Touch Screen Calibration



#### NOTE

*You will not be able to use the pen that came with your X10gx to calibrate the touch screen since the calibration routine will detect the active pen tip and not allow you to proceed. Use your fingertip or a passive stylus designed for touch screens.*

After a period of normal usage, the touch screen may need to be calibrated with the fingertip to ensure the cursor matches the actual touch point. To perform this calibration, refer to [Calibrating the Display](#).

## ARMOR X10gx Tablet Computer

### Entering Data Using the Input Panel

#### Accessing Input Panel in Windows 7

The input panel is a virtual keyboard and handwriting entry tool that is located on your desktop. It is hidden just off the top left or right side of the display. The edge appears in the upper left corner when you move the active pen close to the screen or tap anywhere on the screen with a fingertip or passive stylus, as shown in Figure 38. When the edge is visible, tap on it twice to fully open it on the desktop, as shown in Figure 39.



Figure 38. Location of the Input Panel



Figure 39. Input Panel Keyboard Opened on Desktop

#### Operating Modes

The input panel has two modes: handwriting and keyboard entry. These are selectable by the two mode icons at the upper left corner. **NOTE:** The panel will always re-open in the last mode used. Click on the **Tools** menu for handwriting options and for information on how to set up and use Input Panel.

## ARMOR X10gx Tablet Computer

### Editing Documents

When you tap on an open text document such as a Word document, a keyboard icon  will appear on the screen. Tap on this icon to open the input panel.

### Configuring Input Panel Options

The **Input Panel Options** window is where you can change a wide variety of Input panel display and operating features. There are two ways to get to this window:

1. Click on **Control Panel** → **Hardware and Sound** → **Tablet PC Settings** and select the **Other** tab, then click on **Go to Input Panel Settings**.
2. With the Input Panel keyboard open on the desktop, click on the down arrow next to the **Tools** button and select **Options**.

Click on the link **Learn More About Opening and Moving Input Panel** at the bottom of the options window to access a Windows help tutorial about opening and positioning the Input Panel.

### Opening Input Panel with a Gesture

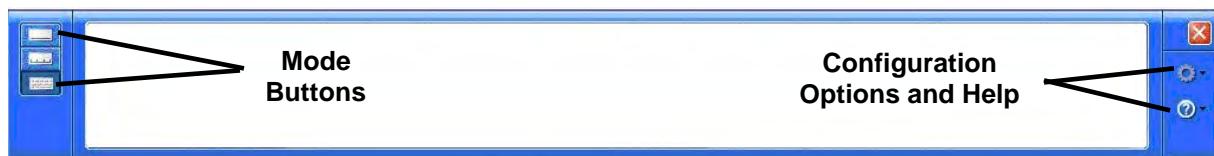
You can also use a side-to-side gesture to open the input panel. **Select Start** → **Control Panel** → **Hardware and Sound** → **Pen and Touch**, then highlight **Start Tablet PC Input Panel** in the Pen Actions panel and click on **Settings**.

When the Start Input Panel Gesture Settings window opens, check the **Enable Start Input Panel** gesture option. Follow the instructions to test and adjust your gesture.

## ARMOR X10gx Tablet Computer

### Accessing Input Panel in Windows XP

Tap on the **Input Panel** icon  in the task bar to open the Input Panel frame, as illustrated in Figure 40.



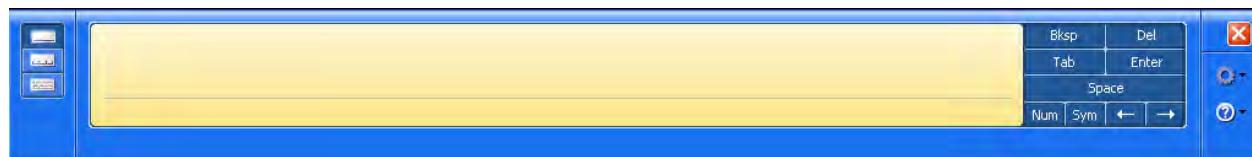
**Figure 40. Input Panel with No Mode Showing (for illustration purposes only)**

Using the Input Panel, you can write notes in your own handwriting or enter data one character at a time with the digital pen or the stylus.

The Input Panel has three modes for entering data: **On-Screen Keyboard mode**, **Character Pad mode** and **Writing Pad mode**. Each mode has a button on the left side of the panel. The Input Panel will always open in the last mode that was selected or used.

#### Writing Pad

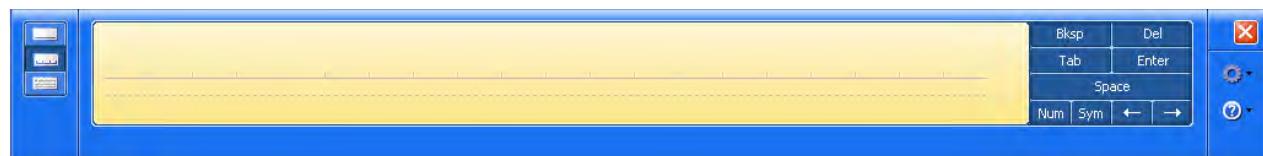
Pressing the top mode button opens the Writing Pad (Figure 41) within the Input Panel. In this mode, you can enter text by using the stylus in your own handwriting, or “ink”. The Writing Pad is especially useful for tasks such as taking notes or adding text to an existing text file. As you write, the Input Panel expands to accommodate more text as needed. If you want to convert ink to text, the Input Panel does so dynamically.



**Figure 41. Writing Pad Mode**

#### Character Pad

Pressing the middle button opens the Character Pad (Figure 42). The character pad can also convert your ink to text so that it can be inserted into a program, but this mode is used to enter one letter at a time using the stylus. The Character Pad is particularly useful when you need high accuracy—for example, when you’re entering an email address or a URL. The characters that you enter into the character pad are immediately converted to text, so you can spot errors immediately.



**Figure 42. Character Pad Mode**

## ARMOR X10gx Tablet Computer

### On-screen Keyboard

Use the on-screen keyboard (Figure 43) when you don't want to use ink but you do want to use the pen, or when you're using a Tablet Computer without an attached keyboard. Simply tap the letters on the keyboard to form words. The Input Panel enters the text directly in the field or at the insertion point of the active program. The on-screen keyboard is especially useful for entering small amounts of text, such as passwords and file names.



**Figure 43. On-Screen Keyboard Mode**

### Customizing the Input Panel

You can customize the Input Panel based on your personal preferences, such as automatic text insertion, changing the ink thickness, and adjusting the amount of space between lines in the writing area. Click on the  icon to open a submenu and select **Options**.

### Entering Data using Other Virtual Input Devices

There are a number of on-screen keyboards offered by companies other than Microsoft, such as the [My-T-Pen® Onscreen Virtual Keyboard Utility](#) and the [Comfort® On-Screen Keyboard for Windows](#).

There are also other types of software and hardware input devices besides virtual keyboards that can be used for viewing and entering data, such as hand gesture recognition software and infrared tracking devices.

## ARMOR X10gx Tablet Computer

### Using the Fingerprint Sensor (FPS)

#### Installing the FPS Software

To initially set up your FPS software, double-click on the **TrueSuite** icon on the desktop and click on **Get Started** to begin. This will take you through the steps to enroll, or register, your fingerprint(s). The fingerprint sensor is located on the right side of the tablet in the middle of the row of buttons.

Once you have enrolled your fingerprints, you will need to swipe in each time you restart the computer.

#### Using the Fingerprint Sensor

To use the fingerprint sensor, swipe your finger or thumb from side to side at medium speed across the sensor.

#### Using the TrueSuite Application

Open the TrueSuite application by double-clicking on the **TrueSuite icon** on the desktop or by selecting **Start → All Programs** and clicking on the **TrueSuite** folder in the programs list (you may have to scroll down to see it). Click on the **TrueSuite** option to open the application, as shown in Figure 44. There are five user panels available. Click on the navigation icon  in the upper right corner to open a panel.

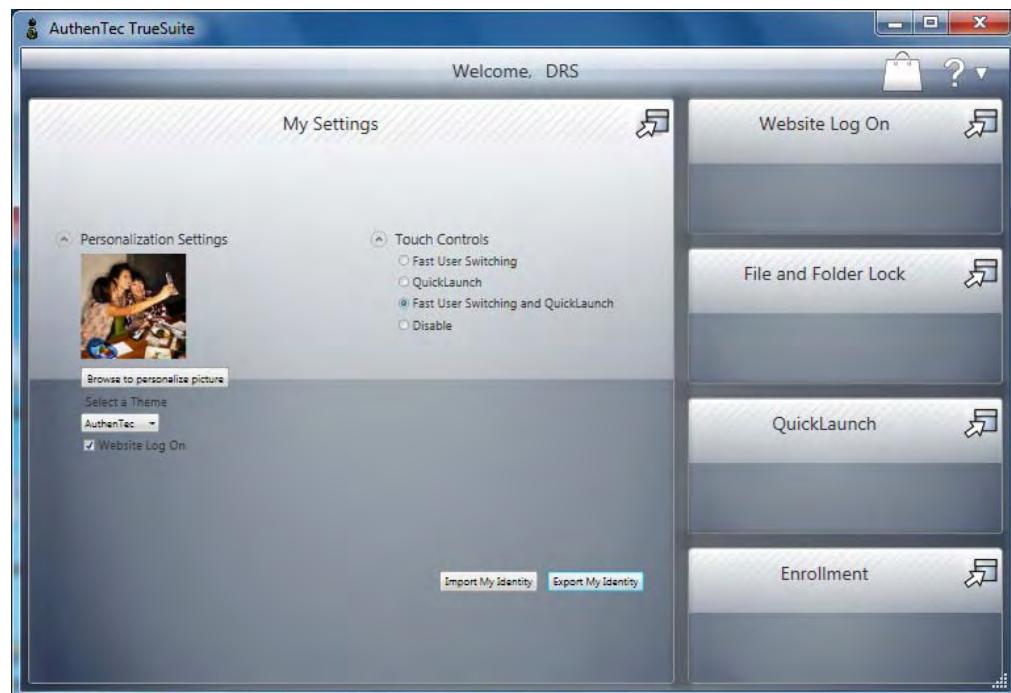


Figure 44. TrueSuite Application Window

## ARMOR X10gx Tablet Computer

### TrueSuite Options and Settings

A complete description of the options and settings of the TrueSuite software is beyond the scope of this user's guide. Click on the "?" in the upper right corner of the window to access the application's help resources for detailed descriptions and instructions.

### Uninstalling your Fingerprint Software

Should you decide to uninstall your fingerprint software, be sure to use the uninstall program provided with the AuthenTec software rather than through Control Panel.

Click on **Start → All Programs → TrueSuite → Uninstall TrueSuite.**

**ARMOR X10gx Tablet Computer**

## Using the Webcam

### Capturing Images and Video

Image and video capture is performed using the built-in webcam and image capture software. Your X10gx is provided with a complementary version of Picasa 3™ to demonstrate the image capture process, or you may wish to download and install your own camera application.

Follow the procedure in Table 9 to capture and save a still image or movie using the Picasa 3 software.

**NOTE**

*Remove the blue protective film from the webcam lens before using the camera.*

**Table 9. Capturing a Still Image or Video**

STEP	ACTION	COMMENTS
1.	Double-click on the <b>Picasa 3</b> icon on the desktop.	The Picasa application window will open as shown in Figure 45.
2.	Click on the “ <b>Capture photos or video...</b> ” button in the options bar (see Figure 45).	A Capture dialog window will open displaying the current webcam image.
3.	To capture the image as a <b>still image</b> , click on the <b>camera</b> button below the image.	Each capture will appear as a thumbnail at the bottom of the window.
4.	When finished, click on the <b>Done</b> button to access editing and correction options or to save or upload your images.	
5.	To capture moving video, click on the <b>Record</b> button below the image.	The capture window will change to a viewer with options to view, save and upload your captured video.
6.	To return to the main window, click on the <b>Back to Library</b> button.	
7.	Refer to the <b>Picasa Help resources</b> for detailed instructions.	

## ARMOR X10gx Tablet Computer

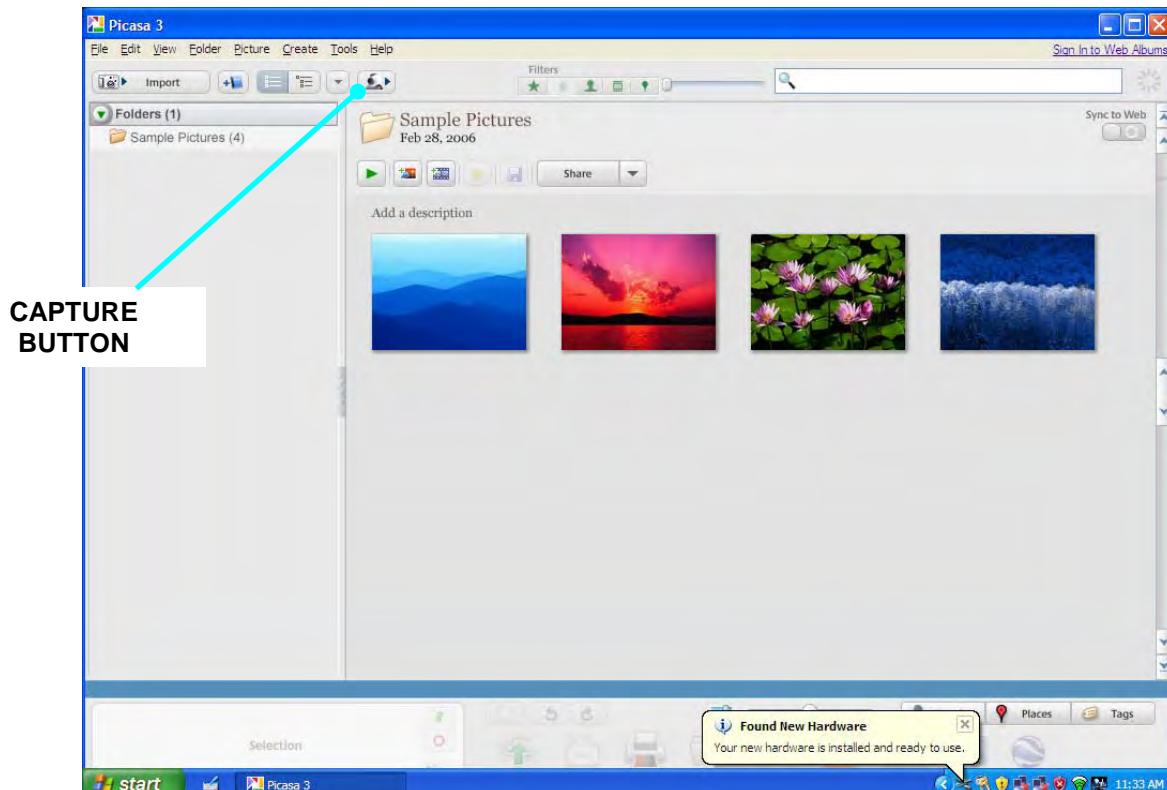


Figure 45. Picasa Application Window

## Scanning a Barcode

The built-in webcam and application software of your choice allow you to scan various types of barcodes and incorporate them in to your documents. We have included two simple applications to demonstrate the barcode scanning capabilities of the X10gx.



### NOTE

*Ensure that adequate light can reach the barcode to be scanned.*

#### Linear Barcodes Such as UPC-10, EAN-13 and ISBN

Figure 46 shows a sample of a linear barcode. Follow the procedure in Table 10 to scan a linear barcode.

**ARMOR X10gx Tablet Computer****Figure 46. Sample Linear Barcode****Table 10. Scan UPC-10, EAN-13 and ISBN Barcodes in Windows 7**

STEP	ACTION	COMMENTS
<b>1.</b>	Double-click on the <b>Webcam Barcode Scanner</b> icon on the desktop.	The application window opens as shown in Figure 47.
<b>2.</b>	Hold the barcode to be scanned 2-3" from the camera and hold it steady.	A tone will announce successful barcode capture, and the barcode number will appear at the bottom of the window. The captured barcode is stored in the Windows clipboard.
<b>3.</b>	To use a barcode in an application, place the pointer in the application and paste.	

**Figure 47. Webcam Barcode Scanner® Barcode Scanner Application Window**

## ARMOR X10gx Tablet Computer

### 2D Barcodes in Datamatrix or QR format

A sample 2D barcode is shown in Figure 48. Follow the procedure in Table 11 to scan a barcode.



**Figure 48. Sample 2D Barcode**

**Table 11. Scan Datamatrix and QR Format Barcodes in Windows 7**

STEP	ACTION	COMMENTS
1.	Double-click on the <b>QuickMark</b> icon on the desktop.	The QuickMark® application window opens as shown in Figure 49.
2.	Hold the barcode to be scanned 2-3" from the camera,	An audible signal will sound upon capture and the barcode information will be displayed in the application window, as shown in Figure 50.
3.	To return to the camera mode, click on the door icon at the lower right corner of the window.	



**Figure 49. QuickMark® Barcode Scanner Application Window**

**ARMOR X10gx Tablet Computer**

**Figure 50. A Captured 2D Barcode**

## ARMOR X10gx Tablet Computer

### Screen Magnifier

Some text and images on a tablet computer can be so small they are difficult to see clearly. Your X10gx has a handy application that will magnify a portion of the screen and help you see more effectively. The program is called Virtual Magnifying Glass™.

To start the application, click on the **Virtual Magnifying Glass icon** on the desktop or select **Start > Programs > Virtual Magnifying Glass**.

Use the Scroll wheel to increase or decrease magnification. The application will return to the last magnification when restarted. Left click to close the magnifier.

To configure the magnifier, right-click on the icon in the task bar. A magnified example is shown in Figure 51.



Figure 51. Virtual Magnifying Glass at Work

**ARMOR X10gx Tablet Computer****Tips for Proper Use and Care Of Your X10gx**

There are certain precautions you should take to ensure that your ARMOR X10gx Tablet Computer continues to provide you with reliable service:

- Do not subject the computer to heat by placing it on the dashboard of a vehicle with the display facing the sun.
- Do not store the computer in temperatures below -40 degrees C.
- Do not pile tools or heavy objects on top of the computer.
- Avoid severe impacts, especially to the display.
- Do not try to take the computer apart. Disassembly of the unit by unauthorized personnel may void your warranty.
- Do not use excessive force when inserting removable cards. They are keyed to go in only one way and inserting a card incorrectly or using excessive force could result in damage to the card or the computer.
- Keep your screen clean and calibrated.

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## ARMOR X10gx Tablet Computer

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## 4. NETWORKING

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Your ARMOR X10gx comes configured with two wireless network capabilities: Wi-Fi™ (wireless fidelity) and Bluetooth®. The Wi-Fi network is primarily used for higher bandwidth connections such as Internet or a company LAN. The Bluetooth network is used for connecting wireless devices such as a wireless router, printer or scanner to your computer.

The X10gx can also accommodate an optional factory-installed WWAN radio and/or GPS receiver. These wireless devices are described in

## ARMOR X10gx Tablet Computer

[Optional Add-ons and Accessories for Your](#) X10gx. Please contact [DRS Technical Support](#) for information about installing these options.

Your X10gx can be connected to a cabled LAN using the Ethernet connector on the side of the tablet or through the breakout box on a desk or vehicle dock.

### Managing your Wi-Fi Connections

Your Wi-Fi (WLAN) radio is already configured and operating when your computer starts. Refer to Table 12 for instructions on how to manage your WLAN connections.



#### NOTE

*The Windows Network and Sharing Center utility in Control Panel will show you all of the networks you can select or manage. If you have an optional Gobi WWAN card, it is best to let the Sierra OneClick Internet connection manager application control your WWAN network connection. For instructions, please refer to [Activating the Optional Gobi® WWAN Radio](#).*

**Table 12. View and Manage Network Connections**

STEP	ACTION	COMMENTS
1.	Select Start → Control Panel → Network and Internet → Network and Sharing Center.	The window shown in Figure 52 opens.
2.	Click on the “ <b>Connect to a network</b> ” link to open the window shown in Figure 53. Click outside this window to close it.	The label “Connected” will appear beside each network you are currently connected to. Any other available networks are also listed.  The green signal bars indicate the relative strength of the wireless signal. A yellow shield indicates those sites that do not have security enabled. Use caution when connecting to these sites.
3.	To connect to a network, click on the network name and select <b>Connect</b> . To disconnect from an active network, click on the name and select <b>Disconnect</b> .	

## ARMOR X10gx Tablet Computer

STEP	ACTION	COMMENTS
4.	For more detailed information on the options and settings for these windows, click on the <b>Help</b>  icon	

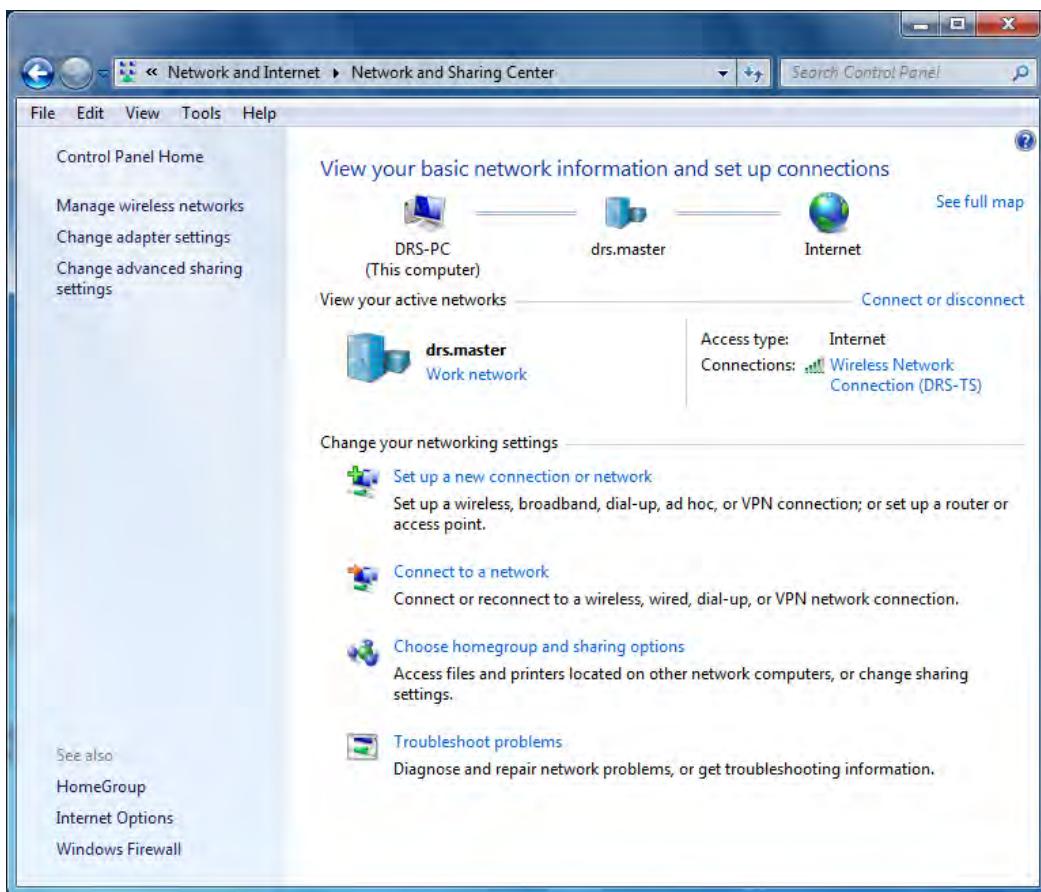


Figure 52. Windows Network and Sharing Center

## ARMOR X10gx Tablet Computer



Figure 53. Currently Connected and Available Wi-Fi Networks

## Managing your Bluetooth Connections

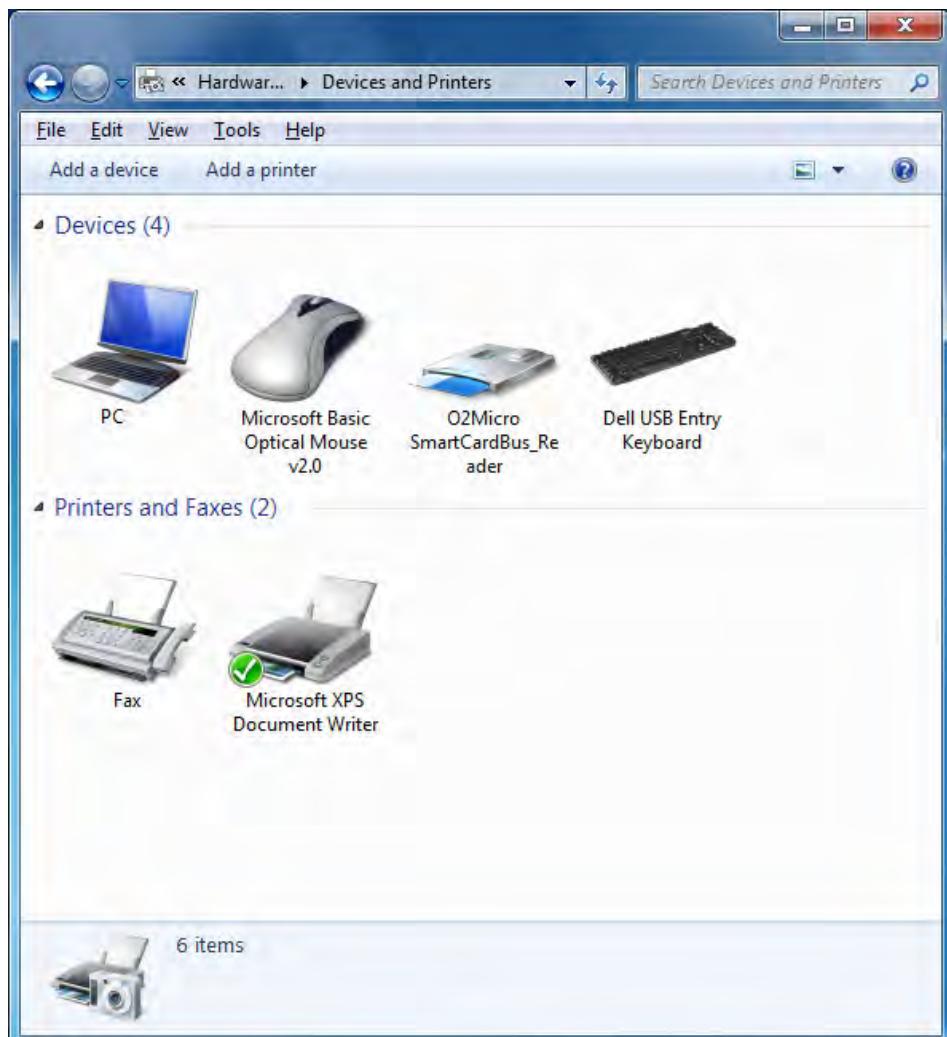
Your X10gx comes equipped with Bluetooth® networking. However, to utilize this feature, you must “associate” your computer with the Bluetooth devices you want to connect. To see what Bluetooth devices are available and to add or remove devices, follow the procedure in Table 13.

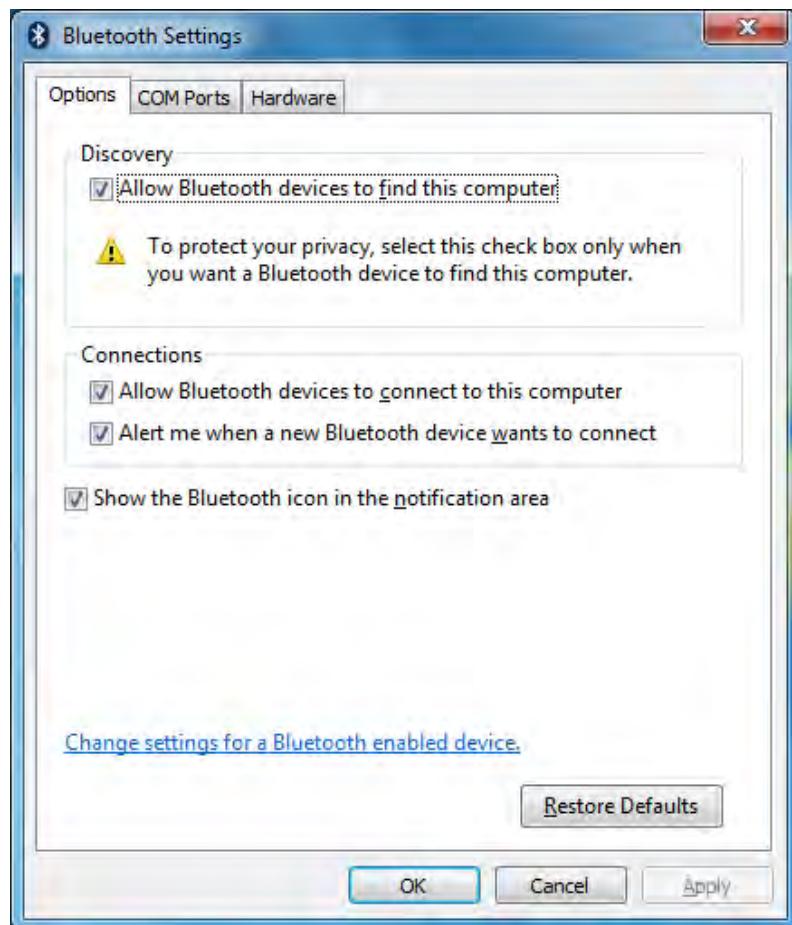
Table 13. View and Manage Bluetooth Devices

STEP	ACTION	COMMENTS
1.	Select Start → Control Panel → Hardware and Sound → Devices and Printers.	The Devices and Printers window opens (Figure 54) showing any peripherals that are in range or are already connected (including cabled devices).
2.	Right-click on the icon for your computer and select <b>Bluetooth settings</b> from the menu.	The Bluetooth Settings window opens, as shown in Figure 55.
3.	Check the “Allow Bluetooth devices to find this computer” option.	
4.	Check the “Allow Bluetooth devices to connect to this computer” option.	

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STEP	ACTION	COMMENTS
<b>5.</b>	To add a device, click on the “Add a device” option in the toolbar.	
<b>6.</b>	To remove a device, click on the “Remove a device” option in the toolbar.	
<b>7.</b>	For additional information about these windows, click on the <b>Help</b>  icon.	

**Figure 54. Devices and Printers Window**

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**Figure 55. Bluetooth Settings Window**

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## Managing your Ethernet Connection

Your X10gx supports a cabled 10/100/1000 Ethernet connection through the RJ45 connector on the left side of the tablet or a 10/100 Ethernet connection through a desk dock or a vehicle dock breakout box. An RJ45 Ethernet connector is provided at the vehicle dock breakout box for physical connection to the Ethernet LAN.

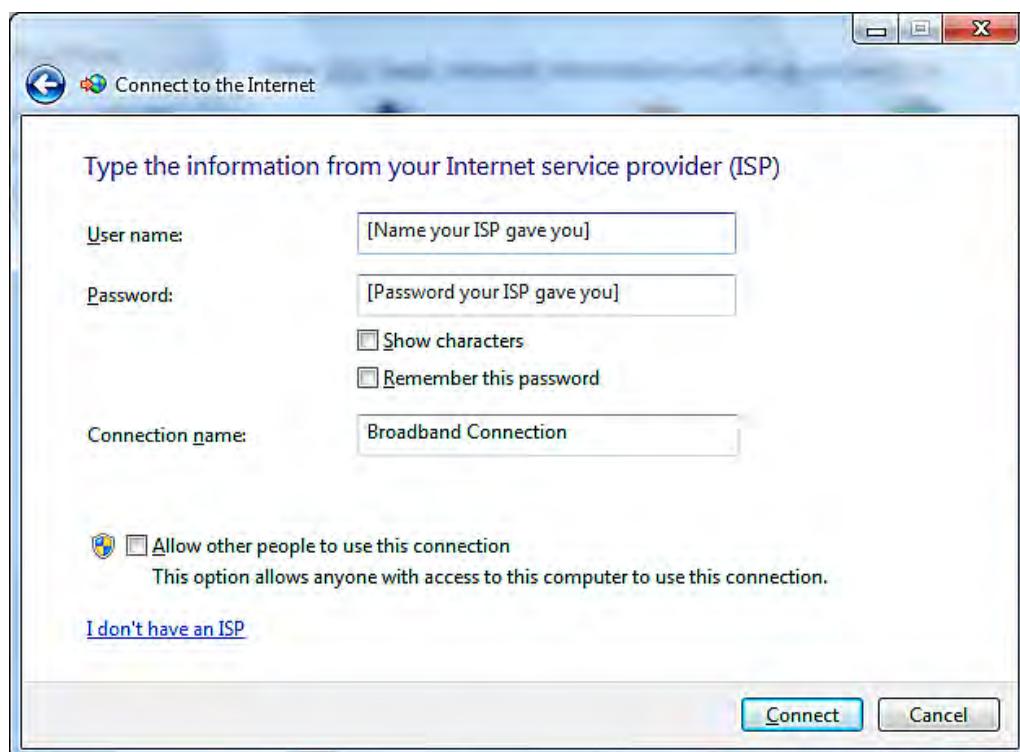
Once your X10gx is cabled into the network, follow the procedure in Table 14 to connect to the LAN.

**Table 14. Setting up an Ethernet Connection**

STEP	ACTION	COMMENTS
1.	Contact your IT department or internet provider to obtain a user name and password.  If necessary, your internet provider will give you an IP address as well. Otherwise, the IP address will be provided automatically by the network once you are physically connected and the X10gx is running.	
2.	Click on <b>Start → Control Panel → Network and Internet → Network and Sharing Center</b> .	This will open the Network and Sharing Center window as shown in Figure 52.
3.	Click on the <b>Change Adapter Settings</b> link in the left-hand navigation panel.	This will open the Network Connections window.
4.	If <u>no</u> red “X” appears next to the <b>Local Area Connection</b> icon, your external LAN connection is established and you can open an internet browser to access the internet.  If there is a red “X” showing, go to Step 5.	
5.	Click on the “back” arrow to return to the Network and Sharing Center window.	
6.	In the <b>Change Your Network Settings</b> panel, click on the <b>Set Up a New Connection or Network</b> link.	
7.	Highlight the <b>Connect to the Internet</b> option and click on <b>Next</b> .	The Connect to the Internet window will open.

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<b>8.</b>	Click on the <b>Broadband</b> connection option.	An information dialog window will open with entry fields for your service provider, as shown in Figure 56.
<b>9.</b>	Enter your user name and password in the fields provided. Click on the <b>Remember this Password</b> option if you don't want to have to enter the password each time you access the network.	
<b>10.</b>	Enter the IP address provided by your IT department or internet service provider in the <b>Connection Name</b> field.	If the address is already showing, you do not have to enter it again.
<b>11.</b>	Click on the <b>Connect</b> button.	A message window will pop up stating that your connection was successful.

**Figure 56. Internet Service Provider Information Window**

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### Activating the Optional Gobi® WWAN Radio

If you have the Gobi® WWAN radio installed, your hardware is already configured. However, for certain providers, you must install a valid SIM card (Figure 18) before you can connect to their network. The SIM card is obtained from your WWAN service provider and is installed in a socket located inside the X10gx. Once you obtain your SIM card, follow the procedure in [Installing a SIM Card](#).

Once your SIM card is installed, or if you don't need one, click on the **OneClickInternet** icon on the desktop to open the connection manager, as shown in Figure 57.



Figure 57. Sierra® OneClickInternet™ Connection Manager

### Using the OneClickInternet Application

For instructions on how to use the OneClickInternet connection manager, click on the OneClickInternet application **Help** button.

### Using the Network Driver Interface Specification (NDIS)

NDIS is an application programming interface (API) that provides an additional layer of control to your Sierra® OneClickInternet™ connection manager. It allows your Gobi radio to automatically connect to your provider after powering up the computer without starting the OneClick Internet application and before you log in. However, when you first receive your ARMOR X10gx, NDIS is not automatically available and must be manually configured in order to use it.

Follow the procedure in Table 15 to enable NDIS in your Sierra OneClick Internet connection manager.

## ARMOR X10gx Tablet Computer



### CAUTION!

*Before uninstalling the OneClickInternet application with NDIS enabled, make sure that the “Gobi NDIS Auto Connect” option is unchecked in the Settings/General tab. Otherwise the module will always connect automatically on the next start up. Without the OneClickInternet application installed, you cannot disable this feature.*



### NOTE

*It is recommended that you test the profile that you will use with the NDIS auto connect feature to ensure that it works prior to enabling NDIS.*

**Table 15. Configuring the Sierra OneClick Application to Use NDIS**

STEP	ACTION
1.	If open, close the OneClick connection manager.
2.	Use Windows Explorer to navigate to the C:\Program Files (x86)\OneClickInternet folder.
3.	Double-click on the <b>Config.ini</b> file to open the file with Notepad (you can use any text editor).
4.	Add the following line: <b>AutoNDISConnect=1</b>
5.	Save the file and exit.
6.	In the Sierra OneClickInternet application, click on the <b>Settings</b> button and select the General tab. Check the “Gobi NDIS Auto Connect” option.

### Important Notes about Using NDIS:

- NDIS turns the WWAN radio on even before the OS starts. This is not always a desirable state, so choose NDIS only if you need this functionality.
- NDIS enables the Gobi WWAN hardware to connect, reconnect and roam automatically, so these connection options on the Settings page are ignored if chosen in conjunction with NDIS.
- If you reboot the computer, NDIS will maintain your connection during the reboot.
- Selecting the “Auto Launch” option on the Settings page when NDIS is selected is not recommended as this will launch the OneClickInternet application upon reboot which will restart your connection.

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## Activating the Optional GPS Receiver

The u-blox ® u-center™ GPS control application is bundled with your X10gx software suite. Before you can use the application, however, you must manually obtain and enter the communications (COM) port that was assigned to the u-center program by Windows when the operating system was installed. To do this, follow the procedure in Table 16.

**Table 16. Configuring the u-Center Com Port**

Step	Action	Comment
<b>1.</b>	From the Windows desktop, select the <b>Start</b> button and select <b>Control Panel</b> → <b>Hardware and Sound</b> → <b>Devices and Printers</b> → <b>Device Manager</b>	The Device Manager dialog window will open.
<b>2.</b>	Open the <b>Ports (COM &amp; LPT)</b> option and scroll down to “ <b>u-blox 5 GPS and GALILEO Receiver</b> ” and record the COM port number in parentheses.	Example: “u-blox 5 GPS and GALILEO Receiver (COM6)”. The COM port number is COM6.
<b>3.</b>	Close the Control Panel and open the u-center application by double-clicking on the <b>u-center desktop icon</b> or selecting the <b>u-center</b> option from the <b>All Programs</b> list.	The u-center application window opens as shown in Figure 58. <b>NOTE:</b> The application workspace is configurable and may not look exactly as in the figure.
<b>4.</b>	Select the <b>Receiver</b> menu in the application tool bar and click on the <b>Port</b> option.	
<b>5.</b>	Choose the COM port that you recorded from Control Panel.	Your GPS receiver will automatically begin searching for satellites.

## ARMOR X10gx Tablet Computer

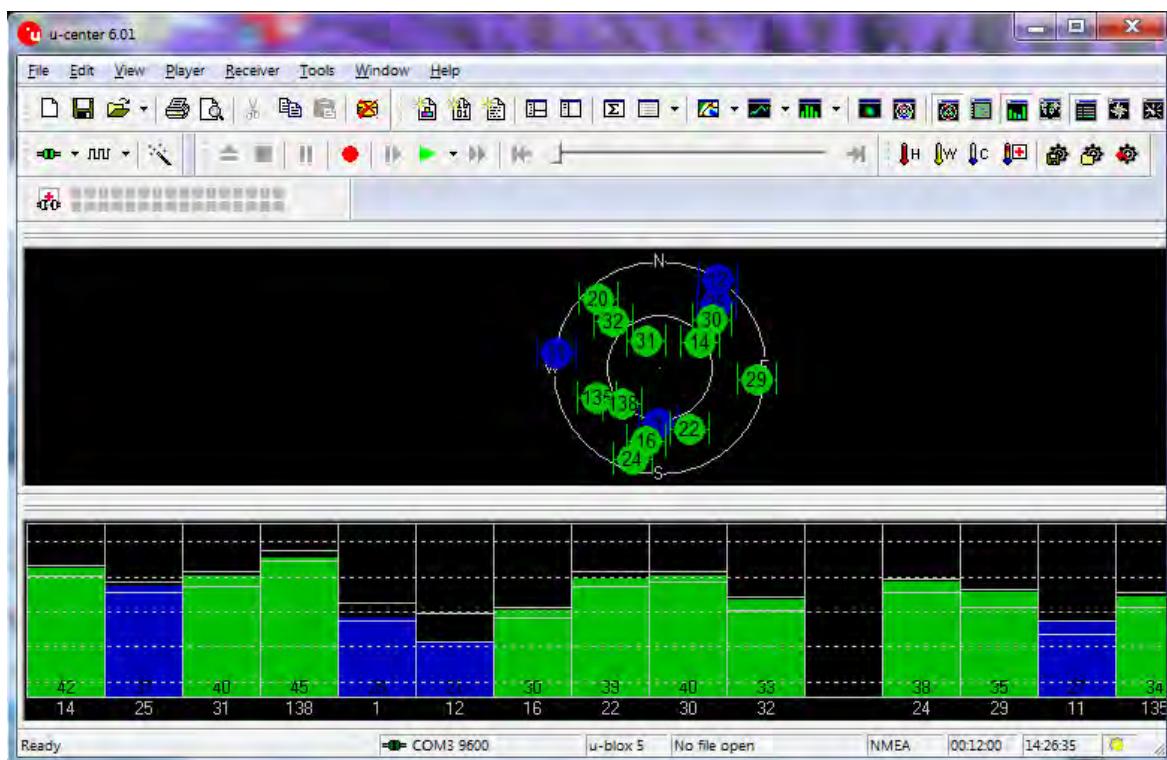
### The u-center GPS Application Window

The diagram in the center shows the approximate positions of satellites relative to your location that are within range of the receiver. The graph at the bottom of the page shows the signal strength of each satellite. A green bar indicates acceptable signal strength; a blue bar indicates marginal reception. You must have at least four satellites with acceptable signal strength to generate reliable position data.

### u-center User's Guide

A complete description of the u-center software is beyond the scope of this manual. However, an online User's Guide is provided with your u-blox installation. To access the user's guide, select **Start → Computer → Local Disk (C:) → Program Files (x86) → u-blox → u-center → Documentation → User's Guides** and double-click on the **u-Center\_User\_Guide pdf** file.

**NOTE:** We recommend you create a shortcut to this file on the desktop.



**Figure 58. U-Center GPS Application Window**

### Assisted GPS

Assisted GPS (AGPS) is an option that uses your wireless network connection to quickly download the GPS almanac and ephemeris information your system needs to compute a first fix on your location. This greatly reduces the time to first fix (TTFF).

With AGPS, your system can acquire an accurate fix in less than 30 seconds. Without AGPS, the TTFF can take as long as 15 minutes depending on surrounding structures and the strength of the satellite signals.

## ARMOR X10gx Tablet Computer

However, AGPS depends on an internet connection so it is limited to areas where wireless network coverage is available.

### Activating Assisted GPS

AGPS is free with your purchase of your ARMOR X10gx but you must obtain the necessary AGPS password from u-blox by following the procedure in Table 17.

**Table 17. Obtaining the AGPS Password from u-blox**

Step	Action	Comment
1.	Send an email with no subject or content to <a href="mailto:agps-account@u-blox.com">agps-account@u-blox.com</a>	Within 24 hours, u-blox will return a password via your email account.
2.	Once you have your password, click on the <b>u-center</b> icon  on the desktop.	The u-center application window opens as illustrated in Figure 58.
3.	Locate the thermometer icon with a red cross  and click on it.	The AssistNow Online™ window opens, as shown in Figure 59.
4.	Enter your email address in the <b>User</b> field.	
5.	Enter your AGPS password in the <b>Password</b> field.	
6.	Click <b>OK</b> to save and exit.	
7.	When you want to use the assisted GPS capability, ensure you have a valid wireless connection to the internet and click on the thermometer icon with the red cross  .	

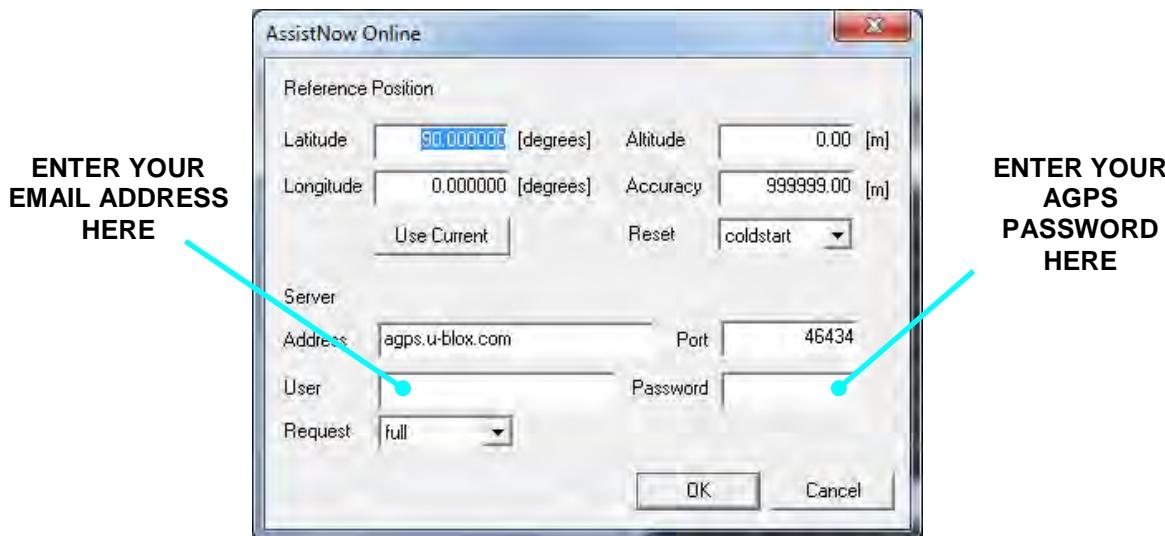
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Figure 59. u-center AssistNow Online Window

## Enabling and Disabling Your Wireless Radios

You may wish to turn off one or more of your radios to save power, to avoid interfering with other radio systems, or just to ensure your privacy. Or you may want to turn off all of your installed radios at one time but keep working on your computer, as when travelling on an aircraft.

Follow the procedure in Table 18 to enable or disable your wireless radios.



### NOTE

*If you exit ARMORutils completely or shut down your system with the Radios ON/OFF Toggle set to OFF, all radios will be off the next time you restart ARMORutils or turn on your computer. This is done for safety reasons to prevent your wireless radios from being accidentally re-activated during flight.*

*You will need to re-enable each radio with its Radio ON/OFF button when you reach your destination.*

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**Table 18. Enabling and Disabling Your Wireless Radios**

Step	Action	Comment
1.	Click on the <b>ARMORutils icon</b> on the desktop and select the <b>Wireless Setup</b> option.	This will open the Wireless Setup dialog window, as shown in Figure 64.
2.	Click on the <b>ON</b> or <b>Off</b> button to enable/disable each installed radio that you want to control then click the <b>Save Settings</b> button to save your configuration.	
3.	Click on the <b>Radios ON/OFF Toggle</b> button to turn off <u>all enabled radios</u> at one time. Click it again to turn them all back on.	

## Wireless Signal Quality

Wireless signal quality is affected by several conditions:

- Distance from a Wi-Fi access point.
- Access rights (set up through an administrator).
- Your security settings.
- Orientation of the wireless antennas.

If you are having difficulty connecting to your network, try the following steps:

1. Open the Wireless Setup page in ARMORutils and verify that the radio is enabled.
2. If your tablet is not locked in a vehicle mount, try turning the unit in various directions to improve signal quality.
3. Try to get closer to the access point.
4. Move away from obstacles such as trees and metal objects which may be between you and the Access Point.
5. Verify that the Wi-Fi access point is operating.
6. If none of these actions solves the problem, contact your Network Administrator for assistance.

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### Using your Radios with an RF Vehicle Dock

If you have the X10gx RF vehicle dock (DRS P/N 9800F26200-0000) and the optional GPS receiver and/or WWAN radios, you can switch to externally mounted vehicle antennas for improved operation. By using external antennas, you can reduce the attenuating effects of the vehicle cab and the constantly changing direction of the internal antennas.

When configured in ARMORutils, the RF multiplexer in the X10gx will switch the radios to the external antennas whenever the tablet is docked and switch them back to the internal antennas when the tablet is undocked.

Follow the instructions in Table 19 to configure your X10gx to use external antennas.



#### NOTE

*If you have a Non-RF dock or you have an RF dock but are not connected to external antennas, you must set the Dock RF Sw in the ARMORutils Wireless Setup dialog window to “Disable” in order to use the tablet’s internal antennas.*

**Table 19. Configuring the X10gx to use External Antennas**

STEP	ACTION	COMMENTS
1.	Place the X10gx in the docking cradle and press down on the top clamp until it locks.	
2.	Double-click on the ARMORutils icon on the desktop.	The ARMORutils Main Window opens.
3.	Click on the <b>Wireless Setup</b> option.	The Wireless Setup dialog window opens as shown in Figure 60.
4.	In the <b>Dock RF MUX</b> panel, select <b>GPS Only, WWAN Only or Both</b>	When the tablet is docked, only the antennas that are selected will be switched.
5.	Press the <b>Docking RF Sw Enable</b> button to enable switching of the antenna configuration that is selected in the <b>Dock RF Mux</b> panel.	When the Docking RF Sw is set to “Disable”, the tablet will utilize its internal antennas.
6.	To remove the X10gx, press on the clamp locking mechanism until the top clamp snaps up.	

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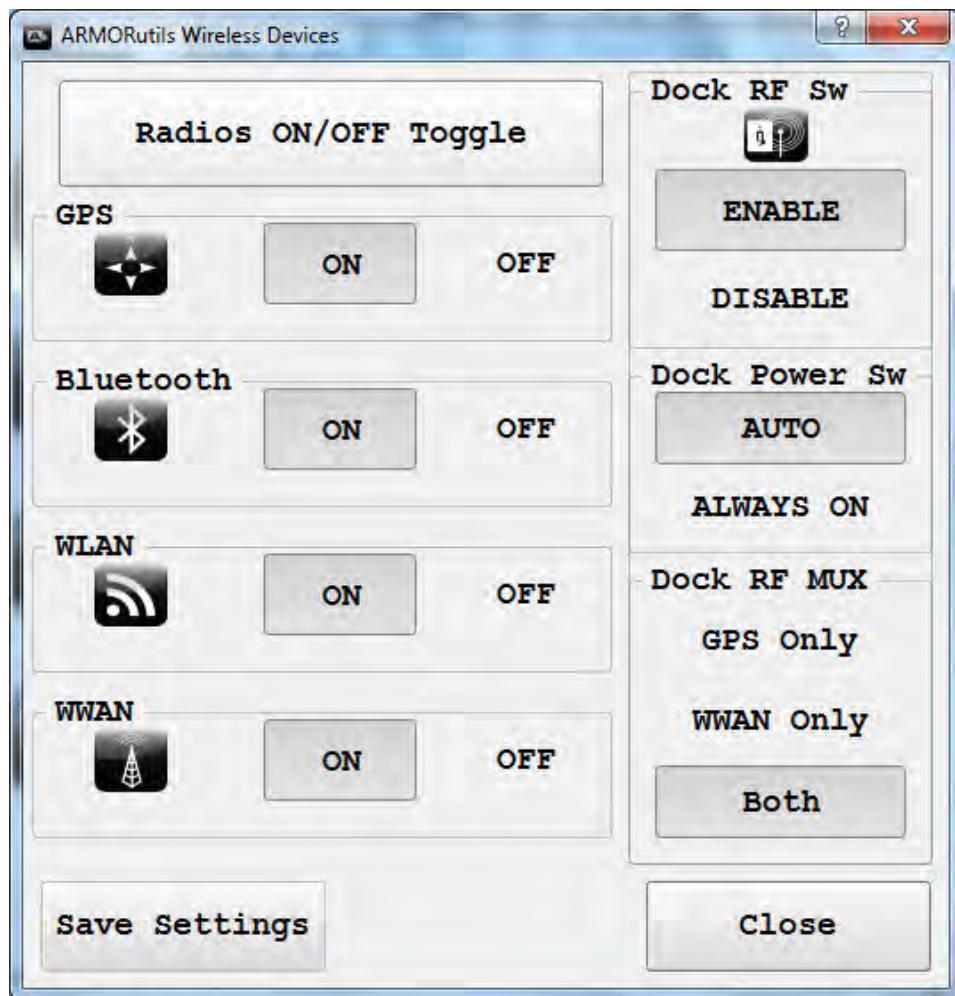


Figure 60. ARMORutils Wireless Setup Dialog

### Using an ARMOR Legacy Dock

There are also a number of legacy vehicle docks that can be used with the X10gx (see [ARMOR Legacy Vehicle Docks](#)); however, power must always be available at the tablet docking connector pins with these docks. If you are using a legacy vehicle dock, set the **Dock Power Sw** to **ALWAYS ON**.

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## 5. YOUR ARMOR X10GX SOFTWARE

Your ARMOR X10gx comes with a variety of software applications. Many of these are standard with your particular operating system, some are necessary to configure and operate your system, some are required for specific devices or functions and some are complementary applications provided by DRS to enhance your X10gx experience.

The following paragraphs provide an overview of the key programs and utilities necessary to configure and operate your X10gx computer. Some of these applications are required for specific devices or functions and some are complementary applications provided by DRS to enhance your X10gx experience. Many of these are standard with the Windows 7 operating system.



### NOTE

*A detailed description of each application's settings and options (with the exception of the ARMORutils application provided by DRS) is beyond the scope of this manual. Please refer to the help resources provided with each software application or to the Windows Help resources.*

### ARMORutils™ Application

The ARMORutils application is provided to help you configure and manage your X10gx computer. It contains settings and information about screen setup, wireless configuration, battery status and much more. The following descriptions are based on the **Windows 7** operating system.



### NOTE

*The screen images in this section are used for reference only and may not reflect the actual configuration of your X10gx.*

### Starting ARMORutils

With Windows 7, ARMORutils starts automatically when you boot up your computer and places an icon  in the system application (systray) area located in the lower right corner of the task bar (see Figure 61). An icon is also provided on the desktop and ARMORutils appears in the **Windows Start menu All Programs list** so you can restart ARMORutils should you exit it for any reason.

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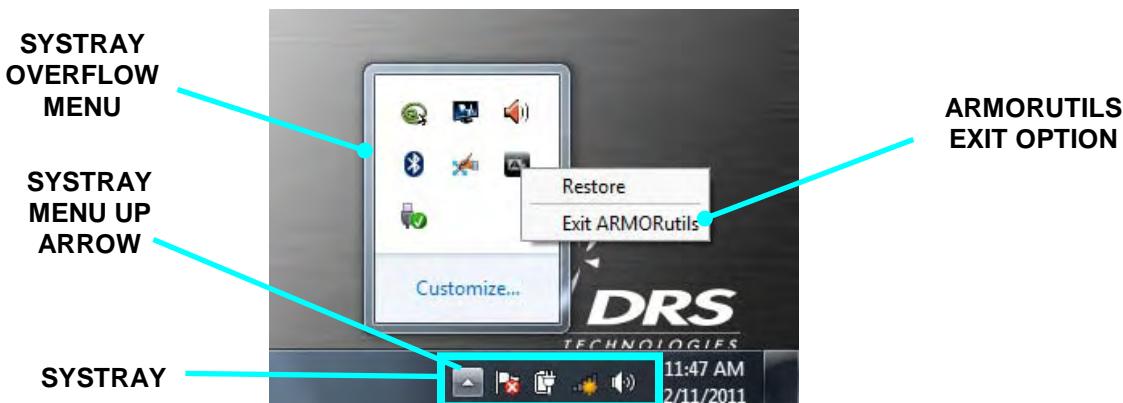


Figure 61. Systray with Overflow Menu Displayed

### Opening ARMORutils

To open the ARMORutils Main dialog window (Figure 62), right-click on the ARMORutils icon in the systray and select **Restore** (NOTE: If the icon is not visible in the systray, click on the “up” arrow icon to access the overflow menu).



#### NOTE

*Armor Utilities must be run by a user with Administrator privileges due to the User Account Code restrictions in Windows 7. If you are not using an account with administrator privileges, Windows will display a password entry window when you try to run ARMORutils. You must enter the Administrator password to proceed.*

### Exiting from ARMORutils

When you click on the **CLOSE** button on the ARMORutils main window or click on the red “X” at the upper right corner, you are only closing the main window – you are not exiting from the utility. ARMORutils continues to run in the background.

To exit from the application completely, right-click on the ARMORutils icon in the systray and select **Exit ARMORutils**. You can restart the application by clicking on the **ARMORutils icon** on the desktop or select the **ARMORutils** option in the Start menu **Programs** list.



#### NOTE

*If you exit ARMORutils completely, you will lose programmable button functionality. Restart ARMORutils to reactivate the PBs.*

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### ARMORutils Main Window

The ARMORutils main window is shown in Figure 62. Eight options provide access to dialog or information windows. Click on an option to access one of these windows. Those options that are not available will be grayed out. **NOTE:** The **Screen Setup** option will not be available if your tablet has a pen screen only display.



Figure 62. ARMORutils Main Menu Window

## ARMOR X10gx Tablet Computer

### Backlight Setup Dialog

The Backlight Setup dialog window allows you to adjust the screen brightness manually or automatically and to select from a series of preset profiles to automatically restrict the brightness range under specific lighting conditions.

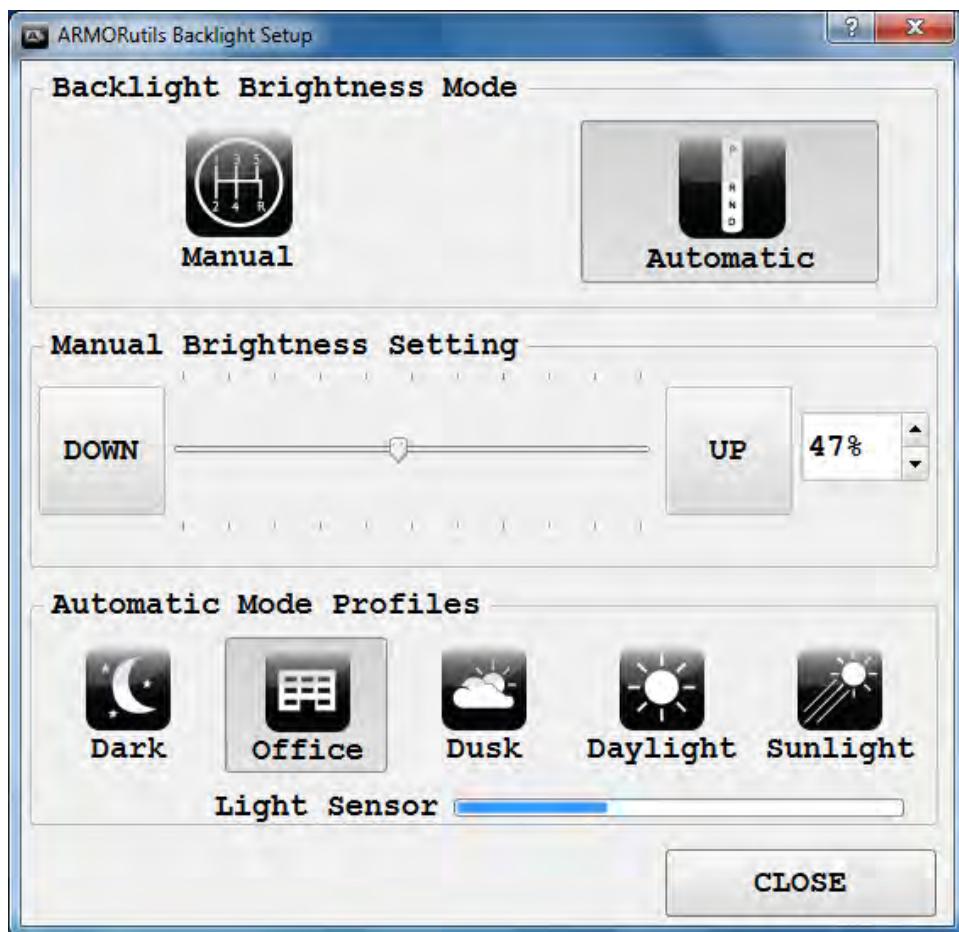


Figure 63. ARMORutils Backlight Setup Dialog

#### Automatic Brightness Mode

The Automatic brightness mode is initially activated by default. Automatic brightness adjustment is controlled by the ambient light sensor (ALS) located on the indicator panel on the front of your X10gx tablet. The ALS monitors the surrounding (ambient) light level and automatically adjusts the backlight level to maintain the same relative screen brightness. For example, if you are working in an office near a window and someone opens the blinds, the surrounding light will suddenly increase. The ALS will measure the increase in light level and automatically increase your screen and indicator brightness to compensate.

Unlike Manual mode, where you can vary the brightness across a much larger adjustment range, in Automatic mode, the total range of brightness adjustment is smaller and is determined by the selected Automatic Mode Profile.

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### Automatic Brightness Mode Profiles

Everyone's eyes react differently to changes in light levels and there may be times when the full range of automatic brightness adjustment is uncomfortable for you.

You can tailor the automatic brightness adjustment by selecting one of the 5 pre-configured brightness profiles: Dark, Office, Dusk, Daylight, and Sunlight. These profiles control the range of brightness levels to values based on typical surroundings or times of day.

For example, if you typically work in an office environment but the automatic brightness doesn't make the display bright enough for you, you can select the Dusk, Daylight or Sunlight profile to increase the brightness range proportionally. Similarly, if the normal brightness control results in displays that are too bright, you can select the Office or Dark profile to reduce the brightness range.

When you first start ARMORutils, the system defaults to the Office profile. Once you select a different profile, the tablet will continue to use that profile until you select another.

### Manual Brightness Mode

Click on the **Manual** button to activate the manual brightness control mode. To manually adjust screen brightness, click repeatedly on the **UP** or **DOWN** buttons in the Manual Brightness Setting panel or drag the slider. The current brightness level is displayed as a percentage in the window to the right of the UP button. You can also adjust the brightness by clicking on the up and down arrows next to the percentage readout.

The manual controls change the brightness from 0% to 100% of the total available adjustment range for Manual mode. At the 0% point, the brightness is low but the screen is not totally dark.

### Switching Between Brightness Modes

If you are in Manual mode and you click on one of the automatic profile settings, the brightness mode will switch to Automatic mode. Conversely, if you are in Automatic mode and click on the Manual mode UP or DOWN button, or one of the up/down arrows, the brightness mode will switch to Manual mode.

### Light Sensor Bar

The Light Sensor bar provides a visual indication that the ALS circuit is functioning correctly. Screen brightness changes in response to the changing ambient light level occur gradually to allow your eyes to adjust and may not be readily apparent, but the Light Sensor bar gives an immediate indication that the ALS is controlling the screen brightness. The Light Sensor bar will continue to operate even when the backlight mode is set to Manual.

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### Wireless Setup Dialog

The Wireless Setup dialog allows you to enable or disable all of the installed wireless devices in your ARMOR X10gx. It also provides controls for external antennas connected through an X10gx vehicle dock.

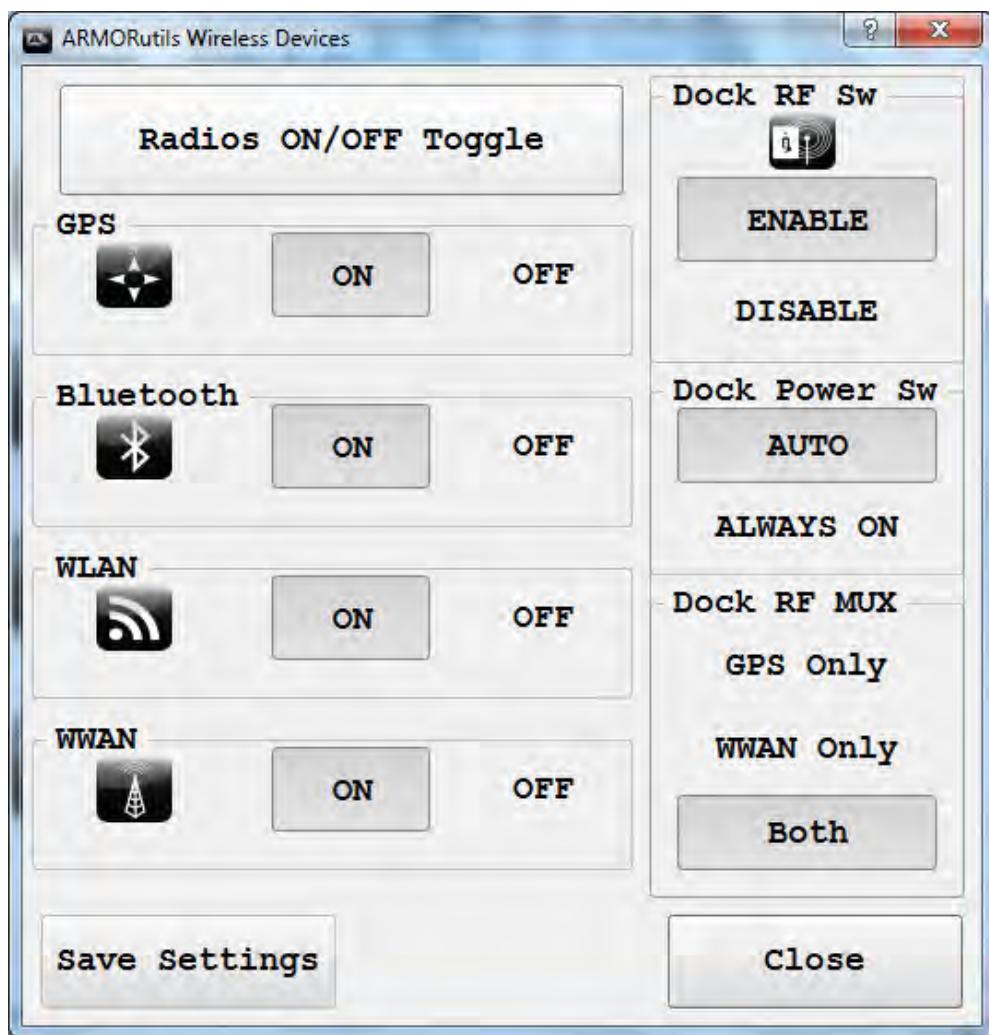


Figure 64. ARMORutils Wireless Setup Dialog

#### Radios ON/OFF Toggle

Click on the **Radios ON/OFF Toggle** button to turn off or turn on all radios currently enabled by the Radio ON/OFF buttons. This is particularly handy if you're on a commercial aircraft and you want to continue working with the computer without interfering with the aircraft electronic systems.

When you arrive at your destination, just click on the **Radios ON/OFF** button again to turn on your enabled radios.

## ARMOR X10gx Tablet Computer

### Radio ON/OFF Buttons

There is an **ON** and **Off** button for each radio that is installed or supported. When you first start your ARMOR X10gx, all installed radios are ON or enabled (default condition). Each radio can then be disabled by pressing its **OFF** button and re-enabled by pressing its **ON** button.

**NOTE:** Radios that are available but not installed appear here also and will not be grayed out.

### Dock RF Switch

The **Dock RF Sw** button enables or disables the antenna configuration that is selected by the Dock RF Mux switch. The initial setting for the Dock RF Sw is “Enable”. If the button is set to “Disable”, the tablet will use its internal antennas.

### Dock Power Switch

In earlier X10 series tablets, the 5 VDC power pins in the docking connector were always active to ensure power to the docking stations. This is not necessary with the new X10gx docking stations due to an automatic sensing circuit that turns off power to the docking connector whenever the X10gx is undocked.

The initial setting for the Dock Power Sw is “Auto” to enable dock sensing. However, to use the X10gx with some ARMOR legacy docks, the Dock Power Sw must be set to “**Always On**” (refer to [Setting the X10gx for Power Operation with Legacy Docks](#)).

### Dock RF MUX Switch

Your X10gx contains an RF multiplexer circuit that is configured by the **Dock RF Mux** switch. There are two RF coaxial docking connectors on the X10gx dock: one for an external WWAN antenna and one for an external GPS antenna (see [ARMOR X10gx Vehicle Docks](#)). Depending on how it is configured, the RF multiplexer will automatically switch your GPS and/or WWAN antennas to external antennas mounted on the vehicle whenever you dock the tablet.

You can select **GPS only**, **WWAN only**, or **Both** antennas. If only one external antenna is selected, the other radio will operate on its internal antenna. The initial default setting for the Dock RF MUX is “Both”.

### Save Settings Button

Regardless of how you configure your radios and the Dock RF Switch during your session, they will return to their default settings the next time you restart the computer unless you save your settings using the **Save Settings** button.

Once you configure each radio and the RF switch to suit the way you normally use them (**ON** or **OFF**), you can press the **Save Settings** button to save the current configuration as your new default settings.



#### NOTE

*If you exit ARMORutils completely or shut down your system with the Radios ON/OFF Toggle set to OFF, this will be saved as the default setting and the radios will all be off the next time you start your computer.*

## ARMOR X10gx Tablet Computer

### Buttons Setup Dialog

The Buttons Setup dialog window is shown in Figure 65. It allows you to assign two different functions for each programmable button (PB) labeled P1, P2 and P3. These buttons are located on the X10gx control panel (see Figure 2).

The first function is activated by pressing and releasing the PB (**P1**, **P2** or **P3**). The second function is a combo function activated by first pressing and releasing the **Fn** button and then pressing and releasing a PB (**Fn+P1**, **Fn+P2**, **Fn+P3**). This provides a total of 6 individual functions that can be activated using the PBs. The function currently programmed is shown in the field next to the PB or the PB combo.

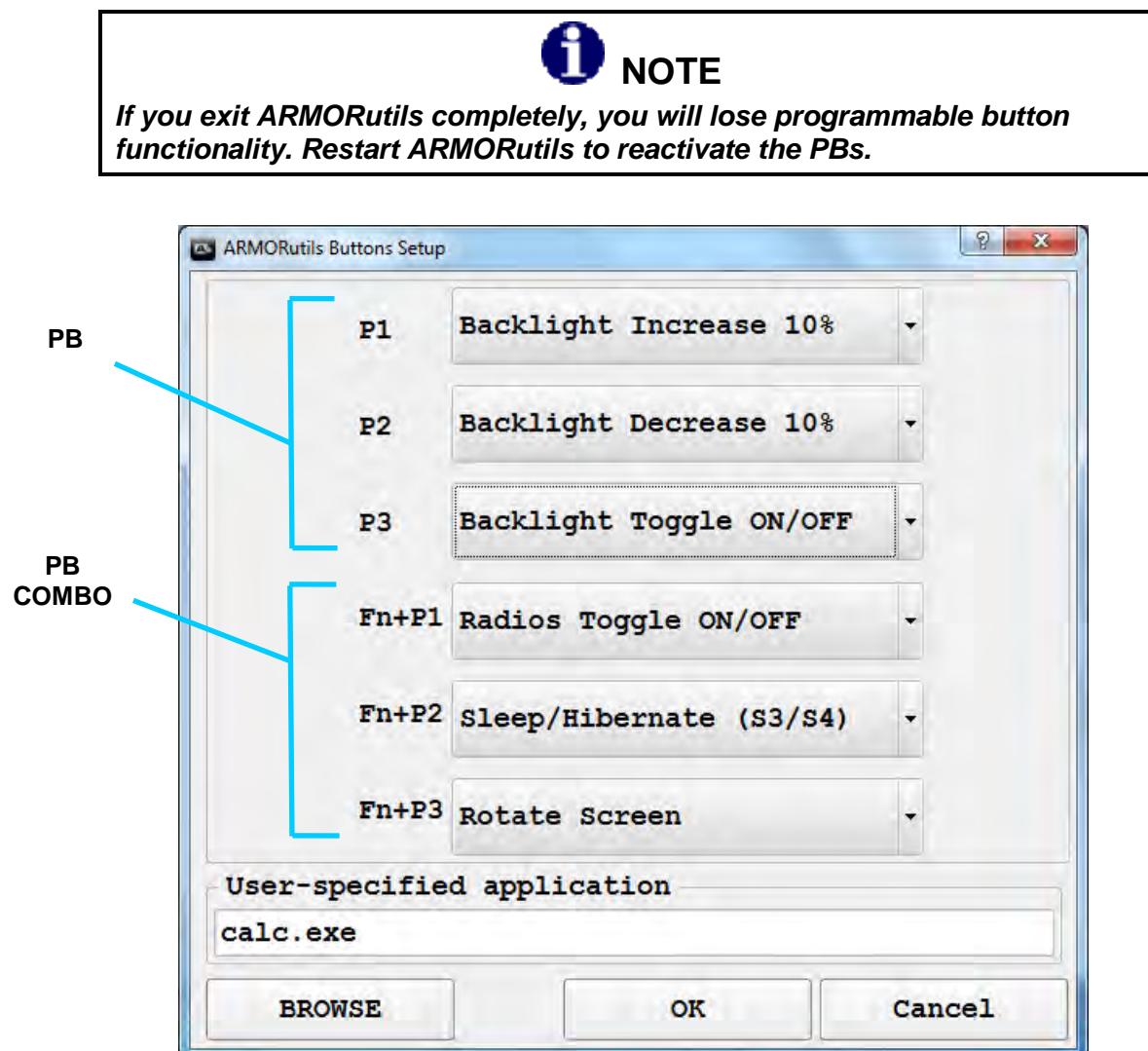


Figure 65. ARMORutils Buttons Setup Dialog Window

## ARMOR X10gx Tablet Computer

### Selecting a Function

Click on the **menu arrow** next to the PB or PB combo and select the desired function, then click on the **OK** button to save your setting. Figure 66 shows a menu opened for the P3 button.

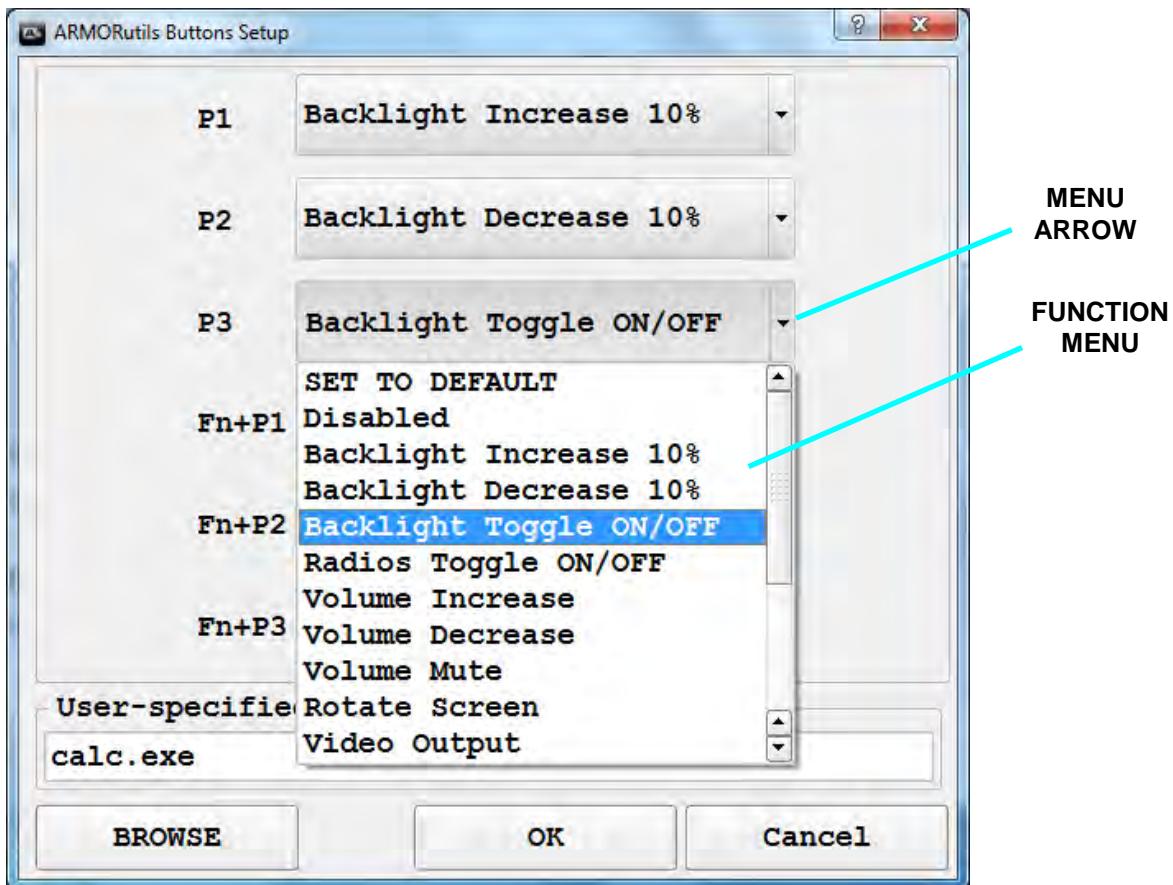


Figure 66. ARMORutils Programmable Button Options Menu

### Available PB Functions

The currently available PB functions are listed below along with a brief description of their purpose (additional functions may be added in future releases of ARMORutils). You can assign any of these functions to any PB or PB combo.

- Set to Default – Returns the setting to its factory default function.
- Disabled – Disables the button or button combo.
- Backlight Increase 10% - Increases screen and indicator brightness in steps.
- Backlight Decrease 10% - Decreases screen and indicator brightness in steps.
- Backlight Toggle ON/OFF – Toggles the screen on and off.
- Radios Toggle ON/OFF – Toggles all enabled radios on and off.

## ARMOR X10gx Tablet Computer

- Volume Increase – Increases sound volume in steps.
- Volume Decrease – Decreases sound volume in steps.
- Volume Mute – Toggles volume ON or OFF.
- Rotate Screen 90 degrees – Rotates the screen 90 degrees clockwise with each press.
- Video Output Cycle – Not currently supported.
- Sleep/Hibernate – Will place the tablet in Sleep or Hibernate mode.
- Launch User-Specified Application – Allows you to select and launch an installed application or utility.
- <ENTER> key – Replicates pressing the keyboard “Enter” key
- <UP> key – Replicates pressing the keyboard “Up Arrow” key
- <DOWN> key – Replicates pressing the keyboard “Down Arrow” key
- <PAGE UP> key – Replicates pressing the keyboard “Page Up” key
- <PAGE DOWN> key – Replicates pressing the keyboard “Page Down” key

### “Set to Default” Function

Select this function to return a PB or PB combo’s programming to its factory default settings.

### “Launch User-Specified Application” Function

Selecting this function enables the **User-specified application** panel at the bottom of the PB window. This function allows you to select an executable file to launch an installed application or utility using a PB or PB combo. You can manually type in the path to the file or hit the **BROWSE** button and search for the file in Windows Explorer.

To launch the application, press the assigned PB or PB combo.

## ARMOR X10gx Tablet Computer

### Configuration Dialog

The Configuration Dialog window provides visual confirmation of those wireless radios that are installed in your X10gx. If a radio is installed and available, the associated icon and status will appear in dark contrast. The status of the installed radios is displayed in parentheses next to the word "Installed". When the radio is enabled, the status is "ON". If the radio is disabled, this status will change to "OFF".

If a radio is not installed, the status will be "Not Detected" or "Not Installed" and the icon and text will be grayed out, as illustrated in Figure 67.

The bottom panel of the dialog window lists the current versions of your system BIOS, ARMORutils and operating system, as well as the ARMOR model number and the unit serial number.



Figure 67. ARMORutils Configuration Dialog Window

## ARMOR X10gx Tablet Computer

### Administration Button

The Administration button is normally hidden from view. To see this button, hold down the **Fn** key on the right control panel and click on the **Configuration** option on the ARMORutils Main Menu. The Configuration dialog window will re-open with the Administration button visible. Click on the **Administration** button to open the User Access Settings window shown in Figure 68.

### User Access Settings Window

This window allows an administrator to deny access by users to a particular dialog window or function. Uncheck the applicable box and click **OK** to disable user access. The disabled dialog window button will appear grayed out in the user's ARMORutils Main window, as illustrated in Figure 69. Here, the Screen Setup and Button Setup options are disabled.

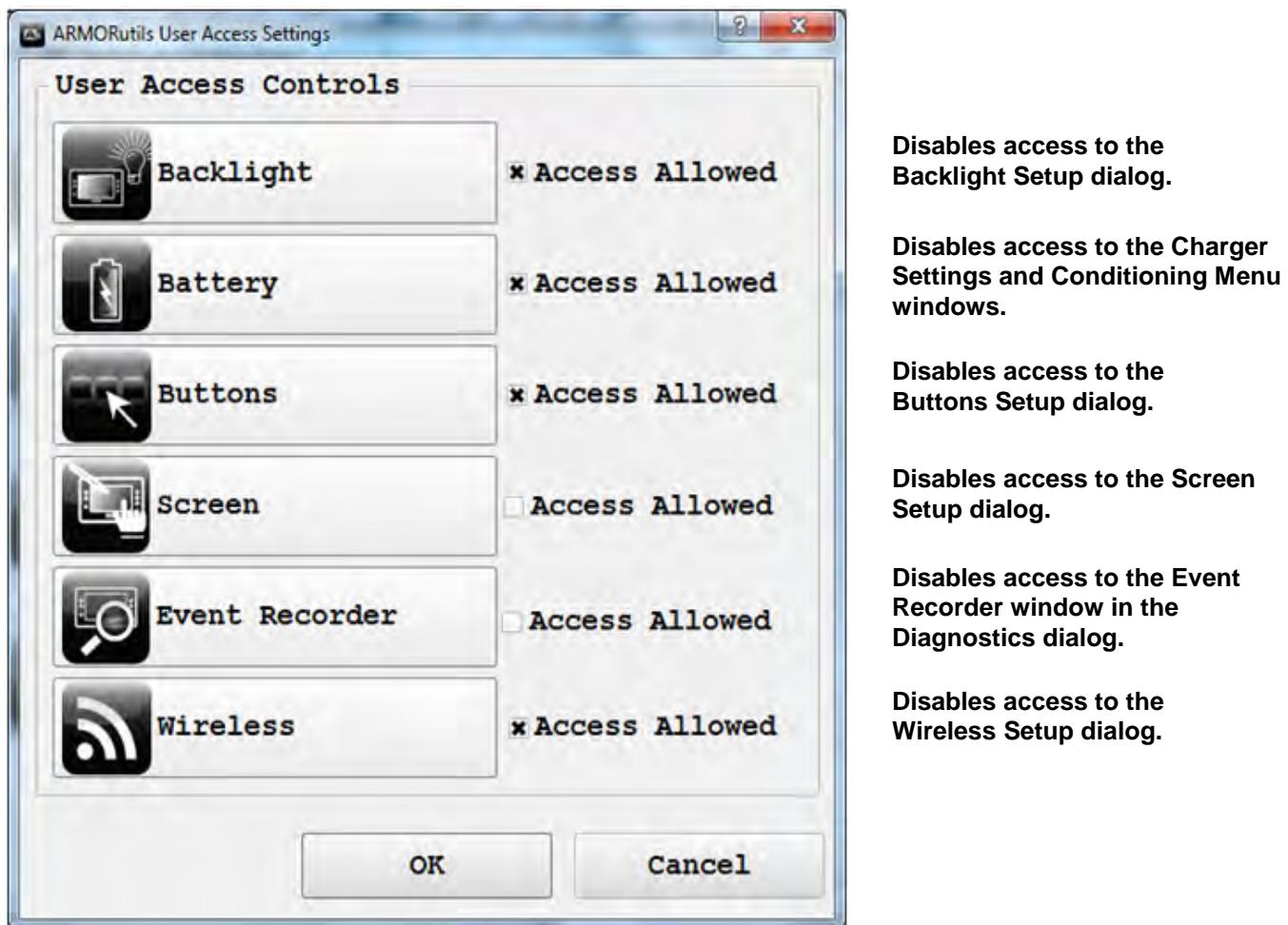


Figure 68. User Access Settings Dialog

## ARMOR X10gx Tablet Computer



Figure 69. Example of the ARMORutils Main Screen with Options Disabled

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### Battery Monitor Dialog

The Battery Monitor dialog window is shown in Figure 70. This window provides the following information about each battery:

- Current charge level (% of the maximum energy capacity)
  - Current status – whether the battery is CHARGING, DISCHARGING, FULLY CHARGED, FULLY DISCHARGED, READY or NOT READY. A READY status indicates a waiting state, such as the batteries are fully charged and waiting to discharge or a second battery is waiting for the first battery to reach a particular charge level.
- NOTE:** If the status is NOT READY, the system cannot read the battery status and a fault condition exists.
- Estimated time to 90% of full charge
  - Estimated time to full charge (if external power is connected) or the estimated remaining operating time (if on batteries only)

There are also four buttons on this window that open additional dialogs or information windows: **Battery 1 Details**, **Battery 2 Details**, **Charger Settings** and **Conditioning Menu**. The functions of these buttons are described in the following paragraphs.

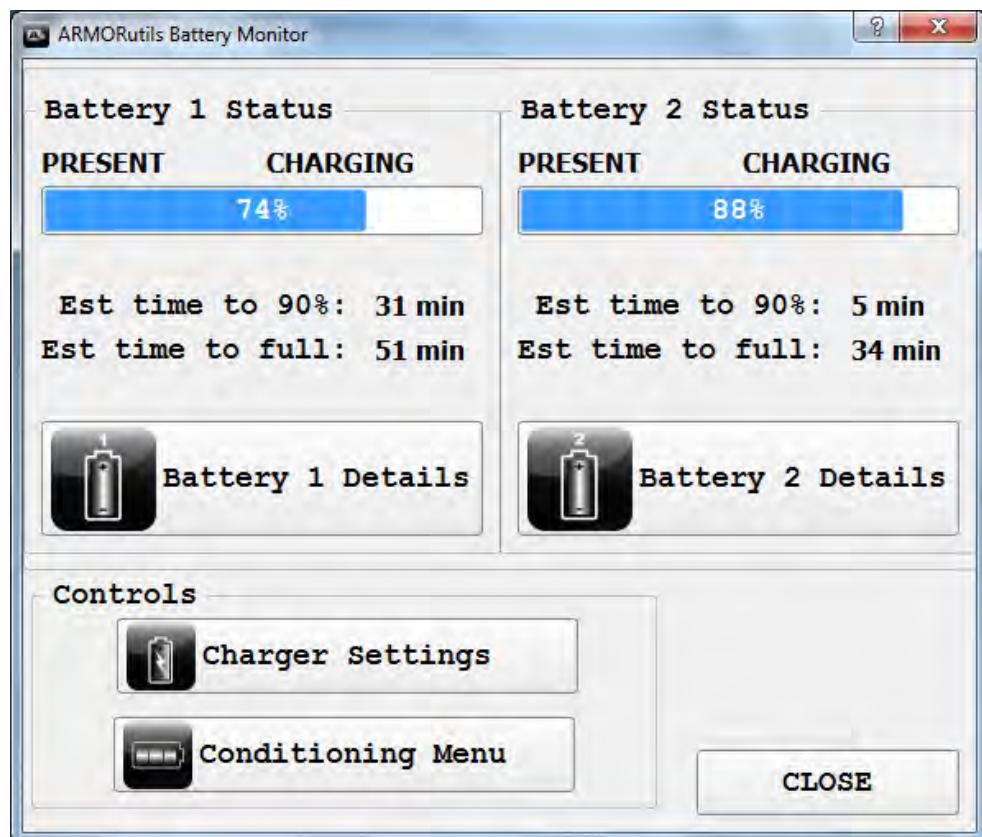


Figure 70. ARMORutils Battery Monitor Dialog Window

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### Battery 1 and Battery 2 Details Buttons

Select a **Battery Details** button to open a Battery Information window. Figure 71 shows a typical window for the #1 battery. This window provides the same % charge and status information as the Battery Monitor window but it also provides more detailed information about the battery including:

- the battery's serial number
- its current voltage, operating current and dissipated power in watts.
- the battery's remaining energy capacity in mAh
- its maximum energy capacity in mAh
- the battery's design energy capacity in mAh
- its accumulated cycle count

**NOTE:** A negative sign (-) next to a charge value indicates a battery is discharging. The absence of a sign indicates the battery is charging or is fully charged.



Figure 71. ARMORutils Battery Information Window

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**Remaining Capacity** – This is the current energy level expressed in mAh instead of % of charge.

**Maximum Capacity** – This is the current maximum energy capacity that the battery can achieve. This value is determined primarily by the battery's age, operating temperature history and total number of accumulated charge cycles.

**Design Capacity** – This is the maximum capacity that the battery was designed to hold.

**Charge Cycles Count** – This is the total number of times the battery has been discharged below the 30% level and then recharged.

**Est. Cycles Remaining** – This is a rough estimate of the number of remaining cycles before your battery reaches its 80% capacity, at which point it is a candidate for replacement. This estimate is based on an industry average of 400 cycles under nominal usage. When the remaining cycles count reaches 0, you should consider replacing the battery.

### Charger Settings Button

Click on the **Charger Settings** button to open the **Charger Control Settings** window shown in Figure 72. In this window, you can decide what charging policy the system will use when two batteries are installed.



**Figure 72. ARMORutils Charger Control Settings Window**

### Charge Both

If you select Charge Both, both batteries will charge at the same time regardless of individual battery charge level. The total charge level indicated is determined by adding the charge of both batteries and dividing this sum by 2.

## ARMOR X10gx Tablet Computer

### Charge Lowest First

If you choose **Charge Lowest First**, the battery with the lowest charge will be charged to 80%, followed by the next lowest battery. Once both are at 80%, the first charged battery will be charged to 100%, followed by the second charged battery.

Click on **OK** to save the new default setting. Select **CANCEL** to exit without changing the policy.

### Conditioning Menu Button

Click on the **Conditioning Menu** button to open the Battery Conditioning window shown in Figure 73. This window will display the conditioning cycle information for each battery. It also allows you to select a single battery to condition, or to select both batteries.

Your X10gx batteries are self conditioning/calibrating and do not normally require conditioning.



#### NOTE

*Conditioning, or calibration, should only be performed if you notice that the levels reported by Windows or ARMORutils are consistently different from actual battery performance, as this adds to the total cycle count of the battery.*

The conditioning process consists of first charging the battery to a full charge, then drawing the charge down to its minimum, followed by charging the battery back to a full charge. The entire conditioning process takes about 8 hours for two batteries.

## ARMOR X10gx Tablet Computer

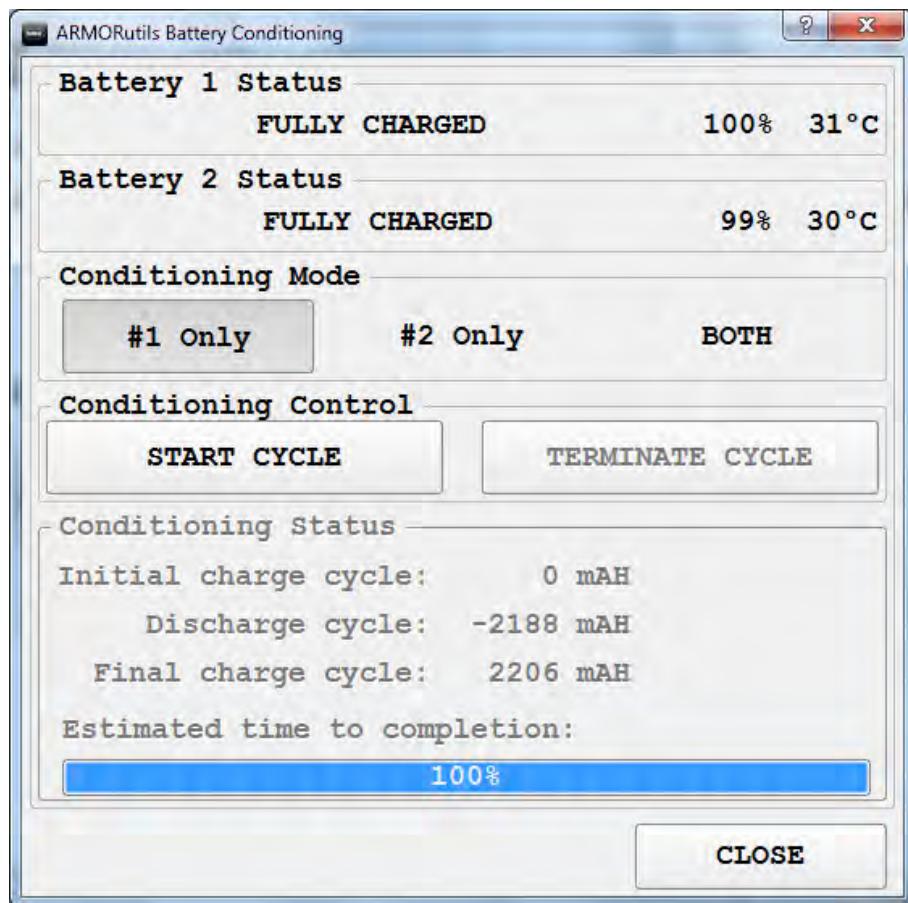


Figure 73. Battery Conditioning Window

### Start Cycle Button

Click on the **START CYCLE** button to begin the conditioning process.

### Terminate Cycle Button

Click on the **TERMINATE CYCLE** button at any time to stop the conditioning process. **NOTE:** If you terminate the conditioning process, you will have to start again from the beginning.

## ARMOR X10gx Tablet Computer

### Screen Setup Dialog

#### NOTE

*If you have a pen screen only display, this dialog will not be accessible from the ARMORutils Main window.*

The Screen Setup dialog (Figure 74) is used to select the current display mode and to access calibration routines for both the touch and pen screens. There are three display modes: **Dual**, **Touch Only** and **Pen Only**. The example below shows the system is in Dual Mode (Dual mode option grayed out), which means both the Touch Only and Pen Only modes are available.

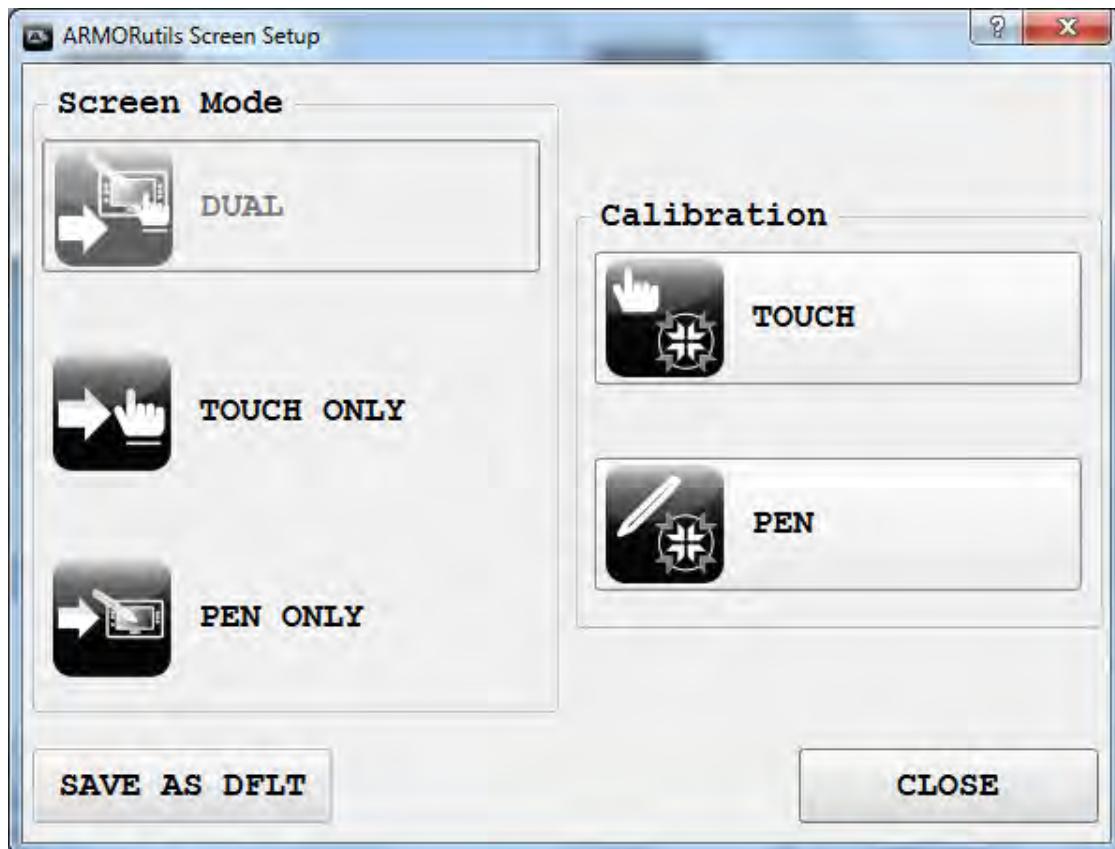


Figure 74. ARMORutils Screen Setup Dialog Window

#### Screen Mode Options

These options allow you to select the current display mode. For example, click on the **Touch Only** button to enable only the touch screen and disable the pen screen. Click **OK** to change to the new mode. The Touch Only mode option will become grayed, as illustrated in Figure 75.

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The **Touch Only** option is grayed out because it is the mode that is enabled and is not available for selection. The **Dual Mode** and **Pen Only** options are contrasted, indicating that these two modes are available.

Click on the **Pen Only** option to enable the pen screen and disable the touch screen, or click on **Dual Mode** to enable both screens.

Click on **SAVE AS DFLT** to activate the new display mode. The button will change to a darker color to indicate the change was saved.

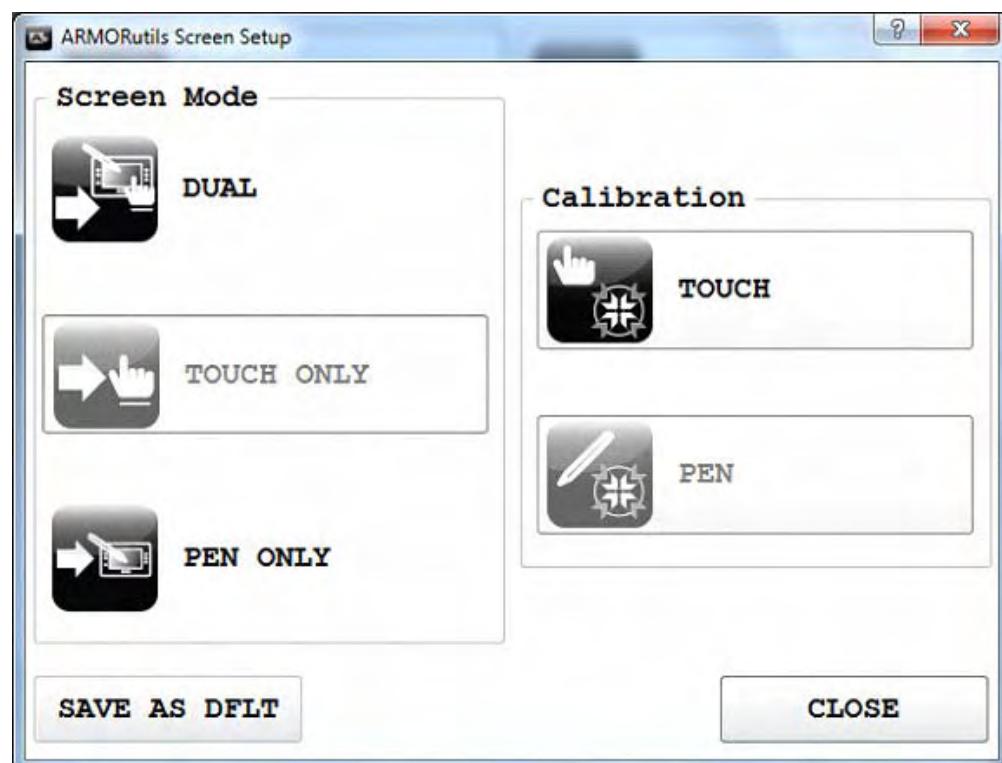


Figure 75. Screen Setup Dialog with Touch Screen Only Enabled



### NOTE

*You can also find options to change the display mode through pen and touch utilities in Windows Control Panel. However, you should only use ARMORutils to change the display mode since ARMORutils will override any screen mode options selected in the Windows utilities.*

### Calibration Options

To calibrate a screen, click on **TOUCH** or **PEN** option in the Calibration panel. Follow the on-screen instructions. If one of the screen calibration options is grayed out, it is not available with the current mode setting.

## ARMOR X10gx Tablet Computer

### Diagnostics Dialog

The Diagnostics window displays the following internal temperatures of the X10gx tablet, as shown in the example in Figure 76:

- CPU core temperature (DTS and Diode)
- CPU Mainboard temperature
- Battery #1 temperature
- Battery #2 temperature

This temperature information can be used by DRS to diagnose possible system problems.

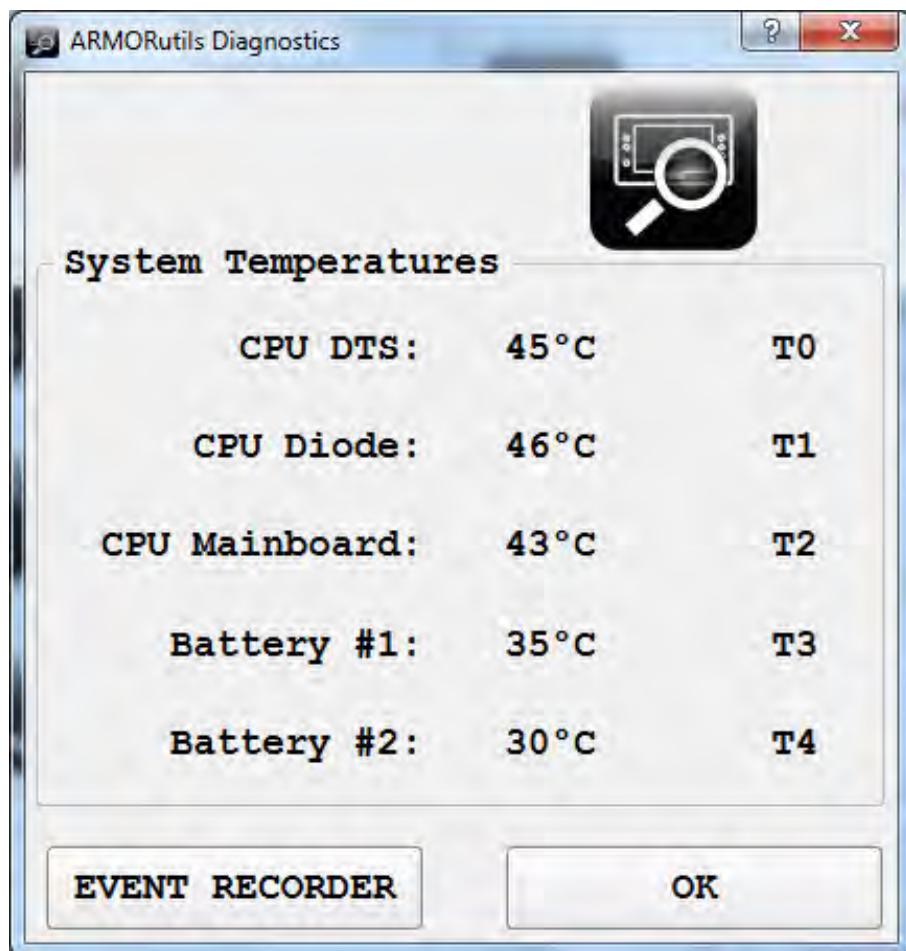


Figure 76. ARMORutils Diagnostics Dialog

### Event Recorder Button

Click on the **Event Recorder** button to open the Event Recorder window shown in Figure 77. This window provides entry fields and options to create a log file of temperature variations and battery status over time. For instructions on how to use the Event Recorder function, refer to [Creating an Event Log](#).

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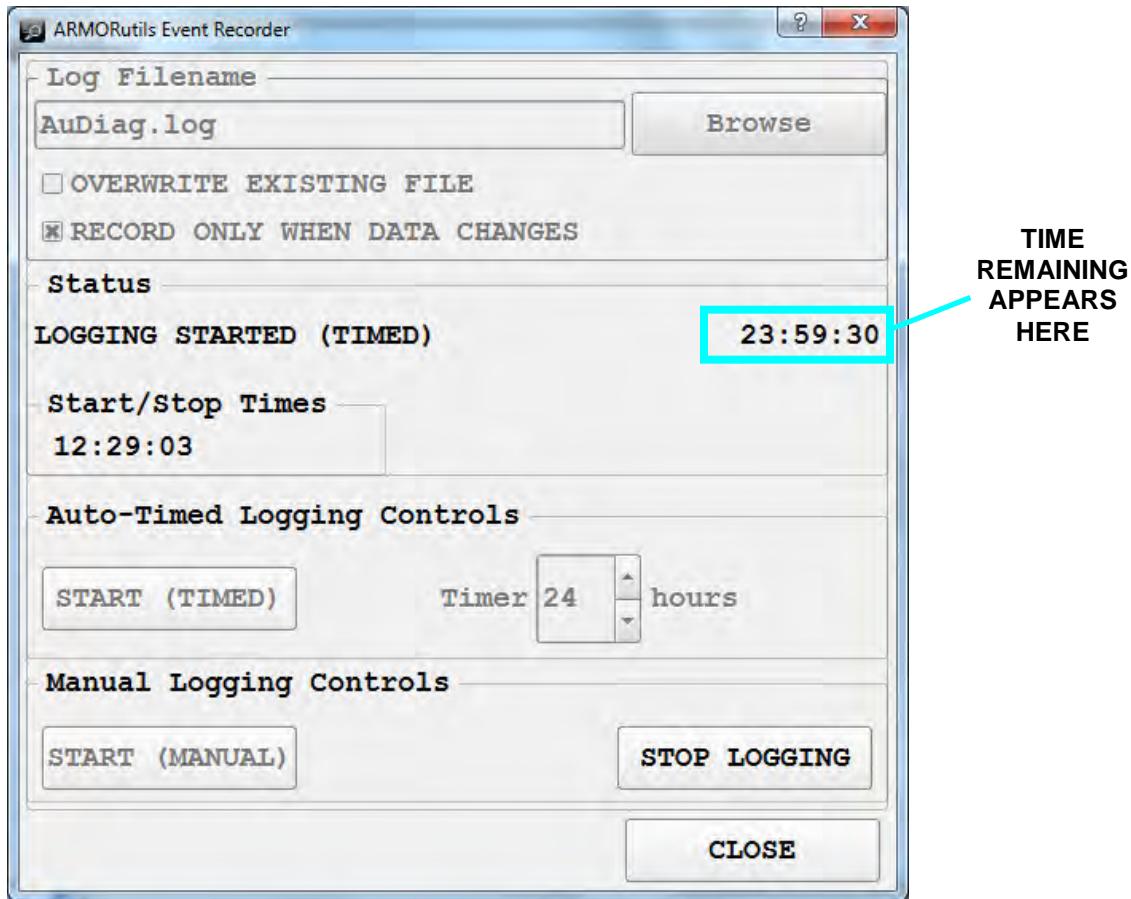


Figure 77. ARMORUtils Event Recorder Window

### Log Filename

The filename that appears in the Log Filename field when you first open the Event Recorder window is the default log file in the ARMORUtils application folder. You can use this default log filename or enter a new filename. You can also click on the **BROWSE** button to select from other stored files or create a different folder to store your files.

### “Overwrite Existing File” Option

If you start a new logging session, the data will be appended to the existing file shown in the Log Filename field by default. If you want to save your logging as a different file, enter the new filename. If you want your new log file to overwrite a displayed filename, check the Overwrite Existing File option. You can browse to select a file already created or you can create a new file and/or folder.

### “Record Only When Data Changes” Option

The Event Recorder program normally logs a line of data every 6 seconds. This can result in a very large file if the logging runs for long periods of time. The file size can be reduced

## ARMOR X10gx Tablet Computer

considerably by checking the **Record only when data changes** option. With this option selected, the recorder will only enter a line of data when any data point changes.

Your Event Recorder is pre-configured from the factory with this option checked. Uncheck it if you want to record data continuously.

### Status

The Status panel displays the time the logging was started, the time remaining (if Auto Logging is used) and the time logging was stopped (either at the end of an auto-timed period or when the STOP LOGGING button was selected).

### Timer

Here you can set the duration of your logging session by typing in the number of hours directly or by using the up/down arrows. The current maximum auto-timed logging duration is 168 hours (1 week).

### Start Timed Button

Click on this button to start the timed logging period.

### Start Manual Button

Click on this button to manually start the logging process. The logging process will continue until you select the STOP LOGGING button or the computer is turned off.

### Stop Logging Button

Click on this button to stop logging either in auto-timed or manual mode. **NOTE:** In manual mode, the logging will continue until you stop it or turn power off to the computer.

### Close Button

Click on this button to close the Event Recorder window. Your logging session will continue in the background.

### Using the Event Log File

In addition to temperature change, the event log also records other key information about the batteries, such as their manufacturer, model number, serial numbers and a history of their charging and discharging during the logging period. A sample event log printout is shown in Figure 78. The battery status codes and column headings are defined in the header.

You can open and view the log file in any text application. The file can be printed out or exported to a database program like Microsoft Excel or Access and converted to a graph or chart.

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```
=====
20110207-16:11:25 - ARMORutils diagnostics data logging - STARTED
    ARMORutils: v1.20.1187
    ArmorLib DLL: v1.12
    BIOS: V1.03
    KBC Firmware: 00.17
```

```
Operating System: Microsoft Windows 7
    Model Number: ARMOR X10gx
    Serial Number: 914GM01006G04400588M000
```

```
-----  
Battery #1: Mfgr=MicroSun M/N=990548 S/N=20100906-103
```

```
-----  
Battery #2: Mfgr=MicroSun M/N=990548 S/N=20100927-204
```

### STATUS CODES:

```
PR = present
NP = not present
RDY = ready
NR = not ready
FC = fully charged
FD = fully discharged
CHG = charging
DCH = discharging
CC1 = battery conditioning charge cycle 1
CDC = battery conditioning discharge cycle
CC2 = battery conditioning charge cycle 2
```

### DEFINITIONS

### TEMPERATURE SENSORS:

```
T0=CPU DTS
T1=CPU Diode
T2=CPU Mainboard
T3=Battery #1
T4=Battery #2
EP=External Power
```

Date-Time Stamp			System Temperatures							
YYYYMMDD-HH:MM:SS	Battery 1	Battery 2	EP	T0	T1	T2	T3	T4		
20110207-16:11:25	- CHG	77%	CHG	96%	PR	46°C	46°C	43°C	38°C	32°C
20110207-16:11:31	- CHG	77%	CHG	97%	PR	46°C	46°C	43°C	38°C	32°C
20110207-16:11:37	- CHG	77%	CHG	97%	PR	46°C	46°C	44°C	38°C	32°C
20110207-16:11:43	- CHG	78%	CHG	97%	PR	46°C	46°C	43°C	38°C	32°C
20110207-16:11:49	- CHG	78%	CHG	97%	PR	46°C	46°C	44°C	38°C	32°C
20110207-16:11:55	- CHG	78%	CHG	97%	PR	47°C	47°C	44°C	38°C	32°C
20110207-16:12:01	- CHG	78%	CHG	97%	PR	47°C	46°C	44°C	38°C	32°C
20110207-16:12:07	- CHG	78%	CHG	97%	PR	46°C	46°C	44°C	38°C	32°C
20110207-16:12:13	- CC1	78%	CHG	97%	PR	47°C	47°C	44°C	38°C	32°C
20110207-16:12:19	- CC1	78%	RDY	97%	PR	46°C	46°C	44°C	38°C	32°C
20110207-16:12:31	- CC1	78%	RDY	97%	PR	47°C	47°C	44°C	38°C	32°C
20110207-16:12:49	- CC1	79%	RDY	97%	PR	47°C	47°C	44°C	38°C	32°C
20110207-16:13:37	- CC1	80%	RDY	97%	PR	47°C	47°C	44°C	38°C	32°C
20110207-16:13:43	- CC1	80%	RDY	97%	PR	46°C	46°C	44°C	38°C	32°C
20110207-16:13:49	- CC1	80%	RDY	97%	PR	47°C	47°C	44°C	39°C	32°C
20110207-16:14:25	- CC1	81%	RDY	97%	PR	47°C	47°C	44°C	39°C	32°C
20110207-16:15:31	- CC1	82%	RDY	97%	PR	47°C	47°C	44°C	39°C	32°C
20110207-16:16:19	- CC1	83%	RDY	97%	PR	47°C	47°C	44°C	39°C	32°C
20110207-16:16:37	- CC1	83%	RDY	97%	PR	48°C	47°C	44°C	39°C	32°C
20110207-16:16:43	- CC1	83%	RDY	97%	PR	48°C	48°C	44°C	39°C	32°C
20110207-16:16:55	- CC1	83%	RDY	97%	PR	47°C	47°C	44°C	39°C	32°C
20110207-16:17:15	- ARMORutils	diagnostics	data logging	- STOPPED						

Figure 78. Sample Event Log File

## ARMOR X10gx Tablet Computer

### ARMORutils About Window

The About window (Figure 79) displays the current version and release date of the ArmorUtils software.

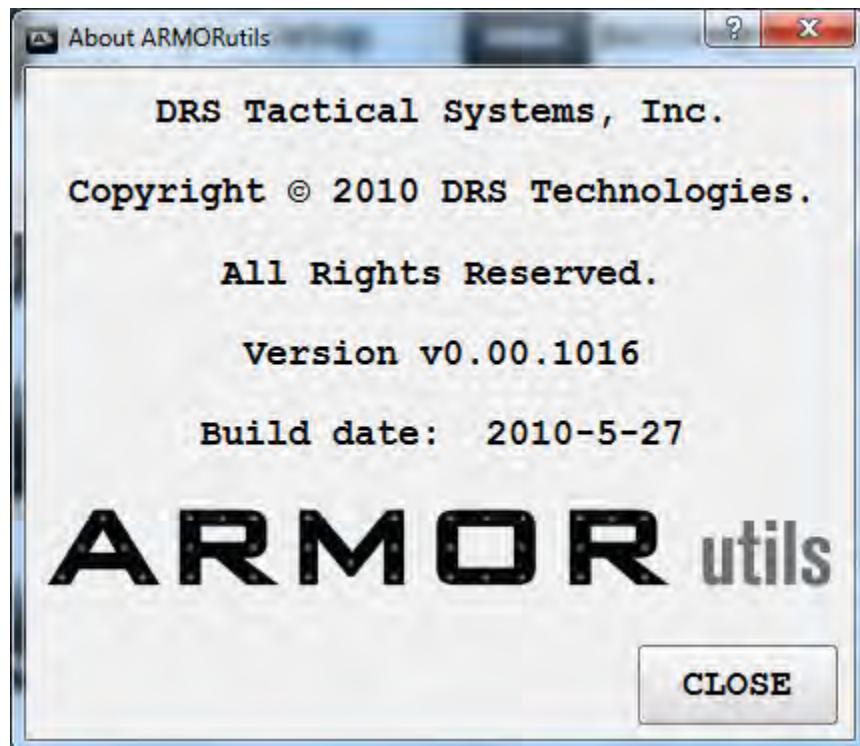


Figure 79. ARMORutils About Window

## ARMOR X10gx Tablet Computer

### Getting Started with Windows 7

Click on **Start** → **Getting Started** to open the Windows welcome page (Figure 80) and access a number of helpful links and resources. **NOTE:** Screen content and layout may vary depending on your version of Windows 7 and any added service packs or updates.



Figure 80. Windows 7 Welcome Page

### Help for Windows

For information on using Microsoft Windows' features, options, applications and utilities, refer to the Microsoft help files and tutorials by clicking on the **Start** button and selecting **Help and Support**.

## ARMOR X10gx Tablet Computer

### Windows Display Utilities

The following paragraphs provide a brief description of key Windows display utilities to help you configure and begin using your X10gx. A detailed description of all of the functions and capabilities of these and other Windows utilities is beyond the scope of this manual. Refer to the **Windows Help Resources** for in-depth descriptions and tutorials.

**NOTE:** Windows utilities and the way you get to them may vary depending on the version of your Windows operating system.

### Pen and Touch Utility

The Pen and Touch utility provides settings that effect how the pen works for both the active pen screen and the touch screen.

To open this utility, select **Start → Control Panel → Hardware and Sound → Pen and Touch**. The Pen and Touch utility opens, as shown in Figure 81.

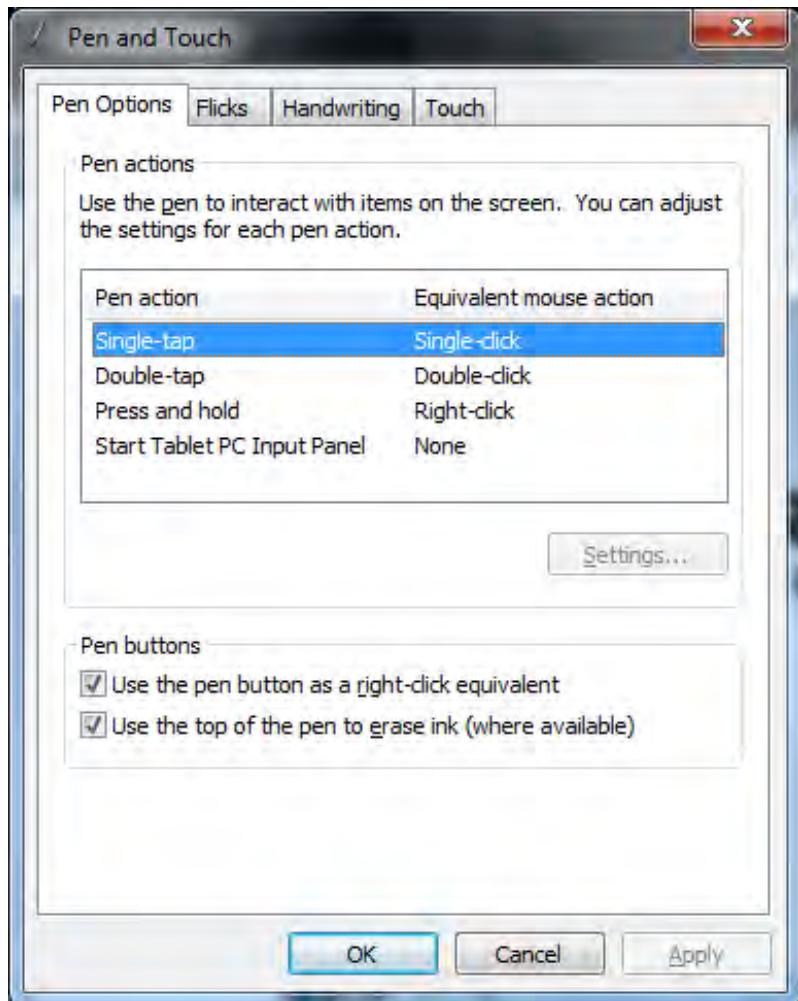


Figure 81. Pen and Touch Utility

## ARMOR X10gx Tablet Computer

### Pen Options Tab

The Pen Options tab opens by default and provides settings that are applicable to the pen screen only.

#### Pen Actions Panel

Highlight an action from the **Pen Actions** list and click on the **Settings** button (if active) to open a settings window, then select options or make adjustments.

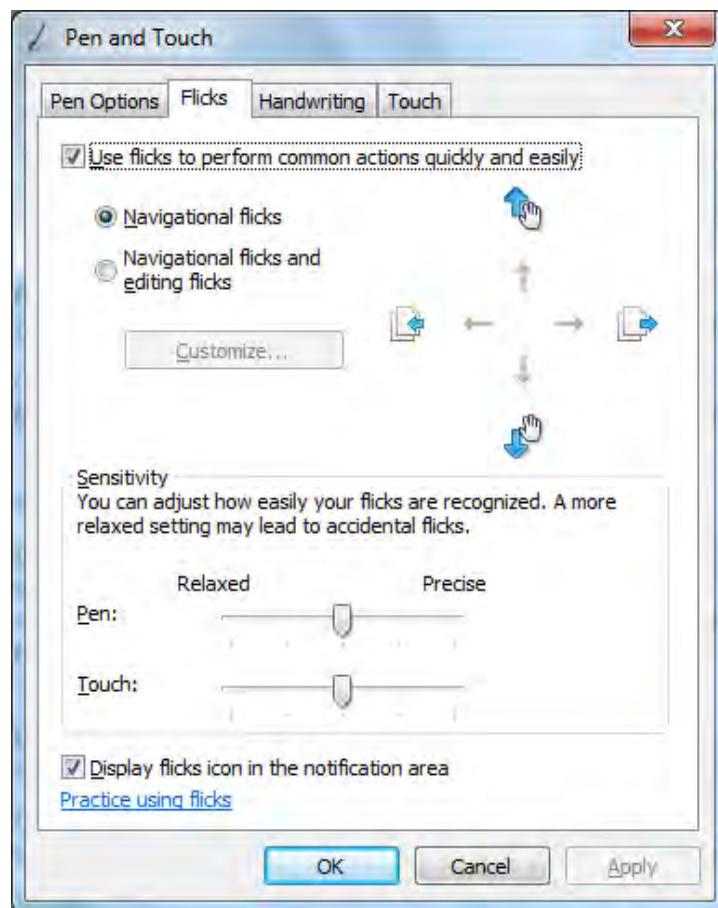
#### Pen Buttons Panel

**Use the Pen button as a right-click equivalent** option – This option is overridden by the pen button options in the **Pen tab** of the Pen Tablet Properties utility, regardless of whether it is checked or not.

**Use the top of the pen to erase ink** option – The erase function is not supported in the X10gx from any utility option.

### Flicks Tab

The Flicks tab provides settings that are applicable to both the pen and touch screens. Flicks are short quick gestures either up, down, left or right that produce common actions such as scrolling through a document, dragging an object, or opening a folder. Click on the **Practice using flicks** link at the bottom of the window to access a tutorial.



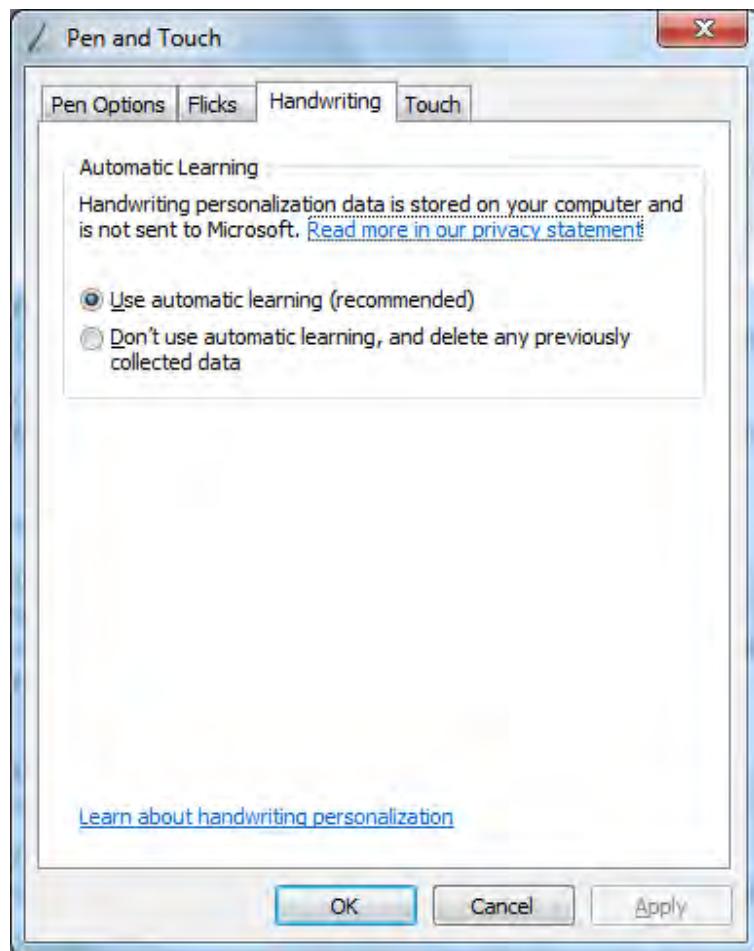
## ARMOR X10gx Tablet Computer

**Figure 82. Pen and Touch Utility – Flicks Tab**

### Handwriting Tab

The Handwriting tab provides settings that are applicable to both the pen and touch screens.

The options on this tab allow you to enable or disable the automatic handwriting learning feature. Click on the “Learn about handwriting personalization link at the bottom of the window for information about automatic learning and how to train your tablet to recognize your personal handwriting style.



**Figure 83. Pen and Touch Utility – Handwriting Tab**

## ARMOR X10gx Tablet Computer

### Touch Tab

The Touch tab provides settings that are applicable to the touch screen only. The options on this tab affect how the pen, or your finger, interacts with the touch screen.

Check the **“Use your finger as an input device”** option to use either the pen or your finger with the touch screen.

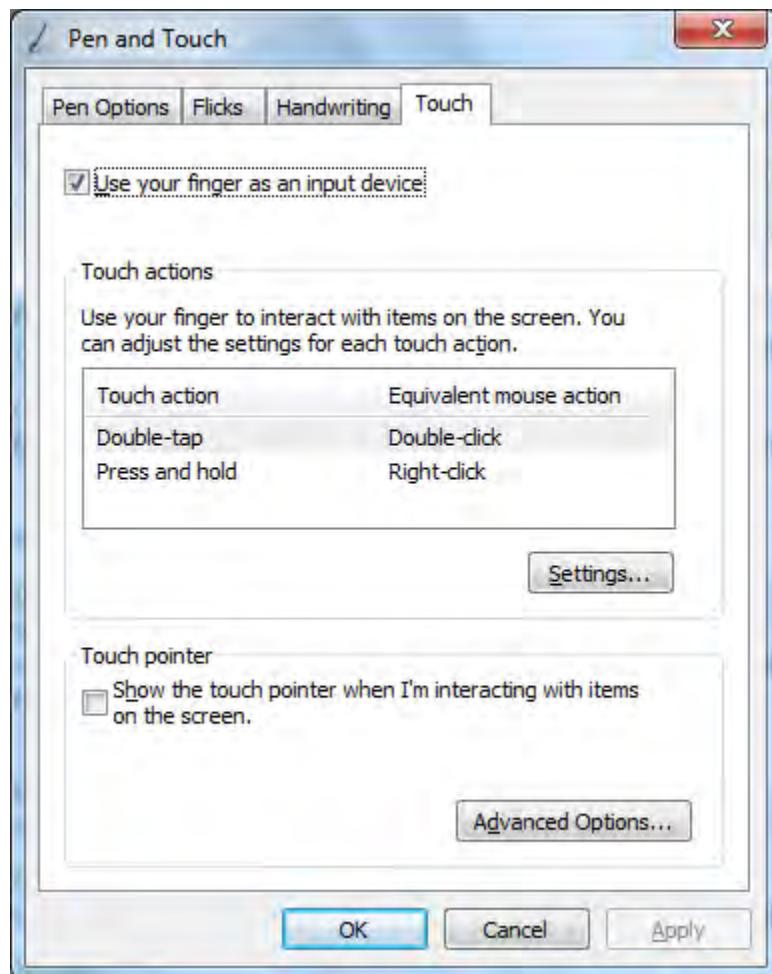


Figure 84. Pen and Touch Utility – Touch Tab

## ARMOR X10gx Tablet Computer

### Touch Actions

Highlight a touch action and click on the **Settings** button to open an adjustment window.

### Touch Pointer

Select this option to place a cursor at the touch point. A virtual mouse image will also appear next to the cursor, as shown in Figure 85 . You can then click on the left or right mouse button to produce the appropriate mouse action.

Click on the **Advanced Options** button to open a window where you can adjust the touch pointer position, appearance and behavior.



**Figure 85. Touch Tab Virtual Mouse Pointer**

## ARMOR X10gx Tablet Computer

### Tablet PC Settings Utility

If you have a second display with a touch or pen screen, you can use this tab to calibrate or change the screen orientation.

#### Display Tab

The Display tab provides links to initiate screen calibration. Other display options are not used.

##### Configure your pen and touch displays

This option is not supported by the X10gx. Use the **Screen Setup dialog** in ARMORutils to change display modes.

##### Display Options

This option is not supported by the X10gx. Select **Control Panel → Hardware and Sound → Display → Change Display settings** to change settings for multiple displays.

##### Calibrate Button

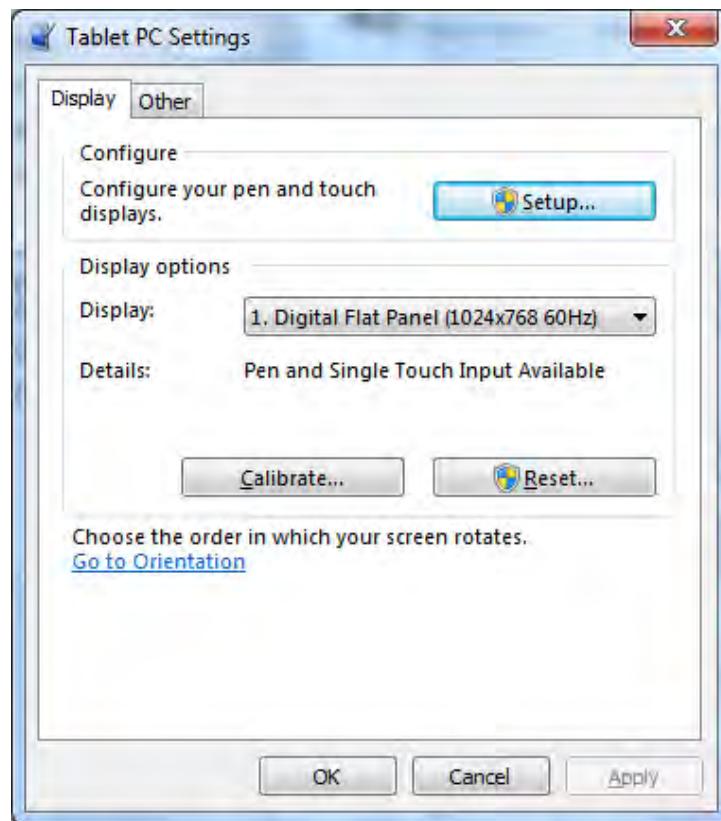
Click on the **Calibrate** button and select **Pen input** or **Touch input** to calibrate a screen.

##### Reset Button

Click on this button if you want to remove the calibration you just performed.

##### Go to Orientation

This option is not supported by the X10gx.

**ARMOR X10gx Tablet Computer**

**Figure 86. Tablet PC Settings – Display Tab**

## ARMOR X10gx Tablet Computer

### Other Tab

This tab allows you to change where an on-screen menu appear when you activate the pen or touch displays so that your hand does not block your view of the menu. For example, if you are left-handed, check the **Left-handed** option to have the menus appear to the right of the cursor.

It also provides a link to configure settings for the Input Panel.

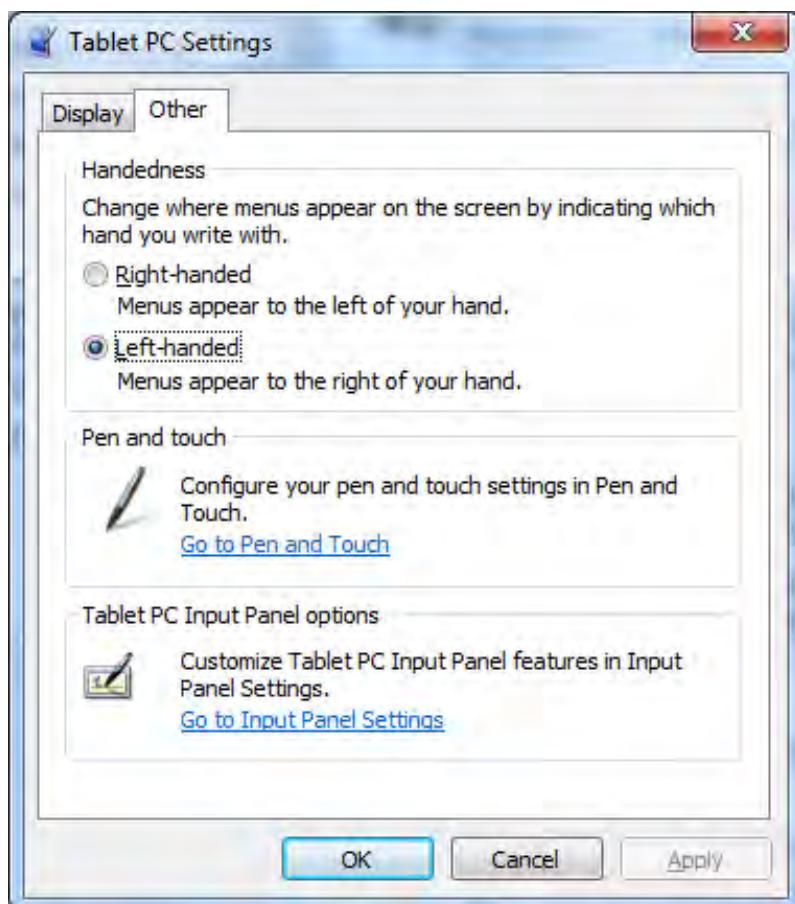
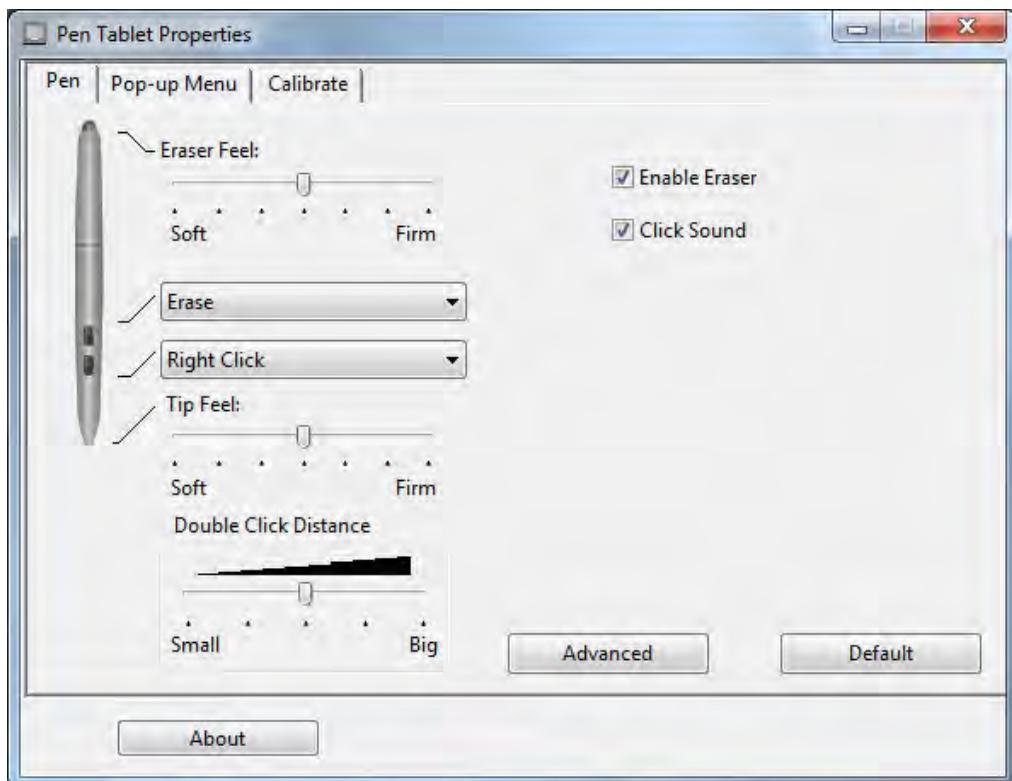


Figure 87. Tablet PC Settings Utility – Other Tab

## ARMOR X10gx Tablet Computer

### Pen Tablet Properties Utility

The following paragraphs briefly describe the purpose and actions of the Pen Tablet Properties utility. To open the Pen Tablet Properties window, select **Start** → **Control Panel** → **Hardware and Sound** and click on the **Pen Tablet Properties** icon to open the Pen Tablet Properties window shown in Figure 88 (in Windows 7 Pro, click on the ISD Tablet Properties icon).



**Figure 88. WACOM Pen Tablet Properties Window – Pen Tab**



#### NOTE

*The pen that comes with your ARMOR X10gx has only one side button and no eraser (see [Your X10gx Pen](#)).*

### Pen Tab

The Pen tab is displayed by default when the Pen Tablet Properties window opens (Figure 88). The pen pictured in the tab is a WACOM™ pen that is normally used in advanced drawing tablets. Its functionality far exceeds what is practical for your X10gx tablet. Consequently, we have provided a simpler active pen.

## ARMOR X10gx Tablet Computer

### Supported Options

Figure 89 and Figure 90 highlight those functions and options that are supported by your ARMOR X10gx pen.



#### NOTE

*Options not supported by the X10gx pen are grayed out in Figure 89 and Figure 90 for illustration purposes only. They are not grayed out on the actual application screen image.*



**Figure 89. Settings and Options Supported by the ARMOR X10gx Active Pen**

### Click Sound

Check the **Click Sound** option to enable a clicking sound when you perform an action with the pen.

### Eraser

The X10gx does not support the Erase function.

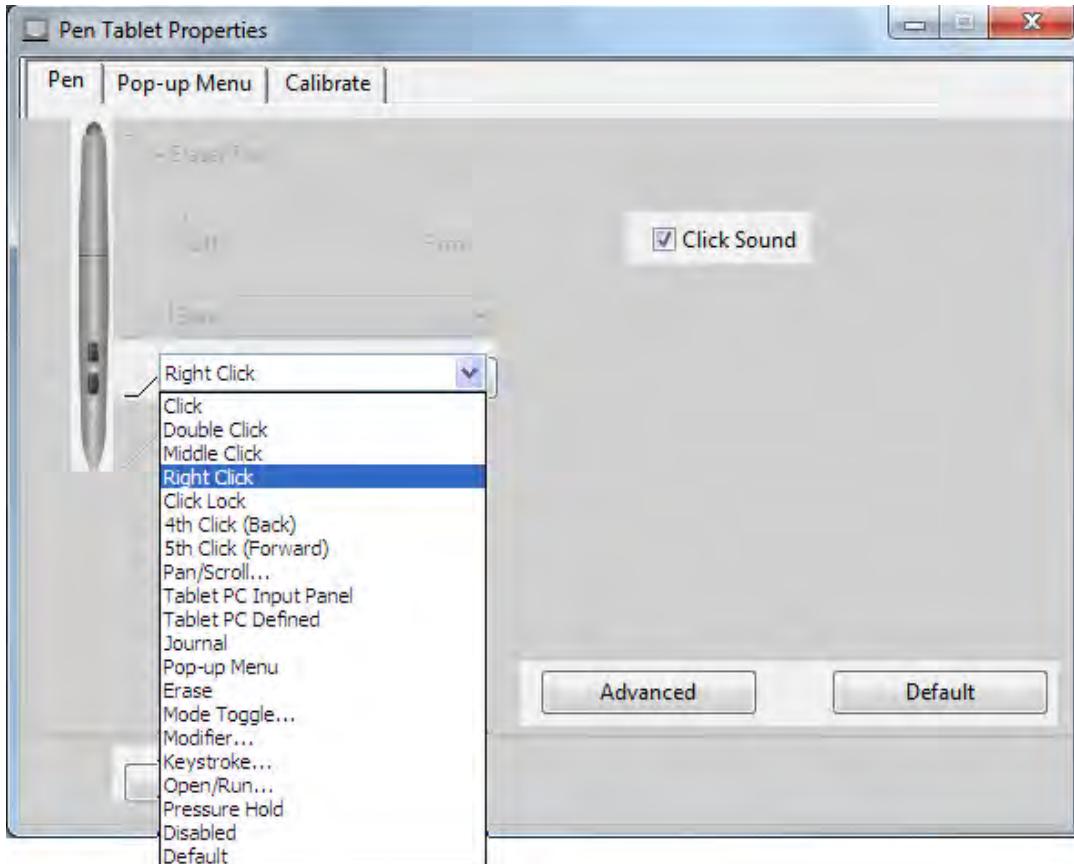
## ARMOR X10gx Tablet Computer

### Side Button Menu Options

The side button can be set to perform different functions that are selected from the pull down menu shown in Figure 90. The default function is “Right Click”.

Only the lower button menu is used with the X10gx pen. Refer to [Explanation of Side Button Options](#) in the **Appendix** for a description of each menu option.

**NOTE**  
*Some side switch settings may work differently in different software applications.*



**Figure 90. Side Button Menu Options**

### Default Button

Click on the **Default** button to return the **Pen tab** settings to their default values.

## ARMOR X10gx Tablet Computer

### Advanced Button

Click on the **Advanced** button to open the Advanced Settings window, as shown in Figure 91. The two options in this window allow you to set the way the side switch will be used to perform a right click action. **Click & Tap** is the default action.

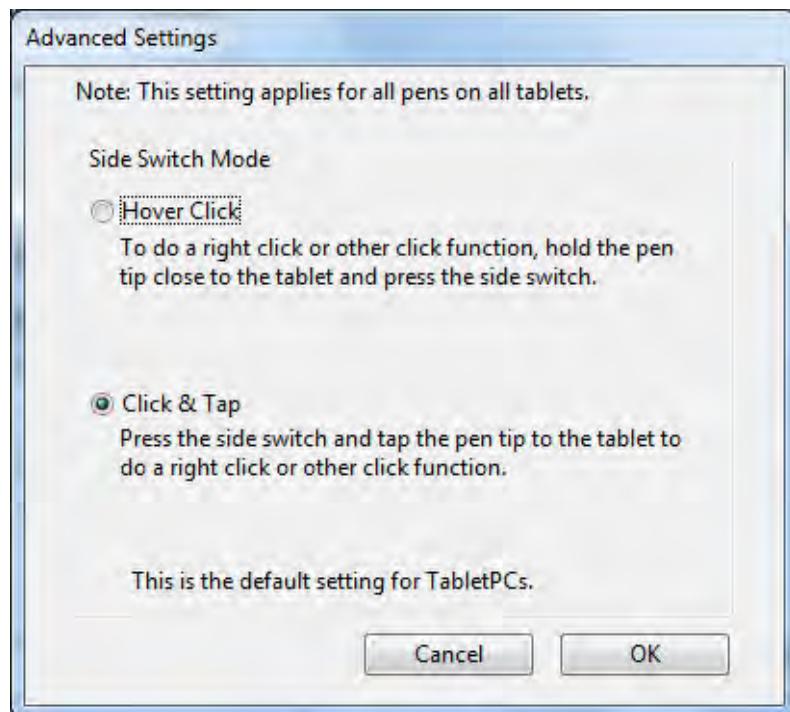


Figure 91. Pen Tablet Properties - Advanced Settings Window

## ARMOR X10gx Tablet Computer

### Pop-up Menu Tab

The Pop-up Menu tab is shown in Figure 92. This tab allows you to add additional functionality to the side button. These functions will be displayed in a pop-up menu when the side button is pressed while in an application or working on the desktop. If only one function has been selected, only that function will be available.



#### NOTE

***To use the functions set in the pop-up menu, you must select the "Pop-up Menu" option from the side button menu in the Pen tab.***

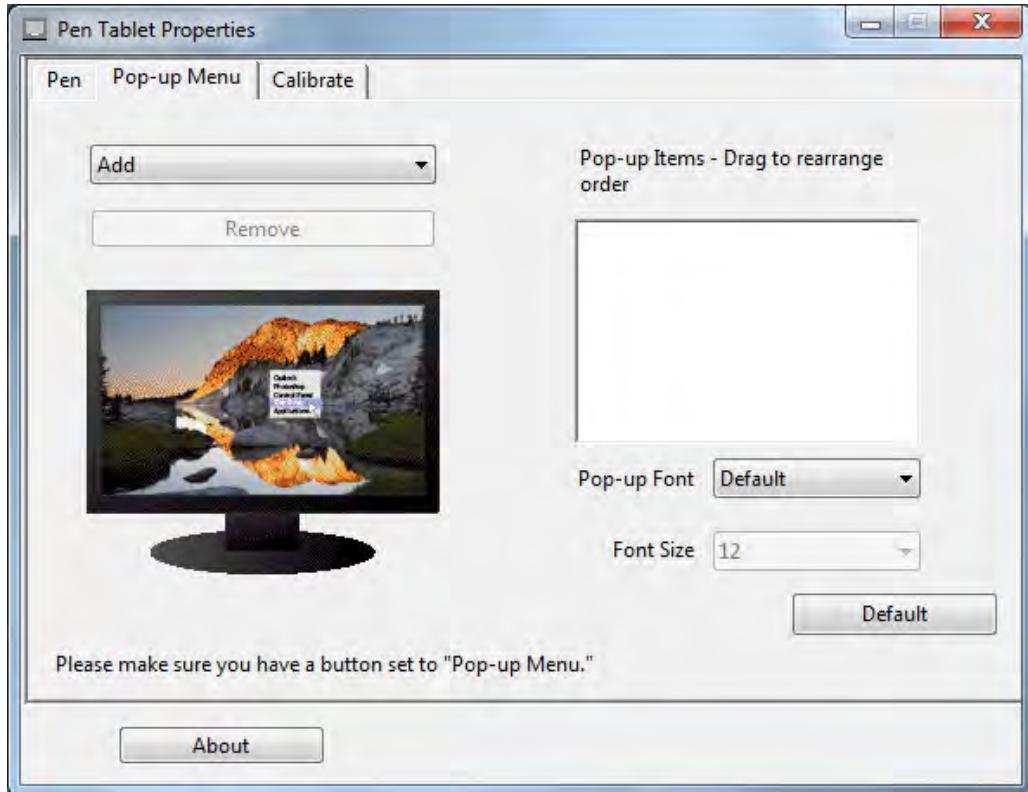


Figure 92. Pen Tablet Properties – Pop-up Menu Tab

## ARMOR X10gx Tablet Computer

Click on the down arrow in the **Add** field to open a list of available functions then select and configure the desired function. Those functions that are selected will appear in the **Pop-up Items** panel to the right of the **Add** field. Click on the **Remove** button to delete a function.

When you are using the pen in an application or on the desktop and you press the side button, a small menu is displayed with the options you have configured.

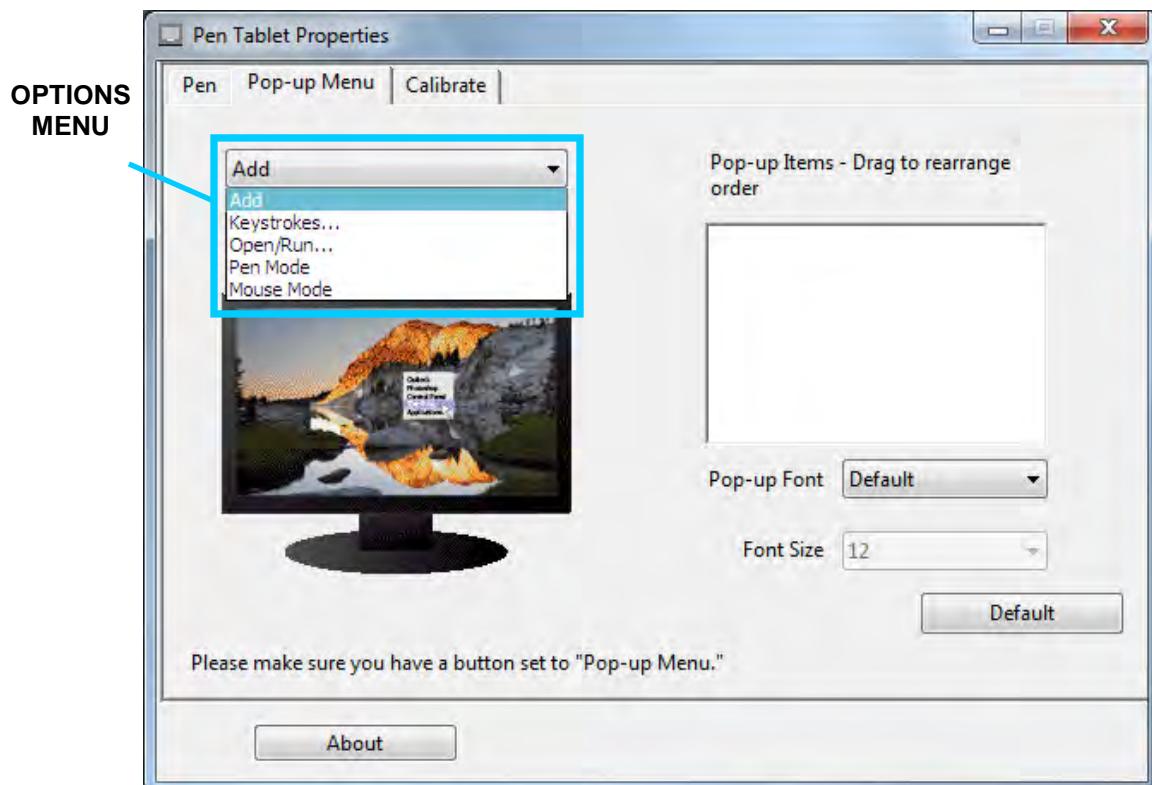
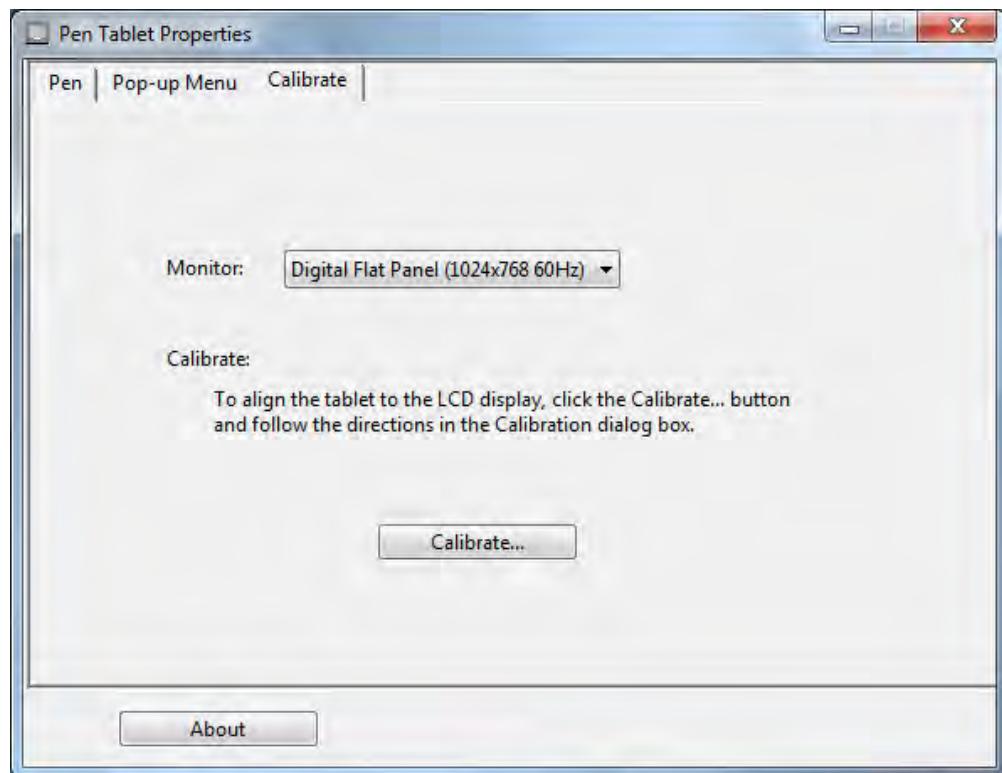


Figure 93. Pop-up Menu Add Options

## ARMOR X10gx Tablet Computer

### Calibrate Tab

The Calibrate tab is shown in Figure 94. Click on the **Calibrate** button to access the screen calibration routine. Follow the on-screen instructions.



**Figure 94. Pen Tablet Properties Window – Calibrate Tab**

## ARMOR X10gx Tablet Computer

### Tablet and Pen Settings Utility (Windows XP Only)

Windows XP Tablet lets you customize the tablet and the pen settings to suit the way you work with an active pen. To open the Tablet and Pen Settings window, select **Start** → **Control Panel** → **Tablet and Pen Settings**. Refer to the Windows Help resources for instructions on using these settings.

#### Settings Tab

The Settings tab is shown in Figure 95. With this tab, you can select whether you want to use the pen with the left hand or right hand, select menu positions, and calibrate the screen.

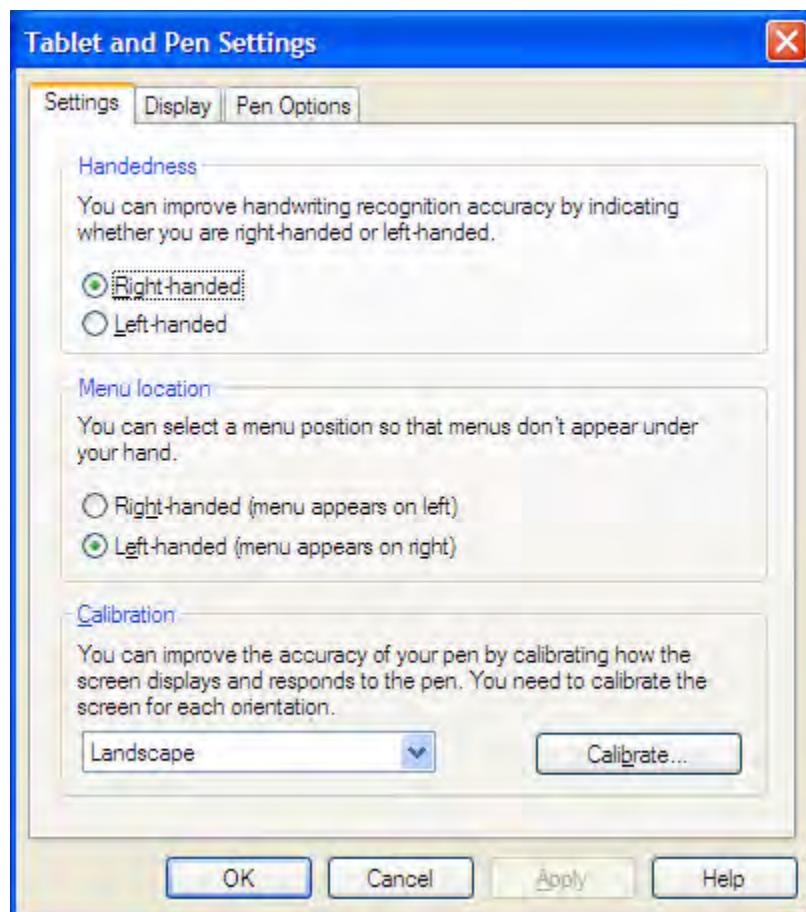


Figure 95. Tablet and Pen Settings Window – Settings Tab

## ARMOR X10gx Tablet Computer

### Display Tab

The Display tab is shown in Figure 96. With this tab, you can preset the primary and secondary screen orientations.

The **Screen Brightness** settings are not available from this window. To adjust the screen brightness, refer to [Display Management](#).

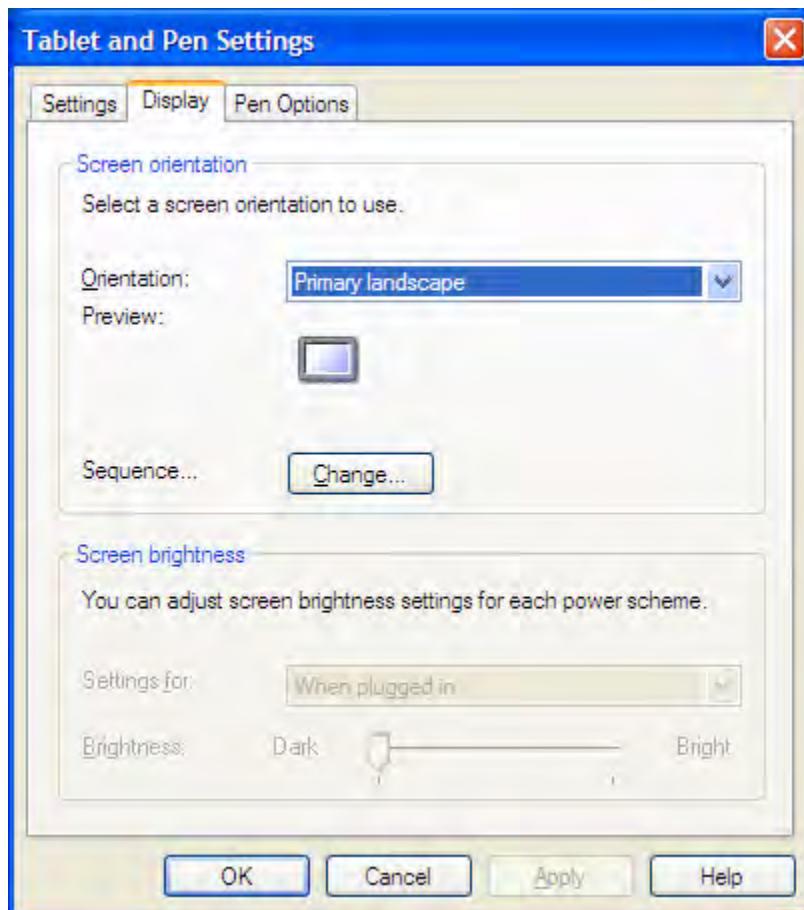


Figure 96. Tablet and Pen Settings Window – Display Tab

## ARMOR X10gx Tablet Computer

### Pen Options Tab

The Pen Options tab is shown in Figure 97. Use this tab to adjust pen settings such as double-click, right-click, hover, and launch Input Panel.

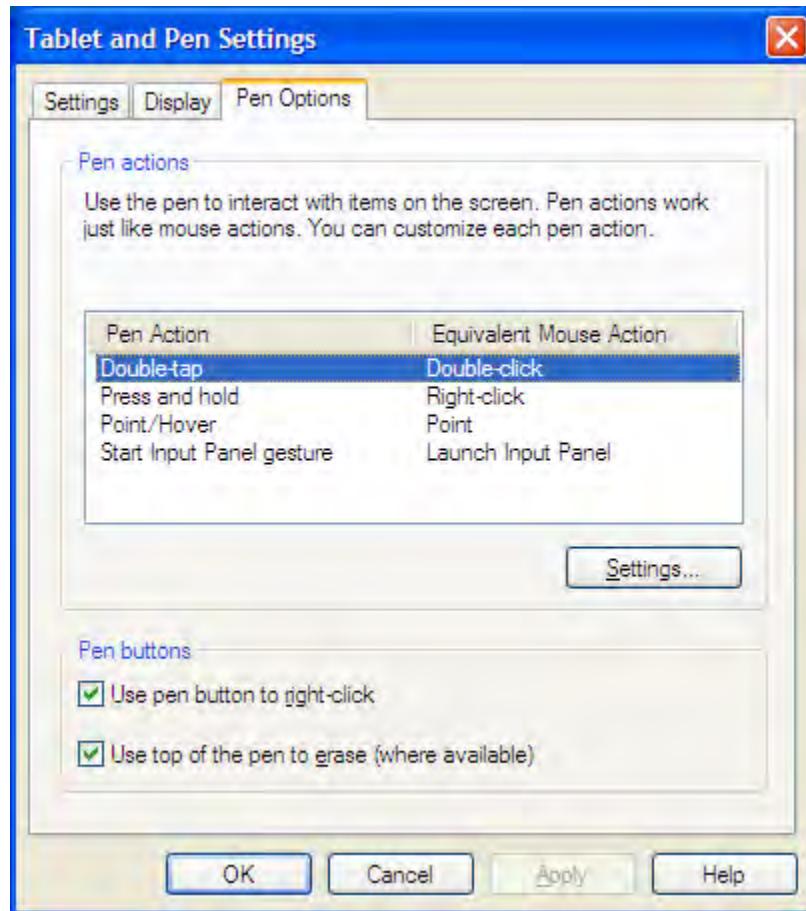
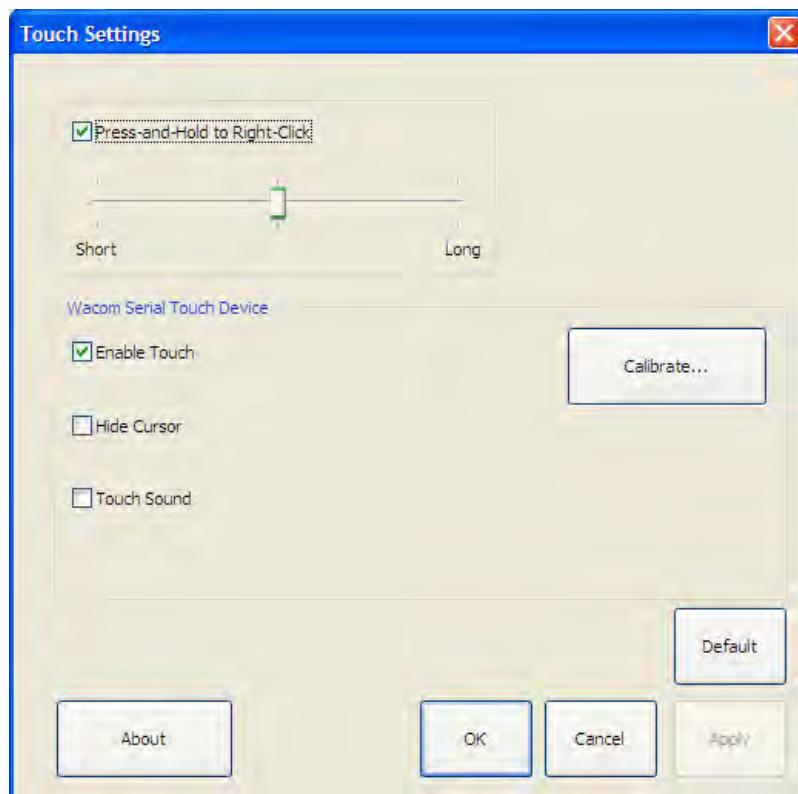


Figure 97. Tablet and Pen Settings Panel – Pen Options Tab

**ARMOR X10gx Tablet Computer****Touch Settings Utility (Windows XP Only)**

The Touch Settings window is shown in Figure 98. This window provides options to enable or disable the touch screen, hide the cursor, enable a touch sound and access the screen calibration routine.



**Figure 98. Touch Settings Utility Window**

## ARMOR X10gx Tablet Computer

### TrueSuite™ Fingerprint Recognition Software

Your X10gx comes pre-loaded with the AuthenTec® TrueSuite™ Premium fingerprint recognition software. This application enables you to secure your computer login, access to specific folders or loaded applications, and your logins to remote websites so that only you can access them with a swipe of your finger or thumb.

Open the application by selecting **Start → All Programs** and open the **TrueSuite** folder in the programs list (you may have to scroll down to see it). There are three options in this folder: **TrueSuite**, **TrueSuite Tray**, and **Uninstall TrueSuite**. Click on the **TrueSuite** option to open the TrueSuite window, as shown in Figure 99. You can also click on the **TrueSuite Tray** option to place a TrueSuite icon in the systray where it will remain during your current session. Mousing over this icon will open a menu where you can start the TrueSuite application. You can also change the touch controls and access help options without opening the TrueSuite application.

The application window opens with the **My Settings** panel displayed. There are four other panel options available: **Website Log On**, **File and Folder Lock**, **QuickLaunch**, and **Enrollment**.

Click on the navigation icon  in the upper right corner of any of these options to open the panel.

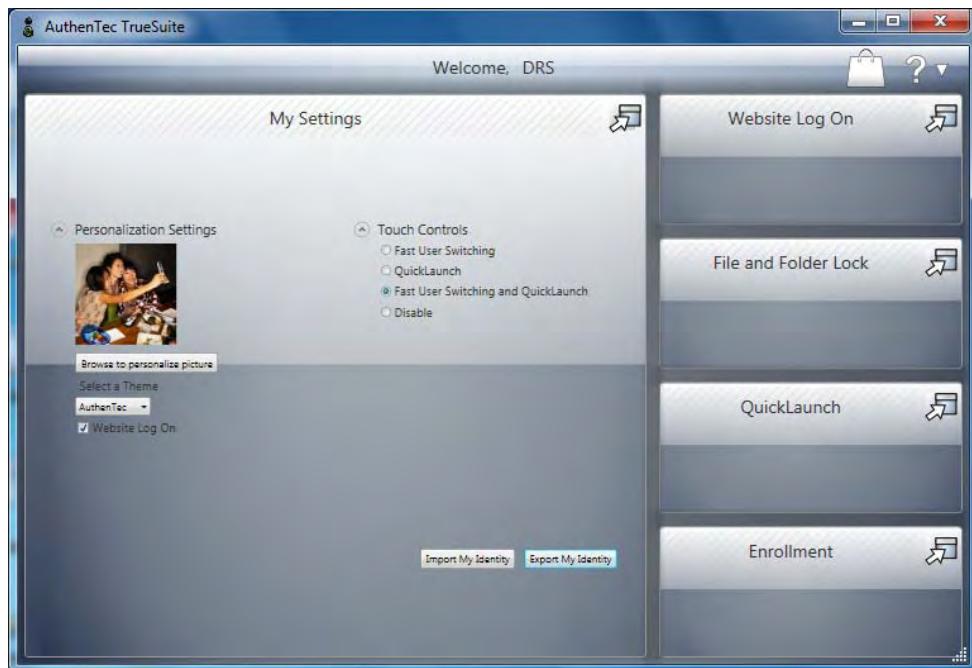


Figure 99. AutenTec TrueSuite Application Window

### Using the TrueSuite Application

You must install the TrueSuite application in order to initially register your finger and/or thumb print. Refer to [Using the Fingerprint Sensor \(FPS\)](#) for installation and setup instructions.

## ARMOR X10gx Tablet Computer

### Realtek® HD Audio Manager Application

This application allows you to configure your speakers, adjust headset audio and microphone levels and create sound effects. Refer to [Configuring your Audio System](#) for instructions.

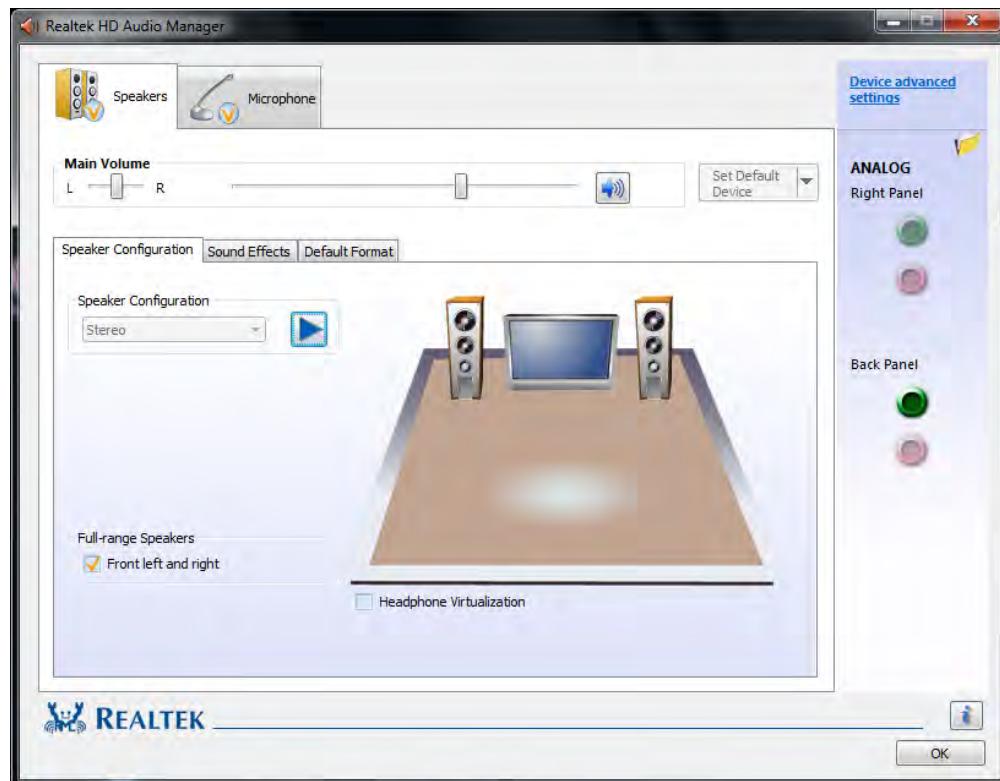


Figure 100. Realtek HD Audio Manager Application

## ARMOR X10gx Tablet Computer

### Picasa 3® Image Capture

Picasa 3 is an image capture program that allows you to use the webcam for taking still pictures and movies and for capturing barcodes. A brief tutorial is given in Using the Webcam. Refer to the Picasa 3 **Help** resources for detailed instructions on how to use this application.

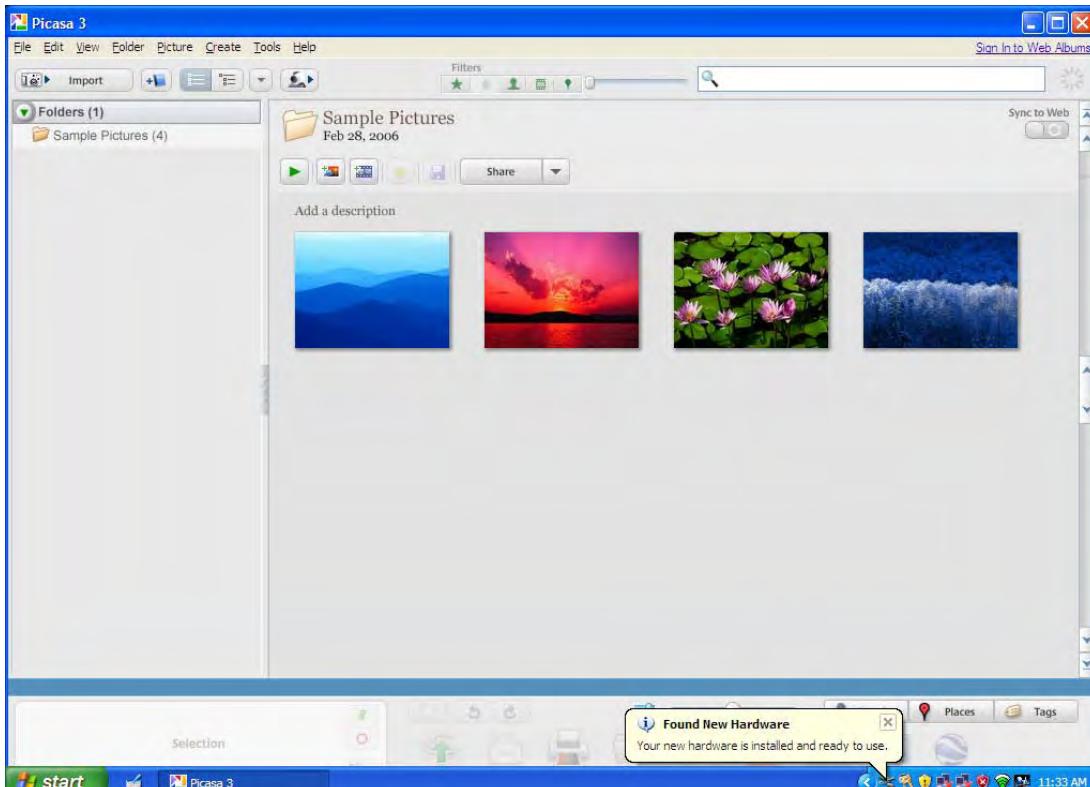


Figure 101. Picasa 3 Image Capture Application

## ARMOR X10gx Tablet Computer

### Virtual Magnifying Glass™

This handy utility allows you to magnify portions of the screen that are too small to see clearly. It projects a virtual magnifying glass over a portion of the screen, as shown in Figure 102. Refer to [Screen Magnifier](#) for a brief tutorial on how activate and use this application. For detailed configuration and operating instructions, start the application and then right-click on the magnifier icon in the systray and click on the “Help” option.



**Figure 102. Virtual Magnifying Glass Application**

**ARMOR X10gx Tablet Computer**

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## ARMOR X10gx Tablet Computer

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# 6. TROUBLESHOOTING

This section addresses only those problems that can be corrected by replacing a removable component such as a hard drive or battery, by replacing or reseating an external cable, or by changing a configuration setting. Any other failure will require the tablet be returned to DRS Tactical Systems.

For each problem that occurs with your ARMOR X10gx computer, there are specific steps that will isolate the problem to a failed component or to a configuration option that may be set incorrectly. In many cases, a single action step will isolate or correct the problem. In others, a troubleshooting flowchart with multiple actions may be needed.

### Isolating the Problem

Table 20 lists some possible symptoms pointing to problems with your ARMOR X10gx. It then provides actions to correct a problem. In some cases, you will be directed to a troubleshooting flow chart to further isolate the problem.

Use the Symptom and Problem Area columns to identify the problem you are having, then follow any directions in the Action column or go to the indicated troubleshooting flowchart to begin troubleshooting.



#### NOTE

*Table 20 is written primarily for the Windows 7 operating system. References may vary depending on your version of Windows.*

**Table 20. ARMOR X10gx Trouble Symptoms**

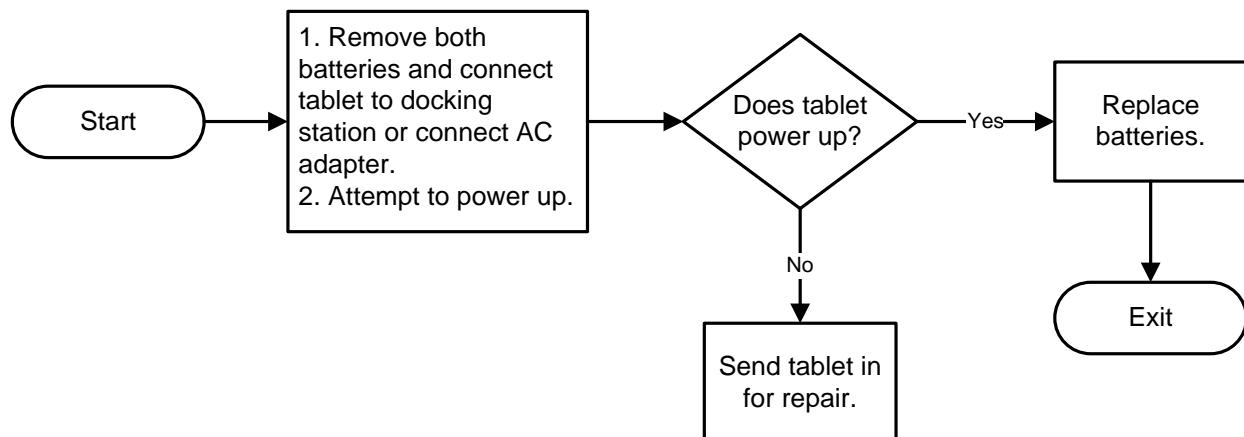
PROBLEM AREA	SYMPTOM	ACTION	FLOW CHART
Display (touch or pen screen)	Tapping with the pen or stylus does not select or activate an option, or the cursor does not align with stylus or pen point.	<ol style="list-style-type: none"><li>Follow the instructions in <a href="#">Calibrating the Display</a> to calibrate the screen. Repeat up to 5 times if necessary.</li><li>If the screen still does not calibrate correctly, send the tablet in for repair.</li></ol>	
Display	Display is off but wireless indicators are still active	Press P3 to toggle the display backlight on.	

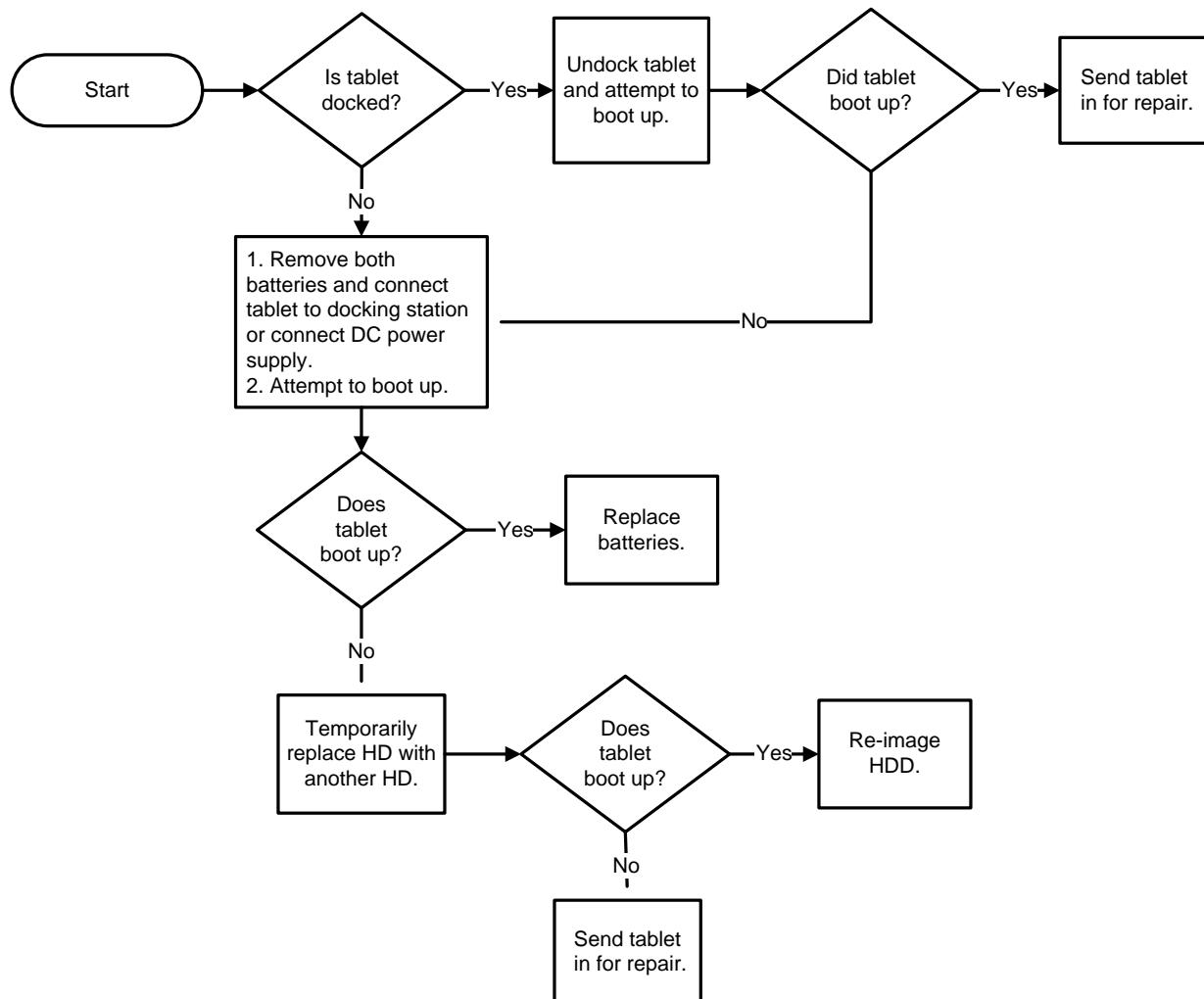
## ARMOR X10gx Tablet Computer

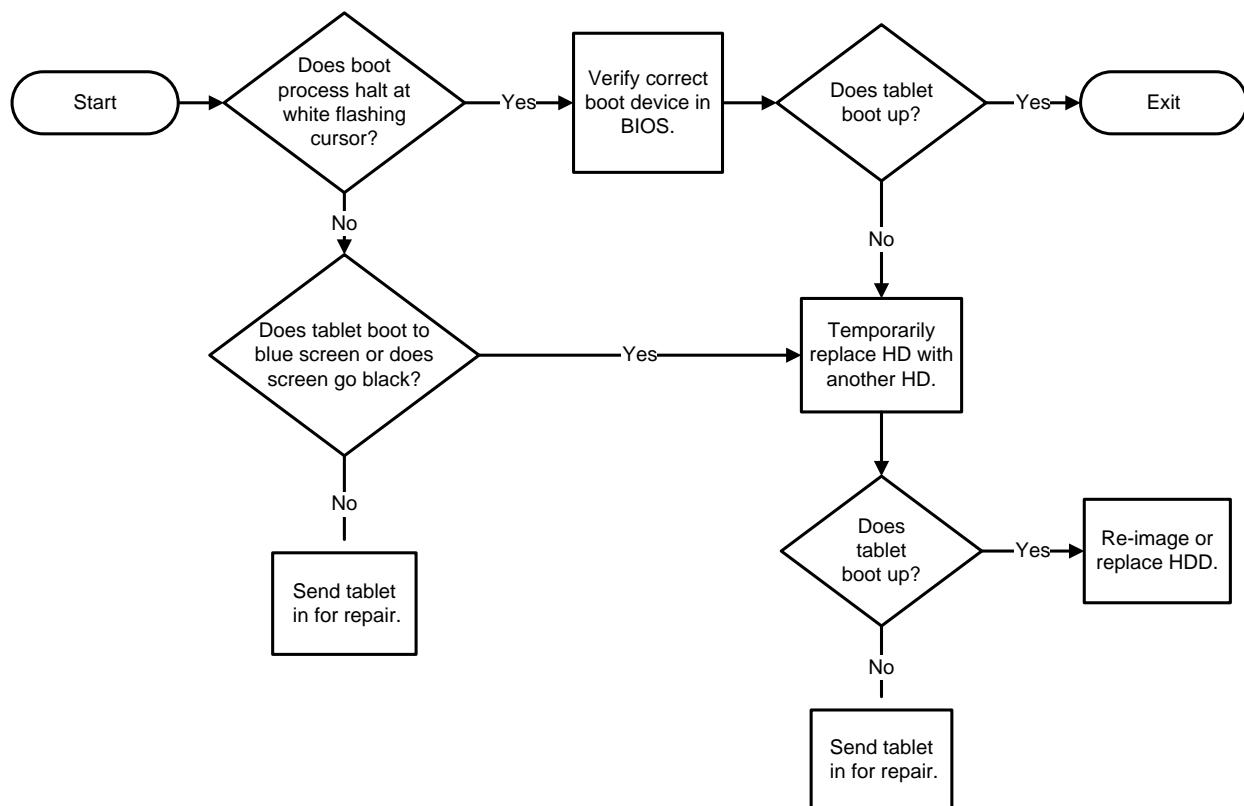
PROBLEM AREA	SYMPTOM	ACTION	FLOW CHART
Display	Backlight goes on and off.	<ol style="list-style-type: none"> <li>1. Default the BIOS.</li> <li>2. If not fixed, flash H8.</li> <li>3. If not fixed, send tablet in for repair.</li> </ol>	
Display	Pen does not right-click when held against the screen.	<ol style="list-style-type: none"> <li>1. Select <b>Start → Control Panel → Hardware and Sound → Pen and Touch.</b></li> <li>2. Highlight the <b>Press and hold</b> option in the Pen Actions panel and click on <b>Settings</b>.</li> <li>3. Ensure the <b>Enable press and hold for right clicking</b> option is checked.</li> <li>4. If problem is not fixed, replace pen.</li> </ol>	
Display	Pen does not right click when side button is pressed (default setting).	<ol style="list-style-type: none"> <li>1. Select <b>Start → Control Panel → Hardware and Sound → Pen Tablet Properties.</b></li> <li>2. Verify/change setting to Right Click in bottom side button menu.</li> </ol>	
Display	Pen not working in center of display.	Send tablet in for repair.	
Display	Pen opens and closes folders and programs without touching screen.	Send tablet in for repair.	
Battery	Tablet will not recognize a battery.		<a href="#">TS-04</a>
Battery	Battery will not hold a charge.	Perform the procedure in <a href="#">What to Do for an Overly Discharged Battery.</a>	
Battery	Battery consistently shows a full charge but does not meet typical operating times.	Perform the procedure in <a href="#">Battery Conditioning/Calibration</a> . <b>NOTE:</b> If the battery still shows poor performance, replace it.	

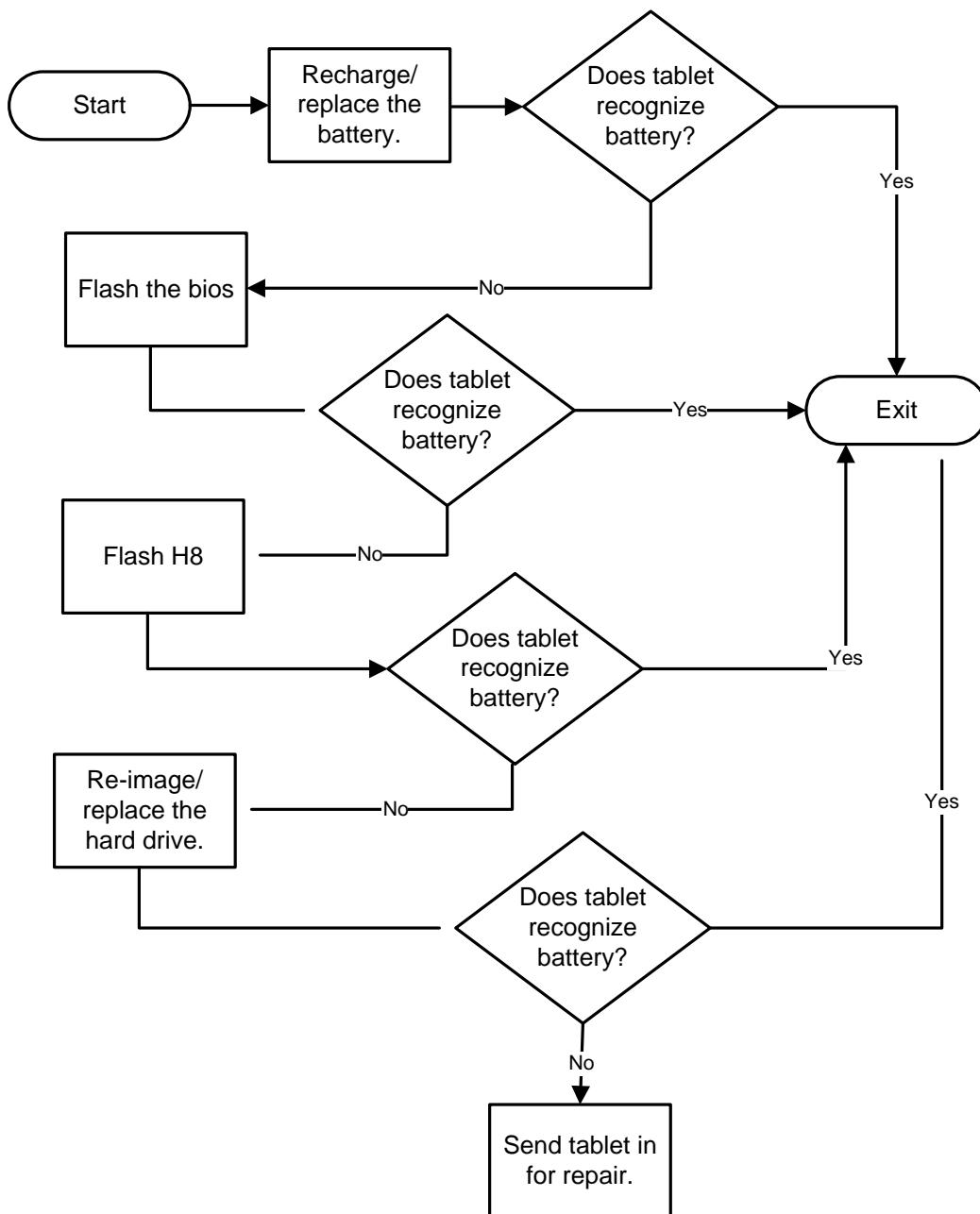
## ARMOR X10gx Tablet Computer

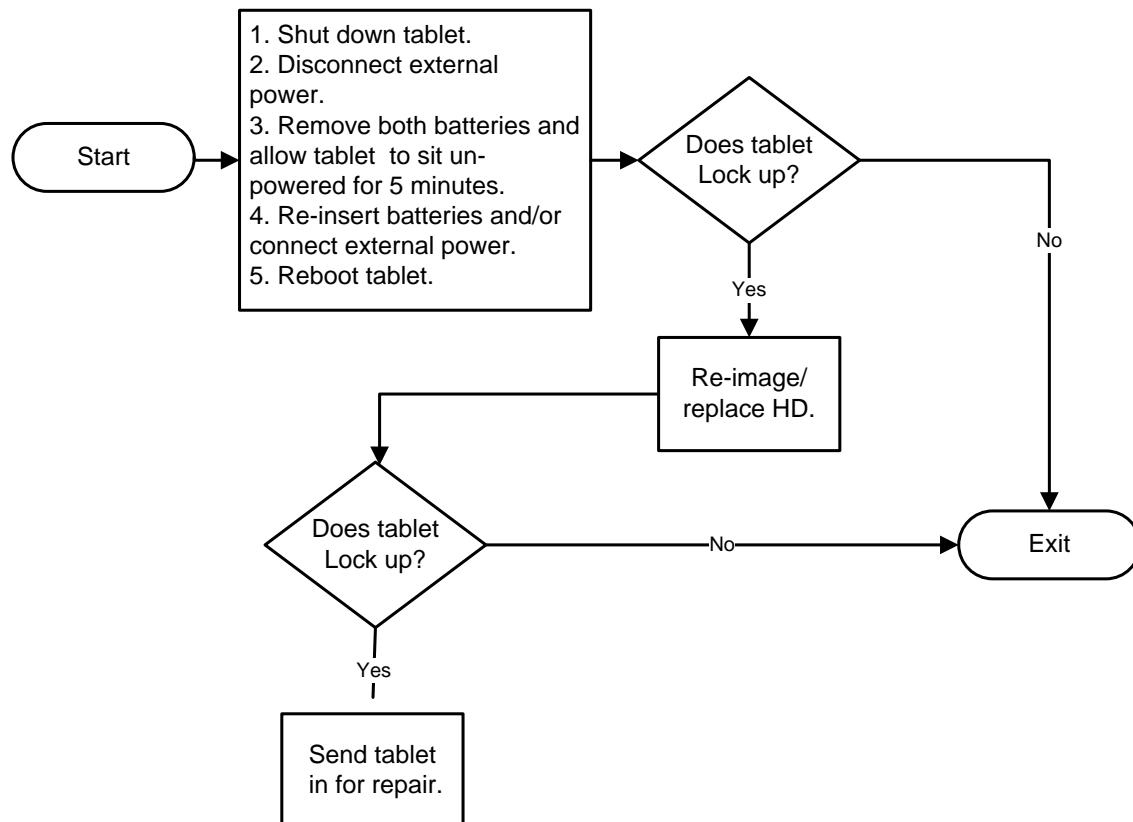
PROBLEM AREA	SYMPTOM	ACTION	FLOW CHART
Power System or Battery	Charging/Fault LED (indicator panel) is on steady red.	<p>The red LED will turn off when the fault condition is removed.</p> <p>Try removing external power (if connected).</p> <p>If the fault occurs on batteries only, connect external power and remove each battery one at a time.</p> <p>If the fault persists, return the tablet for repair.</p>	
Power System or Battery	Tablet will not power up.		<a href="#">TS-01</a>
Run	Tablet is locked up.		<a href="#">TS-05</a>
Run	Screen rolls, flashes, and then tablet freezes up.	<ol style="list-style-type: none"> <li>1. Remove both batteries and connect AC adapter.</li> <li>2. Reboot the tablet.</li> <li>3. If tablet works normally, reinstall one battery at a time and reboot until problem reoccurs.</li> <li>4. Replace one or both batteries as applicable.</li> </ol>	
Run	Tablet shuts down on its own.	<ol style="list-style-type: none"> <li>1. <b>Start → Control Panel → Power Options</b> and check if the computer has a shut down setting to save power.</li> <li>2. If no shut down option is enabled, return tablet for repair.</li> </ol>	
Boot Up	Tablet will not start boot process. Power ok.		<a href="#">TS-02</a>
Boot Up	Tablet will not boot into Windows.		<a href="#">TS-03</a>
Wireless	Cannot connect to a wireless network.		<a href="#">TS-06</a>
Ethernet/USB	Ethernet or USB ports not working.	Perform the procedure in <a href="#">Returning the BIOS to its Default Settings</a> to reset the BIOS.	

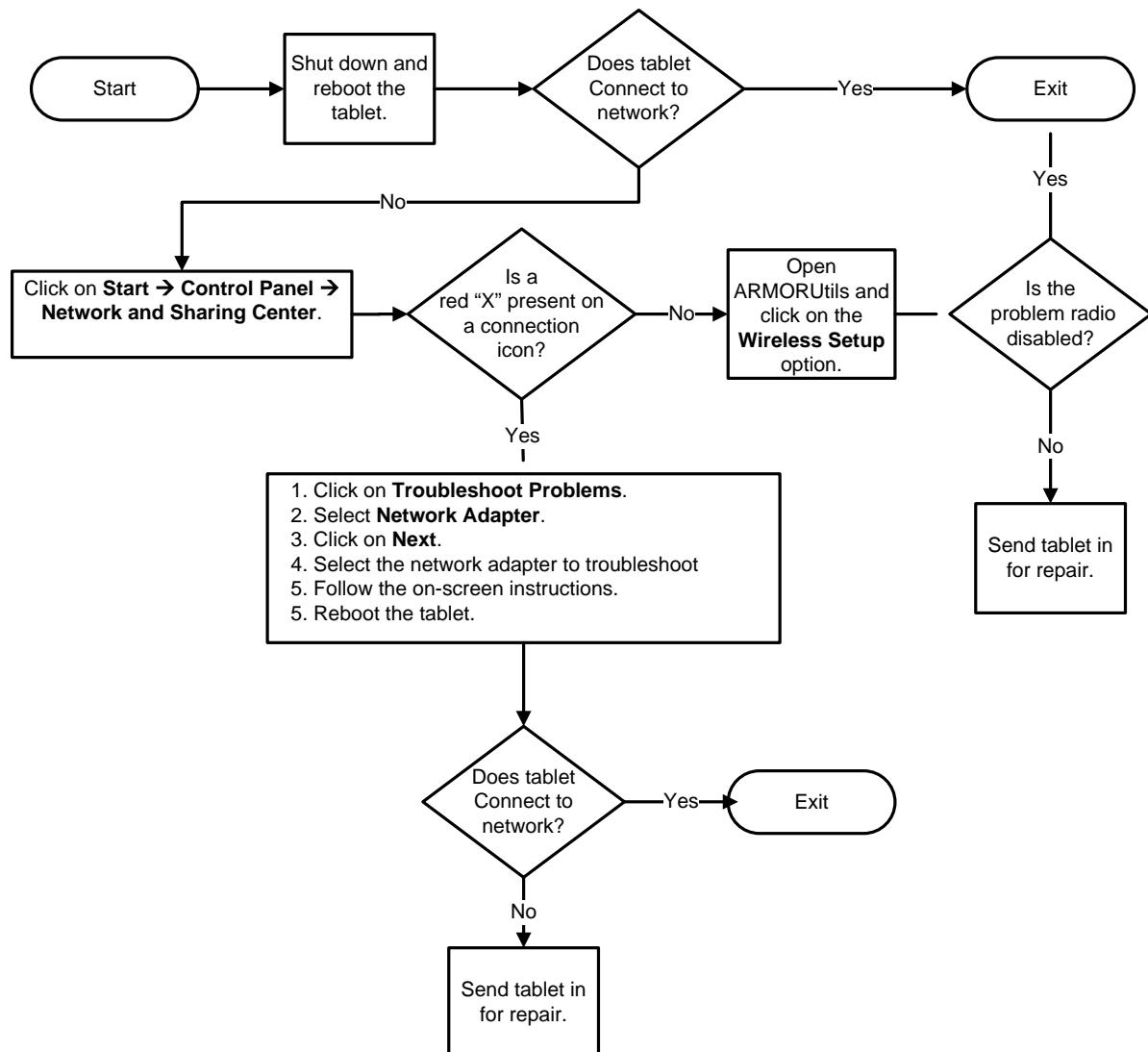
**ARMOR X10gx Tablet Computer**Troubleshooting FlowchartsTS01 Tablet will not Power Up

**ARMOR X10gx Tablet Computer****TS02 Tablet Will Not Start Boot Process**

**ARMOR X10gx Tablet Computer****TS03 Tablet Will Not Boot into Windows**

**ARMOR X10gx Tablet Computer****TS-04 Tablet will not recognize a battery**

**ARMOR X10gx Tablet Computer**TS-05 Tablet is locked up

**ARMOR X10gx Tablet Computer****TS-06 Cannot connect to wireless network**

**ARMOR X10gx Tablet Computer**

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## ARMOR X10gx Tablet Computer

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# 7. MAINTAINING YOUR ARMOR X10GX

## Replacing the Solid-State Drive (SSD)

The SSD is located in the Flexspace compartment in the back of the tablet (see Figure 4). Follow the procedure in Table 21 to remove and replace the drive.

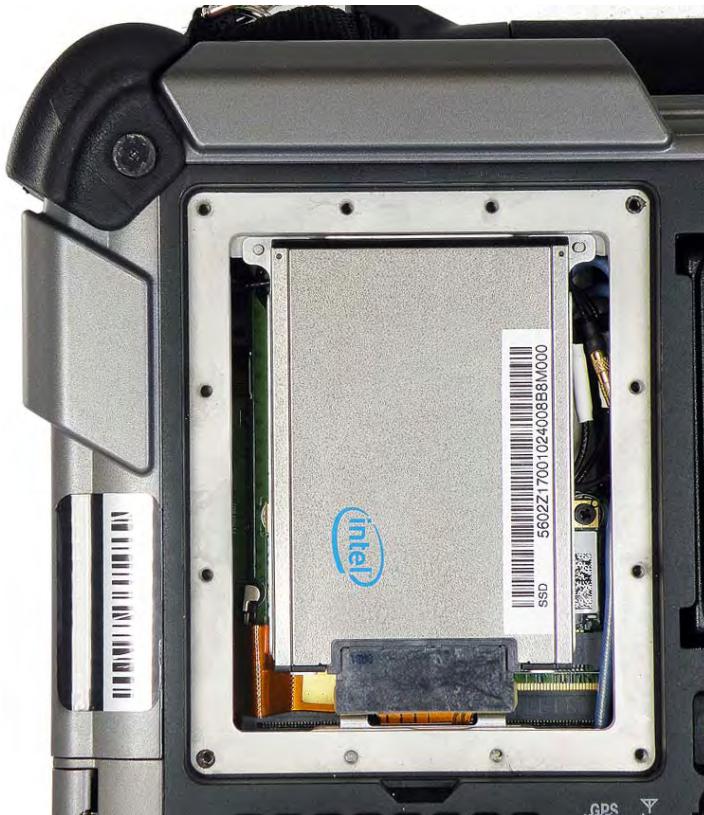


### NOTE

*The SSD should only be removed or installed by a qualified technician in a controlled environment.*

**Table 21. Remove and Replace the Solid-State Drive**

STEP	ACTION
1.	Power down the tablet and disconnect any external power.
2.	Remove the 12 Philips screws securing the Flexspace compartment cover and remove the cover to expose the drive, as shown in Figure 103.
3.	Disconnect and remove the drive.
4.	Install and connect the replacement drive.
5.	Replace the Flexspace compartment cover and secure with the 12 Philips screws.
6.	Torque each screw to 3 kg-cm (2.6 lb-in).

**ARMOR X10gx Tablet Computer**

**Figure 103. SSD Location**

**ARMOR X10gx Tablet Computer****Removing and Replacing the Batteries**

*Only one battery at a time can be removed and replaced during operation without causing a sudden system shutdown. Connect external power first before removing both batteries.*

**Table 22. Remove and Replace a Battery**

STEP	ACTION	COMMENTS
1.	Locate the battery latch between the two battery compartments on the back of the unit, as shown in  Figure 104. The bottom latch is for battery #1, the top latch is for battery #2.	
2.	Press in and hold the button on either latch while sliding the latch to the open position.	
3.	Pry up the battery and remove it.	
	 <b>CAUTION!</b> <i>Do not force the battery into position. If the battery will not slip easily onto the connector, pull it slightly toward the center compartment wall and press in gently.</i>	
4.	Position the fresh battery as shown in  Figure 104 and gently press down on the battery until the connector seats.	<b>NOTE:</b> The X10gx can operate on a single battery installed in <u>either</u> compartment.

## ARMOR X10gx Tablet Computer

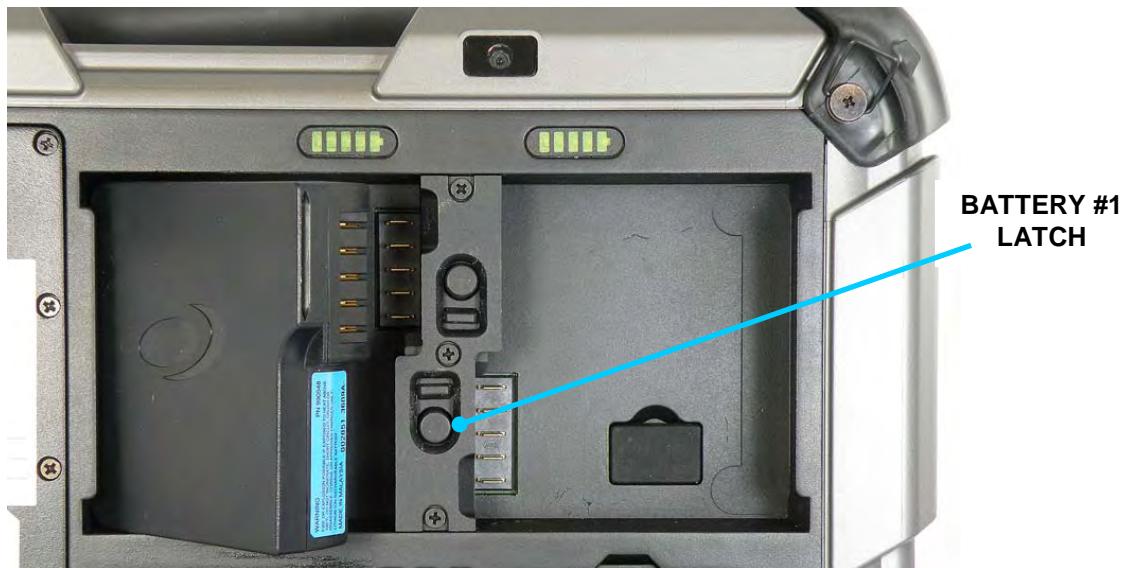


Figure 104. Battery Positioned for Insertion

STEP	ACTION	COMMENTS
5.	Slide the latch up until the button pops out. The battery is now locked in place.	

## ARMOR X10gx Tablet Computer

### Installing a SIM Card

Follow the procedure in Table 23 to install your SIM card.



#### CAUTION!

*Circuit boards containing electrostatic discharge (ESD) sensitive devices are exposed in this compartment. Static-free handling and processing is required to prevent possible damage to the components.*



#### CAUTION!

*Use care when operating the X10gx with the cooling register removed. Internal voltages are exposed to possible short circuit.*

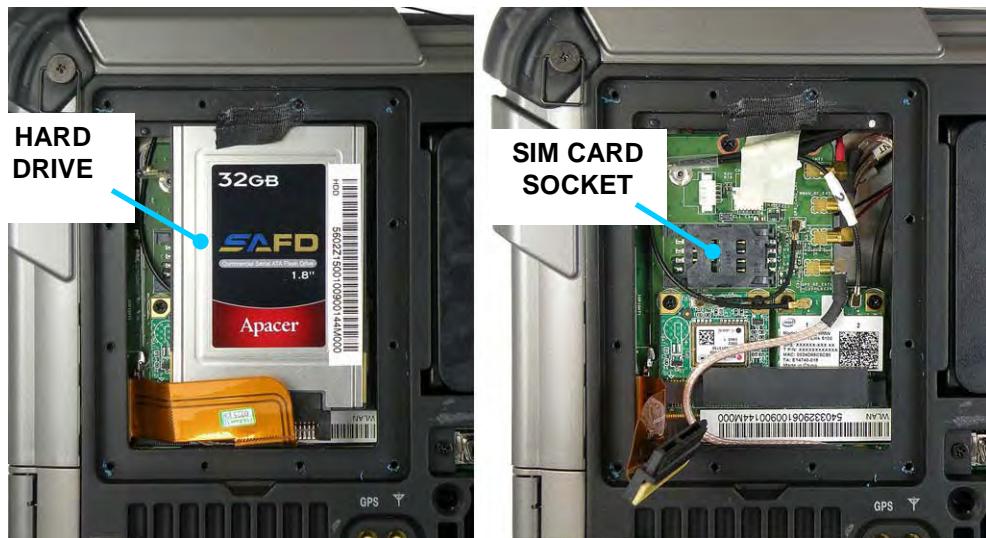


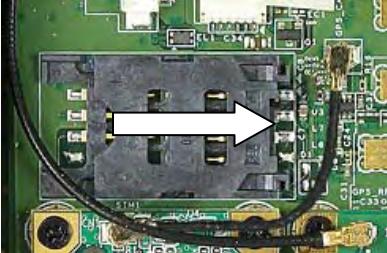
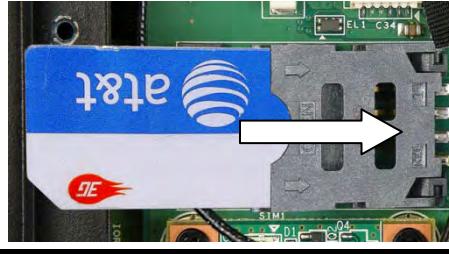
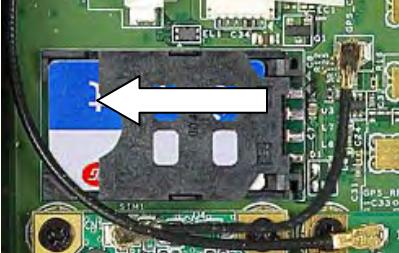
#### NOTE

*This procedure should only be performed by a qualified technician in a controlled environment.*

Table 23. Installing a SIM Card

STEP	ACTION	condition or indication
1.	Power down the tablet and disconnect any external power.	
2.	Remove the batteries.	
3.	Remove the 12 Philips screws securing the hard drive cover and remove the cover to expose the hard drive, as shown in Figure 105.	
4.	Disconnect and remove the hard drive to expose the SIM card socket, also shown in Figure 105.	

**ARMOR X10gx Tablet Computer****Figure 105. Hard Drive Compartment**

STEP	ACTION	
5.	Place a fingertip in the notch on the left side of the cover and slide the cover to the right until you feel an indent, then lift up.	
6.	Insert the SIM card with the corner notch to the lower left.	
7.	Gently press the cover down and slide to the left to lock in place.	
8.	Install the compartment cover with 12 Philips screws and torque each screw to 3 kg-cm (2.6 lb-in).	

## ARMOR X10gx Tablet Computer

9.	Reinstall the batteries and reconnect external power if desired.	
----	------------------------------------------------------------------	--

### Removing and Replacing a Memory Module

Two 2GB memory modules are located in a sealed compartment at the lower left rear corner of the tablet, as indicated in Figure 4. Follow the procedure in Table 24 to replace a module.



#### NOTE

*This procedure should only be performed by a qualified technician in a controlled environment.*



#### CAUTION!



*These modules contain electrostatic discharge (ESD) sensitive devices. Static-free handling and processing is required to prevent possible damage to the components.*

Table 24. Replacing a Memory Module

STEP	ACTION	condition or indication
1.	Power down the tablet, remove the batteries and disconnect any external power.	
2.	Place the tablet face down on a clean surface and remove the 10 Philips screws securing the hard drive cover, then remove the cover to expose the memory modules, as shown in Figure 106.	

## ARMOR X10gx Tablet Computer

STEP	ACTION	condition or indication
3.	Spread the two spring clips securing the top module and lift at the outer edge, as indicated.	The module will swing up to a 45° angle, as shown in Figure 107.
	<p><b>NOTE</b></p> <p><i>A small piece of cushioning tape is sandwiched between the two modules and may make the top module appear to be stuck. Pry up at the edges to release the module from the tape.</i></p>	
4.	Remove the module and replace it with a new one.	
5.	Replace the module cover and torque screws to 3 kg-cm (2.6 lb-in).	



Figure 106. Memory Module Compartment

## ARMOR X10gx Tablet Computer



Figure 107. Memory Module Ready for Removal

## ARMOR X10gx Tablet Computer

### Changing the BIOS Settings

Follow the procedure in Table 25 to access the BIOS setup utility and verify settings or make changes. You can use the active pen (not a stylus or fingertip) to navigate the setup screens and select options, or you can connect an external keyboard to one of the USB ports.

Contact [DRS Technical Support](#) if you have any questions about the BIOS settings for your ARMOR X10gx.



*Incorrectly setting the BIOS options could cause the X10gx to become unstable or render it completely inoperable. Move carefully through the menus and use caution when making changes. Read the description of each change in the right-hand column before making any adjustments.*



#### NOTE

*If you make permanent changes as a result of an upgrade or addition of new equipment, be sure to keep a record of the changes. Table 26 provides a handy place to record these changes. Always record the previous value in case you have to return to that value.*

Table 25. Access the BIOS Setup Utility.

STEP	ACTION	COMMENTS
1.	Start the computer and as soon as the DRS logo appears tap on the screen until you hear a beep.	The <b>Information tab</b> of the Setup Utility will be displayed.
2.	Click on a tab at the top of the screen to select a different menu page.	
3.	A listed menu option with a triangle to the left of it indicates an available submenu. Double-click on this option to open the sub-menu.	
4.	Click once on a bracketed setting [XXXXX] to select that menu option.	A selected option will change to white text. If an item does not have a bracketed setting, there are no setting options available.

## ARMOR X10gx Tablet Computer

5.	Click again on the bracketed setting to change that option's setting. Click repeatedly to cycle through a list of available settings.	
6.	Select the <b>Exit Submenu</b> tab at the top of the screen.	
7.	When all changes have been made, select the <b>Exit</b> tab to open a list of exit options.	
8.	Click on the desired option to select it, then click it again to implement the option and exit the Setup Utility.	

Table 26. Record Bios Changes Here

SETTING	PREVIOUS VALUE	NEW VALUE	DATE CHANGED

## ARMOR X10gx Tablet Computer

### Returning the BIOS to its Default Settings

When your X10gx was shipped to you, the BIOS settings were set to a “default” state for your particular configuration. To return the BIOS to this default state, follow the procedure in Table 27.



#### NOTE

*Defaulting the BIOS will change the brightness control to the “Automatic” adjustment mode. To change the adjustment to manual, open the Backlight Setup in ARMORutils and select Manual mode.*

Table 27. Return the BIOS to Its Default State

STEP	ACTION
1.	Access the BIOS Setup Utility (see Table 25 for instructions).
2.	Press <b>F9</b> to load the default BIOS configuration.
3.	Press <b>F10</b> to save your changes and exit.

### Setting the X10gx for Power Operation with Legacy Docks

The 5V DC power required by an ARMOR docking station is supplied by the tablet through the docking connector. Unlike previous ARMOR tablets, the X10gx has circuitry that senses when the tablet is undocked and automatically switches off 5V power to the power pins in the tablet docking connector. The power is switched back on when the tablet is docked again. This power switching feature is controlled by the **Dock Power Sw** in the **ARMORutils Wireless Setup** dialog.



#### WARNING!

*Do not set the Dock Power Sw in ARMORutils Wireless Setup Dialog to “Always On” if the X10gx will be used in a hazardous location (HAZLOC), regardless of the docking station used.*

## ARMOR X10gx Tablet Computer



### CAUTION!

*With the Dock Power Sw set to “Always On”, there is a slight risk of accidentally causing an arc since the exposed power pins on the docking connector will be ‘live’ while undocked. Do not insert any metallic object into the docking connector while the X10gx is powered up.*



### NOTE

*When the Dock Power Sw is changed to “Always On”, the comm ports on the breakout box are remapped as follows:*

- |          |   |                                        |
|----------|---|----------------------------------------|
| Serial 1 | → | X10Gx side port (with RTS/CTS support) |
| Serial 2 | → | Dock Com 2 (no RTS/CTS support)        |
| Serial 3 | → | Dock Com 1 (with RTS/CTS support)      |
| Serial 4 | → | Dock Com 3 (no RTS/CTS support)        |

Table 28. Setting the Dock Power Switch for Legacy Operation

STEP	ACTION	COMMENTS
1.	Open ARMORutils and select the Wireless Setup dialog.	The Wireless Setup dialog window opens as shown in Figure 64.
2.	Change the Dock Power Sw to <b>ALWAYS ON</b> .	
3.	Click on Save Settings	

## ARMOR X10gx Tablet Computer

### Changing the Power Button Default Action

Follow the procedure in Table 29 to change the default action of the **Power** button.



#### NOTE

*This change will only affect the action of the Power button during the operating state; it will still work the same as described in Error! Reference source not found. when the computer is powered off or is in sleep or hibernate mode.*

Table 29. Changing the Power Button Actions

STEP	ACTION	COMMENTS
1.	Select <b>Start</b> → <b>Control Panel</b> → <b>Hardware &amp; Sound</b> → <b>Power Options</b>	The Power Options dialog window is displayed.
2.	From the left panel, select <b>Choose what the power buttons do</b> .	The Systems Settings window opens as shown in Figure 108.
	<div style="border: 1px solid black; padding: 5px; text-align: center;"> <b>NOTE</b> <i>The X10gx does not have a Sleep button so ignore the bottom set of options.</i></div>	
3.	Click on the pull-down menus in the <b>On battery</b> and <b>Plugged in</b> columns and select the desired action.	The pull-down menu options are shown in Figure 108.
4.	Click on the <b>Save Changes</b> button at the bottom of the window.	

## ARMOR X10gx Tablet Computer

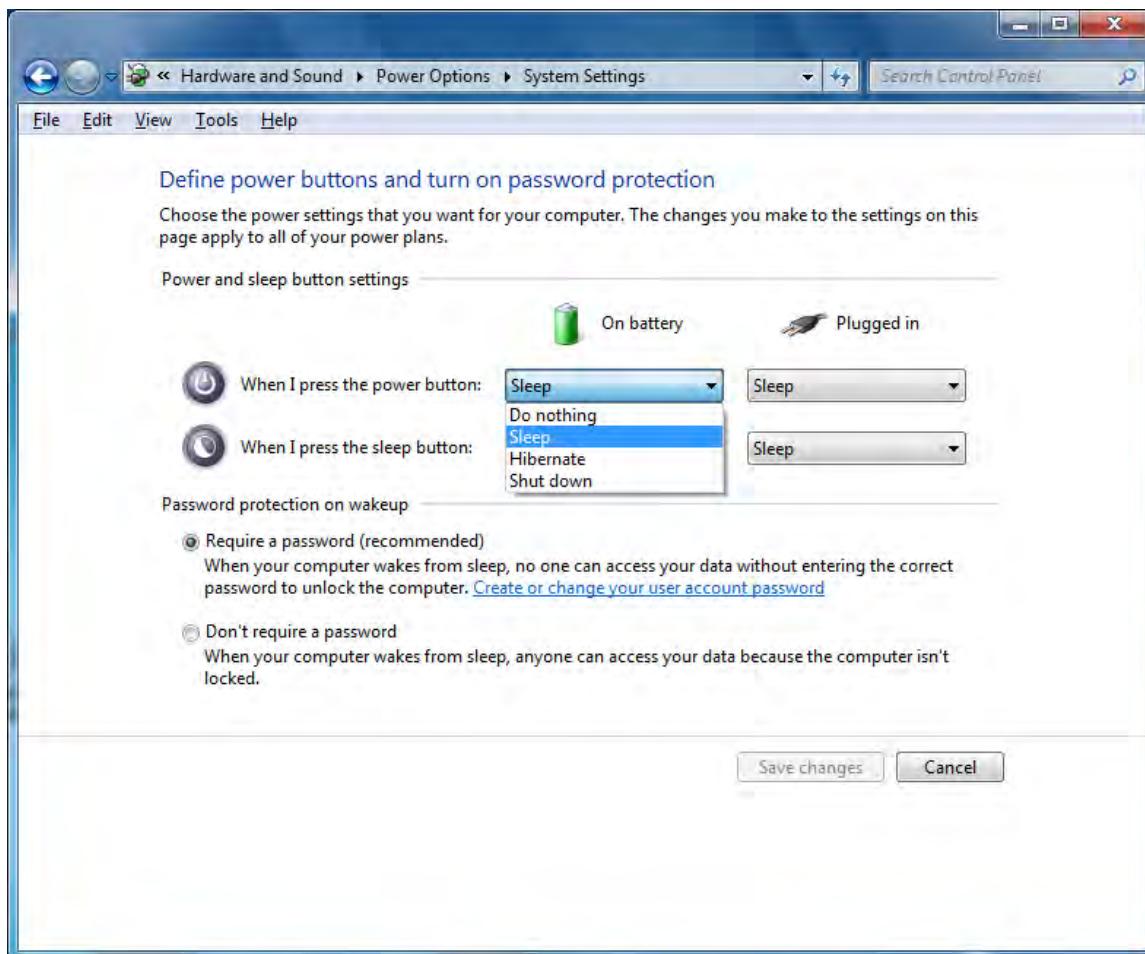


Figure 108. Power Button Settings Options

## ARMOR X10gx Tablet Computer

### Creating an Event Log

If you are experiencing problems and suspect that they are temperature or battery related, you can create a log of the internal temperature and battery status of the X10gx over time using the Event Recorder function in the ARMORutils Diagnostics window. Follow the procedure in Table 30 to create an event log.

**Table 30. Creating an Event Log**

STEP	ACTION	CONDITION OR INDICATION
1.	Open <b>ARMORutils</b> and select the <b>Diagnostics</b> option.	The Diagnostics dialog window opens, as illustrated in Figure 76.
	<div style="border: 1px solid black; padding: 10px; text-align: center;"> <b>NOTE</b> <i>If the Event Recorder button is grayed out, you must enable it in the User Access Settings window. Refer to the description of the <a href="#">User Access Settings Window</a> for instructions.</i></div>	
2.	Click on the <b>EVENT RECORDER</b> button at the bottom of the window.	The Event Recorder window opens as shown in Figure 109. <b>NOTE:</b> The initial status will reflect the start and stop times recorded with the last logging. These will update when you start your new event log.
3.	If you wish to change the current file log name, edit it at this time. Click on the <b>BROWSE</b> button to navigate to a different file or folder.	
4.	For Auto-Timed logging, enter the hours directly in the <b>Timer</b> menu window or use the up/down arrows to select the time and then click on <b>START (TIMED)</b> .	
5.	For Manual logging, click on <b>START (MANUAL)</b> .	
6.	To stop the logging process in either Auto-Timed or Manual mode, click on the <b>STOP LOGGING</b> button.	A sample event log is shown in Figure 78.

## ARMOR X10gx Tablet Computer

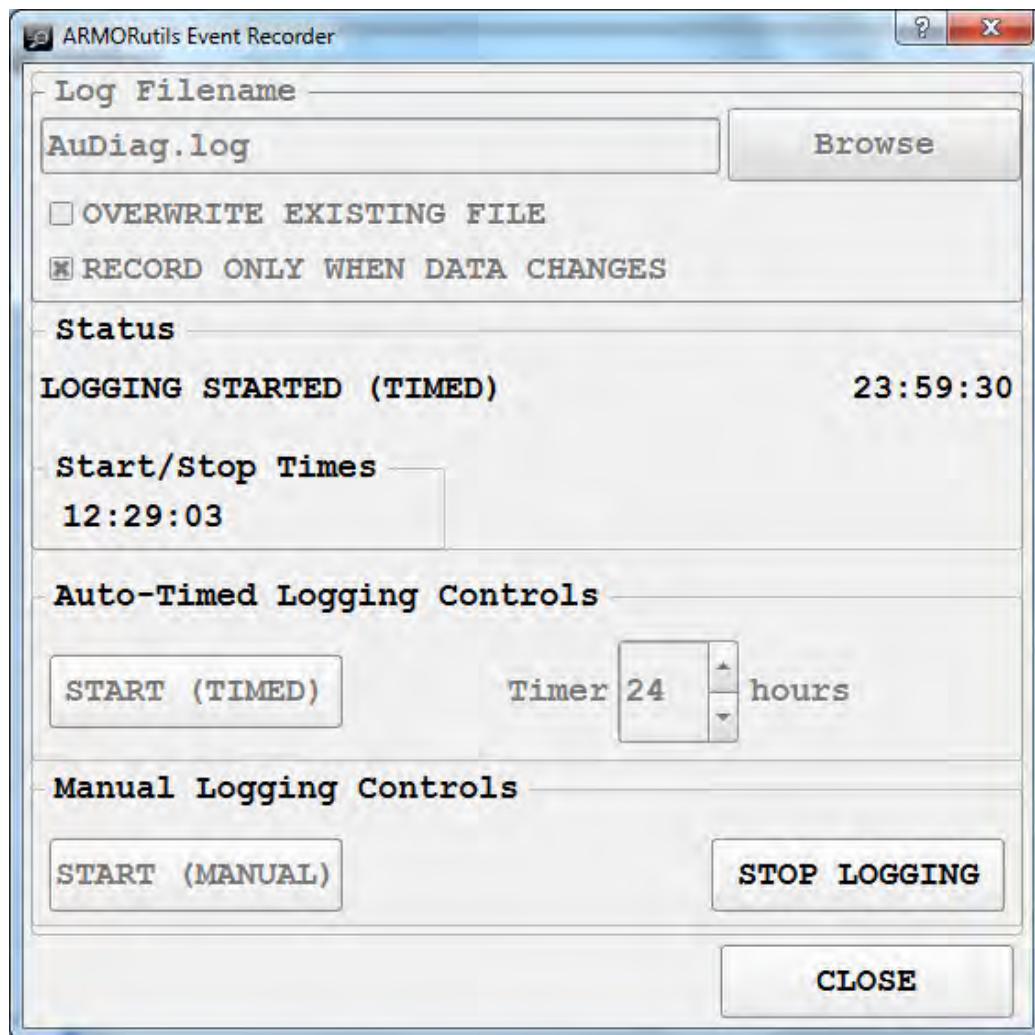


Figure 109. Diagnostics Event Recorder Window

## ARMOR X10gx Tablet Computer

### Caring For the Display Screen

The following tips will help you keep your display clean and healthy:



#### **CAUTION!**

***Use only canned compressed air to clean your screen. Do not use an air compressor. Damage to the screen surface could result.***



#### **CAUTION!**

***Do not attempt to remove stuck particles with a fingernail or other hard object as this can permanently damage the touch screen surface.***

- Do not use an abrasive or metallic pointer on the screen surface as this may damage the screen. Use the pen included with your X10gx, a passive stylus designed for touch screens (not included) or your fingertip.
- Use alcohol or a plastic cleaner such as Plexus™ to clean the pen tip.
- Be careful not to let sand or grit stay on the screen as this can scratch the surface when wiped with a cloth. Use canned compressed air or a soft bristle brush to remove loose particles before wiping with a cloth.
- Use the special ARMOR cloth that came with your X10gx to wipe away dust and fingerprints.
- For stubborn residue, clean the surface with plain water or water with a few drops of dish soap added and pat dry with a clean paper towel or cloth, then use the special ARMOR cloth that came with your tablet to remove any remaining residue.
- Use a cotton swab with plain water, soapy water, alcohol or glass cleaner to gently remove particles stuck to the surface.

### Cleaning the Tablet Case

- Use a clean cloth dampened with water to wipe down the case.
- For stubborn dirt or contaminants, use a cloth dipped in plain or soapy water. Remove any soap residue with a clean cloth dampened in plain water.
- Wipe out battery compartments using a clean dry cloth. Use a soft bristle brush or canned air to remove loose particles.
- Batteries can be cleaned in the same way.

## ARMOR X10gx Tablet Computer

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# 8. DISPLAY MANAGEMENT

## Adjusting the Brightness

The brightness of an LCD display is controlled by adjusting the backlight intensity level. The backlight level for the X10gx can be controlled either manually or automatically. When you first receive your X10gx, the brightness mode is set to "Automatic".

### Automatic Brightness Adjustment

Open the **Backlight Setup** dialog in ARMORutils. In Automatic mode, the backlight level is controlled by the ambient light sensor (ALS) located on the Indicator panel. If the surrounding light decreases, the brightness will also decrease proportionally; if the surrounding light increases, the brightness will increase proportionally.



#### NOTE

*You must keep the ALS uncovered to allow proper automatic brightness adjustment.*

#### Automatic Brightness Mode Profiles

Select one of the profiles that best controls the range of backlight levels to suit your work environment. Refer to [Automatic Brightness Mode Profiles](#) for an explanation of these profiles.

### Manual Brightness Adjustment

Click on the **Manual** button to change to manual brightness mode. You can manually adjust screen brightness in two ways: by using programmable buttons (PBs) **P1**, **P2** and **P3** or by using options and buttons in the **Backlight Setup** dialog in ARMORutils.

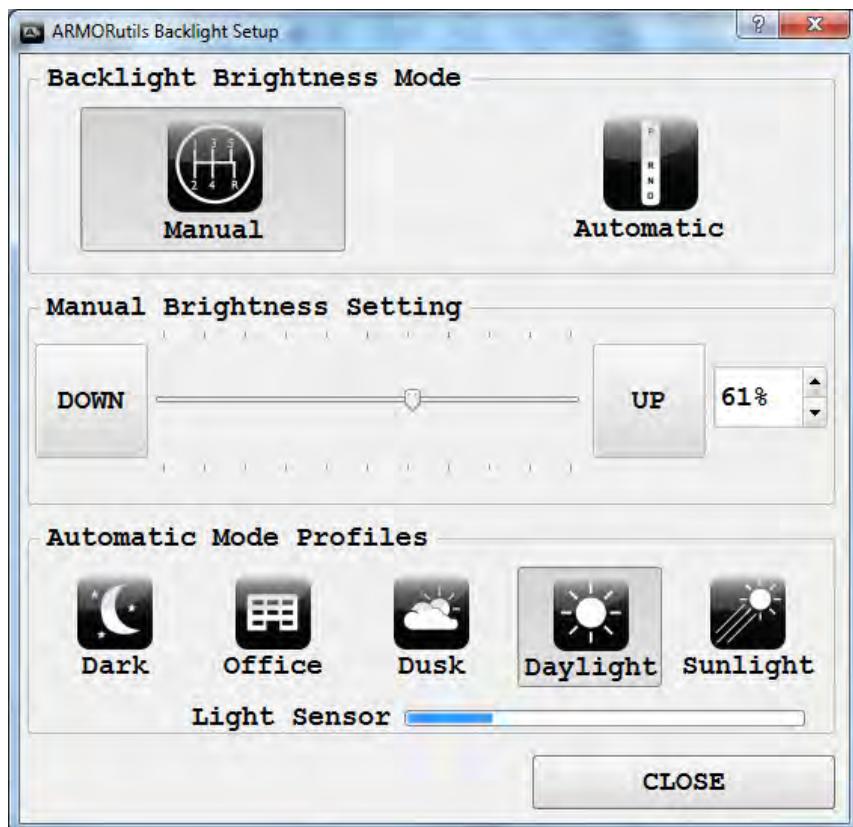
#### Using the PBs

**NOTE:** ARMORutils must be running in order to use these programmable buttons (see [Starting ARMORutils](#)).

Repeatedly press **P1** to increase screen brightness. Repeatedly press **P2** button to decrease screen brightness. Press **P3** to toggle the screen on and off.

#### Using the ARMORutils Backlight Setup Dialog

Open ARMORutils and select the **Backlight Setup** button. The Backlight Setup dialog opens as shown in Figure 110.

**ARMOR X10gx Tablet Computer**

**Figure 110. ARMORutils Backlight Setup Dialog**

Press the **UP** or **DOWN** buttons repeatedly or use the pen or a fingertip to move the slider and adjust the backlight level. The % brightness is displayed in a field on the right. You can also use up and down arrows next to this field to adjust the slider.

**ARMOR X10gx Tablet Computer**

## Calibrating the Display

To access both touch screen and pen screen calibration routines, open **ARMORutils** and click on the **Screen Setup** option. If the display is set to Dual mode, both calibration options will be available (contrasted). If the display mode is touch or pen only, only that screen calibration option will be available.

### To Calibrate the Touch Screen

Select the **Touch** option in the Calibration panel to open the Touch Settings window then click on the **Calibrate** button to open the calibration screen. Follow the on-screen instructions.

### To Calibrate the Pen Screen

Select the **Pen** option in the Calibration panel to open the Pen Tablet Properties window. Select the **Calibrate tab** and click on the **Calibrate** button to open the calibration screen. Follow the on-screen instructions.

## ARMOR X10gx Tablet Computer

### Rotating the Screen

The ARMOR X10gx supports the Windows function of rotating the screen between Landscape and Portrait layout mode. In landscape mode (default orientation), the long axis of the screen is along the top and bottom of the display. In portrait mode, you turn the tablet 90° and the long axis of the screen is along the left and right sides of the display.

There are three ways to rotate the screen:

- By using the Intel Graphics options via the desktop task tray
- By using the Intel Graphics and Media Control panel
- By using a hot key combination

#### NOTE

*If you lose calibration when rotating the screen and cannot use the pen to return to the default orientation, attach an external keyboard and press **Ctrl+Alt+Up Arrow**. This will return the display to the default landscape orientation.*

### Using the Intel Graphics Options

Right click anywhere on the desktop or click on the Intel Graphics icon  in the icon tray (you may have to show hidden icons) and select **Graphics Options** → **Rotation**. Then select one of the four rotation angles as shown in Figure 111. **NOTE:** The “Normal” position is the default landscape orientation.

You can rotate the screen clockwise in four 90° steps, alternating between portrait and landscape orientation, or you can rotate it 180° or 270°.

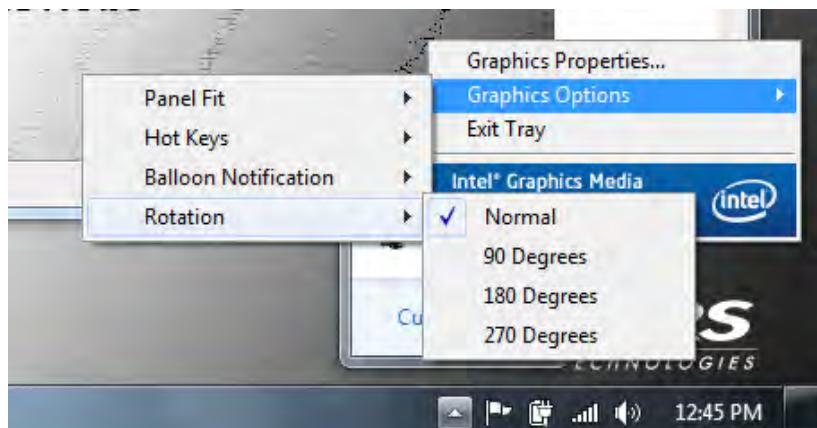


Figure 111. Intel Graphics Screen Rotation Options (from icon tray)

## ARMOR X10gx Tablet Computer

### Using the Intel Graphics and Media Control Panel

Right-click anywhere on the desktop or click on the Intel Graphics icon  in the icon tray and select **Graphics Properties** to open the Intel Graphics and Media Control Panel, as shown in Figure 112. Select the rotation angle and click **OK**. The Intel Graphics Control Panel in Windows XP has similar options.



Figure 112. Intel Graphics and Media Control Panel

## ARMOR X10gx Tablet Computer

### Using a Keyboard “Hot Key” Combination

Open the Intel Graphics and Media Control Panel and select **Options and Support → Hot Key Manager**. A list of pre-assigned (default) hot key combinations is displayed in the right panel, as shown in Figure 113. You can use these default combinations or specify a combination of your own.

To use a hot key combination, open the Input Panel keyboard or connect a USB keyboard and enter the combination.



Figure 113. Intel Graphics Panel Hot Key Manager

## ARMOR X10gx Tablet Computer

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## 9. BATTERY MANAGEMENT

The Lithium Ion batteries used in your ARMOR X10gx computer offer the best technology available today. These 'Smart Batteries' provide ARMOR X10gx users with the greatest power density and the most accurate "fuel gauge" possible. To achieve the best possible performance from your batteries, we recommend using and maintaining the batteries in accordance with the instructions provided in this section.

### Safety and Handling Considerations for your Batteries



#### WARNING!

*Do not drop or mishandle the batteries, immerse them in water, or subject them to high heat. Doing so could increase the risk of explosion or leakage, and possibly cause injury.*



#### WARNING!

*The lithium-ion batteries used in this equipment contain material that is hazardous to your health. If battery contents come in contact with the eyes, IMMEDIATELY flush the affected area with clean water for 15 minutes and have someone else summon medical attention for you. Unaffected persons should assist the affected individual in the vital first flushing of the eyes.*



#### WARNING!

*If battery material comes in contact with the skin, flush the affected area with clean water and seek immediate medical treatment.*



#### NOTE

*Newer DRS batteries such as those included with your X10gx have greater capacity and functionality compared to older or legacy batteries. Legacy batteries can still be used in the ARMOR X10gx but their performance may be substantially reduced.*

**ARMOR X10gx Tablet Computer**

Please use the following safety rules when handling and using lithium-Ion batteries.

- Do not expose the batteries to very high temperatures such as an open flame.
- Do not short circuit the battery contacts or reverse their polarity.
- Do not let children play with the batteries.
- Do not crush, dent or allow any deformation of the batteries.
- Do not disassemble or open the batteries or try to alter or bypass the internal safety circuits.
- Avoid exposing the batteries to wet or extremely humid conditions.
- Avoid exposing the batteries to electrostatic discharge.
- Avoid dropping the batteries.
- Do not use in, or connect the batteries to, any other devices.
- Do not allow removed batteries to remain discharged for more than 1 week

## ARMOR X10gx Tablet Computer

### When to Charge a Battery

#### New Batteries

Due to current regulations regarding shipment of lithium ion batteries, your X10gx batteries are shipped to you in a partially charged condition, typically with a maximum charge of 30%-50%. DRS recommends that you fully charge your batteries before using them for the first time in your computer.

If you do not plan to use your computer immediately, be aware that the batteries can discharge as much as 4% in 24 hours if left in the computer with the power turned off. For this reason, we recommend that computers with the batteries installed that will not be used for an extended period of time be connected to external power, either using the AC adapter provided with your computer or through a docking station using vehicle power.

#### Currently Installed Batteries

Your ARMOR X10gx will alert you when your batteries need charging. When the remaining charge drops below 10%, an alert message like the one shown in Figure 114 will pop up on the desktop. You should connect external power to recharge the batteries or replace them as soon as possible.

To check the current charge level of your installed batteries, view each battery's fuel gauge on the back of the tablet (refer to [Fuel Gauge LEDs](#)) or click on the battery icon  in the systray. This will open a desktop battery window like the one shown in Figure 114. **NOTE:** the battery icon will change to a battery with plug icon  when external power is connected).

You can also select the **Battery Monitor** button on **ARMORutils** main page. This will open the **Battery Monitor** dialog window (Figure 70) where you can check the current status and the remaining charge of your batteries.

#### Removed Batteries

Removed batteries will continue to self-discharge even when disconnected from the computer. The lower the charge level, the sooner the battery will approach the fully depleted state. DRS recommends you recharge removed batteries as soon as possible.

#### Depleted Batteries

When an installed battery's charge drops below 10%, a warning message, similar to the one in Figure 114 will appear on the desktop. At this point, the battery is in a "depleted" charge state (between 10% and 5%). When the total charge drops below 7%, another warning message (Figure 115) will be displayed advising you to connect external power immediately. If the total charge drops below 5%, the computer is programmed to automatically enter the hibernate state. Your Windows session will be saved to the SSD and the computer will shut down to conserve power.

To avoid having your computer unexpectedly enter the hibernate mode, you should connect external power to recharge your batteries as soon as you see the low battery warning message, or replace them immediately with fresh batteries. You should also arrange to recharge any depleted batteries as soon as practical.

## ARMOR X10gx Tablet Computer

### Depleted Batteries Left in the Computer

Lithium ion batteries left in a computer with the power off will discharge at approximately 4% over a 24 hour period. Therefore, a depleted battery can become fully depleted or possibly overly discharged in about two days.

### Depleted Batteries Removed from the Computer

A lithium battery that is not installed in the X10gx will self discharge at the rate of about 0.3% in a 24 hour period or about 3% every 10 days (faster in higher temperature conditions). A depleted battery that is removed is therefore in danger of becoming fully depleted, or possibly overly discharged, in about 30 days.

### Fully Depleted and Overly Discharged Batteries

A lithium battery is considered fully depleted when its charge level falls below 3%. When a battery becomes fully depleted, the LEDs on the fuel gauge may not light but it is still possible to recover the battery if you recharge it immediately. If a fully depleted battery is not recharged soon enough (generally within 24 hours), it can enter an overly discharged state in which it may not respond to normal efforts to recharge it (see

[What to Do for an Overly Discharged Battery.](#)

### Un-recoverable Batteries

If the charge level is allowed to drop to around 0% and the battery is not soon recharged, a safety circuit inside the battery can activate and render the battery un-recoverable. To avoid this possibility, DRS recommends you recharge any battery that reaches the fully depleted state (<3% charge) as soon as possible.



#### CAUTION!

*Batteries that are allowed to continue discharging after reaching the 3% charge level may become un-recoverable and have to be discarded.*

### Avoiding Overly Discharging Your Batteries

The following suggestions will help avoid an overly discharged condition.

- Do not store the X10gx for long periods with the batteries installed without connecting external power. Even when the unit is powered off, the tablet still draws a small amount of power from the batteries.
- Do not store X10gx batteries in a fully depleted condition for long periods of time. The X10gx batteries will further self-discharge over time at a rate of about 3% every 10 days or about 10% a month. For long-term storage, the batteries should be recharged to at least 40% of full charge every 3-4 months of storage.

**ARMOR X10gx Tablet Computer****What to Do for an Overly Discharged Battery**

The X10gx has an internal Level 2 smart battery charger. One of the features of this charger is that it will attempt to recover a battery that has been too deeply discharged (<3%). This is done by applying a trickle current of 80 milliamps for about 3 minutes. This process normally injects enough energy into the battery to allow normal re-charging to begin. If the recovery process is successful, the 20% LED will begin flashing or be on steady. Allow the battery to charge normally.

If the 20% LED fails to start flashing, perform the recovery procedure in Table 31.

**Table 31. Recover an Overly Discharged Battery.**

STEP	ACTION
1.	Remove the battery and wait 5 seconds.
2.	Reinstall the battery and allow it to charge.
3.	If the battery does not respond, repeat the above steps up to a maximum of five times.
4.	If the battery still fails to start charging, it will have to be replaced.

## ARMOR X10gx Tablet Computer

### How to Charge Your Batteries

The X10gx batteries automatically begin charging when installed in the ARMOR Tablet and external power is applied. To recharge the batteries, plug the circular connector of the AC adapter into the DC power input jack on the left side of the ARMOR X10gx, or into the PWR connector on a desk dock unit. If your X10gx is installed in a vehicle dock, the batteries will charge whenever vehicle battery power is available.

Don't be alarmed if batteries feel warm to the touch during the charging process. Your X10gx batteries are protected from being overcharged by internal safety circuits.

### Charging Time

The charging time for one or two depleted batteries (<10% charge) when the batteries are installed in the X10gx is 2.5-4 hours, depending on the following factors:

- power demands on the system (screen brightness setting, wireless and GPS radio activity, utility and software applications currently running, etc.)
- temperature extremes
- number of batteries (1 or 2)
- total remaining capacity of each battery
- 



#### NOTE

*The charging cycle is not linear and the last 20% of charge can take proportionally longer to complete than the first 80% of charge time.*

### Charging Temperatures

DRS has included temperature sensors in the battery circuit to protect the cells when an excessively high or low temperature condition occurs. Your batteries will charge normally in the X10gx computer so long as the internal temperature remains above 0°C (32°F) and does not exceed 45°C (113°F). If the internal temperature moves outside these limits during charging, the computer will suspend the charging cycle until the temperature returns to a value within the normal temperature range.

If the charging cycle is suspended due to temperature, the Charging/Fault indicator will flash at a ½-second rate.

### Setting the Charging Policy

Follow the procedure in Table 32 to set the charging policy and decide if both batteries will charge at the same time regardless of charge level or the battery with the lowest charge will be charged first. Refer to [Charger Settings Button](#) for a description of this function.

## ARMOR X10gx Tablet Computer

Table 32. Select How to Charge the Batteries

STEP	ACTION	COMMENTS
1.	Double-click on the <b>ARMORutils</b> icon on the desktop and select the <b>Battery Monitor</b> dialog page from the Main screen.	The Battery Monitor dialog page opens.
2.	Click on the <b>Charger Settings</b> button.	The Charger Control Settings window opens.
	<div style="border: 1px solid black; padding: 10px; text-align: center;"> <b>NOTE</b> <i>If total system current exceeds 5 amps while charging both batteries, the charger will switch to charging to lowest first.</i></div>	
3.	Select <b>Charge Both</b> or <b>Charge Lowest First</b> .	
4.	Click <b>OK</b> to save the setting.	

## ARMOR X10gx Tablet Computer

### How to Tell When Batteries Have Finished Charging

While the batteries are charging, the fuel gauge LEDs will light to indicate the current level of charge and the amber Charging/Fault LED will flash at a 1-second rate. When the batteries are fully charged, all five fuel gauge LEDs will be on steady and the Charging/Fault LED will be on steady.

### Battery Operating Time

Your ARMOR X10gx can operate on one or two batteries and can operate with a single battery installed in either bay. The length of time your X10gx can operate on batteries alone before needing a recharge is primarily determined by the following:

- screen brightness (backlight) setting
- wireless and GPS radio activity
- utility and software applications that are currently running
- battery temperature extremes
- number of batteries (1 or 2)
- remaining battery capacity

The total operating time for the ARMOR X10gx with two fully charged 2400 mAh batteries at a nominal room temperature is approximately 4 hours. For a single battery, the operating time is approximately 2.5 hours. Legacy batteries with lower capacity will have correspondingly shorter operating times.

### Battery Discharge

When two batteries are installed, the system draws power from the highest charged battery first until it reaches the 10% charge level, and then switches to the second battery. When the second discharged battery reaches the 10% level, the system switches back to the first discharged battery.



#### NOTE

*The total remaining % charge for two installed batteries is determined by the following formula: Batt #1 % + Batt #2 % / 2.*

When the total remaining charge of both batteries reaches the 5% level, Windows forces the computer into hibernation to save your session and protect your batteries from becoming fully depleted.

Any time you return and find your computer has shut itself down (placed itself in hibernation), it's a good idea to check the remaining battery charge level as soon as you power up to be sure your batteries are not exhausted. If they are exhausted, the Charging/Fault indicator will flash 5 times when you press the Power button.

## ARMOR X10gx Tablet Computer

### Operating Under Low Battery Conditions



#### CAUTION!

*The battery critical alarm and action points are preset at the factory and should not be changed unless directed by DRS Technical Support. Incorrectly setting the battery alarm points could result in the X10gx shutting down unexpectedly and causing the loss of work in progress or corrupting your hard drive. DRS is not responsible for any loss of data or damage to the system as a result of changes to battery alarm point settings.*



#### NOTE

*Warning icons and alert windows may differ slightly depending on your version of the Windows operating system.*

### Low Battery Level Alarm

Your ARMOR X10gx is designed to operate even when the battery is depleted (<10% charge). When the total charge drops below 10% (low battery level), the bottom-most LED in the fuel gauge (20% indicator) will flash and a low battery alert message will be displayed, as shown in Figure 114. At this point, DRS recommends you connect external power to recharge the batteries or replace one or both batteries with fresh batteries.

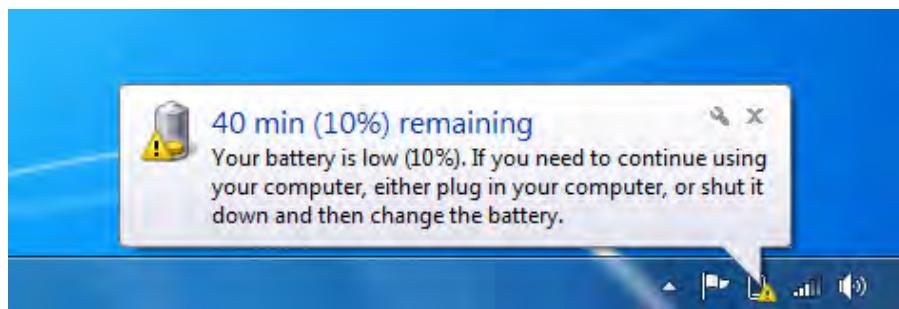


Figure 114. Low Battery Alert Message

### Reserved Battery Level Alarm

When the remaining charge reaches 7% (reserved battery level), a second battery alert message will be displayed, as shown in Figure 115, and the battery icon in the task tray will display a red "X". At this point, you need to save your work and then connect external power, replace the batteries or shut down the computer.

## ARMOR X10gx Tablet Computer

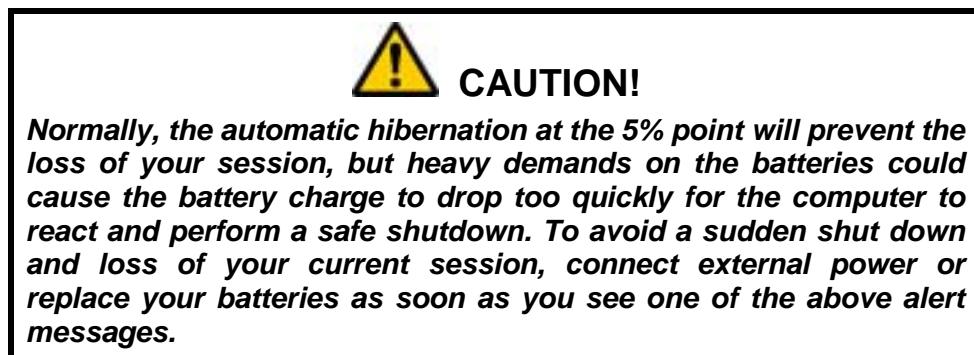


Figure 115. Reserved Battery Alert message

### Critical Battery Level Alarm

When the remaining charge reaches 5% (critical battery level), Windows will automatically place your computer into hibernate mode. Hibernation is a low-power mode that first saves your current session to storage and then performs an orderly shutdown. You should replace your depleted batteries or connect external power before restarting your computer.

When you restart your computer, you will resume your session where you left off.



### What to Do if You Get a Low Battery Alert

DRS recommends you do one of the following immediately should you get a low battery alert:

- Connect external power and begin recharging the batteries
- Replace one or both of the batteries with a fully charged battery.
- Save your work and perform a normal system shutdown.

### Fully Depleted (Overly Discharged) Batteries

If a battery continues to discharge until the total charge reaches the 3% level, it is fully depleted. At this point, it can usually be recovered (see

## ARMOR X10gx Tablet Computer

[What to Do for an Overly Discharged](#) Battery). However, if the battery continues to discharge, the internal battery circuits may permanently disable the battery for safety reasons and you will not be able to recover it.

### Avoiding Overly Discharging Your Batteries

The following suggestions will help avoid an overly discharged condition.

- Do not store the X10gx for long periods with the batteries installed. Even when the unit is powered off, the tablet still draws a small amount of power from the batteries.
- Do not store X10gx batteries in a fully depleted condition for long periods of time. The X10gx batteries will further self-discharge over time at a rate of about 10% a month or 3% every 10 days. The batteries should be recharged to 40% of full charge every 3-4 months of storage.

### Battery Capacity and Charge

A battery's "capacity" is its ability to deliver a specified amount of energy in the form of electrical current to the system over a one-hour period, measured in millamps per hour or mAh. A battery's "charge" is the percentage of this capacity that has been restored to the battery. A fully charged battery is one that can supply 100% of its *current maximum capacity*. **NOTE:** The % charge is based on the current maximum capacity, not the design capacity.

### Maximum Capacity

The maximum capacity of a new battery is at or very close to its design capacity. However, maximum capacity gradually decreases over time due to chemical aging, temperature extremes and usage. Once a battery's maximum capacity drops below 80% of its design capacity, it is considered to be at the end of its life and is normally replaced. For example, a 2400 mAh battery should be replaced when its maximum capacity drops below approximately 2399 mAh.



#### NOTE

*While some batteries may still be usable below the minimum capacity level (<80% of design capacity), the risk for battery failure and/or unexpected shutdown increases dramatically.*

### Checking your Battery's Capacity

You can check a battery's design capacity, maximum capacity and remaining capacity (current charge level in mAh) by opening **ARMORutils** and selecting the **Battery Monitor** option from the Main window and then selecting either **Battery 1 Details** or **Battery 2 Details** (see [Battery Monitor Dialog](#) for a description of these windows).

## ARMOR X10gx Tablet Computer



### CAUTION!

*Permanent battery capacity loss is greatest at elevated temperatures with the batteries fully charged. Do not leave batteries installed in your X10gx in high temperature surroundings with external power connected for days or weeks at a time. Remove the batteries and store them in a cool place.*

## Discharge/Recharge Cycles

Lithium ion batteries do not need to be deeply discharged periodically to maintain capacity like certain other types of rechargeable batteries. In fact, deep discharges have a negative effect on a lithium ion battery's capacity and operating life.

Each time a lithium ion battery is deeply discharged (<30%) and then recharged (either during normal operation or conditioning), the battery records the event as a "cycle." Each of these deep discharge/recharge cycles has a small cumulative effect on the overall capacity and life of the battery and (on average) after approximately 300-400 cycles at nominal room temperature, the battery is a candidate for replacement (sooner if used primarily in high temperature environments).

A battery's accumulated cycles are displayed in the **Charge Cycles Count** field of each Battery Information window in ARMORutils (see Figure 71).

## ARMOR X10gx Tablet Computer

### How to Optimize Energy Use

You can help ensure the maximum performance of your batteries and reduce energy consumption when on batteries or external power by optimizing your computer's power management features. For some suggested ways to do this, select **Start** → **Control Panel** → **Hardware and Sound** and click on the **Power Options** icon. The Power Options window will open, as shown in Figure 116.

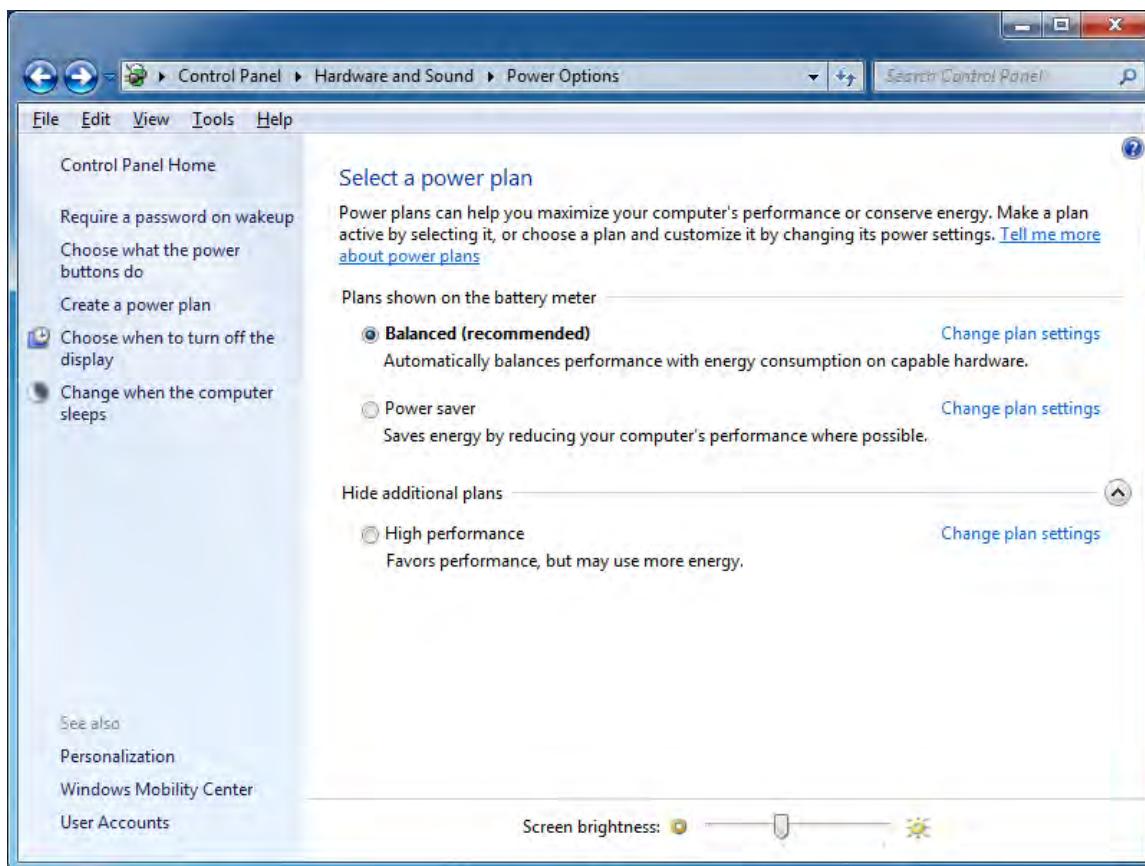


Figure 116. Power Options Window

### Selecting a Power Plan

There are three power plan options initially available: **Balanced**, **Power Saver** and **High Performance** (NOTE: You must click on the "Show additional plans" option to see the High Performance plan).

Click on the **Tell me more about power plans** option for an explanation of power plans and what the various settings can do for you.

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### Changing Power Plan Settings

Once you've selected a power plan, you can customize these plans by clicking on the **Change plan settings** option. This will open the Edit Plan Settings window, as shown in Figure 117. The settings shown are the default settings for the Balanced power plan.

In this window, you can change the time intervals for dimming the display, turning off the display completely and putting the computer to sleep when operating on batteries and external power. You can also set a temporary brightness level

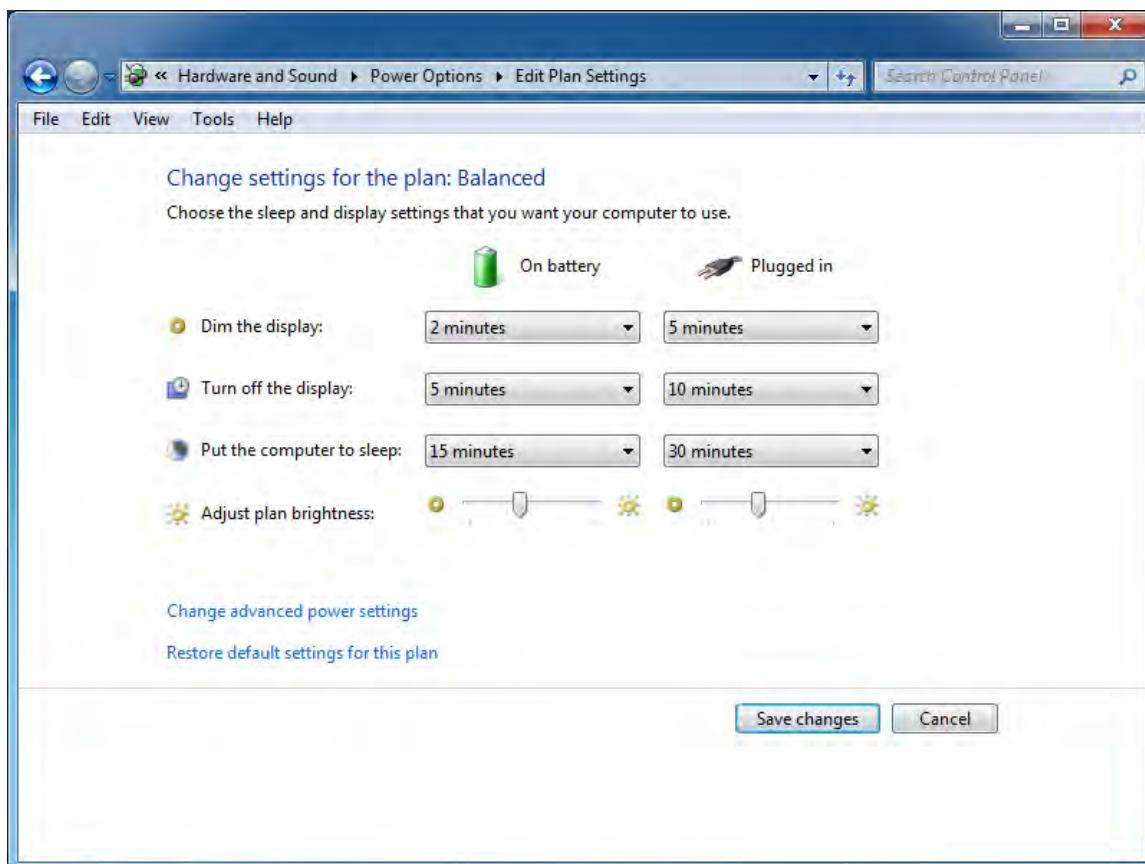


Figure 117. Edit Plan Settings Window

### The Default Power Plan for your X10gx

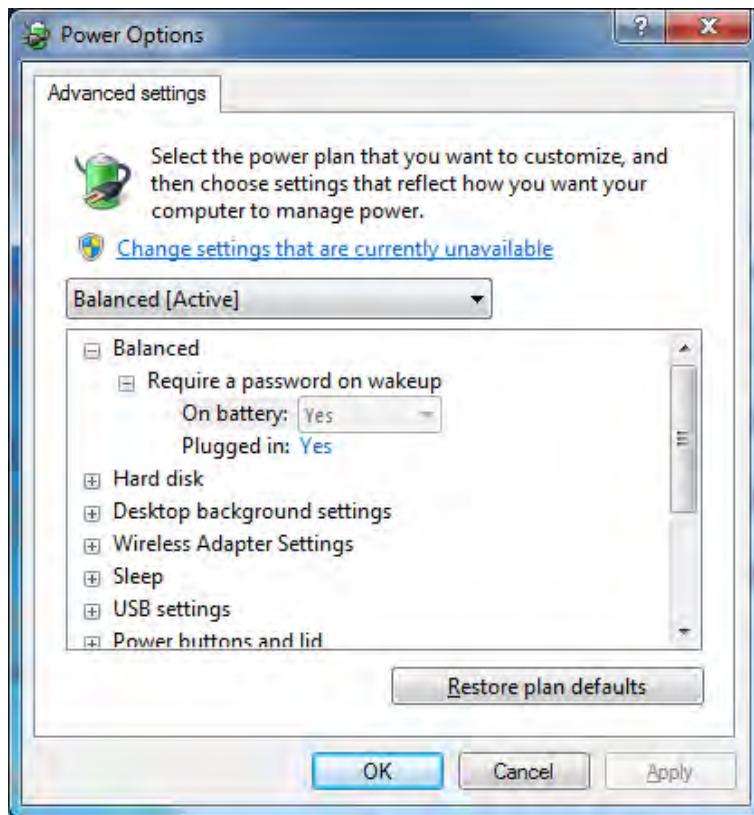
Your X10gx is preset to the **Balanced** power plan. The settings preset for this plan (Figure 117) have been carefully selected to maximize performance while minimizing energy use. DRS recommends that you use the Balanced plan with its default settings as this provides the optimum power management for your X10gx.

### Advanced Power Settings

Click on the **Change advanced power settings** option to open the Advanced Settings screen shown in Figure 118. This window includes the power settings in the Edit Plan Settings window plus additional settings such as setting a time to turn off your hard disk or to turn off your radios

## ARMOR X10gx Tablet Computer

or manage your processor power consumption. **NOTE:** You may need administrator privileges to access these settings.



**Figure 118. Advanced Power Settings Window**

### Creating Your Own Power Plan

In addition to the three plans initially provided with your computer, you also can create your own power plan. Click on the **Create a power plan** option in the navigation panel to learn how to do this. **NOTE:** You can delete any power plan you create, but you cannot delete any of the three power plans initially provided.

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### Monitoring Battery Status

You can monitor the status of each battery (current charge level, whether charging or discharging, etc.) in three ways:

- 1) By clicking on the **Battery** icon  in the systray to open a **desktop battery monitor window**. **NOTE:** The battery icon will change to a battery with plug  icon when external power is connected.
- 2) By selecting the [Battery Monitor Dialog](#) in ARMORutils.
- 3) By generating an **Event Log**.

Each of these methods is described in the following paragraphs.

### Using the Desktop Battery Monitor Window

Click on the Battery icon in the Windows systray to open the desktop battery monitor window, Figure 119 shows three examples of the battery window when the X10GX is operating on batteries alone. The example on the far left shows the battery symbol and remaining charge when the total charge is greater than 10%. The other two examples demonstrate a low battery condition.

Figure 120 shows two examples of the battery symbol and remaining charge when external power is connected. The left example shows less than full charge and the right example shows the batteries fully charged.



#### NOTE

*You must restart the Windows desktop battery window to see any recent changes, such as that resulting from removing a battery or plugging in external power, or changes in the charge or discharge level. To close the window, click outside the window on the desktop.*

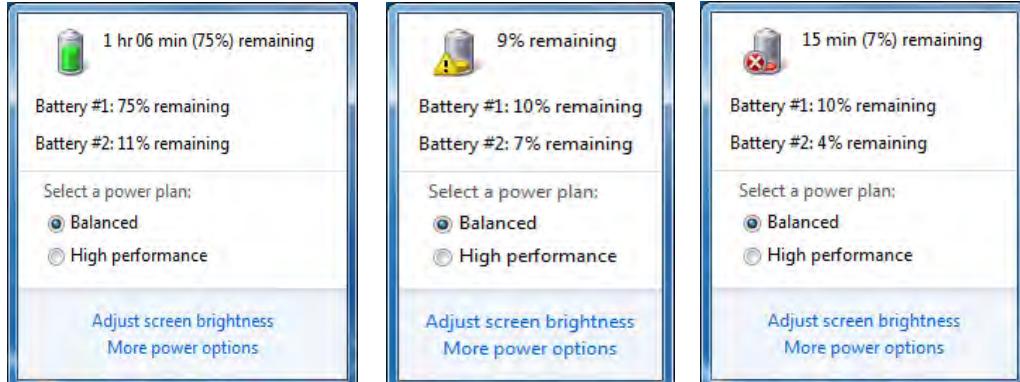


Figure 119. Windows Desktop Battery Window Examples – Batteries Discharging

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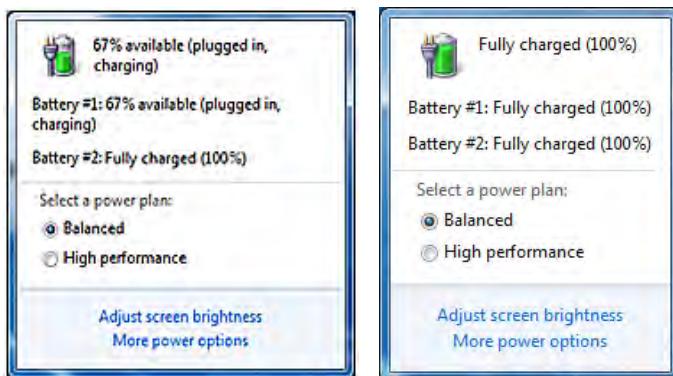


Figure 120. Windows Desktop Battery Window Examples – Batteries Charging



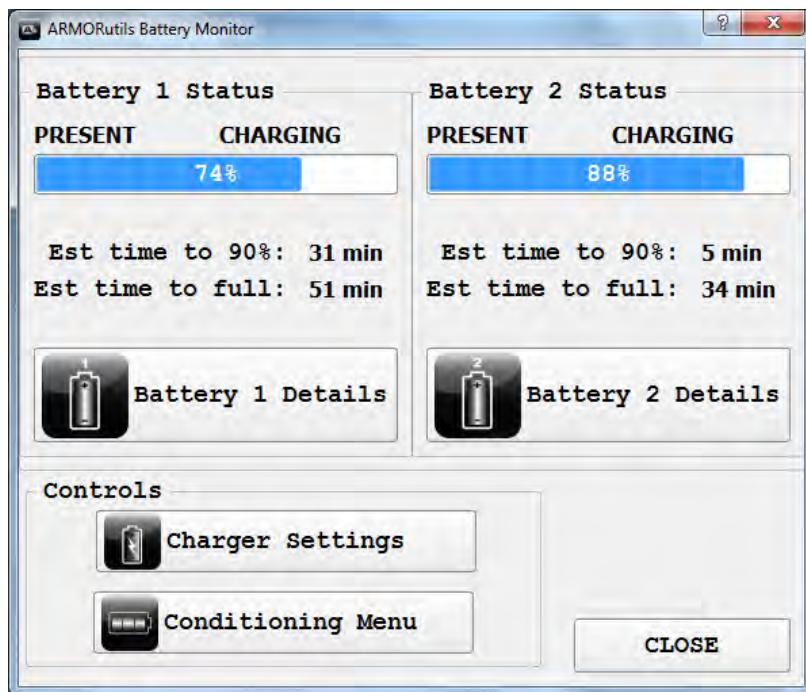
### NOTE

*There may be a slight disparity in % charge between what ARMORutils reports as fully charged and what Windows reports. When the Charging/Fault indicator changes from flashing to on steady, the batteries are fully charged regardless of the final % indicated.*

## Using the ARMORutils Battery Monitor Dialog

Double-click on the **ARMORutils** icon on the desktop and select the **Battery Monitor** button to open the Battery Monitor dialog window, as shown in Figure 121. This window shows each battery's current status and its charge level. It also gives an estimated time to 90% charged and to fully (100%) charged.

For more detailed information about each battery, click on the **Battery 1 Details** or the **Battery 2 Details** button to open a Battery Information window.

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**Figure 121. ARMORutils Battery Monitor Dialog**

## Generating an Event Log

The Event Log is generated from the Event Recorder option on the ARMORutils Diagnostics dialog. The Event Log allows you to record the changes in system temperatures and battery status over time. Refer to [Creating an Event Log](#) for instructions on using this feature.

## ARMOR X10gx Tablet Computer

### Battery Conditioning/Calibration

Your ARMOR X10gx batteries are self-calibrating and do not normally require the conditioning process. The only time DRS recommends conditioning/calibrating a battery is if you notice that the charge levels reported by Windows or ARMORutils, or displayed by the battery gauge, are consistently different from actual battery performance. This is because conditioning adds to the charge cycle count of the battery.

Battery conditioning is a 3-step process consisting of an initial full charge, followed by a full discharge and finally followed by a full recharge. Each step is documented in the Conditioning Status panel of the ARMORutils Battery Conditioning window (see Figure 122).

Read the following cautions and notes carefully and follow the procedure in Table 33 to condition a battery.



#### CAUTION!

*If the internal battery temperature exceeds 45°C or drops below 0°C during conditioning, the system will abort the conditioning process. Do not restart conditioning until the internal battery temperature is well within the above temperature limits to avoid another possible abort.*



#### CAUTION!

*Ensure external power remains connected until conditioning is complete. If you disconnect external power during the discharge cycle, conditioning will not abort immediately but will continue until the battery reaches the 3% charge level, and then abort. If you are operating on only one battery or the other battery is also low in charge, you could risk an unexpected shutdown of the tablet.*



#### NOTE

*You must have external power connected to condition a battery.*



#### NOTE

*The conditioning process can take 10 or more hours with two batteries. Ensure that external power remains connected for the duration of the conditioning period.*

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## NOTE

*Conditioning batteries while the computer is in use can cause excessive heating inside the X10gx. It is recommended that you decrease the screen brightness as much as possible and close any unneeded applications during the conditioning process to help reduce heat buildup.*

Table 33. Conditioning a Battery

STEP	ACTION	CONDITION OR INDICATION
1.	Connect external power to the tablet, either with the included AC adapter or through a docking station.	
2.	Select <b>Start</b> → <b>ARMORutils</b> → <b>Battery Monitor</b> and click on the <b>Conditioning Menu</b> button.	The Battery Conditioning window opens, as shown in Figure 122.  <b>NOTE:</b> The term “Ready” means the battery is in a waiting state. It’s next state may be charging or discharging.

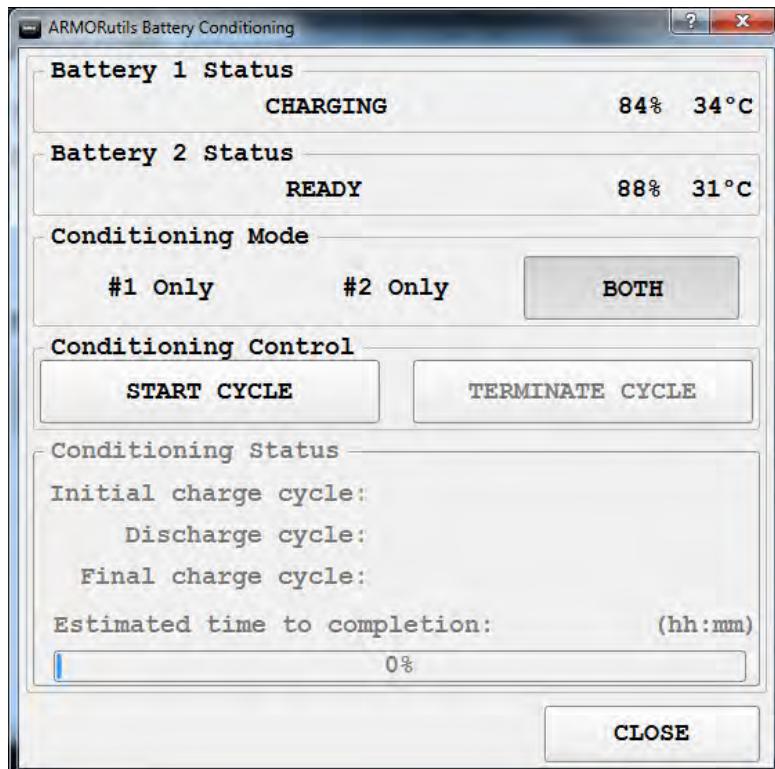


Figure 122. ARMORutils Battery Conditioning Window

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STEP	ACTION	COMMENTS
3.	Select <b>#1 Only, #2 Only or Both</b>	<b>NOTE:</b> If only one battery is installed, selecting that battery will cause the <b>START CYCLE</b> option to appear in dark text; if you select the missing battery or <b>BOTH</b> , the <b>START CYCLE</b> option will appear in grayed out text.
4.	Select <b>START CYCLE</b> .	An alert window will appear as shown in Figure 123. <b>NOTE:</b> To reduce internal heating during the conditioning cycle, DRS recommends you turn down the backlight (brightness) level as much as practical. <b>NOTE:</b> If the internal battery temperature drops below 0°C or exceeds 45°C, the computer will abort the conditioning process.
5.	Click on <b>Yes</b> to proceed or <b>No</b> to cancel the conditioning.	The first charge cycle will begin.
6.	To terminate the conditioning process at any time, click on <b>Terminate Cycle</b> .	

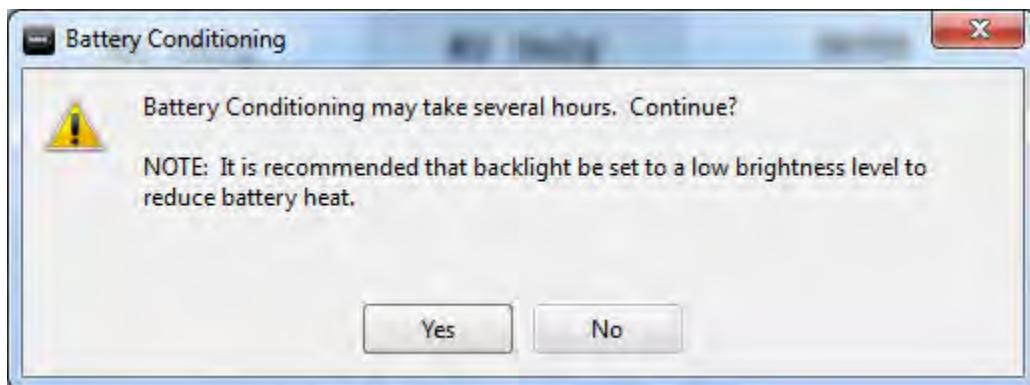


Figure 123. Battery Conditioning Start Alert Message

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### When to Replace a Battery

Battery life is affected by the age of the battery, its operating temperature history and the number of deep discharge/recharge cycles that it goes through over time.

#### Nominal Usage

Industry surveys report that “average daily use” (8 hours or less at nominal room temperature) equates to approximately 300-400 full discharge/recharge cycles per year. Batteries operating at this level of usage that are properly cared for can last as long as two years or even longer. Be advised, however, that a battery that is more than 2 years old is likely to already be in need of replacement.

#### Heavy Usage

A battery that is in constant use (24/7), exposed frequently to temperature extremes such as in a hot vehicle, or is subjected to frequent deep discharging will deteriorate more rapidly. Under these operating conditions, DRS recommends a battery be replaced after 1 year to prevent a possible sudden drop in performance.

### Determining a Battery's Age

To determine the age of the battery, check the lot number on the battery label (see figure below). This number is the date (mm/yy) the battery was shipped from the manufacturer to DRS.



Figure 124. ARMOR X10gx Battery Label

### Before you Dispose of a Battery

If the battery is less than a year old or has less than 300 cycles, and you find that it consistently fails to perform as it should, try conditioning the battery before you send it in for warranty replacement or dispose of it. On rare occasions, an offset can build up between the true battery charge and what the battery reports. This can lead to the battery's being charged to a lower level than what ARMORutils indicates.

To condition a battery, follow the procedure in [Battery Conditioning/Calibration](#).

## ARMOR X10gx Tablet Computer

### Your Battery's Warranty

Your X10gx battery is warranted against all defects in material and workmanship for a period of 1 year from the date of shipment from DRS.

**NOTE:** Because of the many variables associated with usage and aging, DRS is not responsible for battery capacity performance except as affected by factory defects or workmanship in the battery.

### Where to Purchase Replacement Batteries

Your ARMOR X10gx uses long lasting Lithium Ion batteries that are custom made for DRS Tactical Systems, Inc. If you need to purchase replacement batteries, notify your sales representative, authorized reseller or contact [DRS Technical Support](#).

**Do not** substitute any other batteries. Substituting non-DRS batteries could damage the X10gx and may void your computer warranty.

### How to Store Batteries When Not in Use

The following storage tips will help you optimize the capacity and performance of your batteries while in storage.

#### Short-Term Storage

- If your X10gx will be powered off for 7-30 days with no external power connected, it is recommended that the batteries first be fully charged and then removed from the computer for short-term storage.
- DRS recommends you store your batteries in a cool dry place at room temperature (25°C/77°F) or below. **NOTE:** Your batteries can be stored at temperatures up to 35°C (95°F); however, we recommend you not store fully charged batteries at temperatures above 29°C/85°F as this can decrease battery life. Reduce the charge to 30-50% before storing at temperatures above 29°C/85°F.
- Protect battery contacts from accidentally touching metal objects to avoid a short circuit and possible arcing or explosion.
- To accurately check a battery's remaining charge, insert it in your X10gx and select the **Battery Monitor** button from the ARMORutils main window.

#### Long-Term Storage

- If your X10gx batteries will not be used for 30-90 days or longer, they should be placed in storage at a temperature below 32°C (90°F), preferably at room temperature (25°C/77°F) or below to prevent capacity loss.
- Install the batteries in the computer to charge or discharge them to 30-50%.
- Protect battery contacts from accidentally touching metal objects to avoid a short circuit and possible arcing or explosion.

## ARMOR X10gx Tablet Computer

- Lithium ion batteries self discharge at the rate of about 10% per month. While in long-term storage, you should recharge the batteries every 3-4 months to a charge level of 30-50%.
- To check a battery's remaining charge, insert it in the X10gx, power up the unit and select the **Battery Monitor** button from the ARMORutils Main window.

## Battery Tips for Best Performance

- Recharge a battery within 24 hours of a full discharge. Batteries remaining in a fully discharged state longer than 24 hours may deteriorate more quickly.
- Battery charging should be done at temperatures between 32°F (0°C) to 95°F (35°C), but preferably at room temperature. The battery could deteriorate more quickly when charged at high temperatures.
- When operating your ARMOR X10gx on external power for extended periods of time (1 week or longer), it's best to remove the batteries and store them in a cool place until needed.
- If possible, allow a battery to warm or cool to the temperature of your surroundings before installing it in the tablet.

## Disposing Of Your Used Batteries

### Disposal

You can dispose of your X10gx batteries in a normal waste receptacle. However, they contain recyclable materials that can be extracted and used again. Please see the section on recycling below.



#### **WARNING!**

*Disposed lithium-ion batteries that are not fully discharged contain active salts that can result in an explosion if suddenly exposed to moisture or water in the environment. To prevent possible injury to someone finding the battery, please ensure it is fully discharged before disposing in a domestic or commercial garbage receptacle.*

### Recycling

Lithium-ion batteries are fully recyclable and should not be simply thrown away. Please help protect our environment by turning in your defective batteries to an authorized recycler, or send them back to DRS.

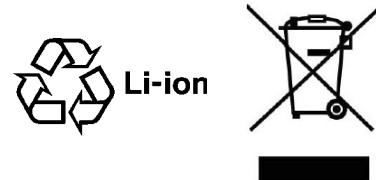
DRS Tactical Systems supports recycling of batteries and will take back your batteries using a Returned Material Authorization (RMA) form. Please contact the DRS Technical Support center toll-free at 1-888-872-1100 for more information.

Follow these precautions when handling or returning used batteries:

- Insulate the battery contacts with tape.

**ARMOR X10gx Tablet Computer**

- Do not disassemble the batteries.
- Package the batteries so that they cannot move around or make contact with each other.
- Follow the procedure in [How to Return a Product to DRS](#) to generate an RMA.



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## ARMOR X10gx Tablet Computer

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# 10. DRS TECHNICAL SUPPORT

DRS Tactical Systems is committed to providing you best product support and the fastest turn around service possible.

## Before You Contact Us

Please have your technical personnel check for network or custom software problems before contacting DRS Technical Support with a problem.

### NOTICE

**DRS Tactical Systems, Inc. reserves the right to charge a No Fault Found (NFF) fee for any unit returned for repair that is found to be fully operational.**

## How to Return a Product to DRS

Before proceeding, please read the [Warranty Information](#).

### 1. Immediately notify DRS.

Inform DRS of your problem at one of the numbers below, or notify an authorized DRS Reseller.

**In North America, call:** (888) 872-1100 or (321) 309-0599 – 24 hrs, 7 days a week

**In Europe, call:** 49-2246-915-99-77

### 2. Obtain a Return Merchandise Authorization (RMA) Number.

If it is determined that your product needs to be returned for replacement or repair, a customer service representative will give you an RMA number. The RMA number is required to return any product to DRS, regardless of the reason for the return.

### 3. If you want to use our online RMA service, please ask for a Username and Password.

To access our online RMA service:

- 1) Go to [www.drsarmor.com](http://www.drsarmor.com).
- 2) Click on the **Support** tab and select **Online RMA**.
- 3) At the login screen, enter your Username and Password.
- 4) Click on **Send**.
- 5) Fill out the online form.
- 6) Print a copy of the form for your records.

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7) Select **Send**.

### 4. Include the Following Required Information with Your Product(s):

- Company name, address and telephone number.
- RMA number received from DRS (if applicable).
- Serial number of the product (see [How to Find and Interpret your Unit's Serial Number](#)).
- Date of purchase.
- Your ship-to address and any special shipping requirements.
- A detailed description of the problem.

### 5. Prepare your Products for Shipment.

- Back up any important data.
- Remove SIM or SD cards.
- Use the original shipping container if possible to return your product.
- Remove the batteries and package them separately.
- If the original container is not available, wrap each item securely with bubble wrap or suitable cushioning material.
- Enclose a copy of the RMA form.
- Enclose a description of the problem and any special notes for the repair technician.

### 6. Ship Your Product(s).

Ship your products to one of the addresses listed below:



#### NOTE

***Transportation and insurance costs must be prepaid. DRS is not responsible for loss or damage which may occur in transit.***



#### NOTE

***Before you ship any product(s) to DRS, be sure to back up the data on the X10gx storage media. Remove any confidential, proprietary or personal information and any removable media such as floppy disks, CDs or PC Cards. DRS is not responsible for any lost confidential, proprietary or personal information, removable media or for corrupted data.***

In North America, ship to:

**DRS Tactical Systems, Inc.**

1110 West Hibiscus Boulevard

Melbourne, Florida 32901 USA

ATTN: Service

## ARMOR X10gx Tablet Computer

**In Europe, ship to:** **DRS Tactical Systems**  
Rathausstr. 10  
53797 Lohmar, Germany  
ATTN: Service Center Technician

Once your product(s) are repaired or replaced under the terms specified in the warranty, DRS will return your product(s), with shipping pre-paid, to the address included with your RMA.

## If You Need Information

Please call us, fax us, email us, or visit our website.

<b>Call us:</b>	<b>In North America, call:</b> (888) 872-1100 or (321) 309-0599 <b>In Europe, call:</b> 49-2246-915-99-77
<b>Fax us:</b>	<b>In North America, fax:</b> 321-725-0496 <b>In Europe, fax:</b> 49-2246-915-99-78
<b>Email us:</b>	
<b>For Support:</b>	<b>In North America:</b> <a href="mailto:support@drs-ts.com">support@drs-ts.com</a> <b>In Europe:</b> <a href="mailto:sales@drsarmor.eu">sales@drsarmor.eu</a>
<b>For Sales and Information</b>	<b>In North America:</b> <a href="mailto:sales@drsarmor.com">Sales@drsarmor.com</a> <b>In Europe, email:</b> <a href="mailto:sales@drsarmor.eu">Sales@drsarmor.eu</a>
<b>Or Visit our website at:</b>	<a href="http://www.drsarmor.com">www.drsarmor.com</a> For translation in German, click on “ <b>Deutsch</b> ” at the top of the page.

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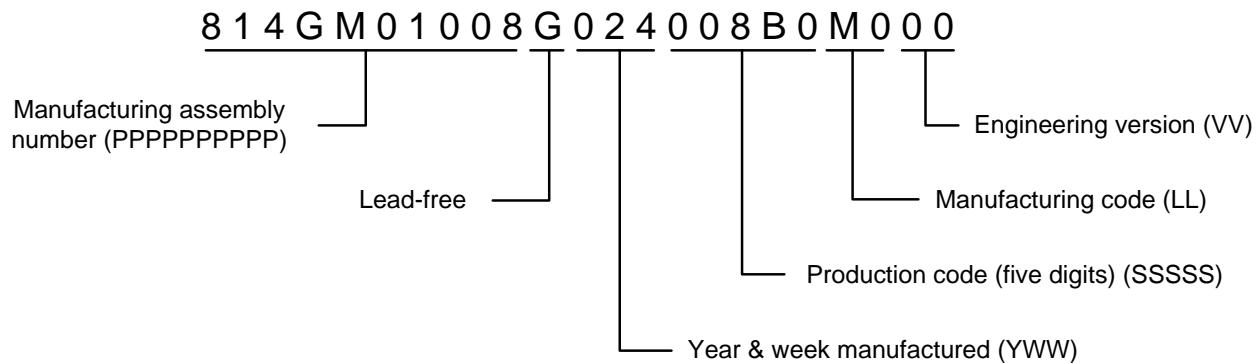
### How to Find and Interpret your Unit's Serial Number

Your X10gx serial number is printed on a label located on the bottom left rear panel of the tablet, as shown in Figure 125. This serial number indicates to DRS the unique configuration of your tablet and its manufacturing history.



**Figure 125. ARMOR X10gx Unit Serial Number Location**

The serial number is broken down as follows:



**ARMOR X10gx Tablet Computer**[Table of Contents](#) [List of Figures](#) [List of Tables](#) [Glossary](#)**ACRONYMS**

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ACRONYM	DEFINITION
AC	alternating current
ALS	ambient light sensor
BIOS	basic input/output system
CD-ROM	compact disk – read only memory
CDMA	code division multiple access
CPU	central processing unit
DC	direct current
DVD	digital video disk
EDGE	enhanced data rates for GSM evolution
EVDO	evolution data only/evolution data optimized
GB	gigabytes
GPRS	general packet radio service
GPS	global positioning system
GSM	global system for mobile communications
HDD	hard disk drive
HSDPA	high-speed downlink packet access
I/O	Input/Output
LCD	liquid-crystal display
LED	light-emitting diode
OEM	original equipment manufacturer
PC	personal computer
PCMCIA	personal computer memory card international association
RAM	random access memory
SAS	security attention sequence
SD	secure digital
SIM	subscriber identity module
SmBus	system management bus
SODIMM	small outline dual in-line memory module
SSHD	solid-state hard drive
SVGA	super VGA (maximum of 800 x600 pixels)
TFT	thin-film transistor
USB	universal serial bus
VAC	volts AC
VDC	volts DC
VGA	video graphics array
WLAN	wireless local area network
WWAN	wireless wide area network
XGA	extended VGA (1024 x 768 pixels)

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## **GLOSSARY**

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<b>TERM</b>	<b>DEFINITION</b>
ambient temperature	The temperature of the air surrounding an object
fully depleted battery	A lithium-ion battery that has discharged to a level of 3 % or below.
fully charged battery	A lithium-ion battery that has reached 100% of charge as indicated by a steady 100% LED on the Battery Gauge on the Control Panel.
fully discharged battery	A lithium-ion battery that has discharged to a level between 10% and 3% of charge, as indicated by a flashing 10% LED on the Battery Gauge.
flexspace	A special compartment with a flexible communications interface for custom circuit cards or modules.

## ARMOR X10gx Tablet Computer

# Warranty Information

**DRS TACTICAL SYSTEMS, INC.  
LIMITED WARRANTY – HARDWARE  
ARMOR PRODUCTS**

## General Information

DRS Tactical Systems, Inc. ("DRS") warrants for the duration of this warranty that the DRS ARMOR product(s) ("Product(s)") produced by DRS will be free from defects in material and workmanship under normal use and service, subject to the terms and conditions set forth herein. This warranty applies to the Products only and excludes, but is not limited to, all other products and accessories supplied and/or distributed but not manufactured by DRS.

This warranty extends only to the original purchaser of Products from DRS or a DRS Authorized Reseller ("Original Purchaser"). It is not transferable to anyone who subsequently purchases or obtains the Products from the Original Purchaser.

## Length of Warranty

The warranty is valid for a period of three (3) years from the original date of the packing slip from DRS and/or an Authorized Reseller. During this period, DRS will, at its option and expense, either repair or replace with new or reconditioned (of equal or better quality) parts of any of the Products which prove to be defective, provided that such Products are returned in accordance with the terms of this warranty. All exchanged parts and Products replaced under this warranty will become the property of DRS. If repair or replacement is not feasible, DRS will, at its option, refund the purchase price of the Product(s) on a three year straight line depreciation basis. Any replacement part or Product will be warranted for the remainder of the original warranty period or ninety (90) days, whichever is longer.

## Terms and Conditions

This warranty covers defects in materials and workmanship in the Products, as follows:

Term	3 years standard
Technical Assistance	Yes
Shipping Costs	Shipping costs of a Product to DRS are not included as part of this Warranty. Shipping costs of a Product to the Original Purchaser after a warranty repair is included as part of this warranty. If after receipt of a Product for repair under this warranty, it is later determined to be a non-warranted repair, all shipping costs are to be paid by the Original Purchaser.

### **This warranty does not cover:**

- Non-DRS ARMOR products (accessories) under the original manufacturer's warranty including, but not limited to, the carrying case, PCMCIA cards, etc. Non-DRS ARMOR branded products are not covered under an extended warranty period.
- Software, including the operating system and software added to the DRS ARMOR hardware products through our factory-integration system, third-party software, or the reloading of software;
- Scratches or abrasions to the Product's LCD screen/display, and abusive wear of the LCD screens;
- Consumables and High Wear Items. Batteries, Keyboards, Touch Pad, Touch Screen, AC Adaptor, and liquid crystal display (LCD) are covered under the Limited Warranty for one (1) year.
- Problems that result from external causes such as accident, fire, floods, or acts of God; abuse; misuse; or problems with electrical power; servicing not authorized by DRS; failure to follow the Product instructions or failure to perform preventative maintenance; problems caused by using accessories, parts, or components not supplied by DRS; improper installation (to include the absence of surge protection in vehicle installations), testing, operation, use or handling of the Product; or unauthorized alteration of Products
- Products with missing or altered service tags or serial numbers.
- Products for which DRS has not received payment.
- DRS is not responsible for and shall not be liable for transportation and insurance charges incurred in or damages resulting from transporting the Products, Accessories and/or Replacement Products to DRS for warranty service.

## ARMOR X10gx Tablet Computer

- DRS is not responsible for any third-party software created for use in the integration and/or operation of any Products, Accessories and/or Replacement Products whether or not such third party software was installed by DRS. Maintenance and support service for third-party software is the sole responsibility of the creator thereof.

### Additional Information

The agents, dealers, DRS Authorized Resellers and employees of DRS are not authorized to make any modifications to this warranty, or additional warranties binding on DRS about or for Products, Accessories and/or products sold or supplied by DRS. Additional statements, whether oral or written, except signed written statements from an officer of DRS, do not constitute warranties and should not be relied upon.

The Product is not designed or certified for use in high risk applications including, but not limited to, the operation of nuclear facilities, aircraft navigation or air traffic control systems, communications systems in which a failure thereof could cause death or serious injury or property damage (e.g., emergency or 911 communications systems), medical systems, life support, weapons systems or any other potentially life critical uses. Original Purchaser understands and agrees that DRS makes no assurances or warranties that the Product is suitable for any such high-risk uses.

DRS' SOLE LIABILITY, AND ORIGINAL PURCHASER'S SOLE REMEDY, FOR ANY MALFUNCTIONS AND DEFECTS IN THE PRODUCTS IS LIMITED TO REPAIR AND REPLACEMENT AS SET FORTH IN THIS WARRANTY STATEMENT. EXCEPT AS OTHERWISE EXPRESSLY STATED HEREIN, DRS DISCLAIMS ALL OTHER WARRANTIES, WHETHER EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, AND ANY IMPLIED WARRANTIES OTHERWISE ARISING FROM COURSE OF DEALING OR TRADE. NO WARRANTIES WILL APPLY AFTER THE WARRANTY PERIOD HAS EXPIRED.

DRS HEREBY DISCLAIMS, AND THE ORIGINAL PURCHASER HEREBY AGREES, THAT DRS DOES NOT ACCEPT LIABILITY BEYOND THE REMEDIES PROVIDED FOR IN THIS WARRANTY OR FOR ANY INDIRECT, CONSEQUENTIAL, PUNITIVE, SPECIAL, OR INCIDENTAL DAMAGES, INCLUDING, WITHOUT LIMITATION, ANY LIABILITY FOR THIRD PARTY CLAIMS FOR DAMAGES, FOR PRODUCTS NOT BEING AVAILABLE FOR USE, OR FOR LOST DATA OR LOST SOFTWARE.

NOTWITHSTANDING ANYTHING CONTAINED HEREIN, DRS' TOTAL LIABILITY FOR ANY ALLEGED OR ACTUAL BREACH OF WARRANTY WILL BE NO MORE THAN THE AMOUNT PAID FOR THE PRODUCT THAT IS THE SUBJECT OF ANY SUCH CLAIM. THIS IS THE MAXIMUM AMOUNT FOR WHICH DRS SHALL BE RESPONSIBLE.

**ARMOR X10gx Tablet Computer**[Table of Contents](#) [List of Figures](#) [List of Tables](#) [Acronyms](#) [Glossary](#)**APPENDIX A****Explanation of Active Pen Side Button Options**

4 <sup>th</sup> Click (Back)	Duplicates a 4 <sup>th</sup> mouse button click – usually the Back command in browser application.
5 <sup>th</sup> Click (Forward)	Duplicates a 5 <sup>th</sup> mouse button click – usually the Forward command in browser application.
Click	Duplicates a left mouse button click.
Click Lock	Duplicates holding an object with the left mouse button; good for dragging objects or selecting text or groups of objects. Press button to grab, press to release.
Default	Sets the switch function to Right Click
Disabled	Disables the side switch.
Double Click	Generates a double-click action with a single press of the side switch.
Erase	Enables the pen tip to act like an eraser in handwriting applications and in some paint and imaging editing programs.
Journal	Opens Microsoft Journal™ (only with versions of Windows that include Microsoft Journal).
Keystroke...	Enables you to define special keystrokes. This function can also be made available using the Pop-up Menu option (must be defined in the Pop-up Menu tab of the Pen Tablet Properties dialog).
Middle Click	Duplicates pressing the middle scroll button on a mouse.
Mode Toggle...	Toggles between Pen and Mouse mode if pre-configured in the Pop-Up Menu tab of the Pen Tablet Properties dialog (see Windows Control Panel).
Modifier...	Enables you to duplicate a shift, ctrl, alt or click function.
Open/Run...	Opens or runs a pre-selected application. This function can also be made available using the Pop-up Menu option.
Pan/Scroll...	Enables you to use the pen like a hand to move a document or image in any direction within an active window.
Pop-up Menu	Makes available selections enabled in the Pop-up Menu tab of the Pen Tablet Properties dialog (see Windows Control Panel).
Pressure Hold	Primarily used with painting programs to maintain the pressure of a

## ARMOR X10gx Tablet Computer

	brush stroke.
Right Click	Duplicates a right mouse button click.
Tablet PC Defined	Uses the pen settings defined in the Pen Options tab of the Pen and Touch dialog window.
Tablet PC Input Panel	Opens the Tablet PC input panel (only with versions of Windows that support Tablet PC).

**ARMOR X10gx Tablet Computer**[Table of Contents](#) [List of Figures](#) [List of Tables](#) [Acronyms](#) [Glossary](#)**RECORD OF CHANGES**

Rev	ECO #	Description Of Change
-	81874	Initial Release.
A	81995	Pg. 63, 1 <sup>st</sup> sentence – Changed “WLAN” to “WWAN”; Pg 185 – Changed item 3 to read: “If you prefer to use our online RMA service, please ask for a Username and Password. To access our online RMA service:”
B	82450	Removed references to port replicator. Revised sections 2, 3, 5, 7 and 9.
C	85196	User’s guide extensively revised.
D	85607	Added ENERGY STAR® page; Revised Sections 1, 2, 3, 4, 5, 8, 9 and 10; added “ALS” to acronym list.

**ARMOR Rugged Mobile Computers**

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**Product Support**

ARMOR computer systems are typically custom-configured for a given application. Before calling DRS, please check with your IT staff to resolve any software issues. Additional ARMOR Product Support is available 24/7 on the web at [www.drsarmor.com](http://www.drsarmor.com) and by telephone at 888.872.1100 or 321.309.0599. For Windows® information, please refer to [www.microsoft.com](http://www.microsoft.com).

