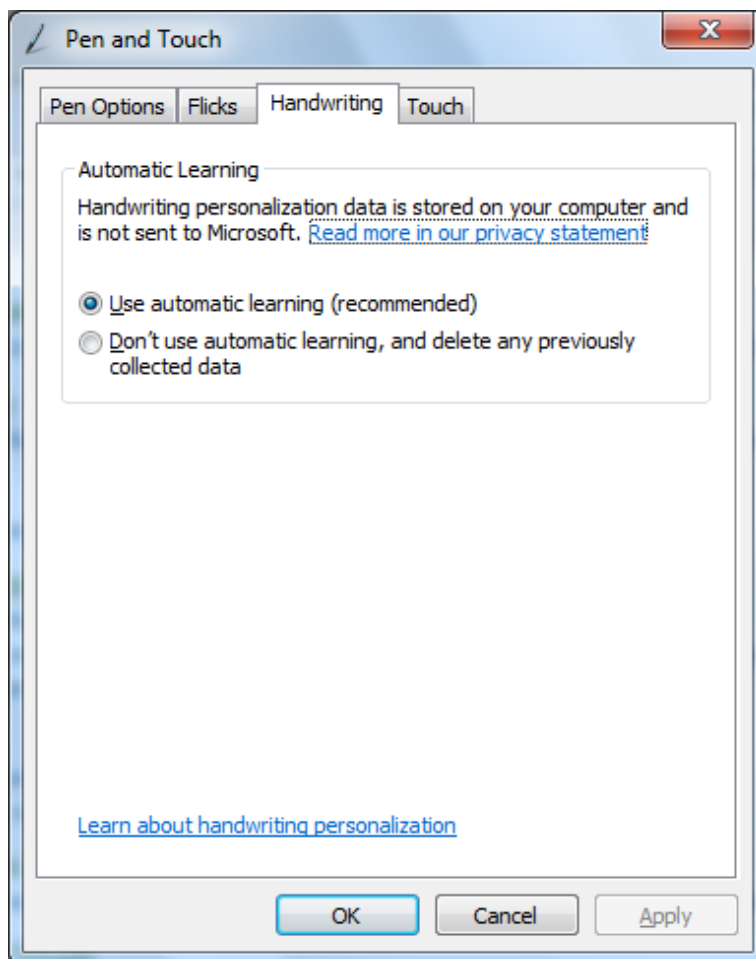


**MODEL X7 TABLET COMPUTER**Handwriting Tab

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.

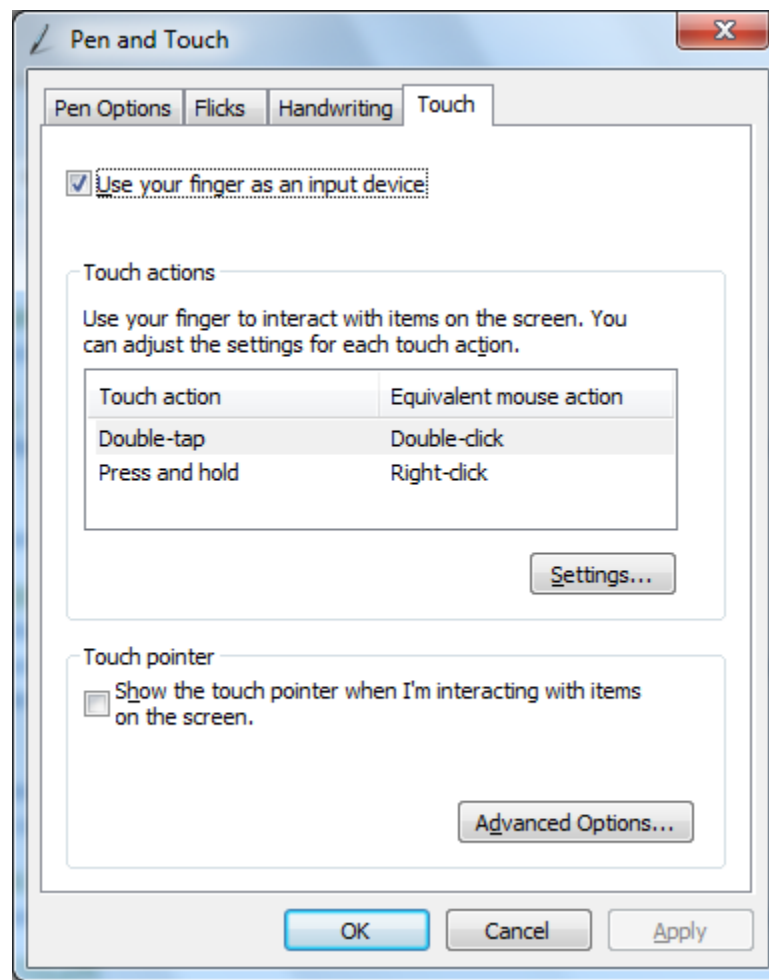


**Figure 72. Pen and Touch Utility – Handwriting Tab**

**MODEL X7 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 73. Pen and Touch Utility – Touch Tab**

**MODEL X7 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 pointer at the touch point. A virtual mouse image will also appear next to the pointer, as shown in Figure 74 . 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 74. Touch Tab Virtual Mouse Pointer**

**MODEL X7 TABLET COMPUTER**

## Tablet PC Settings Utility

To open this utility, select **Start → Control Panel → Hardware and Sound → Tablet PC Settings**. The Tablet PC Settings utility opens, as shown in Figure 75.

### 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 X7. Use the **Screen Setup dialog** in ARMORutils to change display modes.

#### Display Options

This option is not supported by the X7. Select **Control Panel → Hardware and Sound → Display → Change Display settings** to change settings for multiple displays.

#### Calibrate Button

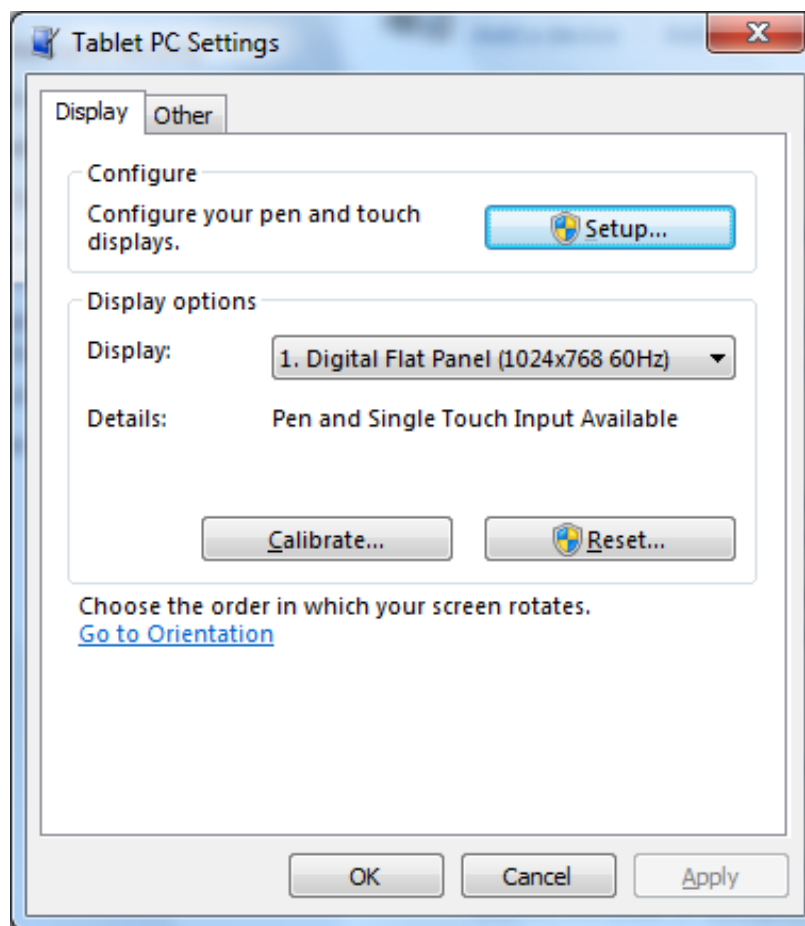
Click on the **Calibrate** button and select **Pen input** or **Touch input** to calibrate a screen.

#### 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 X7.

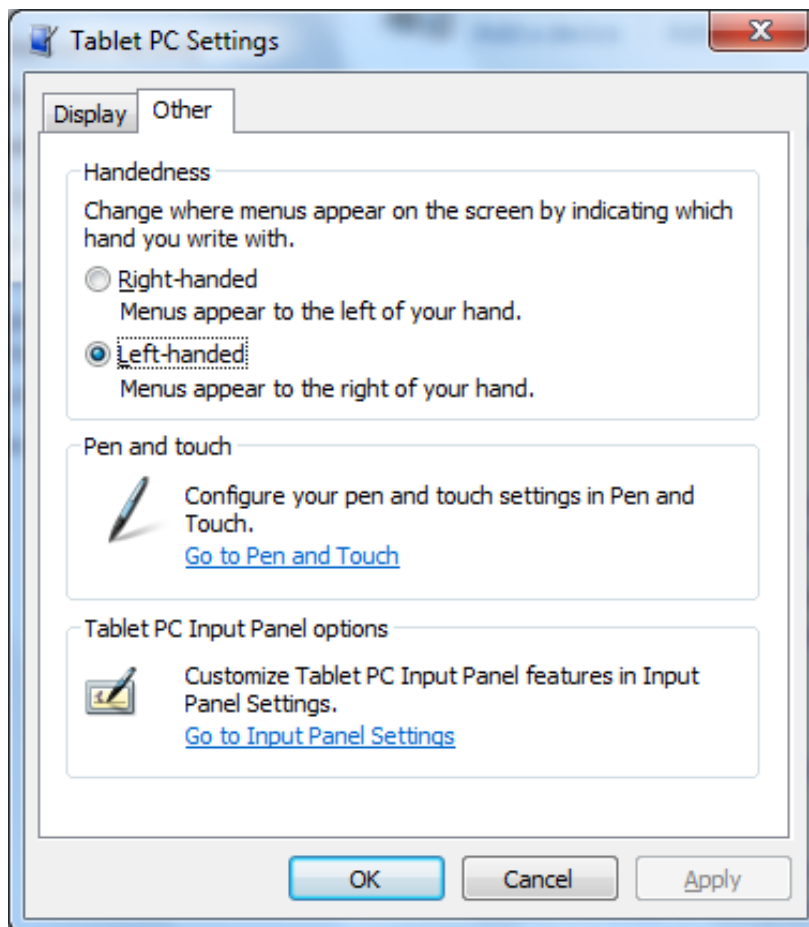
**MODEL X7 TABLET COMPUTER**

**Figure 75. Tablet PC Settings – Display Tab**

**MODEL X7 TABLET COMPUTER**Other Tab

The Other tab (Figure 76) allows you to change where an on-screen menu appears when you activate the pen or touch display 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 pointer.

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

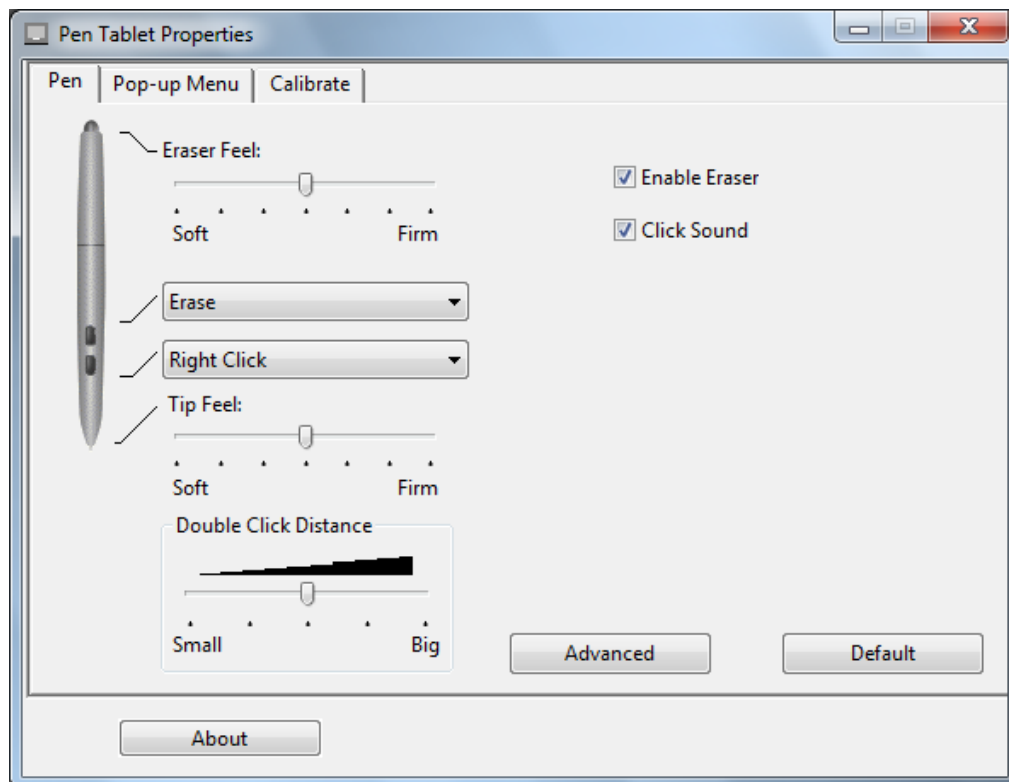


**Figure 76. Tablet PC Settings Utility – Other Tab**

**MODEL X7 TABLET COMPUTER**

## Pen Tablet Properties Utility

The following paragraphs briefly describe the purpose and actions of the Pen Tablet Properties utility (the name may be different depending on which version of Windows 7 you have). To open the utility 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 77.



**Figure 77. WACOM Pen Tablet Properties Window – Pen Tab**



### NOTE

*The pen that comes with your ARMOR X7 has only one side button and no eraser function (see [Your X7 Active Pen](#)).*

### Pen Tab

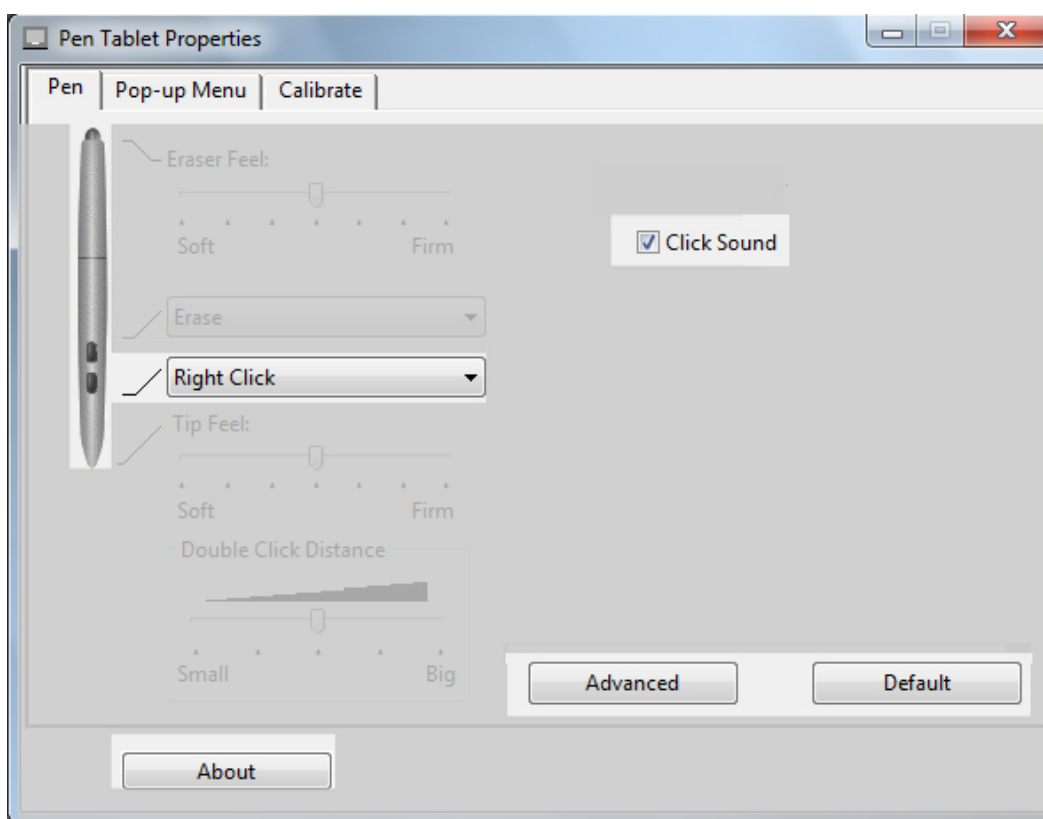
The Pen tab is displayed by default when the Pen Tablet Properties window opens. The pen pictured in the tab is a WACOM™ pen that is normally used in advanced drawing tablets. Its functionality far exceeds what is required for your X7 tablet. Consequently, we have provided a simpler active pen.

**MODEL X7 TABLET COMPUTER**Supported Options

Figure 78 and Figure 79 highlight those functions and options that are supported by your ARMOR X7 active pen.

**NOTE**

*Options not supported by the X7 pen are grayed out in Figure 78 and Figure 79 for illustration purposes only. They are not grayed out on the actual application screen image.*



**Figure 78. Settings and Options Supported by the ARMOR X7 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.

## MODEL X7 TABLET COMPUTER

### Side Button Menu Options

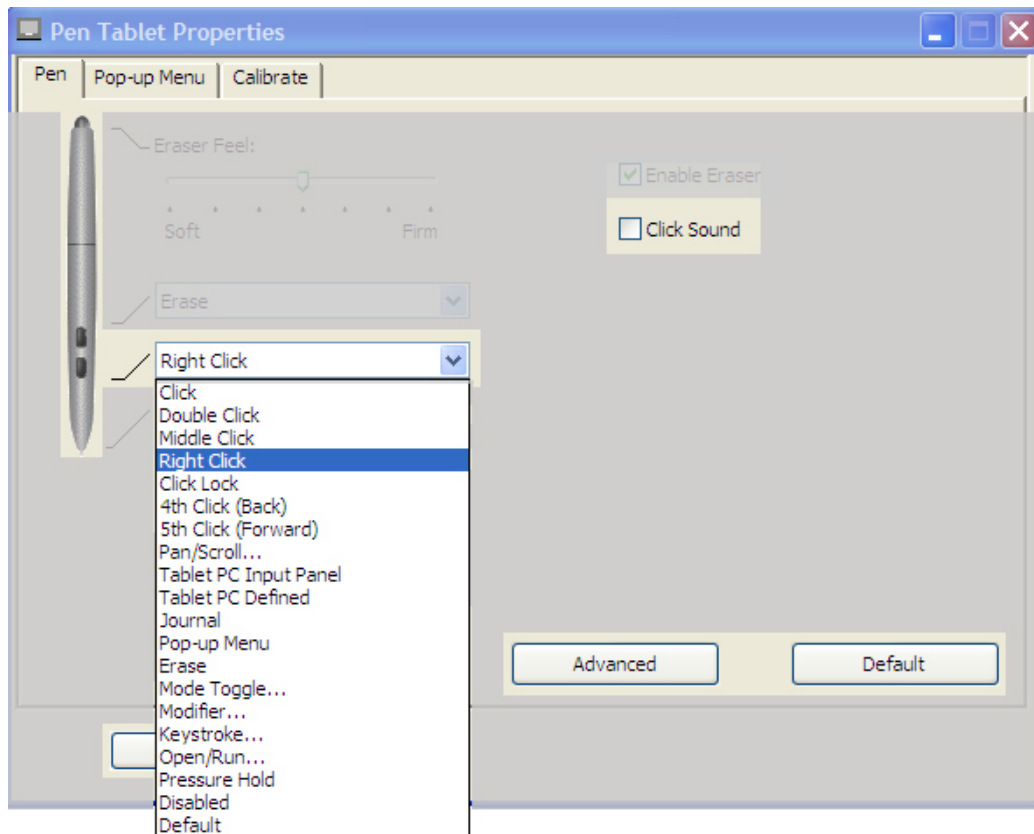
The side button can be set to perform different functions that are selected from the pull down menu shown in Figure 79. The default function is “Right Click”.

Only the lower button menu is used with the X7 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.*



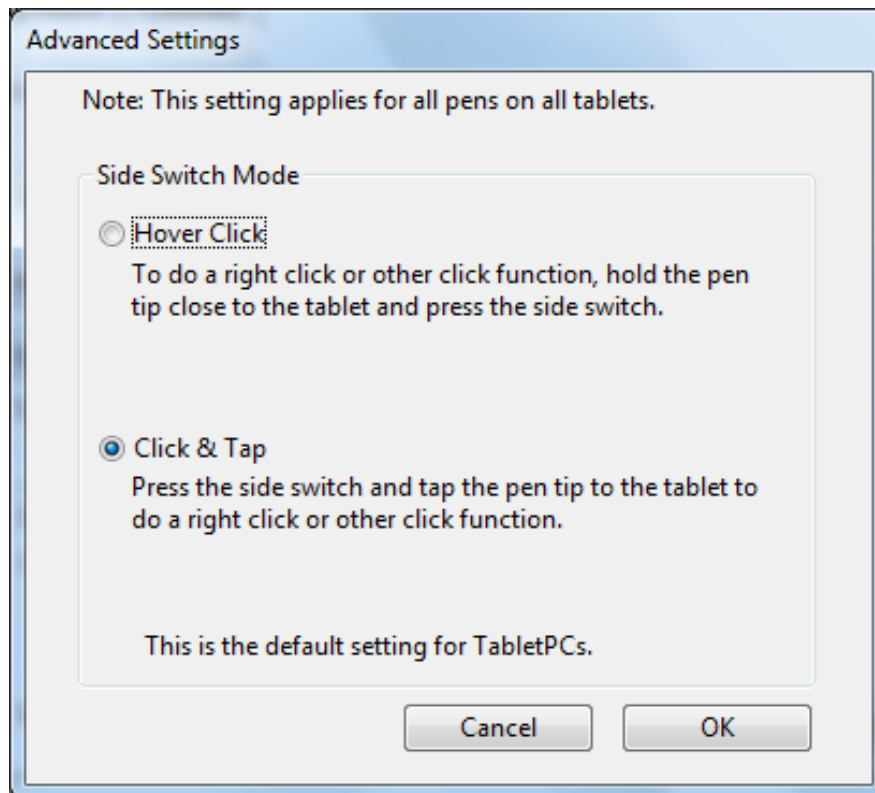
**Figure 79. Side Button Menu Options**

### Default Button

Click on the **Default** button to return the side button setting to Right Click.

**MODEL X7 TABLET COMPUTER**Advanced Button

Click on the **Advanced** button to open the Advanced Settings window, as shown in Figure 80. 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.



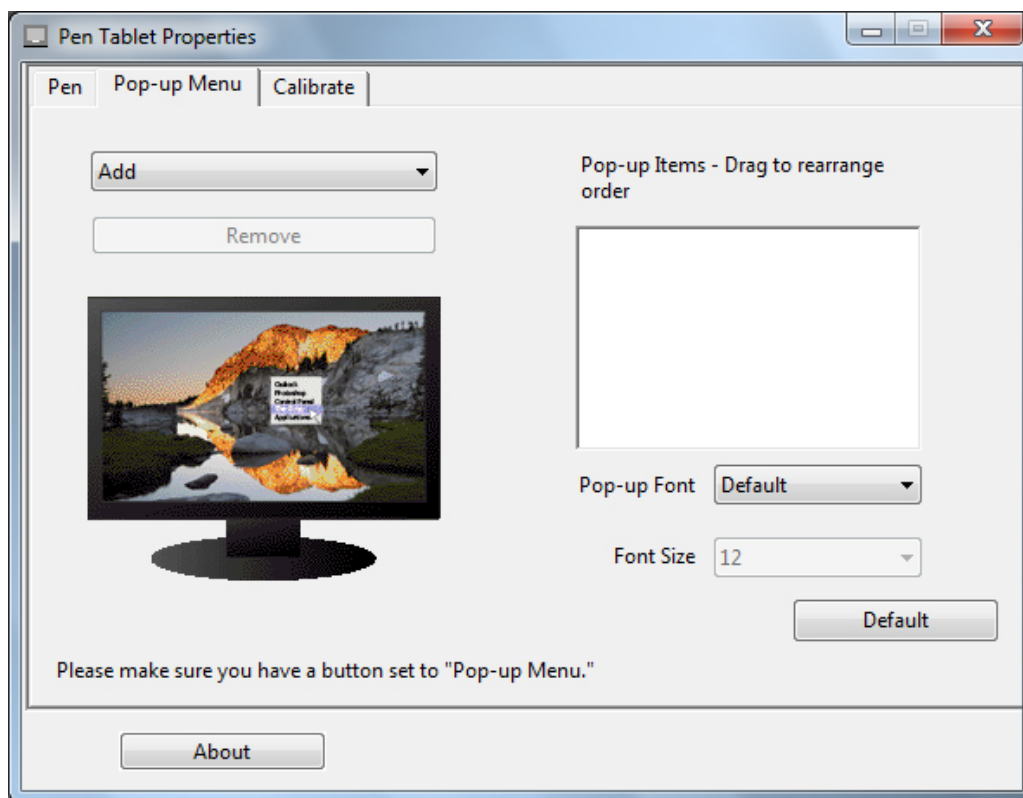
**Figure 80. Pen Tablet Properties - Advanced Settings Window**

**MODEL X7 TABLET COMPUTER**Pop-up Menu Tab

The Pop-up Menu tab is shown in Figure 81. 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.*

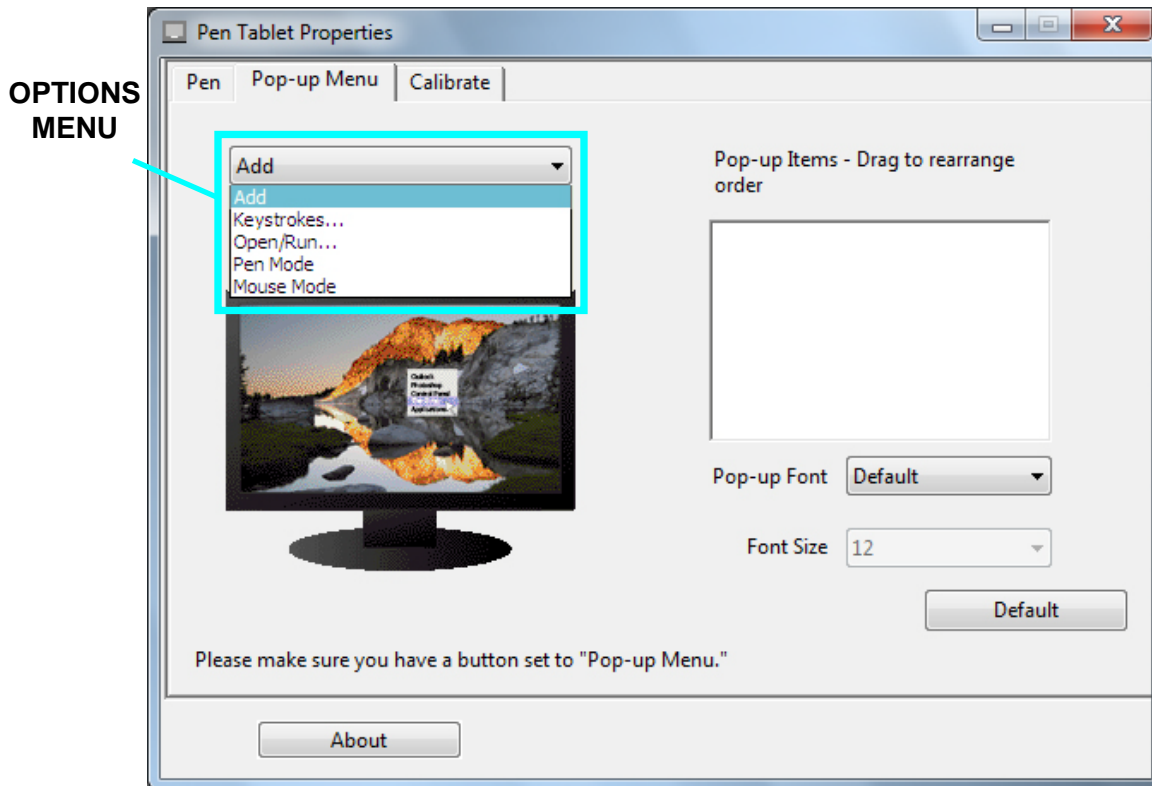


**Figure 81. Pen Tablet Properties – Pop-up Menu Tab**

**MODEL X7 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.

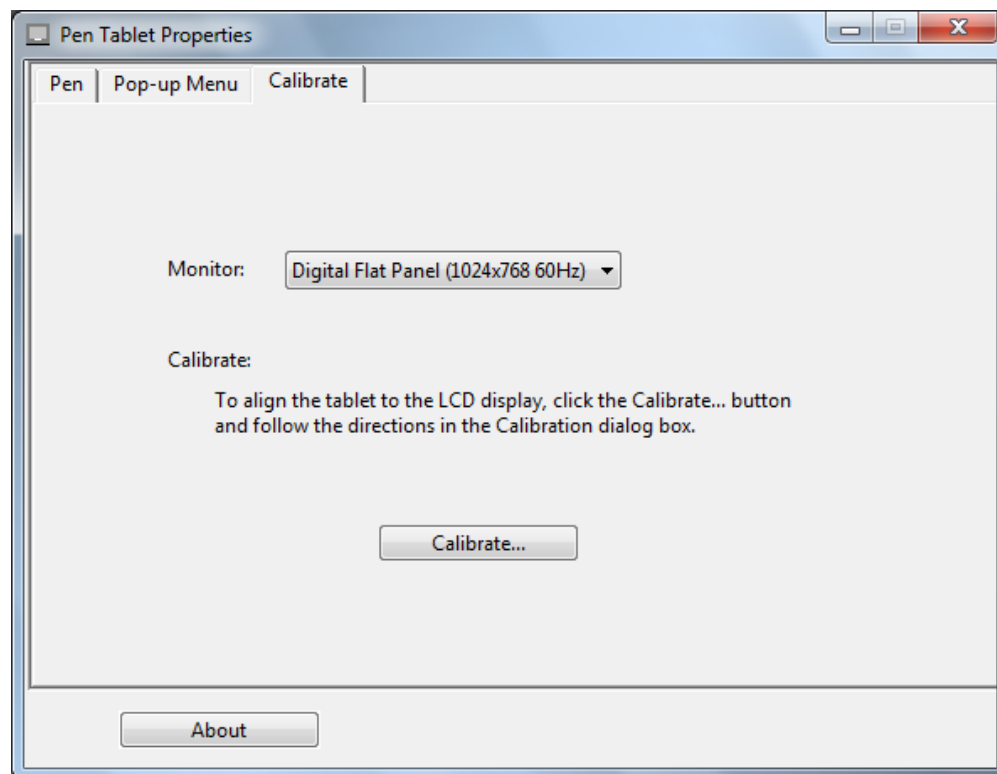
When you are using the pen in an application or on the desktop and you press the side button, a small menu is displayed with the options you have configured.



**Figure 82. Pop-up Menu Add Options**

**MODEL X7 TABLET COMPUTER**Calibrate Tab

The Calibrate tab is shown in Figure 83. Click on the **Calibrate** button to access the screen calibration routine. Follow the on-screen instructions.




**Figure 83. Pen Tablet Properties Window – Calibrate Tab**

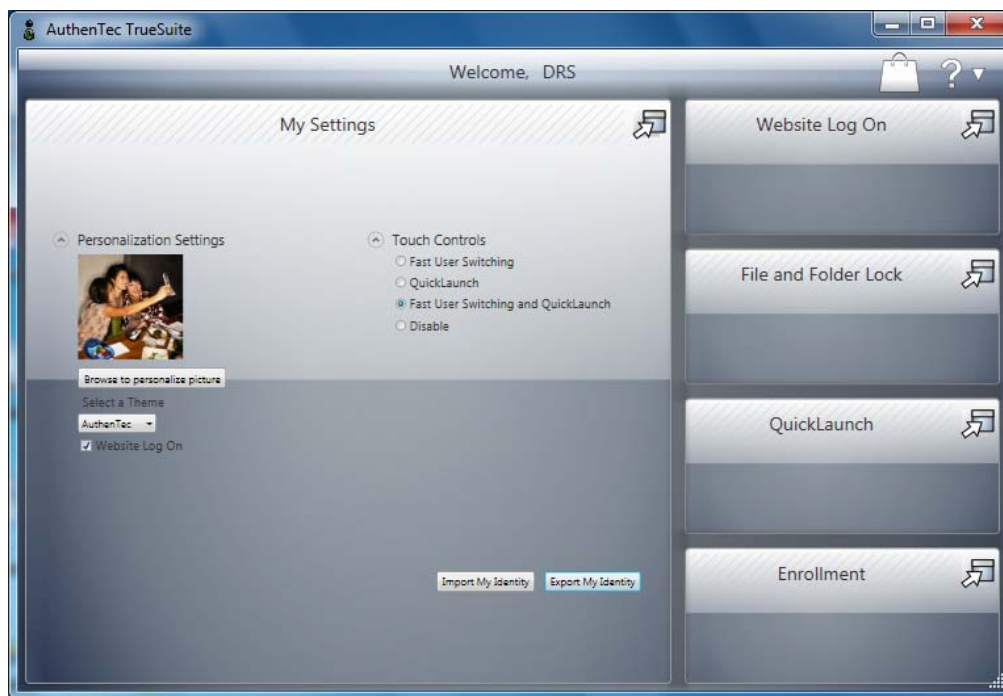
**MODEL X7 TABLET COMPUTER**

## TrueSuite™ Fingerprint Recognition Software

Your X7 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 84. 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 84. AutenTec TrueSuite Application Window**

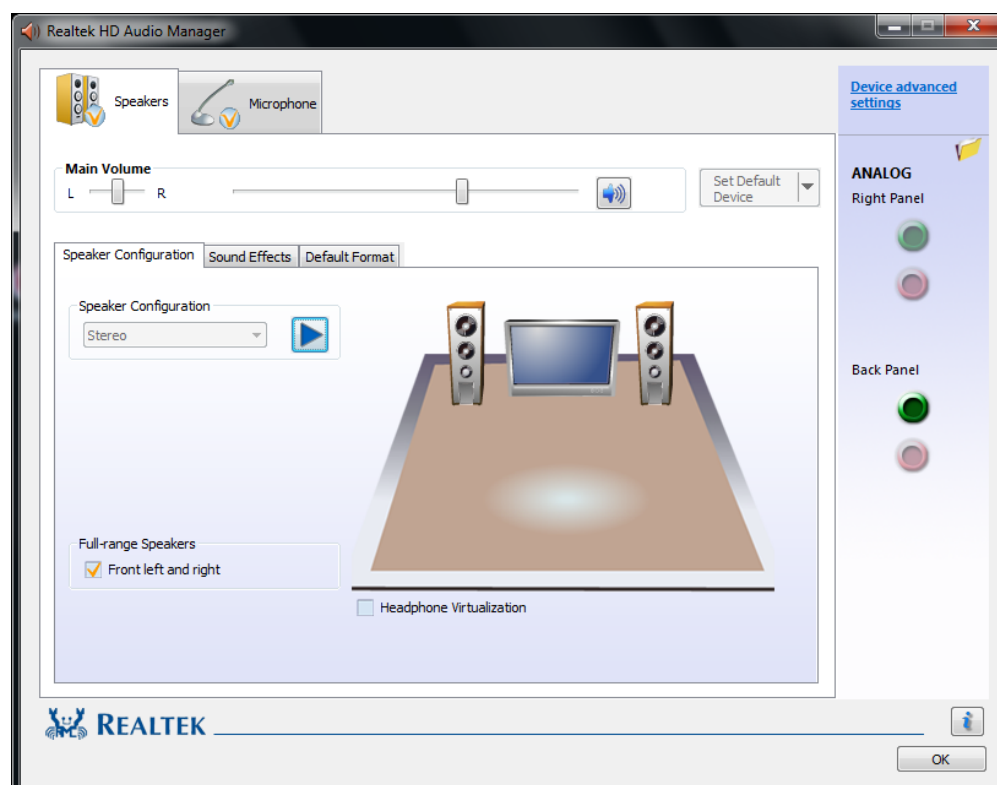
## Using the TrueSuite Application

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

**MODEL X7 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.

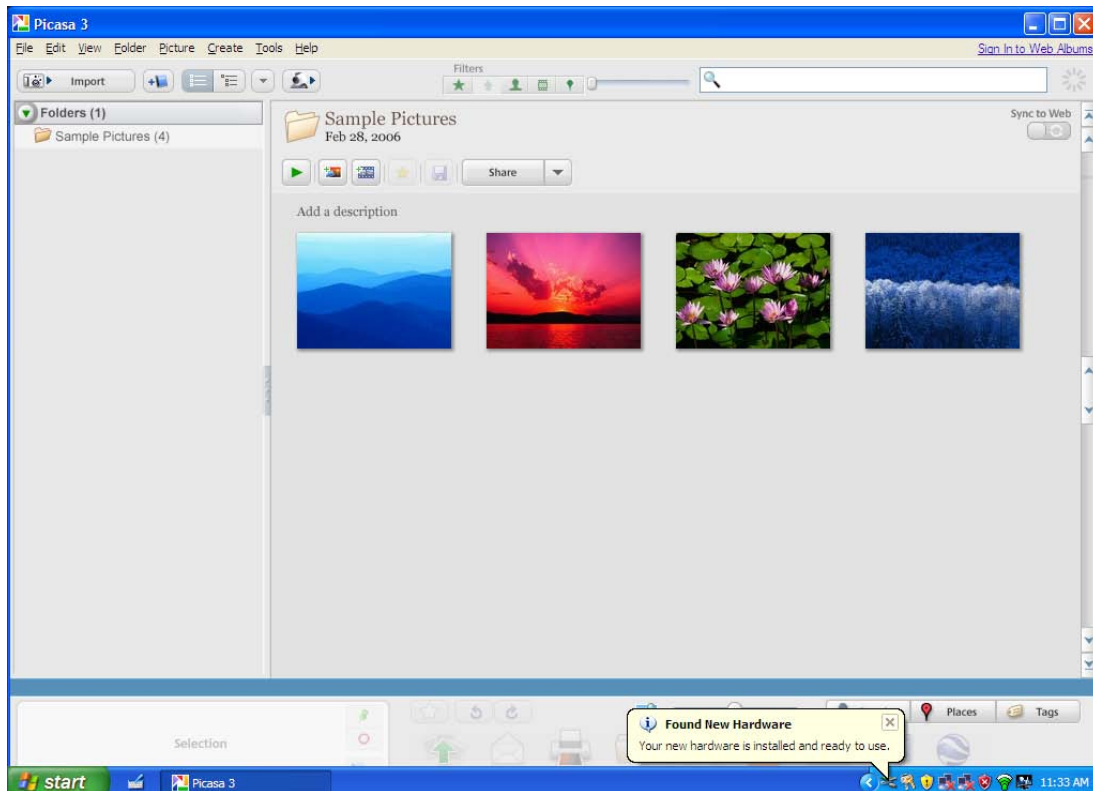


**Figure 85. Realtek HD Audio Manager Application**

## MODEL X7 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. Refer to [Capturing Images and Video](#) for instructions on how to use this application.



### Figure 86. Picasa 3 Image Capture Application

**MODEL X7 TABLET COMPUTER**

## Virtual Magnifying Glass<sup>™</sup>

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 87. Refer to [Using the Screen Magnifier](#) for instructions on how activate and use this application.



**Figure 87. Virtual Magnifying Glass Application**



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## 6. TROUBLESHOOTING

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

For each problem that occurs with your ARMOR X7 computer, there are specific steps that will help 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 21 lists possible problem areas with likely symptoms and then provides actions to correct the problem. Use the **Problem Area** and **Symptom** columns to identify the problem you are having, then follow any directions in the **Action** column or go to the indicated **Flow Chart** to further isolate the problem.

**Table 21. ARMOR X7 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 (pointer) does not align with the fingertip or pen point.	<ol style="list-style-type: none"><li>1. Follow the instructions in <a href="#">Calibrating the Display</a> to calibrate the screen. Repeat up to 5 times if necessary.</li><li>2. If screen still does not respond correctly, send tablet in for repair.</li></ol>	
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>	

## MODEL X7 TABLET COMPUTER

PROBLEM AREA	SYMPTOM	ACTION	FLOW CHART
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="#"><u>TS-04</u></a>
Battery	Battery will not hold a charge.	Perform the procedure in <a href="#"><u>What to Do for an Overly-Discharged Battery</u></a> .	
Battery	Battery consistently shows a full charge but does not meet typical operating times.	Perform the procedure in <a href="#"><u>Battery Conditioning</u></a> .  <b>NOTE:</b> If the battery still shows poor performance, replace it.	

## MODEL X7 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>

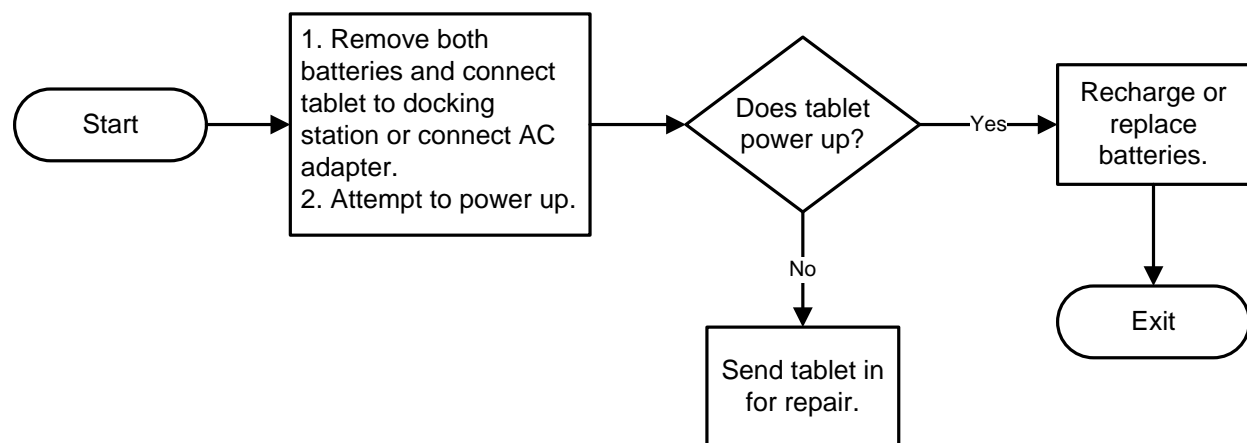
**MODEL X7 TABLET COMPUTER**

PROBLEM AREA	SYMPTOM	ACTION	FLOW CHART
USB	USB port not working.	Reset the BIOS by performing the procedure in <a href="#">Returning the BIOS to its Default Settings</a> .	

**MODEL X7 TABLET COMPUTER**

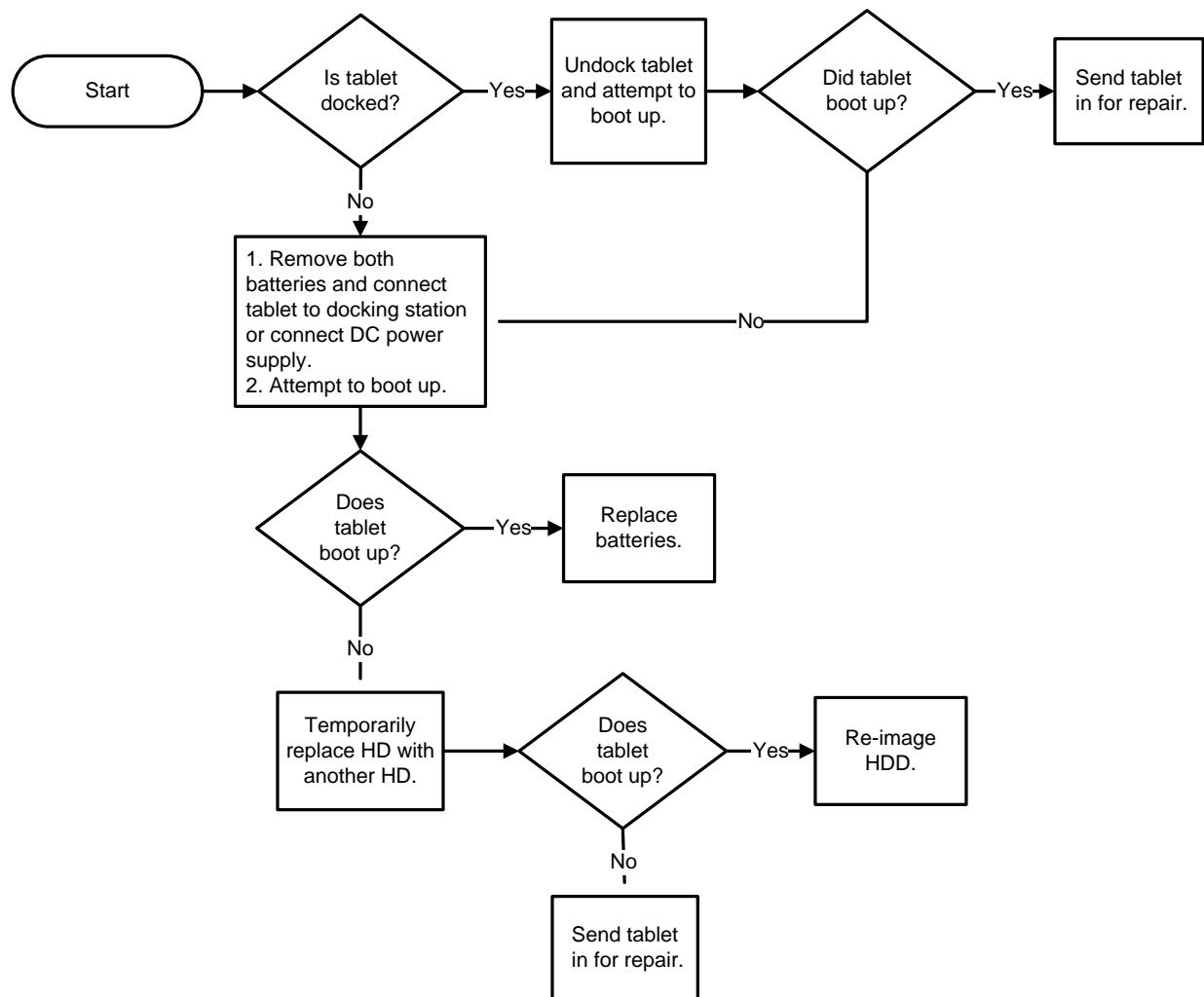
## Troubleshooting Flowcharts

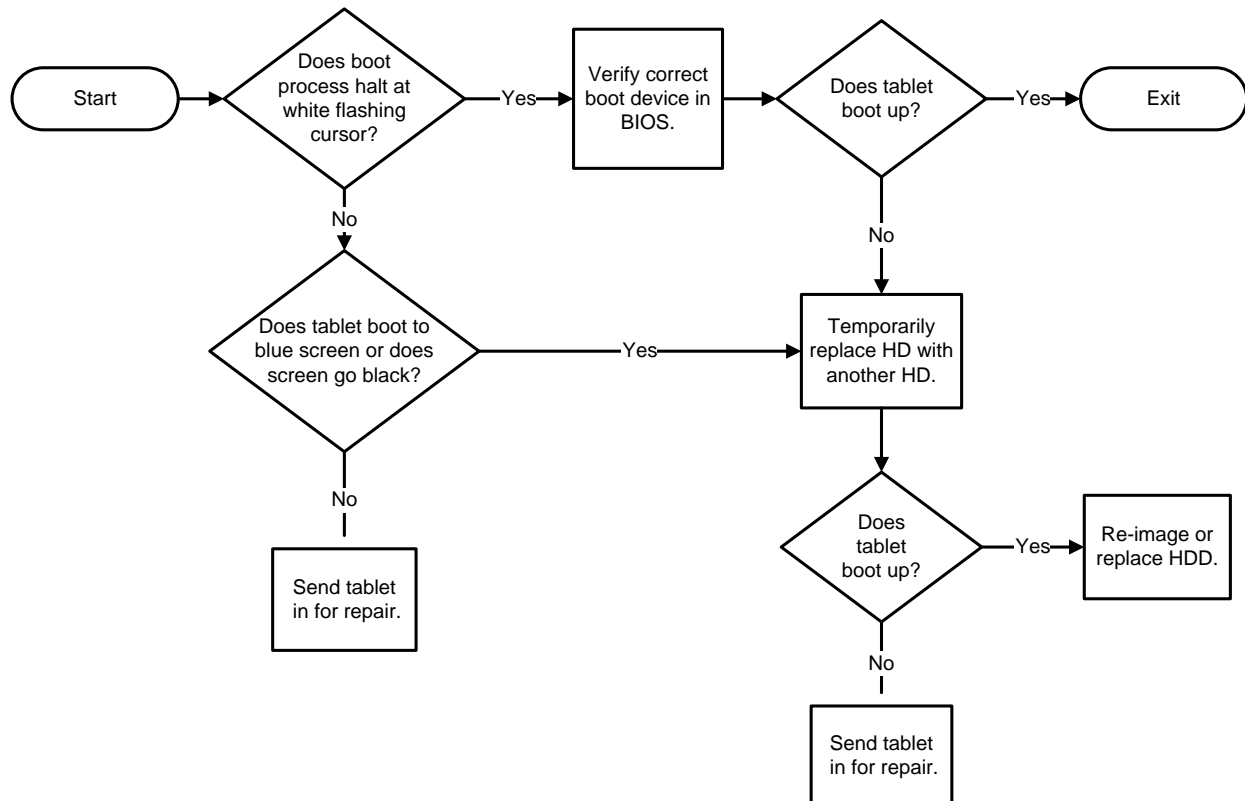
### TS-01 Tablet will not power up

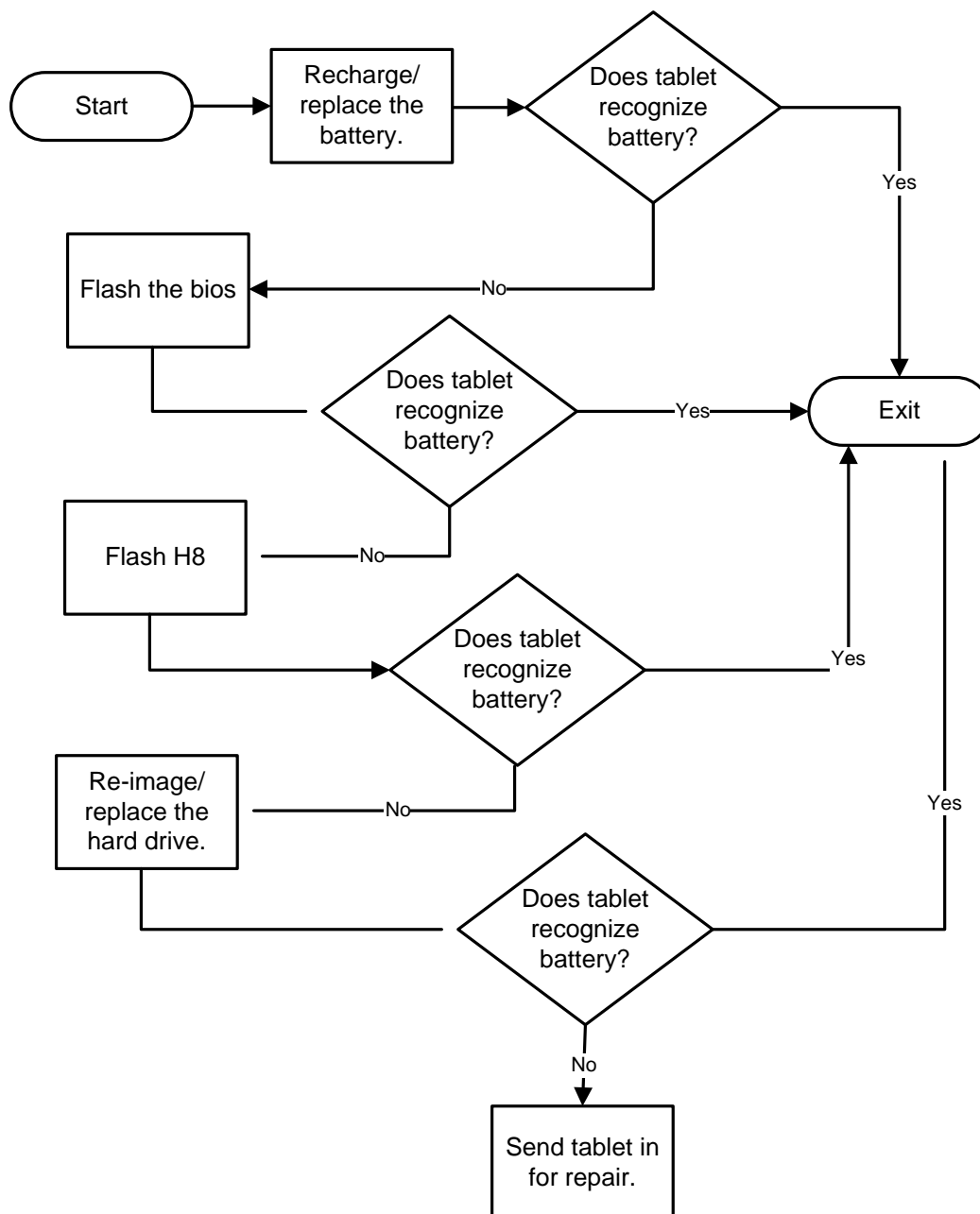


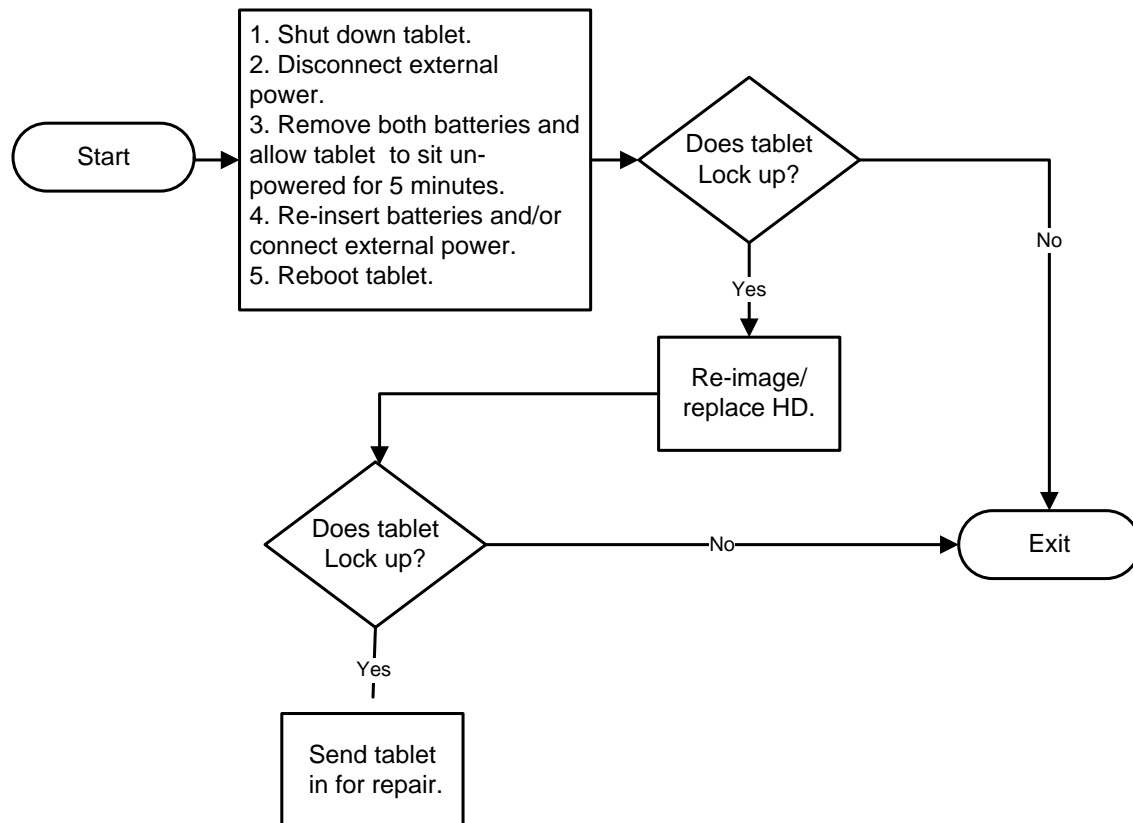
**MODEL X7 TABLET COMPUTER**

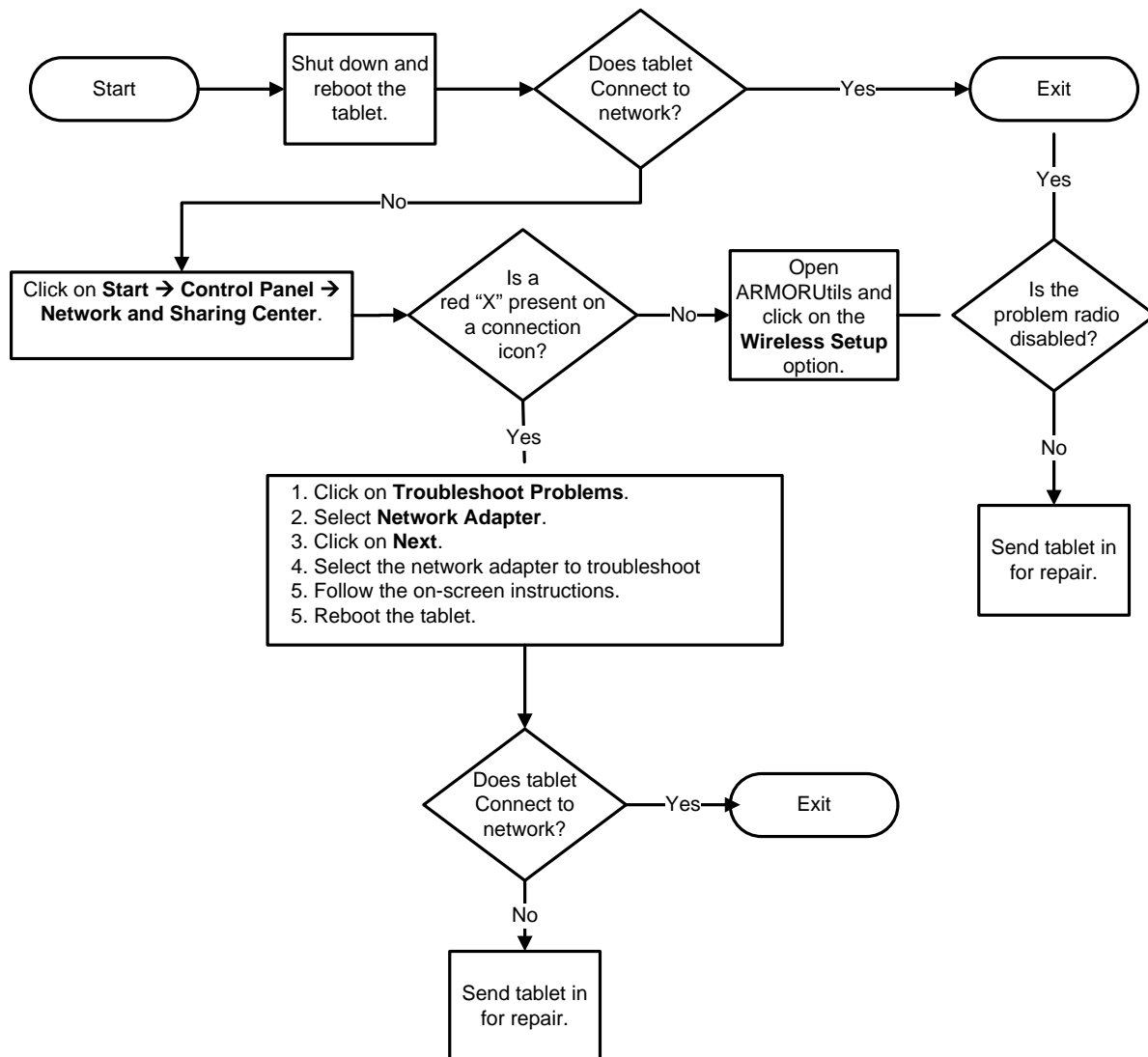
TS-02 Tablet will not start boot process. Power is ok



**MODEL X7 TABLET COMPUTER**TS-03 Tablet will not boot into Windows

**MODEL X7 TABLET COMPUTER**TS-04 Tablet will not recognize a battery

**MODEL X7 TABLET COMPUTER**TS-05 Tablet is locked up

**MODEL X7 TABLET COMPUTER****TS-06 Cannot connect to wireless network**

**MODEL X7 TABLET COMPUTER**

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## 7. MAINTAINING YOUR ARMOR X7

### Removing and Replacing the Batteries

**CAUTION!**

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

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

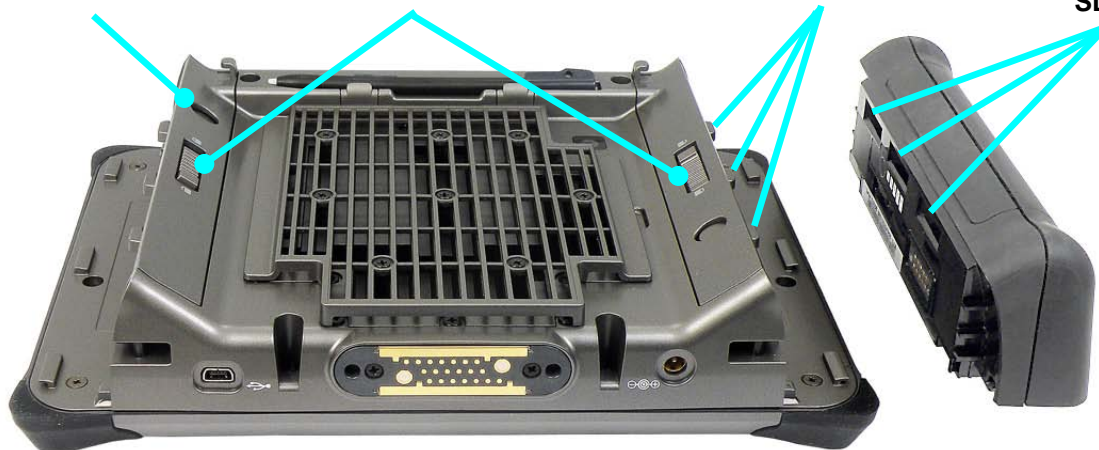
STEP	ACTION
<b>1.</b>	Push in on the battery lock button and slide the battery release to unlock the battery and remove it.
<b>2.</b>	To install a battery, place the battery on the battery bay with the locking slots facing toward the battery latch, as shown in Figure 88.
<b>3.</b>	Slide the battery toward the computer until the battery latch engages the slots in the battery and the battery is flush against the compartment wall.
<b>4.</b>	Press firmly while moving the release button slightly until the battery locking button snaps into place.

**BATTERY  
LOCK BUTTON**

**BATTERY  
RELEASE**

**BATTERY  
LATCH**

**LOCKING  
SLOTS**



**Figure 88. Replacing an X7 Battery**

**MODEL X7 TABLET COMPUTER**

## Removing the Heat Shield and Cooling Register

Perform the procedure in Table 23 to properly remove the heat shield and cooling register. The location of the heat shield and cooling register screws are shown in Figure 89 (**NOTE:** The heat shield in this figure is shown cut away to expose the cooling register screws underneath).

**CAUTION!**

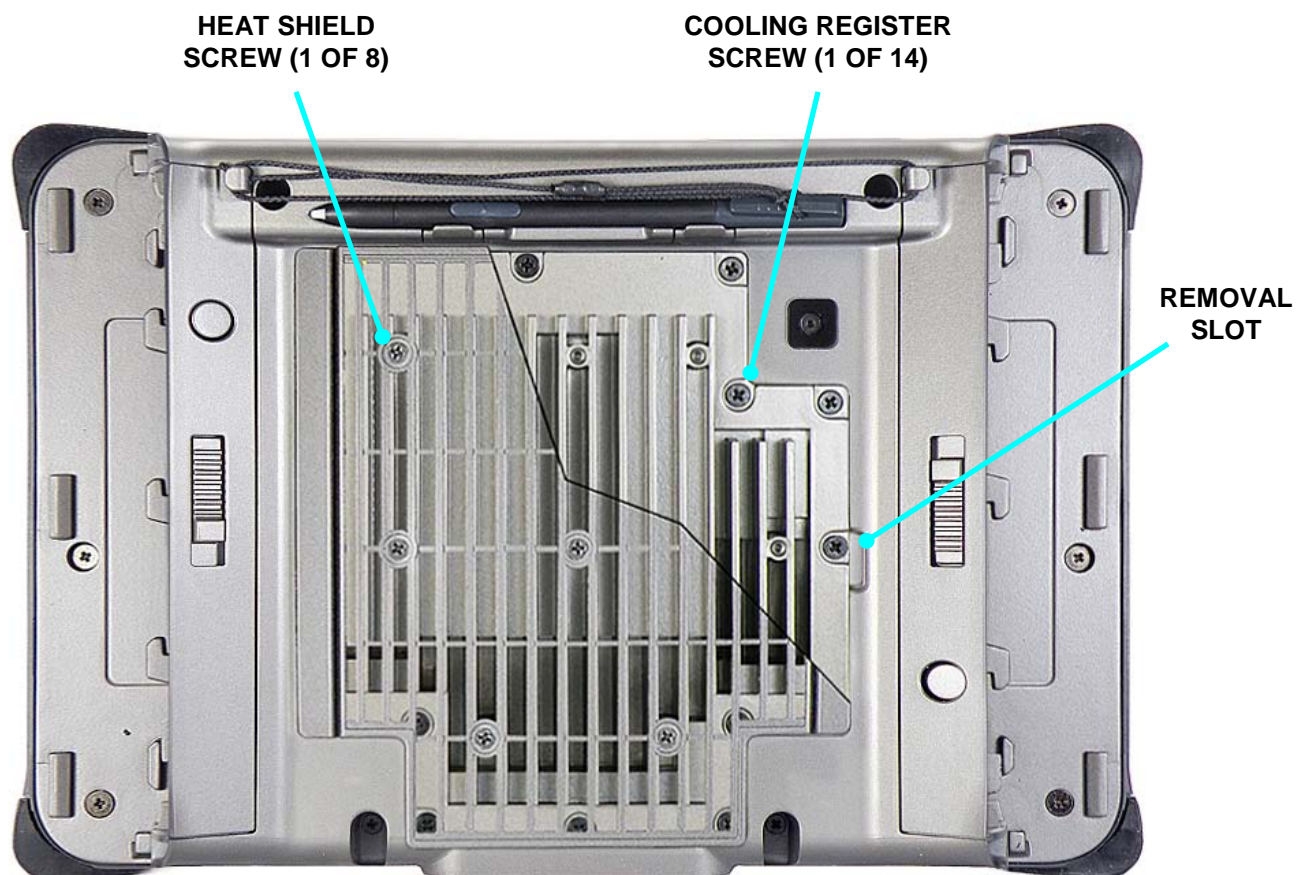
*Circuit boards containing electrostatic discharge (ESD) sensitive devices are exposed in this compartment. Static-free handling is required to prevent possible damage to the components.*

**NOTE**

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

**Table 23. Removing the Heat Shield and Cooling Register**

STEP	ACTION
1.	Power down the computer and disconnect any external power.
2.	Remove the batteries.
3.	Place the computer face down on a clean surface and remove the 8 Philips screws securing the plastic heat shield. Remove the shield.
4.	Remove the 14 Philips screws securing the cooling register.
5.	Carefully pry up the cooling register using the removal slot provided (Figure 89) and remove.

**MODEL X7 TABLET COMPUTER**

**Figure 89. ARMOR X7 Cooling Register and Heat Shield Screws**

**MODEL X7 TABLET COMPUTER**

## Installing the Cooling Register and Heat Shield

Follow the procedure in Table 24 to properly install the cooling register and heat shield.

**CAUTION!**

*The cooling register/cover is an integral part of the environmental seal of the X7 tablet and must be installed correctly using the procedure below. Failure to follow this procedure could result in poor heat transfer to the cooling register and/or possible damage to the cooling register seal, which could allow moisture and contaminants to enter the X7 interior.*

**CAUTION!**

*You must replace the previous thermal transfer pads with new pads that were included with your X7 (P/N 0410F37171-0000). This will maintain proper heat transfer from the mother board chip sets to the cooling register. Do not reuse the old pads.*

**CAUTION!**

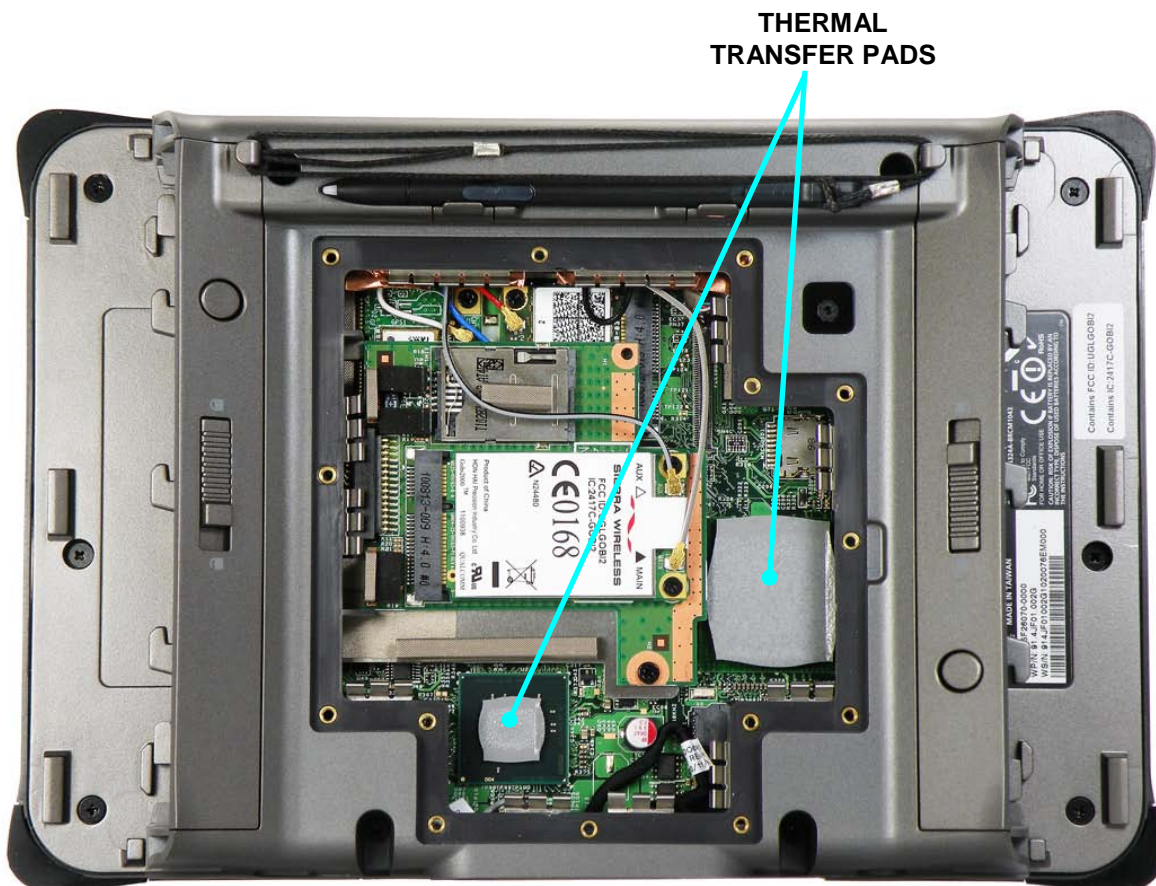
*Circuit boards containing electrostatic discharge (ESD) sensitive devices are exposed in this compartment. Static-free handling is required to prevent possible damage to the components.*

**NOTE**

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

**MODEL X7 TABLET COMPUTER****Table 24. Installing the Cooling Register and Heat Shield**

STEP	ACTION
<b>1.</b>	If either thermal pad (Figure 90) is torn or punctured, gently remove it, being careful not to scratch the chip case.

**Figure 90. Thermal Transfer Pads**

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STEP	ACTION
2.	Obtain a transfer pads from the supply provided with your X7.
3.	Peel off the top and bottom protective layers of the pad and center it over the chip surface using a pair of tweezers, as illustrated in Figure 91.



**Figure 91. Placing a Thermal Pad**

STEP	ACTION
4.	Position the cooling register/cover in place and press down gently to seat the gasket.
5.	Insert 7 Philips screws in the circled locations shown in Figure 92 and tighten until slightly snug. <b>Do not fully tighten at this time.</b>

**MODEL X7 TABLET COMPUTER**

<b>6.</b>	Once all 7 screws are installed, torque each screw to 2.8 kg-cm (2.4 in-lb) following the numbered sequence indicated in Figure 92.
<b>7.</b>	Insert the remaining 7 Philips screws and torque to 2.8 kg-cm (2.4 in-lb) in any sequence.
<b>8.</b>	Replace the heat shield and insert 8 Philips screws. Torque each screw to 2.8 kg-cm (2.4 in-lb) in any sequence.

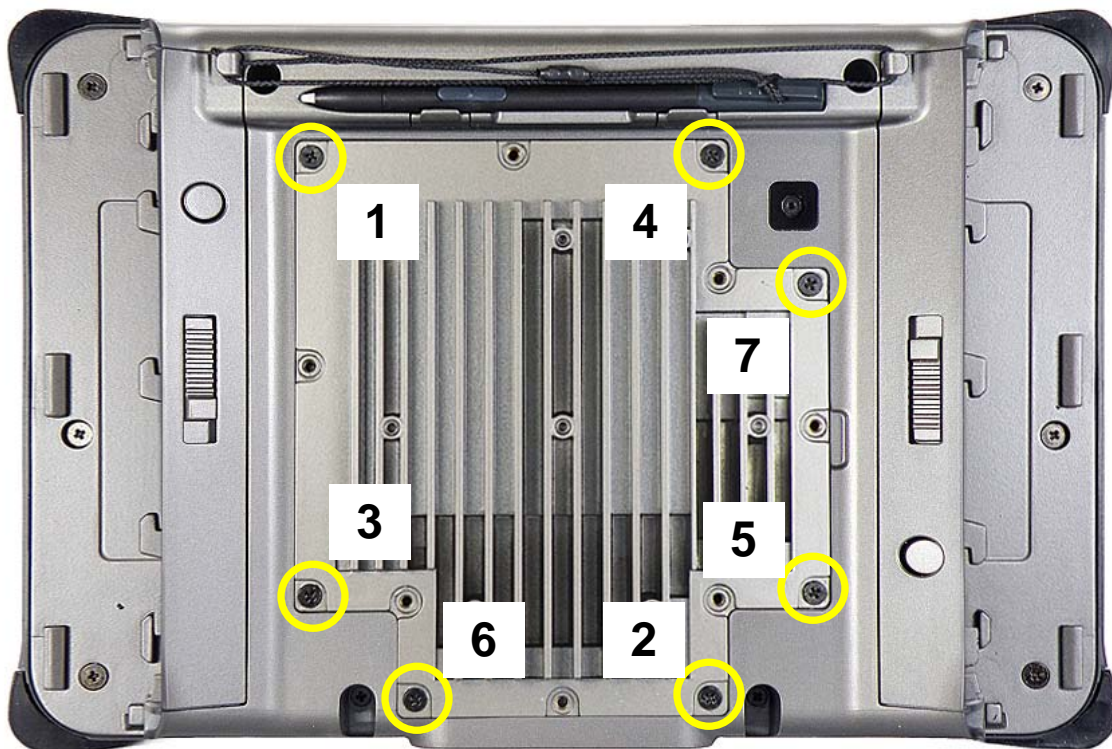


Figure 92. Cooling Register Initial Screw Placement

## MODEL X7 TABLET COMPUTER

### Installing a SIM Card

Follow the procedure in Table 25 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!

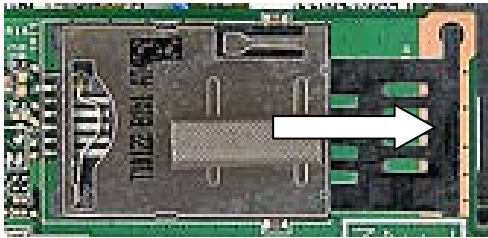
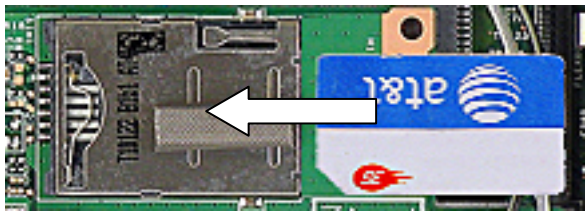
*Use care when operating the X7 with the cooling register removed. Internal voltages are exposed to possible short circuit.*



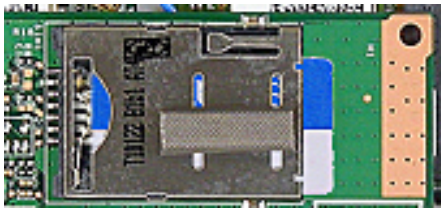
#### NOTE

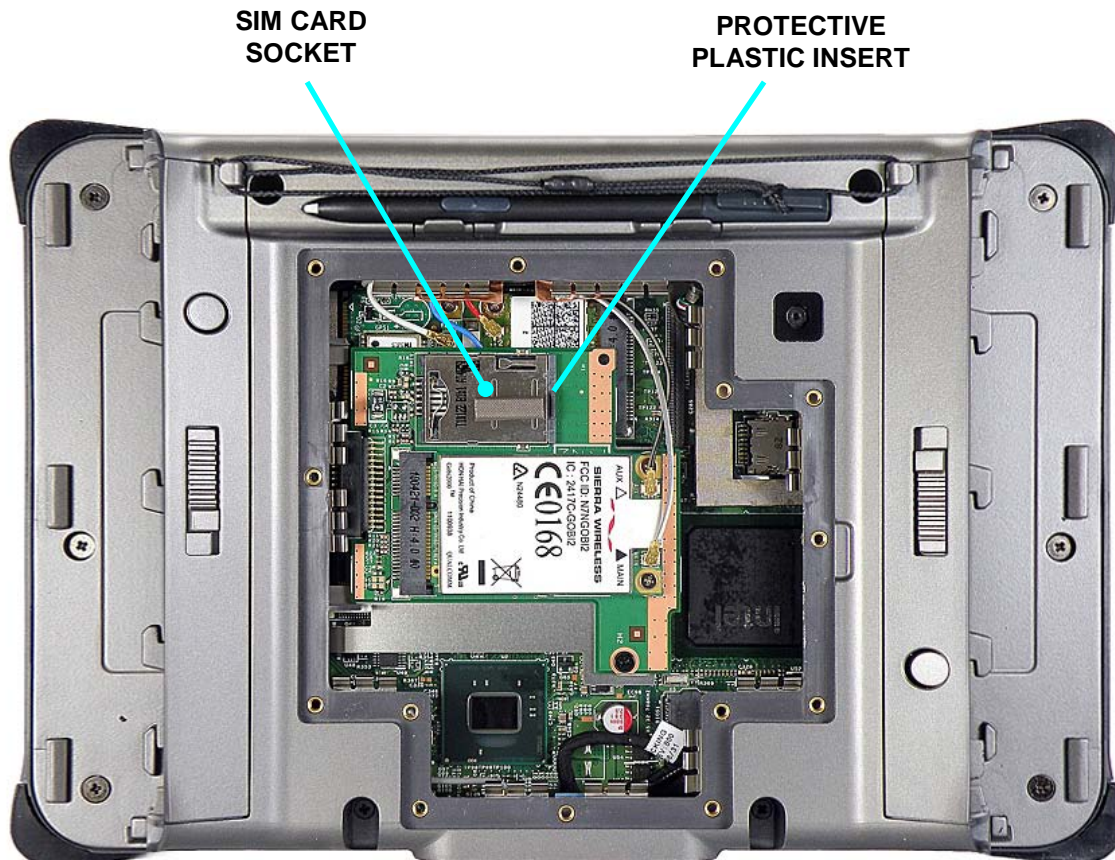
*This procedure should only be performed by a qualified technician in a controlled environment.*

Table 25. Installing a SIM Card

STEP	ACTION	COMMENT
1.	First perform the procedure in <a href="#">Removing the Heat Shield and Cooling Register</a> .	The SIM card is installed in a socket located inside the X7, as shown in Figure 93.
2.	Remove the protective plastic insert from the SIM card socket. <b>NOTE:</b> We recommend you save this insert and reinstall it whenever there is no SIM card in the socket. This will prevent accidentally deforming the cover.	
3.	Insert the SIM card with the corner notch at the lower left as shown.	

**MODEL X7 TABLET COMPUTER**

<b>4.</b>	Press in on the card until you feel the eject spring lock into place.	
<b>5.</b>	To remove the SIM Card, simply press in on the right edge of the card until the eject spring releases and pushes the card out.	
<b>6.</b>	Follow the procedure in <a href="#">Installing the Cooling Register and Heat Shield</a> to properly reinstall the cooling register and heat shield.	

**Figure 93. SIM Card Socket Location**

## MODEL X7 TABLET COMPUTER

### Installing a Micro SD or SDHC Card

Follow the procedure in Table 26 to install your SD 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 X7 with the cooling register removed. Internal voltages are exposed to possible short circuit.*



#### NOTE

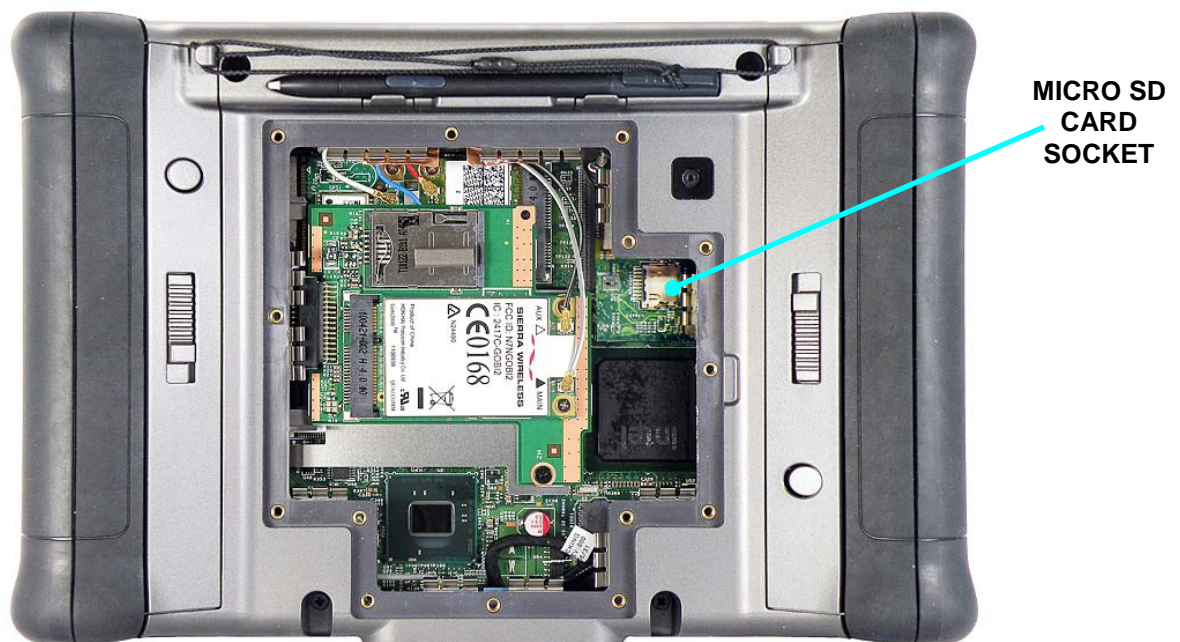
*This procedure should only be performed by a qualified technician in a controlled environment.*

Table 26. Installing the SD Card

STEP	ACTION	CONDITION OR INDICATION
1.	First perform the procedure in <a href="#">Removing the Heat Shield and Cooling Register</a> .	
2.	Carefully lift the micro SD socket cover and insert the SD card all the way into the cover.	<b>NOTE:</b> Due to the small size of the SD card and the limited access space around the socket, a pair of tweezers or small needle-nose pliers may be necessary to insert the card.
3.	Gently press the cover with card down onto the socket until it locks in place.	
4.	Reinstall the batteries or connect external power.	

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STEP	ACTION	CONDITION OR INDICATION
5.	Power up the X7 and click on <b>Start</b> → <b>Computer</b> to verify that the card appears as a new drive.	If the card does not appear, shut down power, remove the card and reinsert it.
6.	Shut down power and follow the procedure in <a href="#">Installing the Cooling Register and Heat Shield</a> to properly reinstall the cooling register and heat shield.	

**Figure 94. Micro SD Card Socket Location**

**MODEL X7 TABLET COMPUTER**

## Changing the BIOS Settings

Follow the procedure in Table 27 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 USB keyboard.

Contact [DRS Technical Support](#) if you have any questions about the BIOS settings for your ARMOR X7.

**CAUTION!**

*Incorrectly setting the BIOS options could cause the X7 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 28 provides a handy place to record these changes. Always record the previous value in case you have to return to that value.*

**Table 27. Access the BIOS Setup Utility.**

STEP	ACTION
<b>1.</b>	You can use the active pen to navigate in the BIOS setup screens or you can attach a USB keyboard to the USB port on the right side of the computer.
<b>2.</b>	Start the computer and as soon as the DRS logo appears, tap on the screen until you hear a beep. A small options menu will be displayed.
<b>3.</b>	Select <b>Launch System Setup</b> to open the Setup Utility main screen.
<b>4.</b>	Use the <b>LEFT</b> and <b>RIGHT ARROW</b> keys to highlight the desired menu page (listed at the top of the screen) and press <b>ENTER</b> to select the menu.
<b>5.</b>	Use the <b>UP</b> and <b>DOWN ARROW</b> keys to scroll through the page settings and to highlight a particular setting or sub-option.

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<b>6.</b>	Select <b>ENTER</b> to access the sub-options under a highlighted option. Press <b>ESC</b> to return to the previous option or menu.
<b>7.</b>	Use the <b>F5</b> and <b>F6</b> keys to cycle through the available options and highlight the desired value to change.
<b>8.</b>	Select <b>ESC</b> to exit the option.
<b>9.</b>	Use the <b>arrow keys</b> to move to the next option.
<b>10.</b>	When all changes have been made, select <b>F10</b> to exit and save your changes or select <b>ESC</b> to exit without saving any changes. The computer will resume booting.

**Table 28. Record Bios Changes Here**

<b>SETTING</b>	<b>PREVIOUS VALUE</b>	<b>NEW VALUE</b>	<b>DATE CHANGED</b>

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## Returning the BIOS to its Default Settings

When your X7 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 29.

**NOTE**

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

**Table 29. Return the BIOS to Its Default State**

STEP	ACTION
1.	Access the BIOS Setup Utility (see <a href="#">Changing the BIOS Settings</a> for instructions on how to access the Setup Utility).
2.	Press <b>F9</b> to load the default BIOS configuration.
3.	Press <b>F10</b> to save your changes and exit.

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# Changing the Power Button Default Action

Follow the procedure in Table 30 to change the default actions of the Power button.

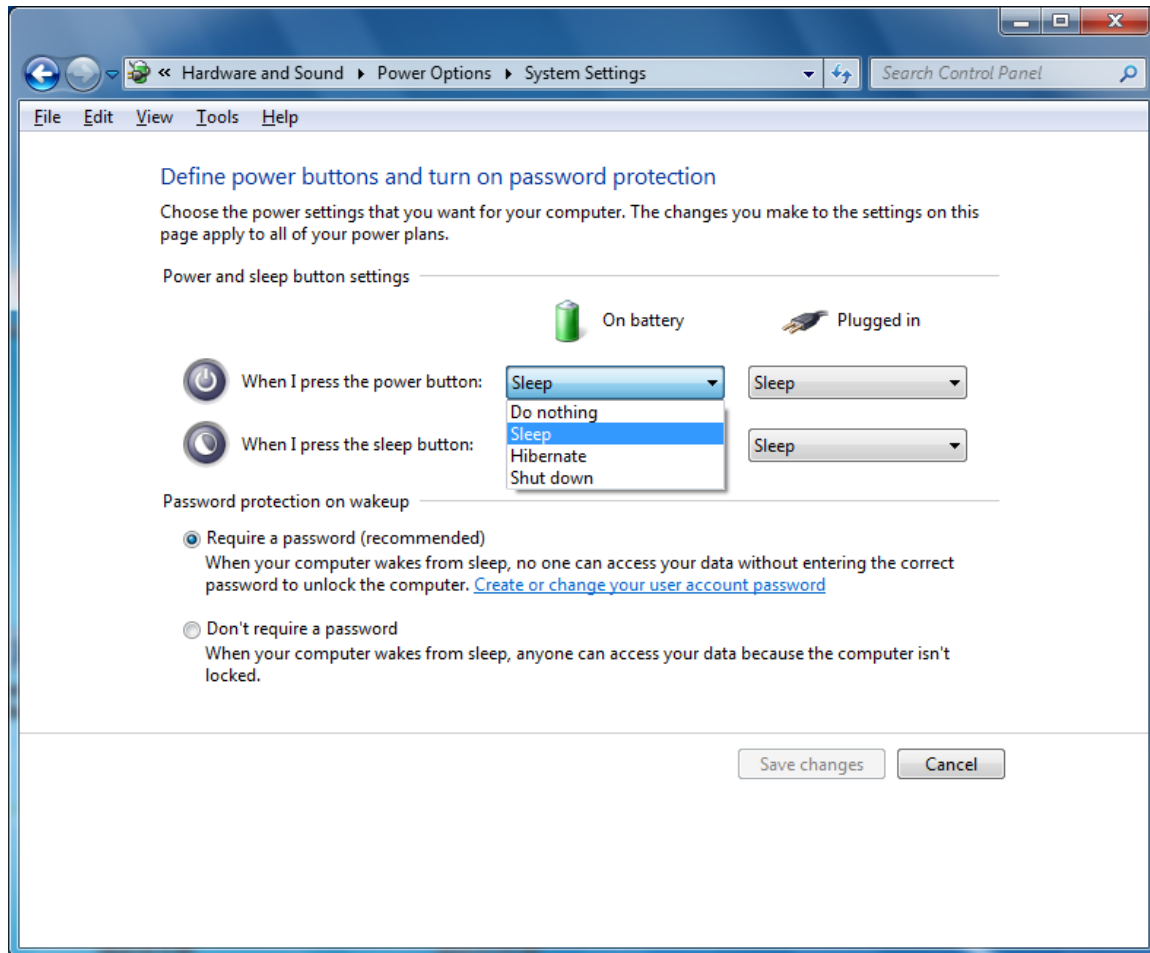


### NOTE

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

Table 30. Changing the Power Button Default Actions

STEP	ACTION	CONDITION OR INDICATION
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 95.
	<div> <h3>NOTE</h3> <p><i>The X7 does not have a Sleep button so ignore the bottom set of options.</i></p> </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 95.
4.	Click on the <b>Save Changes</b> button at the bottom of the window.	


**MODEL X7 TABLET COMPUTER****Figure 95. System Settings - Power Button Options**

## MODEL X7 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 X7 over time using the Event Recorder function in the ARMORutils Diagnostics window. Follow the procedure in Table 31 to create an event log.

**Table 31. 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 65.
	<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 96. <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 67.

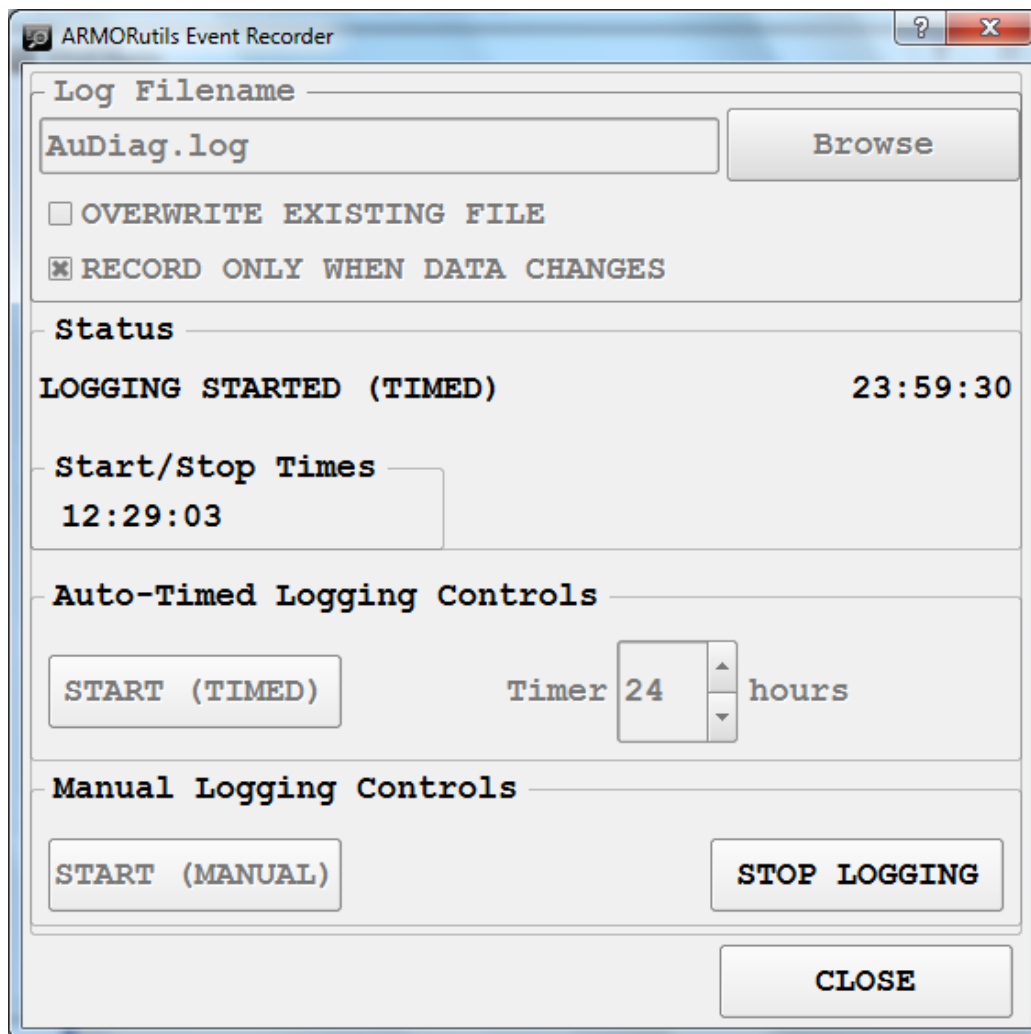
**MODEL X7 TABLET COMPUTER**

Figure 96. Diagnostics Event Recorder Window

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## 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 X7, 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 micro-fiber ARMOR cloth that came with your X7 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 or alcohol to gently remove particles stuck to the surface.

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## 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.
- To clean the cooling register, first remove the heat shield and then clean with a damp cloth or soapy water. Remove any soap residue.

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## 8. DISPLAY MANAGEMENT

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### Adjusting the Brightness

The brightness of an LCD display is controlled by adjusting the intensity of the backlight. The backlight level for the X7 can be controlled manually or automatically. When you first receive your X7, the brightness mode is set to “Automatic”.

### Automatic Brightness Adjustment

Open the **Backlight Setup** dialog in ARMORutils and click on the **Automatic** button. The backlight level will now be controlled by the automatic light sensor (ALS). 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.

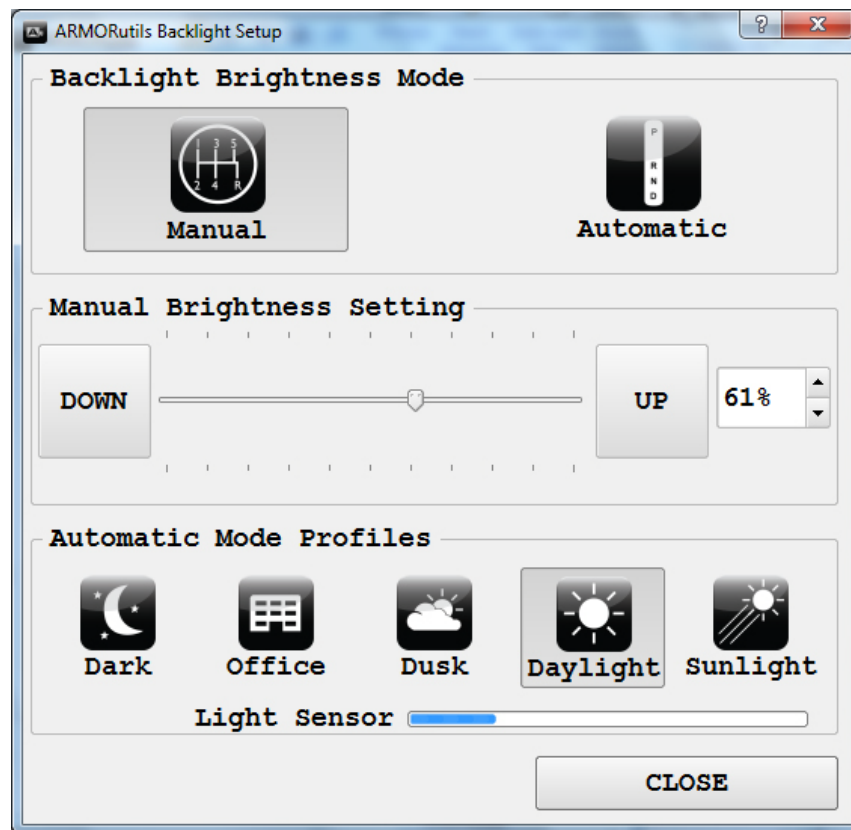
#### Using the PBs

**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 97.

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**Figure 97. Armor Utilities Screen – Backlight Tab**

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.

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## Calibrating the Display

To access both touch screen and pen screen calibration routines, open **ARMORutils** and click on the **Screen Setup** option (see Figure 63). If the display is in 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.

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## Rotating the Screen (Touch or Pen)

Your ARMOR X7 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 computer 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 or icon tray
- By using the Intel Graphics and Media Control panel
- By using a hot key combination with an external keyboard

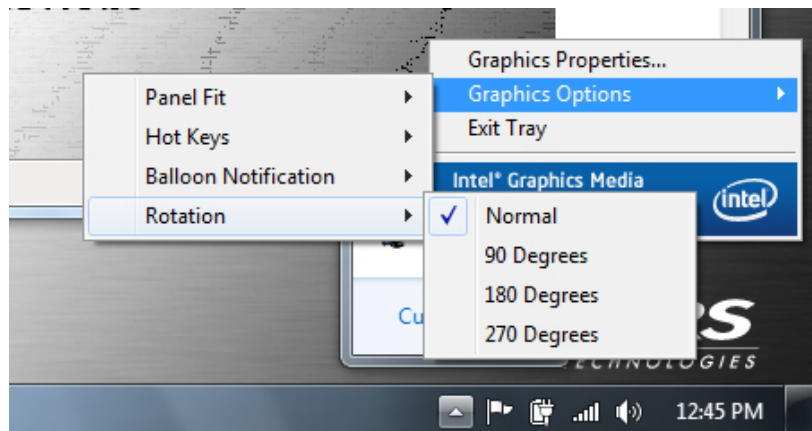
**NOTE**

*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 systray and select **Graphics Options → Rotation**. Then select one of the four rotation angles as shown in Figure 98. **NOTE:** The “Normal” position is the landscape screen orientation with the tablet held as shown in Figure 1.


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 98. Intel Graphics Screen Rotation Options (from the systray)**

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## 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 99. Select the rotation angle and click **OK**.



**Figure 99. Intel Graphics and Media Control Panel**

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## 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 100. You can use these default combinations or specify a combination of your own.

To use a hot key combination, connect a USB keyboard and enter the combination.



**Figure 100. Intel Graphics Panel Hot Key Manager**

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## 9. BATTERY MANAGEMENT

The Lithium Ion batteries used in your ARMOR X7 computer offer the best technology available today. These 'Smart Batteries' provide ARMOR X7 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.

**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.*

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## Safety and Handling Considerations for Your Batteries

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

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# When to Charge a Battery



## New Batteries

DRS recommends that you fully charge your batteries before using them for the first time in your computer. Due to current regulations regarding shipment of lithium ion batteries, your X7 batteries are shipped to you in a partially charged condition, typically with a maximum charge of 30%-50%.

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 X7 will alert you when your batteries need charging. When the remaining charge drops below 10%, an alert message like the one shown in Figure 101 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, click on the battery icon  in the systray. This will open a desktop battery window like the one shown in Figure 103. **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 59) where you can check the current status and the remaining charge of your batteries.

## Removed Batteries

To check the remaining charge of a battery that is removed from the computer, press the fuel gauge button to activate the fuel gauge (see Figure 26).

The lowest charge level indicator (#1) will flash when the battery is at 10% charge or below. If you get this indication, install the battery in your computer and connect external power, or you can recharge the battery in the optional X7 external battery charger (see [Using the X7 External Battery Charger](#)).

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 101 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 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

## MODEL X7 TABLET COMPUTER

Windows session will be saved to the mSATA drive and the computer will shut down to conserve power.

To avoid having your computer suddenly 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.



### CAUTION!

***If batteries are allowed to continue discharging below the 10% level, it is possible that high current demand on the batteries could cause the remaining charge to drop below 5% before Windows can initiate the hibernate process at the 5% level. This can result in the computer shutting down unexpectedly with the loss of your session.***

### 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 X7 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 it 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 will not respond to normal efforts to recharge it.

## 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.

**MODEL X7 TABLET COMPUTER****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 X7 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 X7 batteries in a fully depleted condition for long periods of time. The X7 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.

## What to Do for an Overly-Discharged Battery

The X7 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 Charging/Fault LED will begin flashing. Allow the battery to charge normally.

If the Charging/Fault indicator does not light, perform the recovery procedure in Table 32.

**Table 32. Recovering an Overly-discharged Battery.**

STEP	ACTION
1.	Remove the depleted 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.

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## How to Charge Your Batteries

The X7 batteries automatically begin charging when installed in the computer and external power is applied. To recharge the batteries using the computer, plug the circular connector of the AC adapter into the DC power input jack on the left side of the ARMOR X7, or into the PWR connector on a desk dock unit. If your X7 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 X7 batteries are protected from being overcharged by internal safety circuits.

## Charging Times

The charging time for one or two fully depleted batteries (10% charge or less) when the batteries are installed in the X7 will depend primarily on the following:

- 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

Two types of batteries are available for the X7: a standard type with 2950 mAh capacity and a high-capacity type with 5900 mAh capacity. Table 33 lists typical charging times for each battery type.

**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.*

**Table 33. X7 Battery Charging Times**

<b>Number of Batteries</b>	<b>High-Capacity (5900 mAh) P/N 0300-50842-0000</b>	<b>Standard (2950 mAh) P/N 0300-50842-0001</b>
2	7 hours	3
1	3 hours	1.5

## Charging Temperatures

DRS has included temperature sensors in the battery circuit to protect the cells when a high or low temperature condition occurs. Your batteries will charge normally in the X7 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

## MODEL X7 TABLET COMPUTER


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 34 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.

**Table 34. Select How to Charge the Batteries**

STEP	ACTION	CONDITION OR INDICATION
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 4 amps while charging both batteries, the charger will switch to charging the 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.	

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### How to Tell When Batteries Have Finished Charging

While the batteries are charging, the Charging/Fault indicator will flash at a 1 second rate. When the batteries are fully charged, this LED will be on steady.

### Using the Optional X7 External Battery Charger

The X7 external battery charger (see [External Battery Charger](#) for a description) will fully charge a single battery in about 2.5 hours, or two batteries in about 5 hours.

For instructions on using the external battery charger, see Appendix B, [Using the X7 External Battery Charger](#).

### Battery Operating Times

Your ARMOR X7 can operate on one or two batteries, and can operate with a single battery installed in either bay. The length of time your X7 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

Table 35 lists typical operating times for one or two new, fully-charged standard and high-capacity batteries based on the MobileMark 2007 Productivity Test.

**Table 35. Typical X7 Battery Operating Times**

<b>Number of Batteries</b>	<b>Standard (5900 mAh) P/N 0300-50842-0000</b>	<b>High-Capacity (2950 mAh) P/N 0300-50842-0001</b>
1	4 hours	2 hours
2	8 hours	4 hours

### 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.

**MODEL X7 TABLET COMPUTER****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.

## Operating Under Low Battery Conditions

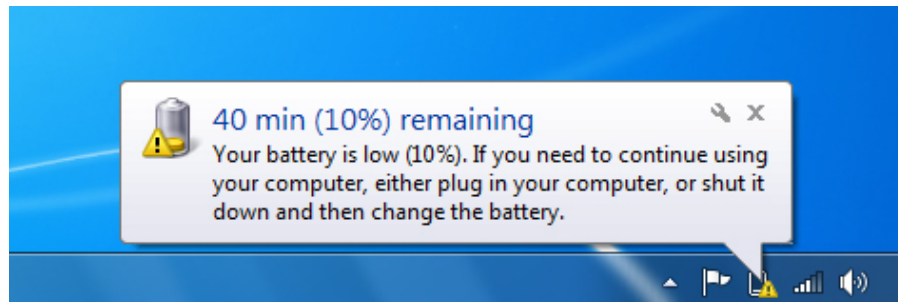
**NOTE:** Warning icons and alert windows may differ slightly depending on your version of the Windows operating system.

### Low Battery Level Alarm

**CAUTION!**

*The 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.*

Your ARMOR X7 is designed to operate even when the battery is depleted (<10% charge). When the total charge drops below 10% (low battery level), a low battery alert message will be displayed, as shown in Figure 101, and the battery icon in the system application tray (systray) will display a yellow caution triangle. At this point, DRS recommends you connect external power to recharge the batteries or replace one or both batteries with fresh batteries.



**Figure 101. Low Battery Alert Message**

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### 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 102, 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. Otherwise, Windows will automatically force the computer into hibernation.




Figure 102. Reserved Battery Alert Message

### Critical Battery Level Alarm

When the remaining charge reaches 5% (critical battery level), Windows will automatically place your computer into hibernation 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.

**CAUTION!**  
*If the total battery charge drops to 3% or lower while the computer is operating, the computer can shut down abruptly with the loss of any work in progress. Normally, the automatic shutdown at the 5% point will prevent this happening, but heavy demands on the batteries may cause the battery charge to drop too quickly for the computer to react and perform a safe shutdown.*

### 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.

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## 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 [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.

- Recharge your batteries as soon as possible after receiving a low battery alert.
- 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 milliamps 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.

## Maximum Capacity

The maximum capacity of a new battery is 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 designed rating, it is considered to be at the end of its life and is normally replaced. For example, a 4-cell 5900 mAh hour battery should be replaced when its maximum capacity drops below approximately 4720 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.*

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## 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).

**CAUTION!**

*Permanent battery capacity loss is greatest at elevated temperatures with the batteries fully charged. Do not leave batteries installed in your X7 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 temperatures).

A battery's accumulated cycles are displayed in the **Charge Cycles Count** field of each Battery Information window in ARMORutils (see Figure 60).

## How to Optimize Battery Operating Time



You can help ensure the maximum performance of your batteries 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.

There are two power plan options: **Balanced** and **High Performance**. DRS recommends that you use the **Balanced** plan as this provides the optimum battery performance. You can further customize these plans by clicking on the **Change plan settings** link.

## Monitoring Battery Status

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

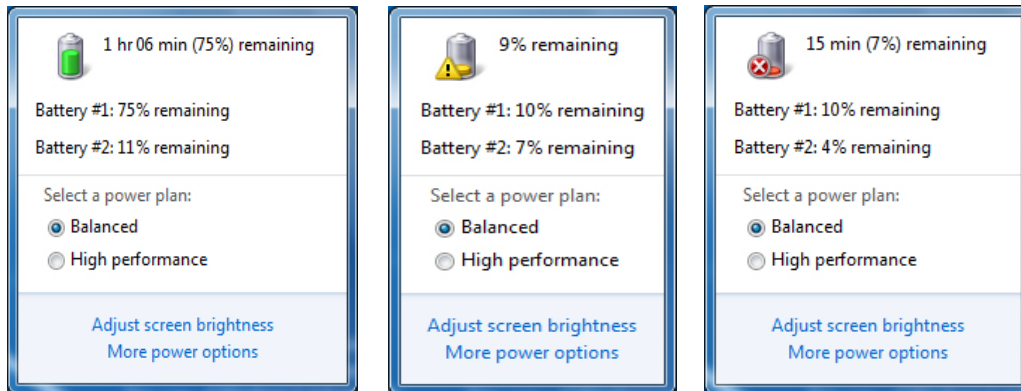
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- 1) By clicking on the **Battery** icon  in the systray to open a **desktop battery monitor window**. **NOTE:** The battery icon will change to a battery with plug  icon when external power is connected.
- 2) By selecting the [Battery Monitor Dialog](#)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

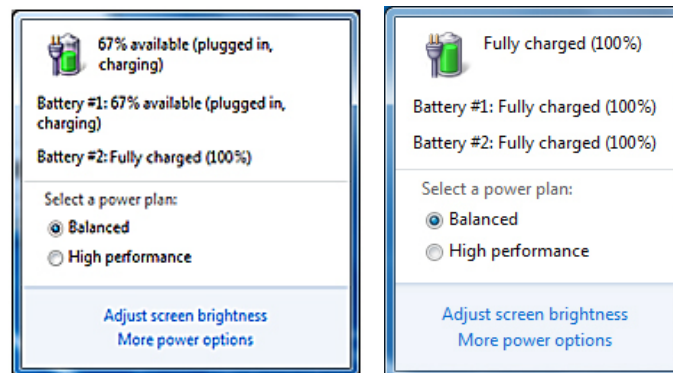
## Using the Desktop Battery Monitor Window

Click on the Battery icon in the Windows systray to open the desktop battery monitor window, Figure 103 shows three examples of the battery window when the X7 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 104 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.



**Figure 103. Windows Desktop Battery Window Examples – Batteries Discharging**



**Figure 104. Windows Desktop Battery Window Examples – Batteries Charging**

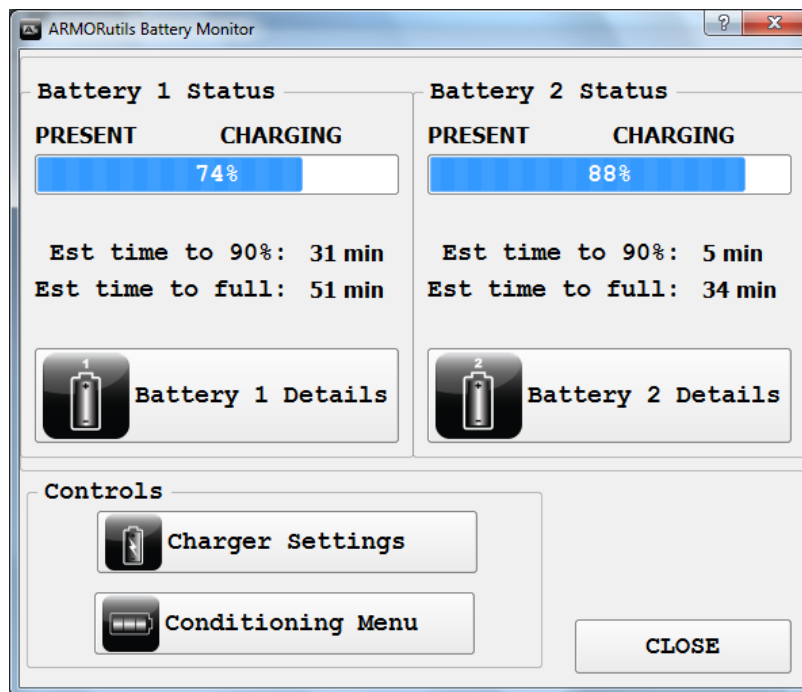
**MODEL X7 TABLET COMPUTER****NOTE**

*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. To close the window, click outside the window on the desktop.*

## 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 105. This window shows the current status (charging, discharging, ready) and 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 with more detailed information about each battery. Refer to [Battery 1 and Battery 2 Details Buttons](#) for a detailed description of these windows.



**Figure 105. 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.

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## Battery Conditioning/Calibration

Your ARMOR X7 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 106).

Read the following cautions and notes carefully and follow the procedure in Table 36 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 3-5 hours to complete. 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 X7. 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 36. 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 106. <b>NOTE:</b> The term “Ready” means the battery is in a waiting state. It’s next state may be charging or discharging.

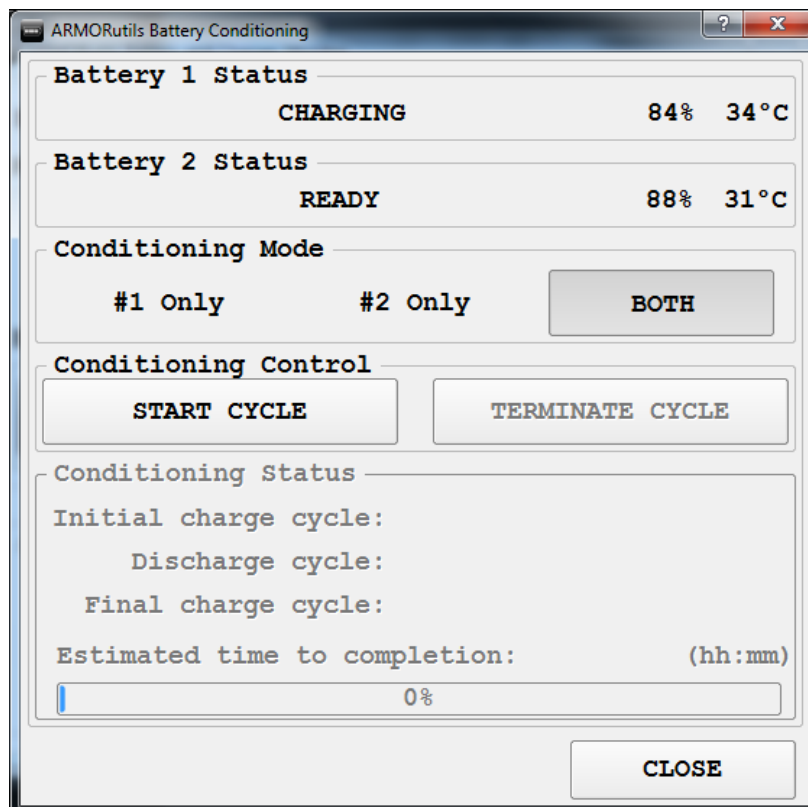


Figure 106. ARMORutils Battery Conditioning Window

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STEP	ACTION	CONDITION OR INDICATION
3.	Select <b>#1 Only</b> , <b>#2 Only</b> or <b>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 107.  <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. The following table lists the approximate charge times for both the standard and 4-cell battery.
6.	To terminate the conditioning process at any time, click on <b>Terminate Cycle</b> .	

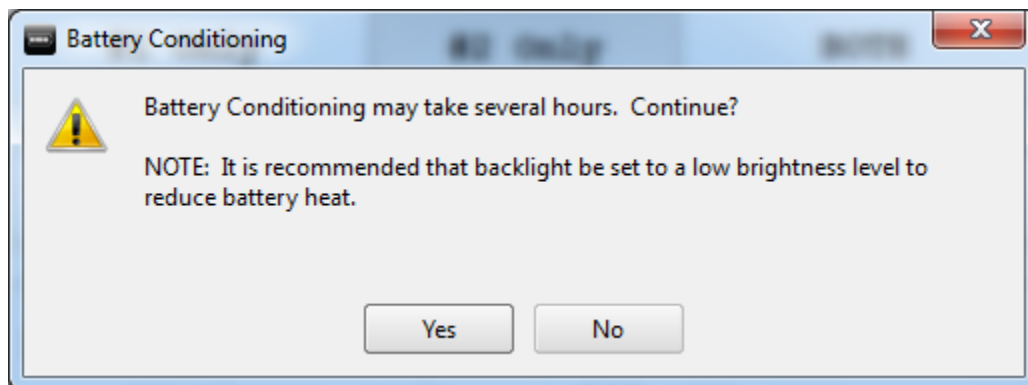


Figure 107. Battery Conditioning Start Alert Message

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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 (see .

## Nominal Usage

Industry surveys report that “average daily use” (8 hours or less at nominal room temperature) equates to approximately 300-400 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 shipping date on the battery label (see figure below). This is the date (mm/yy) that the battery was shipped from the manufacturer to DRS.



Figure 108. ARMOR X7 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](#).

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### Your Battery's Warranty

Your X7 battery is warranted by DRS against all defects in material and workmanship for a period of 1 year from the date of shipment from DRS (not from the date shipped to DRS, as indicated on the battery label).

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 X7 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 X7 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 X7 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 higher temperatures as this can decrease battery life. Reduce the charge to 30-50% before storing at temperatures above 32°C (90°F).
- Protect battery contacts from accidentally touching metal objects to avoid a short circuit and possible arcing or explosion.
- To check a battery's remaining charge, press the fuel gauge button on the battery or for a more exact reading, insert it in your X7 and select the **Battery Monitor** button from the ARMORutils main window.

#### Long-Term Storage

- If your X7 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%.

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- Protect battery contacts from accidentally touching metal objects to avoid a short circuit and possible arcing or explosion.
- 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, press the fuel gauge button on the battery. For a more exact reading, insert the battery in your X7 and select the **Battery Monitor** option 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.

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## Disposing of Your Used Batteries

### Disposal

**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 a discarded battery, please ensure it is fully discharged before disposing in a domestic or commercial garbage receptacle.***

You can dispose of your X7 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.

### 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 sending 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:

- Fully discharge the batteries (10% or less).
- Insulate the battery contacts with tape.
- 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.

**Li-ion**

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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 IT 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 [Your ARMOR Warranty](#).

#### **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 the UK, call:** 44-(0)-1252-730716

**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**.

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- 5) Fill out the online form.
- 6) Print a copy of the form for your records.
- 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 Locate and Interpret your X7 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 X7 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.*

**MODEL X7 TABLET COMPUTER****In North America, ship to:****DRS Tactical Systems, Inc.**

1110 West Hibiscus Boulevard

Melbourne, Florida 32901 USA

ATTN: Service

**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.

**Call us:****In North America, call:** (888) 872-1100 or (321) 309-0599**In Europe, call:** 49-2246-915-99-77**Fax us:****In North America:** 321-725-0496**In Germany, fax:** 49-2246-915-99-78**Email us:****For Support:****In North America:** [support@drs-ts.com](mailto:support@drs-ts.com)**In Europe:** [sales@drsarmor.eu](mailto:sales@drsarmor.eu)**For Sales and Information****In North America:** [Sales@drsarmor.com](mailto:Sales@drsarmor.com)**In Europe, email:** [Sales@drsarmor.eu](mailto:Sales@drsarmor.eu)**Or Visit our website at:**[www.drsarmor.com](http://www.drsarmor.com)

For translation in German, click on “**Deutsch**” at the top of the page.

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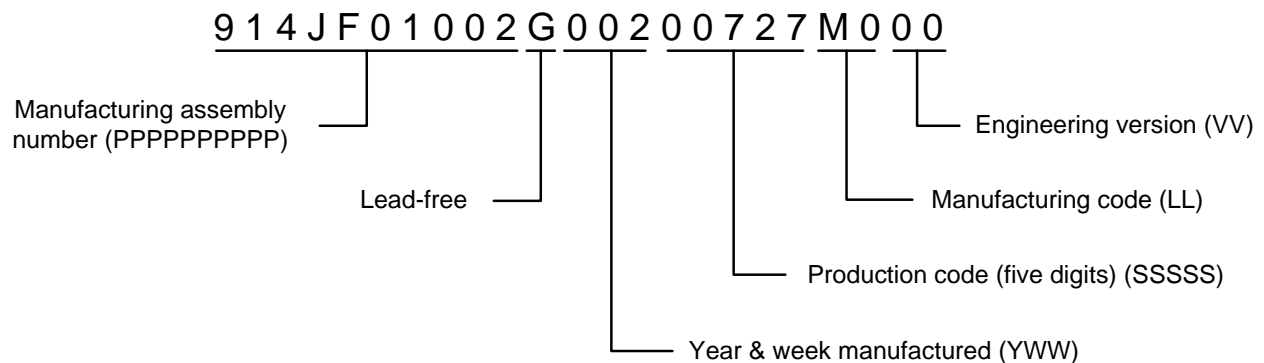
# How to Locate and Interpret your X7 Serial Number

Your X7 serial number is printed on a label located inside the left (#1) battery bay, as shown in Figure 109. It is the 23-digit number beginning with “WS/N” (the “W” in WS/N is a factory code). This number indicates to DRS the unique configuration of your X7 and its manufacturing history.



Figure 109. ARMOR X7 Unit Label Location

A DRS serial number is broken down as follows:



## MODEL X7 TABLET COMPUTER

# Your ARMOR Warranty

### 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.

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- 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.

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**ACRONYMS**

<b>ACRONYM</b>	<b>DEFINITION</b>
AC	alternating current
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
HSDPA	high-speed downlink packet access
I/O	Input/Output
LCD	liquid-crystal display
LED	light-emitting diode
OEM	original equipment manufacturer
NDIS	network driver interface specification
PC	personal computer
PCMCIA	personal computer memory card international association
RAM	random access memory
SD	secure digital
SDHC	secure digital high capacity
SIM	subscriber identity module
SmBus	system management bus
SODIMM	small outline dual in-line memory module
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

TERM	DEFINITION
ambient temperature	The temperature of the air surrounding an object
depleted 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.
fully charged battery	A lithium-ion battery that has reached 100% of charge as indicated by a steady 100% LED on the Battery Gauge.
fully depleted battery	A lithium-ion battery that has discharged to a level of 3 % or below.
fully discharged battery	Same as depleted.
flexspace	A special compartment with a flexible communications interface for custom circuit cards or modules.
overly discharged battery	A fully depleted battery that has discharged to the point where it will not respond to normal efforts to recharge it and is in danger of becoming unrecoverable.
storage device	Any fixed or removable storage device (mSATA, SD card, flash drive) that the processing system can use for temporary or permanent data storage.
systray	System application tray. A small area of the Windows task bar that displays icons of applications and utilities that remain running in the background.

**MODEL X7 TABLET COMPUTER**

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## 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 Computer 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 Computer 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 Computer Properties dialog (see Windows Control Panel).
Pressure Hold	Primarily used with painting programs to maintain the pressure of a brush stroke.
Right Click	Duplicates a right mouse button click.

**MODEL X7 TABLET COMPUTER**

Computer PC Defined	Uses the pen settings defined in the Pen Options tab of the Pen and Touch dialog window.
Computer PC Input Panel	Opens the Computer PC input panel (only with versions of Windows that support Computer PC).

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## APPENDIX B

### Using the X7 External Battery Charger

Step	Action	Comment
1.	Hold the battery with its connector pointing down and the rounded edge of the battery facing away from the charger, as shown in Figure 110.	
2.	Insert the battery into the bay and gently press down to engage the locking latches. Rock the battery slightly to ensure the battery is locked in place.	The battery button will snap into place when the latch is engaged. The charging will begin immediately, as indicated by the steady yellow charge indicator.  When charging is complete, the yellow LED will turn off and the green (fully charged) LED will turn on.
3.	To remove the battery, press on the spring-loaded battery release button and lift the battery from the charging bay.	



**Figure 110. Inserting a Battery into the Battery Charger**

**MODEL X7 TABLET COMPUTER**

## Charger LED Status Indications

There are two status indicators for each battery bay. The table below lists the possible indicator conditions and their meanings.

Status Indicator	Condition
Fully Charged Battery LED (green)	On steady with external power applied and battery fully charged (>95%).
	Flashing (2 sec on / 1 sec off) when battery near full charge (85% - 95%)
	Off with external power disconnected or battery charge less than 85%.
Charging LED (amber)	On steady with external power applied, temperature in limits and battery charging.
	Flashing (1 sec on/1 sec off) with external power applied, temperature in limits and <u>other</u> battery is currently charging (hybrid charging).
	Off when battery is not charging.
Fault LED (red)	On steady when fault in power system is detected (over voltage, under voltage, excessive current, charger circuit failure or battery circuit failure).
	Flashing (1 sec on/1 sec off) with external power applied and battery temp above or below max limits.
	Off when fault is corrected.

**MODEL X7 TABLET COMPUTER**

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## APPENDIX C

### Sierra OneClick Connection Manager User Manual

# User Manual



## Consumer OneClick Internet

for Gobi 2000

Sierra Version 1.9

28<sup>th</sup> Oct 2010

WebToGo Mobiles Internet GmbH  
81371 München, Oberländerstr. 2a

**MODEL X7 TABLET COMPUTER****Table of Content**

1. General
2. Starting OneClick Connection Manager
  1. Area "Menus and Connections"
  2. Area "Statistics"
3. Connection Management
4. Settings
  1. Profile
  2. Network
    1. Select Connection
    2. Select Network
  3. History
  4. PIN
    1. Activate/Deactivate PIN
    2. Change PIN
  5. Info
  6. Firmware
  7. General
  8. Application
5. Application Buttons
  1. SMS
  2. Browser
  3. E-Mail
  4. GPS
6. Radio Button
7. Update
8. Help

## MODEL X7 TABLET COMPUTER

### 1. General

This document contains the User Manual for the customized version of WebToGo Consumer OneClick Internet version 1.8 for Sierra Wireless Gobi 2000 Modules.

The WebToGo OneClick Internet application will allow the user to perform basic functions like connect/disconnect to a mobile network, enter a PIN-code/APN/Username/Password. There are also some advanced options like choosing the network technology, downloading firmware, tracking GPS location and SMS functionality.

#### 1.1 System Requirements

This Version of Consumer OneClick Internet for Gobi 2000 requires

- Sierra Wireless Gobi 2000 3G Module
- Sierra Wireless Gobi 2000 Driver package Version 1.1.90 or higher

Please note the following:

- This version of OneClick Internet will only work with one Sierra Gobi 2000 Wireless modem at a time.

This Version of Consumer OneClick Internet for Gobi 2000 is compatible with

- Windows XP 32 bit SP3
- Windows Vista 32Bit SP2 and Vista 64Bit SP1
- Windows 7 32Bit and 64Bit

#### 1.2 Supported Languages

Consumer OneClick Internet v1.8 for Gobi2000 supports the following languages:

German, English, Spanish, French, Polish, Russian, Italian, simplified Chinese and traditional Chinese.

#### 1.3 Installing or upgrading OneClick Internet

If you have a previous version of OneClick Internet you should uninstall it first:

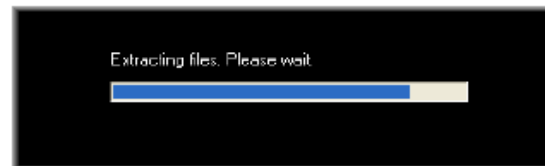
- Go to Control Panel and select "Add or Remove Programs".
- Select "OneClick Internet" and click on "Remove".
- Launch the OneClick Internet installation package.
- Follow the on-screen installation instructions.

Please note the following:

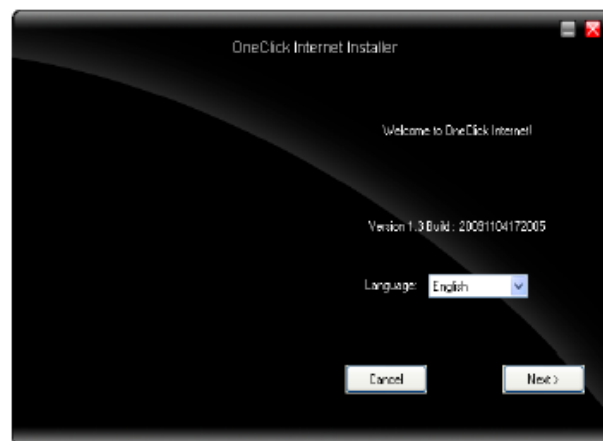
- OneClick Internet does not install the drivers for the Gobi2000 Sierra devices – A DriverInstaller executable is provided separately.

#### 1.4 Installation steps

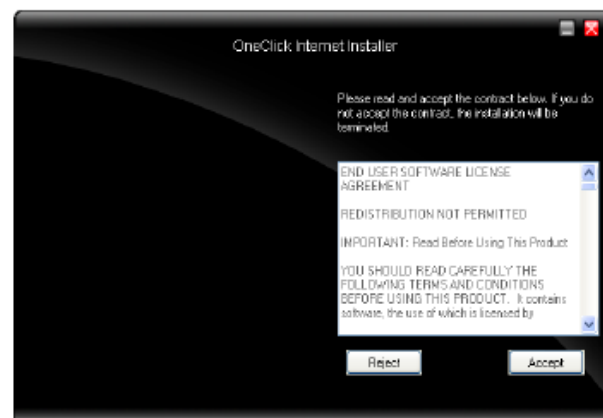
When you double-click the Installer file for OneClick Internet for Gobi2000 it will start extracting the files to install and show you the following dialog.

**MODEL X7 TABLET COMPUTER**

Then a dialog will be shown which allows you to select to install the application in different languages. As a default always the language of the OS will be use if available.



The next step will ask you to accept the license agreement. Please read the license agreement carefully and click "Accept", if you agree. Otherwise please click reject to cancel the installation.



If you accept the license agreement and click accept, the installer will ask you for the directory to install the application. If you want you can select a different directory to install now by clicking the "Browse" button.

**MODEL X7 TABLET COMPUTER**

After clicking install, a green bar will show you the progress of the installation. The following dialog will be shown as soon as the installation has been successfully installed on your computer.



Now you can start OneClick Internet from the Windows Program Menu or double click the desktop icon.

### 1.5 Installation Options

A silent installation of the OneClick Internet Connection Manager can be started by adding the parameter **silent** behind the name of the installer on the command line, e.g.:

```
C:\>Consumer_Sierra_V1.8_20100520 silent
```

## MODEL X7 TABLET COMPUTER

### 2. Starting OneClick Connection Manager

OneClick Connection Manager offers everything you need to manage the mobile Internet communication on your Laptop:

- Internet Connection and Email download
- SMS Manager
- Managing contacts from SIM and Outlook
- GPS Management

After installing WebToGo OneClick Internet a new entry will be placed in the program menu. Straight after installation the main window of the application is visible on your screen. If this is not the case you can start the application from "Start -> Programs -> WebToGo OneClick Internet" or click the desktop icon of OneClick Internet.



Whenever the application is active a status icon will also appear in the toolbar in the bottom right-hand corner of your desktop.



The main window of OneClick Connection Manager is at the heart of the application. Here you can see the status of your OneClick Connection Manager, how much time you have spent on the internet and which data throughput you should expect. You can connect to the internet and send emails or short messages from this window.

The main application is split into two areas:



- Area "Menus and Connection Management"
- Area "Statistics"

# MODEL X7 TABLET COMPUTER











## Area "Menus and Connections"

This area is split in 2 sub-areas.

### Area A

Icon	Description
	<b>Minimize</b> Then OneClick Internet icon will appear in system tray menu.
	<b>Close</b> Clicking this icon will close the application.

### Area B

Icon	Description
	Indicator of network signal strength, followed by the Network name, Network mode, and device name
	<b>Connect</b> Button to connect or disconnect
	<b>SMS</b> Button only enabled if no mobile Internet connection is active. Link to the integrated SMS application.
	<b>Web</b> Link button to preferred browser
	<b>Email</b> Link button to preferred Email application
	<b>GPS</b> Button to open the GPS tool
	<b>Radio</b> Button to switch on and of the radio
	<b>Statistics</b> Button to open the Statistics
	<b>Settings</b> This button opens the Settings for <ul style="list-style-type: none"> <li>• Profile (managing your profiles)</li> <li>• Network (selecting connection and network)</li> <li>• History (data volume transferred)</li> <li>• PIN (PIN settings)</li> <li>• Firmware</li> <li>• Info</li> <li>• General</li> <li>• Application</li> </ul>
	<b>Update database (optional feature)</b> <ul style="list-style-type: none"> <li>• Update database (roaming partner)</li> <li>• Install drivers and new version of OneClick Internet</li> </ul>

## MODEL X7 TABLET COMPUTER

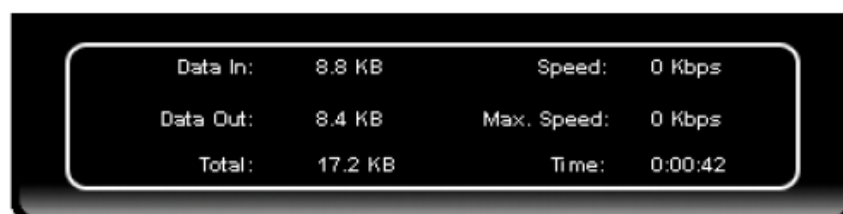
Status



- Connecting to modem
- Ready, you can establish connection
- Connected
- Failure

### Area "Statistics"

Statistics provide advanced information about your connection. All shown data values are approximate values.



<b>Data In:</b>	The amount of data received via the mobile Internet connection
<b>Data Out:</b>	The amount of data sent via the mobile Internet connection.
<b>Total:</b>	The amount of data sent via the mobile Internet connection.

<b>Speed:</b>	The current speed of the data transfer.
<b>Max. Speed:</b>	The maximum speed of the data transfer observed.
<b>Time:</b>	The duration of the current connection.

**MODEL X7 TABLET COMPUTER****3. Connection Management**

1. Launch OneClick Connection Manager and wait until detection has been completed.  
If you see a detection problem, please reinsert your data card and tap on the connect button. If Pin security is active, a window will pop up asking you to enter your SIM PIN.  
You can deactivate PIN security in the application if no connection is active: Settings -> PIN -> Deactivate PIN.
2. By default the software comes with no connection profile. You can modify the access details by selecting the "Settings" menu.
3. Now tap on the connect button. That's it.



In the upper status line you can find the indicator for the signal strength, the name of the Mobile Network Operator you are using, a roaming indicator, and the radio technology you are using.

In the status line below the button row you can see the current status of your connection and the device.

# MODEL X7 TABLET COMPUTER

## 4. Settings

To access the Settings menu tap in main window on the button:



A dialog will open showing registers for the following settings:

1. Profile
2. Network
3. History
4. PIN
5. Info
6. Firmware
7. General

### Profiles

You are free to create your own connection profile. Once a new profile has been created it will appear in the dropdown menu Profiles. You can select it by tapping on Set Profile to use it.

Button	Description
	Create a new profile
	Edit a current profile
	Delete a profile
	Save a profile
<b>Set Profile</b>	Set the Profile you want to use

Label	Description
Profile Name	Profile name, should be unique
APN	Access Point Name of your network operator. For more details contact your network operator. When you are registered to a CDMA network, the APN will not appear.
Username	Username. For more details contact your network operator.
Password	Password. For more details contact your network operator.
DNS	Domain Name Server. For more details contact your network operator.
Proxy settings	Necessary Proxy Settings of your network. For more details contact your network administrator.

# MODEL X7 TABLET COMPUTER

## Network

You are offered two options: "**Select Connection**" and "**Select Network**".



When you are registered to a CDMA network, you will not be able to select the network. All CDMA network will be shown instead.

## Select Connection

Three different settings are available here:

Label	Description
Select automatically	Selects the best suited network available
Only use GPRS	Use only GPRS for a connection
Only use UMTS/HSDPA	Use only UMTS/HSDPA for a connection.

Select and tap Register. If the change is successful you will retrieve a message "Network changed successfully".

Close the window and wait until you see signal strength in the main window. After that you can establish a connection.

## Select Network

In this dialog you may select any available network. It is useful when you are abroad. Automatic mode will select the preferred network of your network operator.

**MODEL X7 TABLET COMPUTER**

If you select Network selection you will get a list of network options.

**1. Automatic Selection****2. Retrieving Networks...**

The marked network is the network you're currently registered with.

**PLEASE NOTE:**

The network list will only appear if the connection setting is "Only use GPRS" or "Only use UMTS/HSDPA".

Select the network and tap on the register button. If the change is successful you will see the message "Network changed successfully".

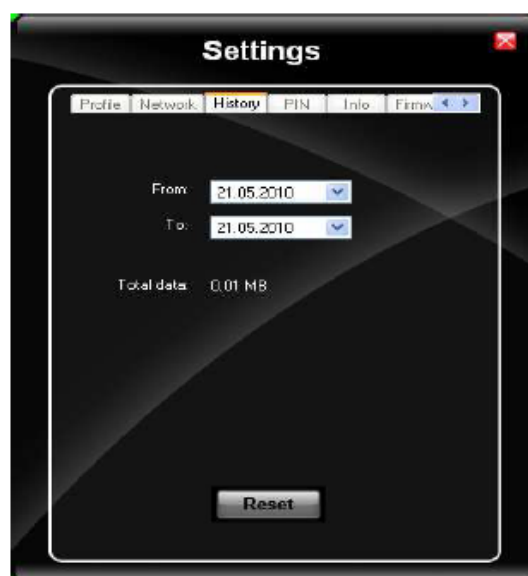
Close this window and wait until you see the signal strength in the main window, then you can establish the connection.

***History***

The history will show you the data volume transferred in a certain time frame.

Select a time frame to see the data volume sent/received in the selected period.

Tap on "Reset" to reset the counter.



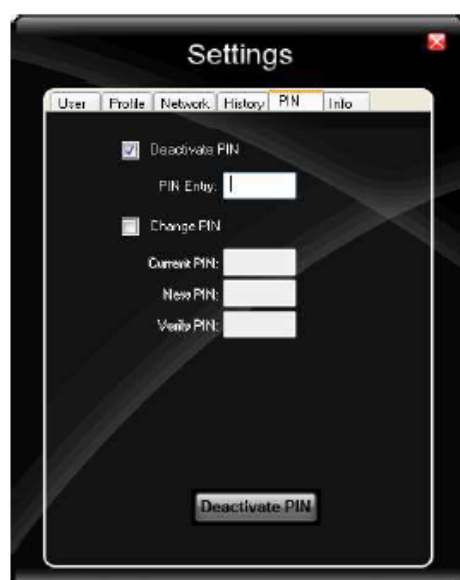
**MODEL X7 TABLET COMPUTER****PIN**

You can **Activate/Deactivate PIN** or **Change PIN**.

1. Activate/Deactivate PIN
2. Change PIN

**Activate/Deactivate PIN**

Usually you have to enter the PIN each time you start WebToGo OneClick Internet using a modem card. Deactivate the PIN to avoid doing this each time.

**Change PIN**

This dialog lets you change your PIN.

Label	Description
Current PIN	Enter your current PIN
New PIN	Enter your new PIN
Verify PIN	Enter once again the new PIN

**Info**

This window shows SIM card, modem and system Information:

## MODEL X7 TABLET COMPUTER



### Firmware

OneClick Internet will select the correct Firmware matching your operator automatically, if a special firmware for your operator is available and a SIM card is inserted. If no specific firmware for your operator is available, it will select the generic firmware. Once a firmware has been selected, it will appear in "Current Profile".



You are free to load your desired firmware. You can select a new firmware manually by clicking the "Select New Profile" dropdown menu, selecting a firmware from the menu and pressing the "Change" button to load it. If you want to return to automatic firmware selection, please choose "Automatic(UMTS)" in the dropdown menu.

**MODEL X7 TABLET COMPUTER**

Switching between CDMA and UMTS firmware is not done automatically. You will have to select CDMA firmware manually, if you want to connect to CDMA networks. If you want to return to UMTS networks, you have to manually select UMTS firmware in respect.

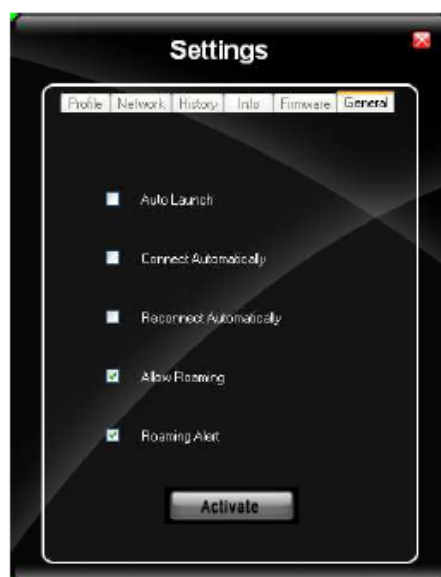
**Activation on CDMA**

When a CDMA Firmware is selected in the Firmware Settings, the activation of the modem on the CDMA network starts automatically. During the process of loading CDMA firmware, an activation window will pop up offering two options: "Manual Activation" and "Automated Activation":

Label	Description
Manual Activation	Speak with a Customer care representative using a standard phone.(Also requires the manual input of certain items).  Please enter the activation code, your phone number and the system ID given in the product documentation.
Automatic Activation	Use your modem to start an automated activation session

If you cancel the activation, a dialog will be shown, that gives you the options to select automatic or manual network activation.

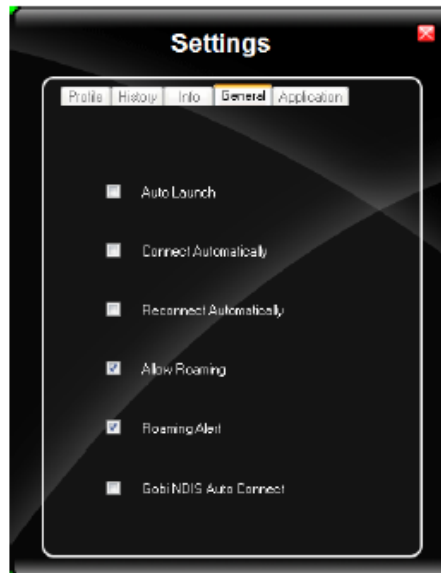
When you have cancelled the activation or if it failed before, you can also start the activation manually by pressing the "Activate" button in the "General" tab.



# MODEL X7 TABLET COMPUTER

## General

In General settings you can set options to connect automatically and for roaming:



Label	Description
Auto Launch	If selected, OneClick Internet will launch automatically when the user starts up the operating system and logs in.
Connect Automatically	If selected, OneClick Internet will connect automatically on start-up.
Reconnect Automatically	If selected, OneClick Internet will reconnect automatically after standby and hibernate.
Allow roaming	If disabled, OneClick Internet will not allow connections in foreign networks. This feature avoids high costs when roaming.
Roaming Alert	If selected, a dialog will inform you when you are moving from your home network to a roaming network when connected. By default the feature is disabled in config.ini.
Gobi NDIS Auto Connect	<p>To enable the feature, the user first needs to add AutoNDISConnect=1 in config.ini in OneClickInternet folder in the program files and then select "Gobi NDIS Auto Connect" in general setting tab.</p> <p>If selected, the gobi module will connect automatically after powering up the operating system and before the user logs in without launching OneClickInternet.</p> <p>NOTE:</p> <ol style="list-style-type: none"> <li>Before uninstalling OneClickInternet make sure that NDIS auto connect feature is disabled in general</li> </ol>

**MODEL X7 TABLET COMPUTER**

setting tab, otherwise the module will allways connect automatically on the next start up. Without having OneClickInternet installed it is not possible to disable the feature.

2. The profile to be used to connect to the netwrok via NDIS autoconnect needs to be selected manually and should be used once before enabling NDIS autoconnect to make sure that selected profile works.

**MODEL X7 TABLET COMPUTER*****Application***

In the "Application" tab you can configure any program/application which will be launched automatically once the Internet connection is established.







## MODEL X7 TABLET COMPUTER

### 5. Application Buttons

#### SMS



The SMS Center window is split into menu bar, folder view, folder content and preview window. To manage your short messages you may:

Button	Description
 Folders	Manage SMS folders
 Settings	Change SMS settings
 New SMS/MMS	Create new SMS/MMS messages
 Reply	Reply to SMS
 Forward	Forward SMS
 Move to...	Move SMS to a folder
 Delete	Delete SMS
 Send/Recv	Send and receive SMS/MMS (if supported)
 Addresses	Manage Phone book contacts on SIM

## MODEL X7 TABLET COMPUTER

### 1. Folder

By using this menu, you may change the folder structure of the SMS Center.



Button	Description
New Folder	Creates a new folder, name has to be unique
Rename	Renames an existing folder
Remove	Removes an existing folder (including the messages)

**PLEASE NOTE:** Predefined folder can't be deleted or modified.

### 2. Settings

The settings window lets you change the deletion mode. You may choose whether to delete an SMS from the SMS Center, from the SIM or decide whether this should be asked at all. You may also activate an alarm signal when a new SMS arrives.

### 3. New SMS

The "New Message" window is used to enter the SMS text. You may also enter texts by copy & paste from other applications. The status bar at the lower right corner indicates the length of the SMS for your convenience: the first number tells you how many parts the SMS consists of (one part has max. 160 characters/unicode70), the second number counts down from 160/70 characters. The number in parenthesis ( ) counts the total number of characters.

The recipient for your SMS has to be entered in the "To" field. This can be either entered by typing digits or by clicking the "To" button to select a recipient from the address book. Recipient addresses may be taken from the SIM address book or from your email client's contact folder. Just select an address and click OK. To send the message click "Send/Receive".

### 4. Reply

Highlight a message to which you want to reply, e.g. in the inbox folder, then click the "Reply" button. The "New Message" window opens and the recipient address is already filled in the "To" field. Continue as before when sending a new message.

### 5. Forward

Highlight a SMS, which you want to forward. Click the "Forward" button. The "New

## MODEL X7 TABLET COMPUTER

Message" window opens, however the message text is already copied. Continue as before when sending a new message.

### 6. Move SMS...

Highlight the SMS to be moved and click the "Move SMS" button. A small window opens that lets you select the destination folder. Select the folder to which the message should be moved, then click "Move".

### 7. Delete

Highlight the SMS which you want to delete. Click "Delete" to remove the message.

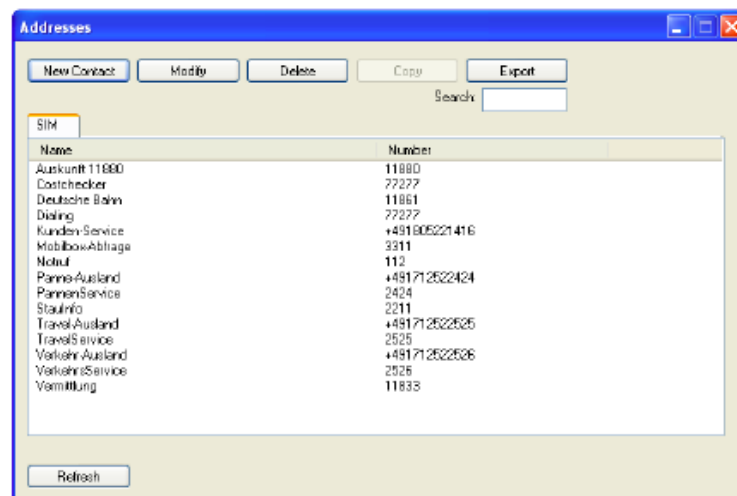
### 8. Send/Receive

Messages will be sent and/or received by clicking on this button.

### 9. Addresses

This button opens the address book. You may add new contacts to your personal address book or you may change existing addresses, delete addresses or exchange them with your SIM card and your e-mail client application, or export the data set.

Button	Description
New Contact	New contact
Modify	Modify a contact.
Delete	Delete contacts, mark one or more and press on the button.
Copy	Synchronisation with MS Outlook.
Export	To export addresses you may select between two export formats: <ul style="list-style-type: none"> <li>• CSV (comma separated text format, usually read by spread sheet applications)</li> <li>• VCard (business card format, used by MS Outlook and other applications)</li> </ul>



**MODEL X7 TABLET COMPUTER****Web Browser**

This button allows the user to open the Web Browser and surf the Internet once the connection is established. The used browser will be the system default browser which is set in the System Internet options.

**E-Mail**

This button will open the E-Mail application once the connection is established. The used application will be the system default E-Mail client which is set in the System options.

**GPS**

Pressing the GPS button will lead you to the GPS Window. Press button 'get GPS' then GPS will be started, indicated by the rotating GPS button, to search for Latitude and Longitude Data.



If Latitude and Longitude Data are displayed, then the user can press the button 'Track Me' to open Google Maps showing him his Position on a map.

*Latitude:* Gives the location of a place on Earth (or other planetary body) north or south of the equator.

*Longitude:* is the geographic co-ordinates most commonly used in cartography and global navigation for east-west measurement.

**6. Radio Button**

The Radio button allows you to switch on and off the radio of your mobile broadband device to save power or to switch to airplane mode.



If the radio is switched off the button becomes red. If it is on, it is green. In case the radio is disabled by a hardware switch or if the device is not available, the button will be disabled.

**7. Update**

One Click Internet provides a build-in online update functionality that allows for an automatic update of OneClick Internet application, device drivers, and APN database.

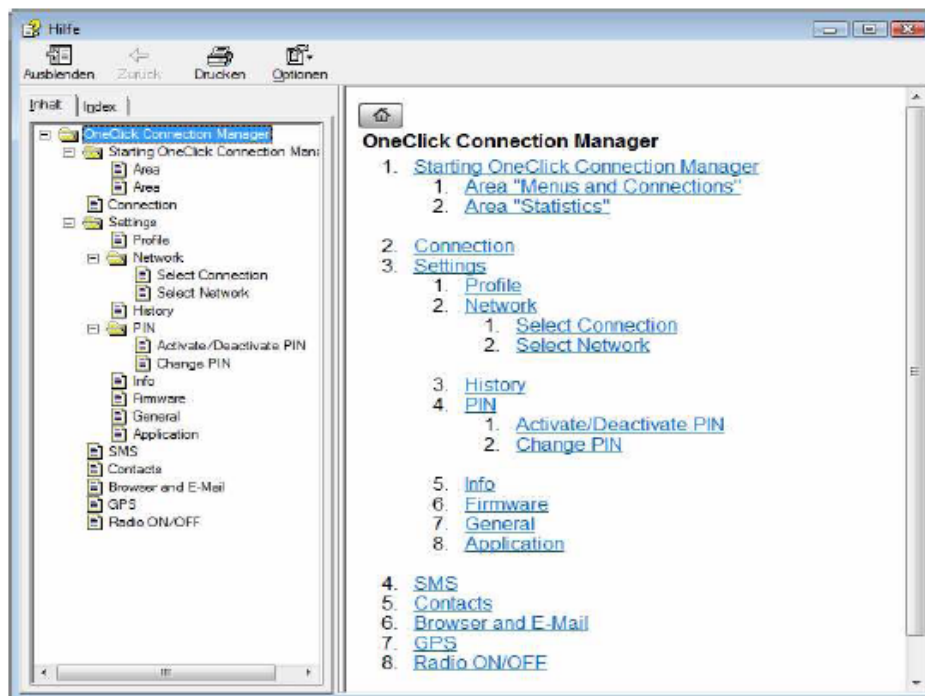
The update is triggered by pressing the update button. The application will check on the WebToGo server, if updates are available, and offer them for download if suitable.

**MODEL X7 TABLET COMPUTER**

In order to start the update, select a file from the list of available updates and press OK.

## 8. Help

OneClick Internet provides a build-in online help that can be opened by pressing the help button on the main windows.



**MODEL X7 TABLET COMPUTER**

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**MODEL X7 TABLET COMPUTER****RECORD OF CHANGES**

Rev	ECO #	Description Of Change
-	84062	Initial Release.
A	84890	Manual extensively revised.

## ARMOR Rugged Mobile Computers

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Melbourne, FL 32901  
Tel 888.872.1100  
FAx 321.725.0496  
[sales@drsarmor.com](mailto:sales@drsarmor.com)

International calls  
+1 321.309.0599

## 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).

