

Protégé Installation Manual And FAQ



Protégé 8, 8a, 10a, 10w, 15a

Introduction:

Congratulations on your purchase of a Protégé touchscreen. This manual primarily covers the hardware features and network essentials of the Protégé screen/controller.

1. Protégé assembly and installation



Main Unit



Bezel



Backbox

NOTE: The installation of Protégé should be performed by professional integrators. The following discussion offers guidance based on standard physical configurations.

Assembly:

Protégé Pro8, Pro8a, Pro10a/w and Pro15a configurations with the following primary components:

- main unit – the electronics and display assembly
- snap-on front cover or bezel
- outer, rear metal housing, “Back-box” (mating screws to main unit provided)
- power supply, documentation CD, printed manual and collateral materials

Protégé is typically shipped with the Back-box and the Bezel detached from the Display Assembly. When the bezel is separated from the system, fragile elements such as the display, fine wiring cables, electronic circuitry may be exposed. Always exercise caution while supplying power and against damaging the exposed device elements when handling the Display Assembly.

The Back-box may be optional in some deployments, but may be relevant for certain installations to provide an added barrier for environmental shielding and limiting access to input/output connections. **It is strongly advised that the Back-box implementation be considered as the preferred approach. Borg will not warrant INSTALLATIONS WITHOUT THE BACK-BOX.**

Back box Install

The Back Box should be set into the wall opening and screwed to a stud on either side. The wall opening should be cut to the size of the backbox. The tabs on the top and bottom of the backbox should be located on the outside of the wall. There are knockouts built into the backbox to allow wiring (ethernet, power, serial) to be attached to the main unit.

Once the backbox and wiring is in place the main unit should be attached to the backbox using the four supplied screws. Then the ribbon cable 20-pin electrical connector is attached to the bezel and the bezel snaps into the grommets on the main unit.

DO NOT try to pry between the display and the inner perimeter of the Bezel – breakage and scratches to your display are not covered under the product warranty; To reattach, align the Bezel carefully over the buttons on the main unit and then snap on the Bezel near the four corners – do so with (preferably protected) hands and **not** any heavy instrument.

For non-stud locations in drywall facilities, Borg offers **optional** Drywall Wings for the backbox to crimp into place. Please contact Customer Support 720-961-4055.

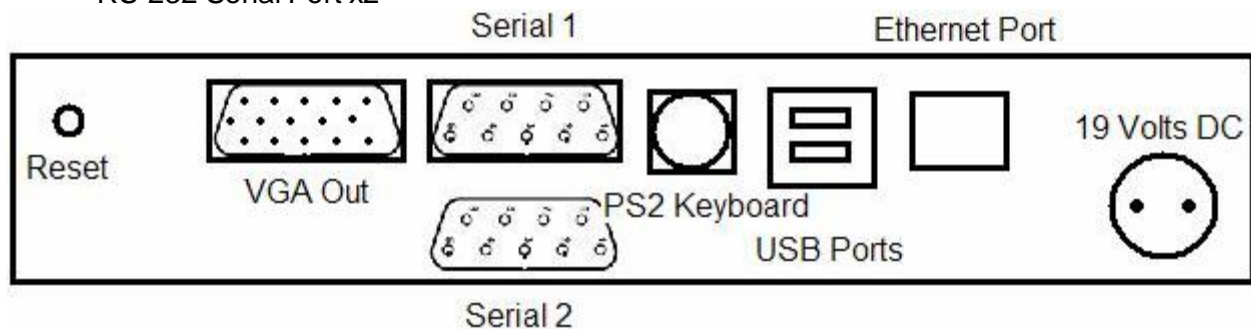


Drywall Wings - Set of two for mid-drywall installations (optional).

Port Connections:

Protégé is characterized by either a 8", 10" or 15" (diagonal) bright TFT Display with touch input enabled. The rear of the Protégé offers an optimum set of input/output ports that include:

- USB 1.1 ports x2
- 1 DC-in power jack (for 19 V input)
- 1 RJ45 port for 10/100 BaseT Ethernet
- RS-232 Serial Port x2



Power Connections

The Main Unit features a DC-in screw type power jack. The 19V side of the power supply can be extended using 2 conductor wire. Please use the following wire gauges depending on length.

- 1-25 FT 18 AWG
- 25-65 FT 16 AWG
- 65-125 FT 14 AWG
- 125-150 12 AWG
- 150-175 10 AWG

NOTE: The Power Jack and Plug are keyed to allow correct polarity. Be sure to maintain correct polarity while extending the low voltage side.

Firmware Configuration:

Borg provides a “standard” XPe firmware image for our clients. This provides the optimal amount of flexibility for a variety of application uses. Borg can provide Win7e or custom images as needed.

XPe - 2GB DOM

- Internet Explorer ver 7.0
- Flash ver 10.2
- .Net 3.5, 3.0, 2.0, 1.1
- Media Player ver 11
- Button Manager 4.01 – configure bezel buttons for URLs, .EXE, alt+tab (toggle apps)
- Startup Folder – launches apps upon power up
- Screen saver content manager for local/network photos, weather, clocks, news ticker
- Windows Explorer
- Javascript 1.3 – optional JVM SE
- QC Hardware test tool

Win7e (WES) - 4GB DOM

- Internet Explorer ver 8.0
- Adobe Flash 10.2
- .Net 3.5, 3.0, 2.0, 1.1
- Media Player ver 12
- User Manager (multiple users)
- Button Manager 4.01 – configure bezel buttons for URLs, .EXE, alt+tab (toggle apps)
- Startup Folder – launches apps upon power up
- Screen saver content manager for local/network photos, weather, clocks, news ticker
- User Management – password on timeout, etc.
- Windows Explorer
- Javascript – optional JVM
- QC Hardware test program

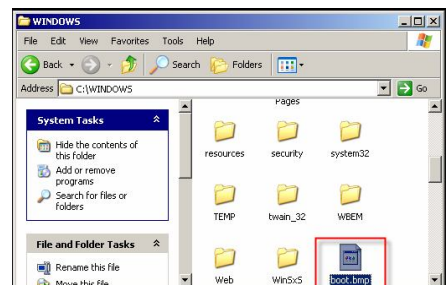
JVM DOM version 1.6.0_02 b06 also available but due to JVM size we can not include .Net in DOM's 2GB or less.

We can also customize an image specific for your needs. Please contact info@borgdisplays.com

Boot Logo:

Connect an external keyboard via PS/2 or USB port to PROTEGE before these modifications.

1. Create a 256-Color Bitmap picture named **boot.bmp** with 640x480 by using MS Paint, Photoshop, Paintshop Pro or any photo editor in your computer.
2. Copy this file to PROTEGE by using a USB Flash Drive and save it to c:\Windows
3. Reboot PROTEGE, and you will see your boot logo is changed.



Front Panel Controls:



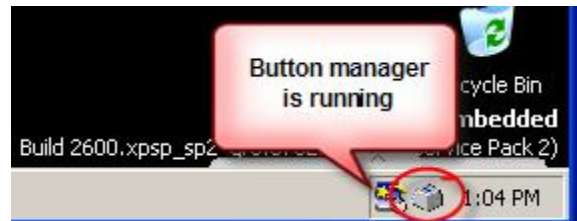
The Front Panel has four Buttons which can be configured to accomplish different functions through the configuration utility (below). The **default Button Settings are as follows:**

- **Button 1** activates the screen on/off
- **Button 2** activates the keyboard in browser mode
- **Button 3** Starts the Web Browser (IE or Firefox on Linux) and it brings up a URL of choice
- **Button 4** Pressing and holding for 5 Seconds powers the unit down or up.

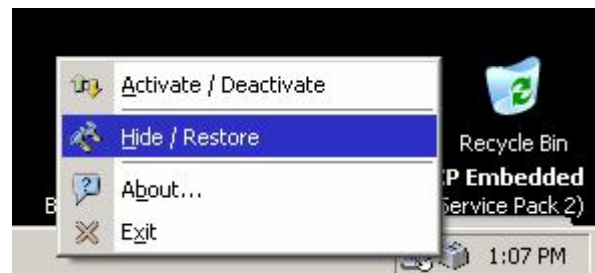
The LED to the right of Button 4 displays green when the unit is on and red when powered down. The Buttons can be disabled, configured, activate a sound, and launch a webpage (home page).

Bezel Button Configuration:

When the Button Monitor is running (default), you will see an icon in the lower-right corner on taskbar.



Click on the icon with mouse Left or Right button, the popup menu will be shown.



- **Activate / Deactivate:** Choose activate (Default) to enable the capacitive buttons monitor, or click it again to deactivate the monitor function temporary.
- **Hide / Restore:** To show or hide the main screen of Button Monitor.
- **About:** Display the current version of Button Monitor.
- **Exit:** Close Button Monitor.

Note: If you exit, then to launch it again, run **c:\MK-8 Button Monitor\btnMonitor.exe**

Note: All Buttons now allow you to launch applications – up to 4 but it is advised to use a max of 3 so Button4 can be set to navigate between 3 full screen applications

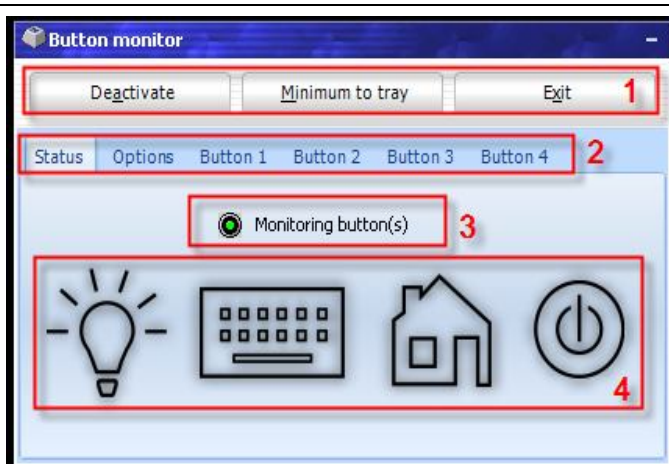
Status Page

Area 1 – Same as on the taskbar menu

Area 2 – Each is a function page (see below)

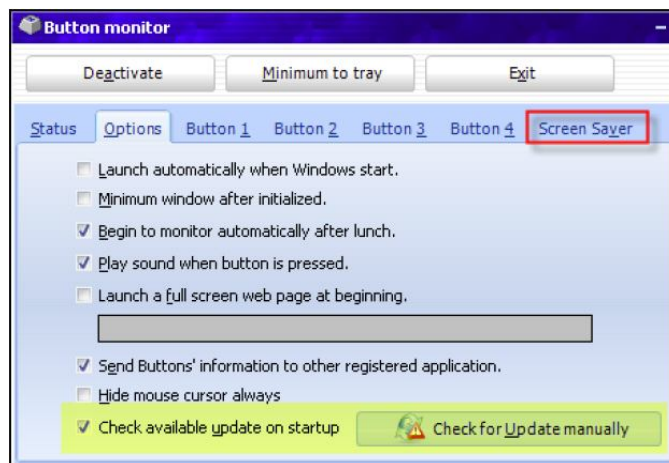
Area 3 – Enable/Disable indicator

Area 4- Status shown when pressed



Options Page

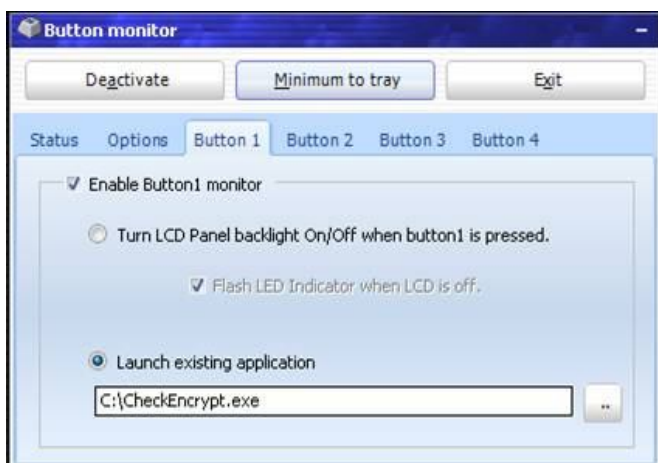
- Launch Button Monitor upon bootup
- NOTE: Disable if running an application**
- Minimize utility immediately after boot
- Monitor button status automatically
- Audible beep when a button is pressed.
- Launch a full-screen webpage in the Home Page at boot. This is NOT the same as KIOSK MODE in Button3. Leaving text area empty navigates to the default Borg Displays.
- OEMs / developers – enable GPIO
- Hide Cursor
- Auto-Update feature for the Button Monitor



Button 1 Page- LCD backlight function

Select “Enable Button1 monitor” to enable or disable Button1. When activated, Button1 will turn the LCD backlight off and on when user presses Button1 again. Select “Flash LED Indicator when LCD is off” when you want the red LED indicator on front bezel to be flashed when LCD backlight is turned off.

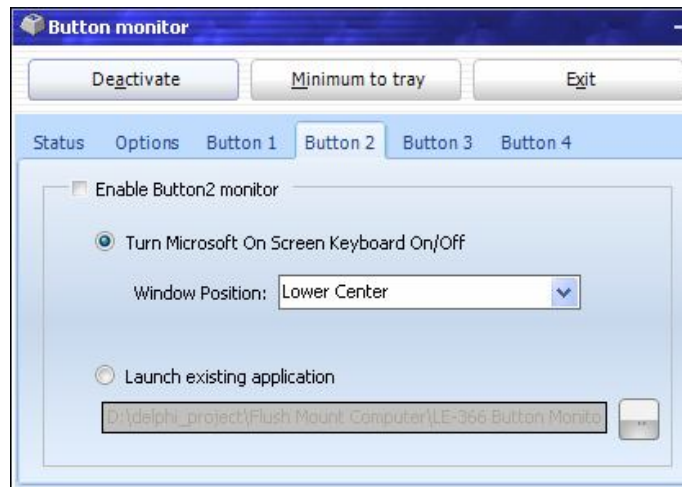
Note: The LED flashing function works only if the SW1 on touch sensor board is turned to ON position.



Button 2 Page – Keyboard function

Select “Enable Button2 monitor” to enable or disable Button2. When activated Button2 will bring an on screen keyboard (OSK) to a specific location on screen.

You can turn OSK off by pressing Button2 again. 9 different default locations can be selected for the OSK



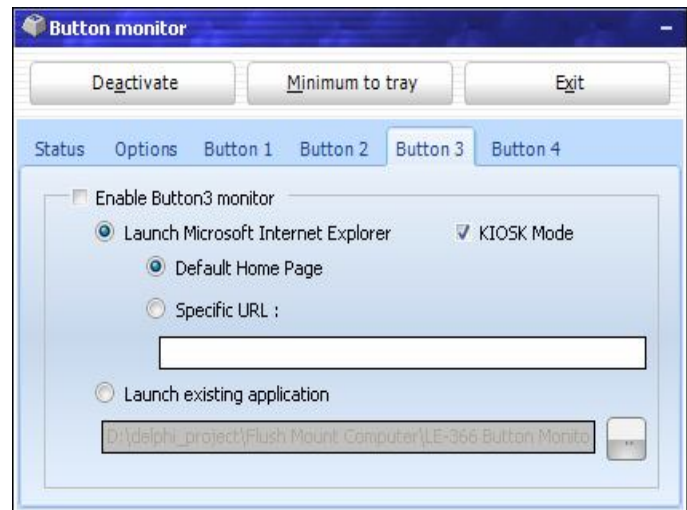
Button 3 Page – IE Function

- Select “Enable Button3 monitor” to enable Button3. When activated this will launch Internet Explorer and go to the page assigned in **OPTION PAGE**.

- Check “KIOSK Mode” if you want this IE window to be a full-screen (without toolbar).

- Navigating in KIOSK mode: Connect USB keyboard then CTRL+ESC to get the Start menu then navigate via USB mouse or UP/DN arrows or TAB/ENTER on keyboard.

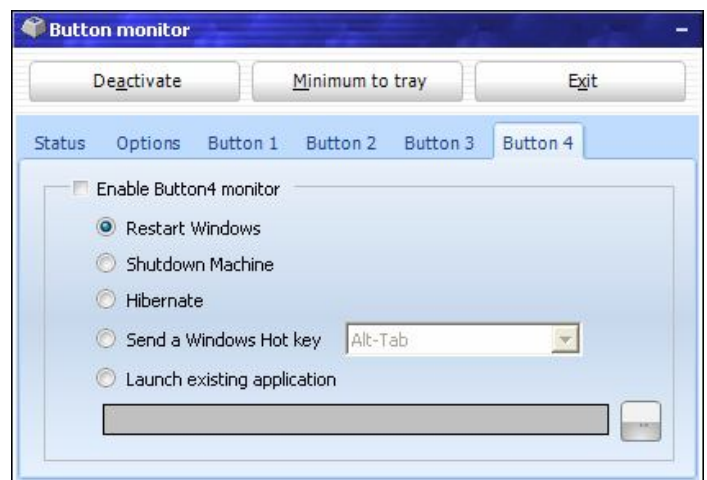
- Pressing Button3 again will close IE. Check the “Specific URL”, and enter your assigned web page. IE will then browse to the page when “Homepage Icon Button” is pressed.



Button 4 Page – Power / Hot Key Function

- Select “Enable Button4 monitor” to enable Button4. When activated, Button4 can shutdown, reboot or be set as a Windows Hot Key from the list. For instance (Alt+Tab) is used to navigate between multiple full screen applications. (see table below for other macros)

WARNING: Button4 has a dual mode whereby a single press activates the command configured above **and pressing and holding for 4 seconds will turn off the power.** Pressing again will turn the unit back on again.



ALT+ENTER	View the properties for the selected item
ALT+F4	Close the active item, or quit the active program
ALT+SPACEBAR	Open the shortcut menu for the active window
ALT+TAB	Switch between the open items
ALT+ESC	Cycle through items in the order that they had been opened

Button 5 Screen Saver – Content Manager

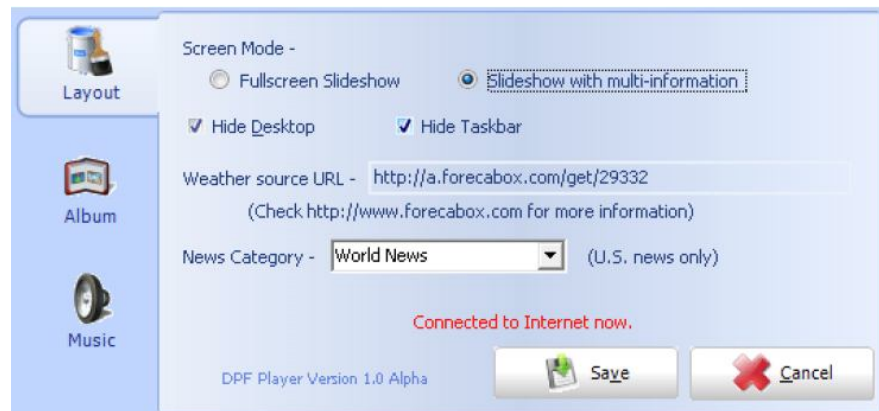
- Select Power Saving to add a screen saver in one of two ways:

1. Simple backlight timer after X mins
2. Sophisticated Content Manager as described below



DPF - Digital Content Manager – Layout Tab

- Select Screen Mode – fullscreen pictures or pix with content.
- Select to Hide desktop or Taskbars if desired
- For Weather see below
- Select News category



The weather URL is customized by going to (<http://a.forecabox.com>), create your own location/style step by step, then save and send the URL to your email address so that you can copy the URL here.

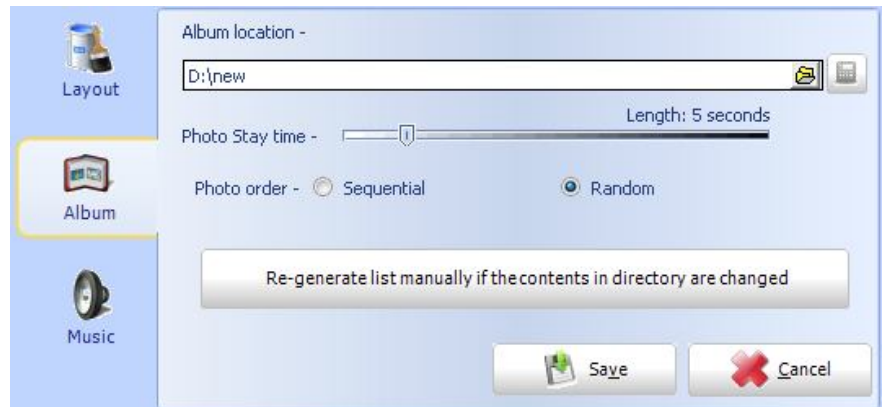
Note. To show weather forecast correctly, the size of forecast box must be exactly the same as we designed for each resolution, all forecast services are provided by FORECA

Screen Resolution 800x600 1024x768 1024x600
 Size of ForecaBox 720x90 720x90 300x250

See examples of screen layouts below -

DPF – Digital Content Manager – Album Tab

- Insert path to photo album locally or network. Click on icon to calculate the file count of all types (JPEG, BMP, GIF, PNG).
- Select Photo sequence time – default is 5 seconds
- Select order of album
- Re-generate the album if new photos are added.






DPF – Digital Content Manager – Music Tab

- Select Enable to begin.
 - Insert path to MP3 files
 - Select volume (note you can use the bezel buttons in this mode to control the volume manually)
 - Select Random if desired
 - Select resume when screen saver is again activated.
- Note:** use photo re-generate button to add new files



Bezel volume buttons when Music is activated

		
Enable/Disable audio mute	Decrease volume 1 degree	Increase volume 1 degree







<div style="text-align: right;">Mode</div> <div style="text-align: left;">Resolution</div>	Full screen slideshow	Slideshow with Multi-information (Click on the hyperlink to see larger screenshot)
800x600 (Pro-8/8A)		
1024x768 (Pro-15/15A)		
1024x600 (Pro-10A)		

Table 1. Slideshow example for different resolution and mode.

FAQ – Features

VGA Port: The VGA D-Sub connector outputs exactly the same display as the internal LCD panel, thus it has two display devices with one screen layout.

Button Monitor: If it is not present please contact customer support to get the zipped file. Setup procedure: extract it and copy the extracted file named BtnMonitor_setup.exe to a USB drive, insert this USB to Pro8a and run this setup file, it will create the directory and copy all necessary files for you automatically. If Button Monitor is disabled, go to Start menu and open a window for the internet, connect a USB keyboard and type in c:\ on the address line. A list comes up and I chose “c:\Button Monitor” This brings up a button monitor window and I double clicked/tapped on btnMonitor.exe That restores the button monitor and places an icon on task bar to begin configuration (See Installation Guide).

Disable Button Monitor: On the task bar there is a button monitor icon on the right hand side. Tap the button for a drop-down menu. Select Hide/Restore, then click “deactivate” button and then “exit”

Screen Saver: >Button Monitor > Options – set time delay and more

Screen Resolution Pro15a > All 15” LCDs have XGA (1024x768) resolution maximum. Be careful to set monitor properties in XPe to frequency, 1024x768 with 60Hz. **LCD Type** correct setting for Pro15a should be “type 3” with 1024x768 resolution. Default **Display Output port** should be “LVDS”.

User Mgmt: > Start > Control Panel > User Account

Mirror: (Pro15a only)

Glow Bezel: (Pro8agl only) To test the edge glow function in QC application, first Disable Button Monitor (see FAQ), then click on “GPIO Information” in main menu and you can see a green and red square as below image, click on it will enable/disable edge glow feature for different colors. > Start > QC Application > GPIO

Network Drive: Our XPe image does support network drive by using TCP/IP, we have not tried Windows Home Server in our lab, but believe WHS uses Client for Microsoft Network to access and it can be connected or mapped as a network drive.

Power Consumption:

Pro8 AMD **GEODE LX800** CPU:

1. Running at full power (LCD on, playing video, also playing music with its volume at maximum): 12W.
2. Idling with LCD on: 9.5W.
3. Idling with LCD off: 7.4W

Pro8a Intel **ATOM 1.6GHz** CPU:

1. Running at full power (LCD on, playing video, also playing music with its volume at maximum): 17.7W.
2. Idling with LCD on: 15.8W.
3. Idling with LCD off: 13W

Pro15a Intel **ATOM 1.6GHz** CPU:

1. Running at full power (LCD on, playing video, also playing music with its volume at maximum): 25.7W.
2. Idling with LCD on: 23.8W.
3. Idling with LCD off: 13W

Programming API: The new GPIO Supports Pro8a with bezel edge glow. (Use notepad to open c:\Button Monitor\style.ini, and change the value from 0 to 1 then save it.) Accepts more commands by using **POSTMESSAGE** so that programmers can control the hardware in their own application.

WM_REDLED_ON = WM_USER + 12010; - Turn RED LED ON
WM_REDLED_OFF = WM_USER + 12011; - Turn RED LED OFF
WM_LCD_BK_OFF = WM_USER + 12016; - Turn LCD Backlight off
WM_LCD_BK_ON = WM_USER + 12017; - Turn LCD Backlight On

(Pro8a Edge Glow version only)

WM_EDGE_GREEN_ON = WM_USER + 12012; - Turn Green Edge glow LED ON
WM_EDGE_GREEN_OFF = WM_USER + 12013; - Turn Green Edge glow LED OFF
WM_EDGE_RED_ON = WM_USER + 12014; - Turn Red Edge glow LED ON
WM_EDGE_RED_OFF = WM_USER + 12015; - Turn Red Edge glow LED OFF

Note. There is a sample application named c:\Button Monitor\Verify.exe can verify all POSTMESSAGE functions in Button Monitor.

Firmware:

Media Player, Windows Explorer, User Manager, QC Hardware Test Utility

Internet Explorer 7.0 – flash 7plugin, javascript (JVM DOM available)

Button Monitor – 4 configurable hard buttons including Application and URL launch, Screen saver, Hot Keys, Boot up modes, kiosk modes, lock down modes

FAQ - Support

NEO screen incomplete bootup – “X” in middle of screen: Possible interruption or corrupt DOM. Log in and re-udpate. Do NOT interrupt update process.

Protégé white LCD upon boot: Somehow the video card settings were modified – attach a monitor to VGA port with USB mouse and go to Control Panel > Display (make sure set to 800x600) > Settings > Advanced > Intel Graphics...> Graphics Properties > Display Devices (Intel Clone) > Display Settings (800x600, 60Hz). See FAQ Detail screenshots for more information below

Testing Bezel Glow: Button Monitor MUST be disabled - then launch the QC program under Start menu.

Start Folder: All folder structures are exactly the same as Windows XP, except we hide “All Programs” and some useless link from Startup menu.

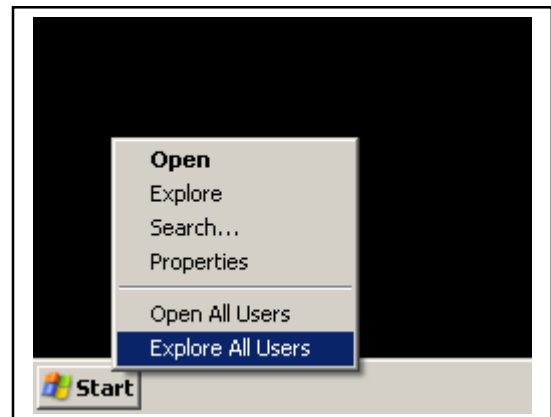
There is a fast way to access to Startup folder, move your mouse cursor to “Start” button and click Right mouse button, select “Explore All Users” will bring you to Explorer and locate to the folder.

There are two Startup folders that you can use:

1. C:\Documents and Settings\Administrator\Start Menu\Programs\Startup
2. C:\Documents and Settings\All Users\Start Menu\Programs\Startup

Websites on XPe or see the MSDN forum:

<http://social.msdn.microsoft.com/Search/enUS/?Refinement=52%2c54&Query=xp+embedded>



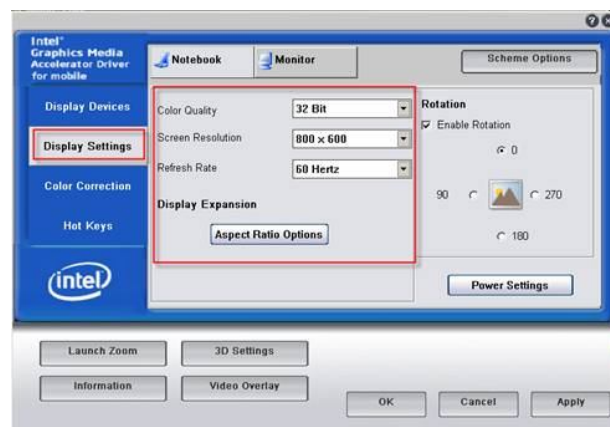
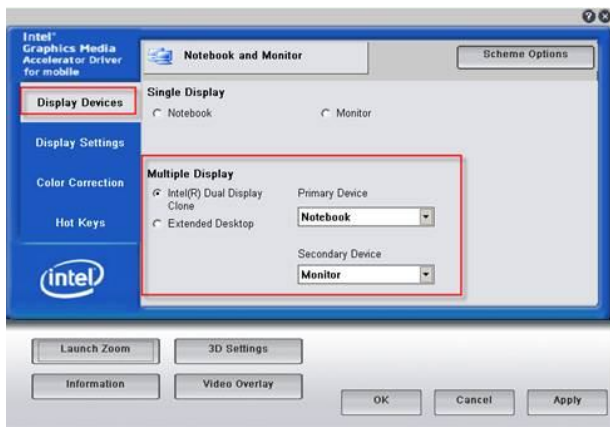
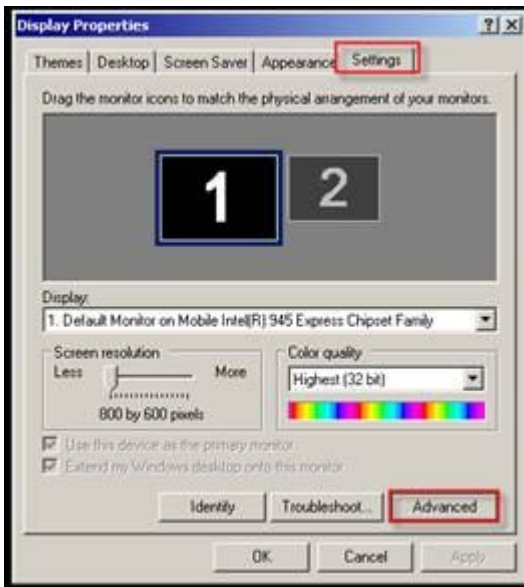
Factory Restore: Last resort only if an application is running and you cannot remove it or log into it.

1. Insert USB keyboard
2. Press Ctrl-Alt-Del to open Windows Security.
3. Click on “Task Manger” button.
4. When “Windows Task Manager” is showed, click on “Applications” page.
5. Click on “New Task...” button.
6. Type “explorer” then click “OK”.

Then the desktop should be restored new, go to Control Panel to see if you can remove that unused application, if you don't see an option in “Add/Remove programs”, you have to remove it manually.

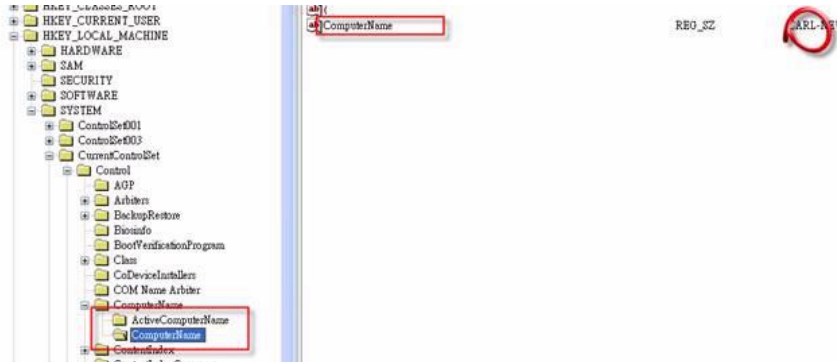
BIOS Boot Up: You can entry the BIOS configuration utility by using “Del” key while booting up. Here you can change what driver to boot from including a network drive.

Correct Display Settings: >Start > Control Panel > Display > Settings – note resolution and frequency (advanced) Select > Intel® Graphics Media Accelerator Drive for Mobile > “Graphics Properties” button



Change “Computer” name: To change computer name in XPe, the fastest way is to change the registry directly.

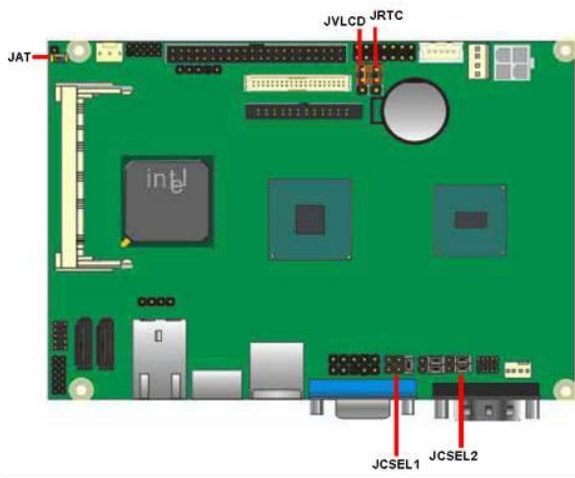
1. Click on “Start”...”Run” and type “regedit” then click OK button.
2. The computer name is stored in \HEKY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\ComputerName\ActiveComputerName, change the value (REG_SZ) of “ComputerName” to the new name that you want.
3. Locate to \HEKY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\ComputerName\ComputerName and change the “ComputerName” item to the same name.
4. Close Registry Edit and Reboot.



Or seek a tool from SysInternals called “New_Sid”.

Motherboard CMOS: To clear/reset the CMOS setting and restore them to default, you can find the JREC jumper on motherboard and clear the BIOS settings.

Jumper	Function
JRTC	CMOS Operating/Clear Setting
JVLCD	LCD Panel Voltage Setting
JAT	AT Mode
JCSEL1/2	COM2 RS232/422/485 mode setting



Jumper: **JRTC**

Type: Onboard 3-pin jumper

JRTC	Mode
1-2	Clear CMOS
2-3	Normal Operation
Default setting	

Firmware updates: To restore image onto Pro-8, Pro8a, Pro15a, you have to boot this machine under a pure DOS environment, the fastest way is to prepare a clean USB thumbnail disk which is SMALLER than 4GB, make it **bootable** and copy all necessary files to this USB disk (you can download a USB boot tool from Borg Displays).

Downloading plugins: Some DVRs, devices, etc will be blocked from accepting a download. XPe prohibits this by default for security reasons but can be overridden like a PC by going to Control Panel > IE Options > Security > Place the URL and hit Add, then LOW for the security setting and try again.

Change Boot Order: To access the BIOS screen, attach a keyboard and press as the unit is starting up. At this point, go into advanced BIOS settings and change the first and second boot devices –

Remote Tech Support: Remote management capable. Download and run TeamViewer <http://www.teamviewer.com>. Provide us the ID and password so we can exam it remotely.

Customer Support: julie@borgdisplays.com