National *Semiconductor*
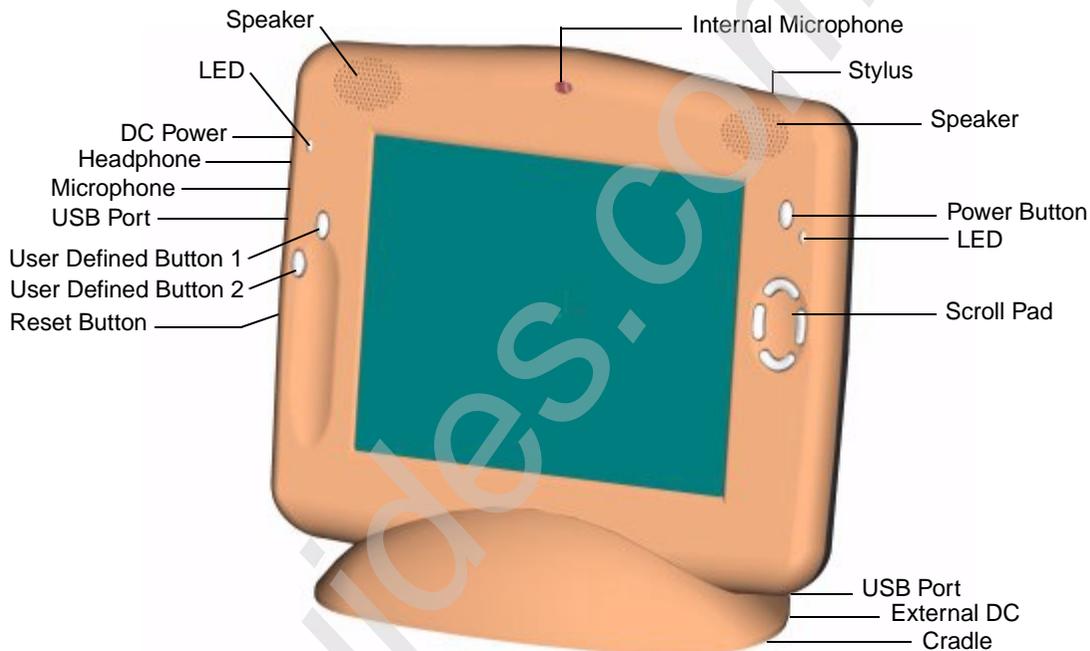
WebPAD™ 1.5 System
The Ultimate Internet Personal Access Device

- GXLV Processor

- System consists of three pieces:
  — Tablet
  — Base Station
  — Cradle

- 9.5x11.75 inch tablet with interactive 10 inch DSTN screen (800x600 color)

- Weighs 3.25 pounds

- Preloaded, preconfigured software. Just power up and use.

- Familiar Internet browser user interface

- Allows user to select and access "Favorite" web sites

- Wireless operation
  — Transmits over a 2.4 GHz radio frequency signal
  — 300 feet range from base station

- Battery operated
  — 3 hours of active use

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WebPAD™ 1.5 System User's Guide

1.0   User Interface

The WebPAD™ system's tablet user interface is simple and easy to use. It consists of an interactive touch screen, scroll pad, and several user-configurable buttons. Speakers and a microphone are built in. Additionally, two ports have been added to the side of the tablet to allow for connectivity to USB devices (i.e., external keyboard, headphones, external microphone, etc.).

The main way to interact with the tablet is through the touch screen. Links and menus are accessed by touching the screen directly over their titles. Additionally, the touch screen is sensitive enough to allow for handwriting recognition software to be used as a means of inputting characters. The touch screen on the tablet works with any type of pointer, from a stylus (included) to the simple touch of a finger.

All of the buttons on the tablet, including the scroll pad, are user-configurable, except the power button. The user can change the definition of the buttons by entering the system configuration mode (see Section 2.0 "System Configuration"). Some of the buttons suggest clearly defined operations, like the scroll pad, but the definitions are changeable.

To input text, whether for an email, search criteria, or to enter a URL, a virtual keyboard is available. The keypad works the same as a normal keyboard and is accessed from the *QNX* menu button or the *Virtual Keyboard* task box at the bottom of the screen. The user touches the screen just above the desired key and the letter appears next to the cursor.

1.1   GRAPHICAL USER INTERFACE

When the tablet finishes booting, the graphical user interface (GUI) is started, as shown in Figure 1. The GUI contains a window area and a task bar. The background of the window area contains an application launcher. Touching either the icon or button beneath the icon invokes the desired application. When applications are invoked, their windows reside in this area.

The task bar contains a menu button and boxes for each of the tasks currently running. The menu button is labeled "QNX" and offers the user another method of launching applications. To use the menu, touch the QNX button and then the desired application.

Two tasks are initially started up when the tablet is booted: RF Link task and Virtual Keyboard task. Touching any of the task boxes on the task bar brings that task's window to the foreground (See Section 1.1.2 "RF Link Task Box" and Section 1.1.3 "Virtual Keyboard Task Box").
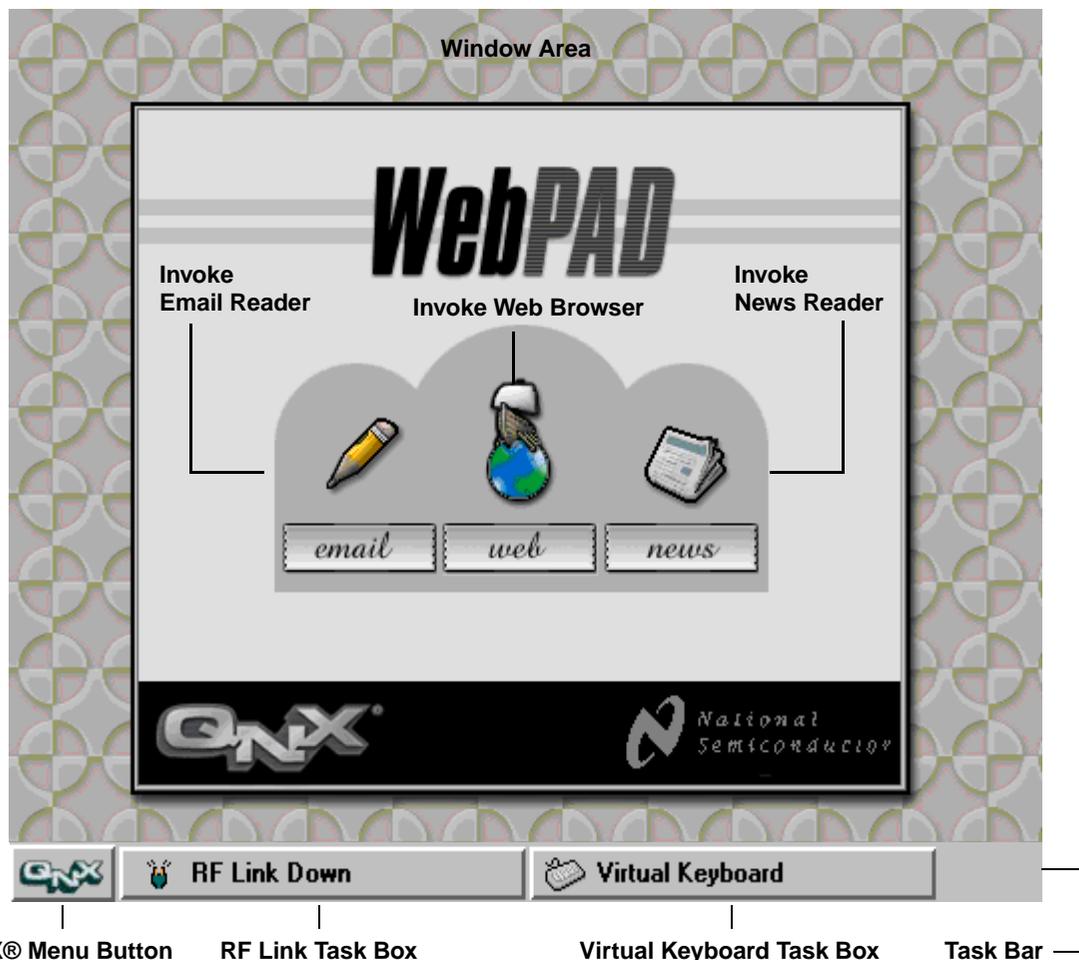

FIGURE 1. Application Launcher Screen

1.1.1 QNX Menu Button

Touch the QNX pop-up menu button to view the menu of available applications. To invoke an application, simply touch the name of the application.

1.1.2 RF Link Task Box

The RF Link task displays the status of the radio link and battery. Selecting the box on the task bar will invoke the Link Status application (see Section 1.5.4 "Link Status"), showing the user the strength of the radio signal from the base station, the amount of charge left on the battery, and the operational status of the link to the base station ("RF Link Up") or not ("RF Link Down"). Refer to Section 1.5.4 "Link Status" for more details on this task.

1.1.3 Virtual Keyboard Task Box

Touching the Virtual Keyboard task box invokes a software keyboard which allows the user to interact with the system. The soft keyboard is the main method of entering URLs, responding to emails, etc.

1.2 LEDS

The tablet contains two LEDs (one amber and one green). The amber LED is on the left side of the tablet, just above the two user-defined buttons. It is a charge indicator. If the LED is on, the battery is fully charged. If the LED is blinking, the battery is being charged. If the LED is off, the system is running off the batteries.

The green LED is on the right side of the tablet, just below the power button. It is a status indicator. If the LED is on, the tablet has been powered up. If the LED is blinking, the batteries inside the tablet are low on power. If the LED is off, the tablet has been powered off.

1.3 BUTTONS

The tablet has seven buttons:
- One power button
- Two user definable buttons
- Four buttons that form the scroll pad

The power button is in the upper right hand corner of the tablet. To turn the system on, simply press the power button. The system will remain powered on until the button is pressed again.

The two user-defined buttons are on the left side of the tablet. These two buttons can be configured by the user to perform a variety of operations. The initial settings of these buttons may vary, so the user should verify the initial settings of the buttons before they are used (see Section 2.2 "Buttons Configuration Options"). Pushing both user-defined buttons at the same time invokes the touch screen calibration application. See Section 1.5.1 "Touch Screen Calibration" for details on this application. If the application configured for a particular button is running when the button is pressed, the application is aborted. This includes pressing both buttons to abort the touch screen calibration application.

Scroll pad buttons are also user-defined. At their default settings, the buttons are used to scroll around in web pages. Pressing one of these buttons will scroll the screen in that direction. The user can reconfigure these buttons but it is not recommended. These buttons have a built in repeat function, therefore, if they are reconfigured, the function may be initiated multiple times with each press of the button. Refer to Section 2.2 "Buttons Configuration Options" for details on configuring the user-defined and scroll pad buttons.

1.4 RESET BUTTON

The tablet also contains a recessed reset button, located on the left edge. This button is used to perform a hard reset to the system. This will put the system into a known reset state. This should only be used if all other attempts to remedy any problems have been exhausted.

WebPAD™ 1.5 System User's Guide

1.5 APPLICATIONS

Applications range from a web browser and email reader to MediaPlayer and touch screen calibrator. Each application has its own function.

Table 1 summarizes the available applications and their access mechanisms. The subsections that follow provide descriptions of each of the applications.

TABLE 1. Applications Summary

Application	Path/Command	Access Mechanisms
Touch Screen Calibration	/usr/webpad/bin/calib	Terminal window
		User-defined button, if configured
		Pressing both user-defined buttons, simultaneously
Terminal	/usr/photon/bin/pterm	QNX menu: Terminal
		User-defined button, if configured
Virtual Keyboard	/usr/webpad/bin/keypad	QNX menu: Virtual Keyboard
		Terminal window
		User-defined button, if configured
Link Status	/usr/webpad/bin/alert	QNX menu: Link Status
		Terminal window
		User-defined button, if configured
MediaPlayer	/usr/photon/bin/mplayer	QNX menu: MediaPlayer
		Terminal window
		User-defined button, if configured
RealPlayer®	/usr/photon/bin/rvplayer	Terminal window
		User-defined button, if configured
		Web browser if user establishes a RealAudio® and ReadVideo® link
Email	/usr/webpad/bin/cmail	Application launcher
		QNX menu: Email
		Terminal window
		User-defined button, if configured
News	/usr/webpad/cvoyager -u www.dejanews.com	Application launcher
		User-defined button, if configured
Browser	/usr/webpad/bin/cvoyager	Application launcher
		QNX menu: Browser
		Terminal window
		User-defined button, if configured
Brightness & Contrast	/usr/webpad/bin/bright_contrast	QNX menu: Brightness & Contrast
		Terminal window
		User-defined button, if configured
DECT Monitor (DECT systems only)	/usr/photon/bin/Monitor	QNX menu: DECT Monitor
		Terminal window
		User-defined-button, if configured
Internet Dialer (DECT systesms only)	/usr/photon/bin/dialer	QNX menu: Internet Dialer
		Terminal window
		User-defined button, if configured

1.5.1   Touch Screen Calibration

To calibrate the screen, touch the center of each target in the order that it appears on the screen, as follows:

1)   Upper left corner
2)   Lower left corner
3)   Lower right corner
4)   Upper right corner
5)   Center of screen
6)   Touch box in center of screen

If target 6 does not occur within 10 seconds of target 5's completion, the calibration routine will assume an error has occurred and start over. Once all 6 targets have been touched, the touch screen is calibrated. To verify calibration, drag the stylus across the screen from top to bottom and then left to right. If the cursor does not track the stylus properly, repeat the calibration process.

1.5.2   Terminal

A terminal window allows access to the operating system and applications from the command line. To type commands, touch the Virtual Keyboard task box or use an USB keyboard which has been plugged in.

1.5.3   Virtual Keyboard

The Virtual Keyboard application is a Virtual Keyboard that allows the user to enter characters without having an external keyboard attached.

1.5.4   Link Status

The Link Status application displays the strength of the radio signal from the base station and the strength of the tablet's batteries. Additionally, this application allows the user to set the length of idle time desired before the screen dims. To set the idle time, touch the box next to "Dim Screen" so a check mark appears in it. Select a length of time and touch the "Apply" button to execute and save the selection.

1.5.5   MediaPlayer

The MediaPlayer application plays WAV and MP3 files.

1.5.6   RealPlayer®

The RealPlayer application allows the WebPAD system to play RealAudio® and RealVideo® clips from the web.

1.5.7   Email

The email tool allows the user to compose, send, retrieve and store emails in a variety of folder configurations. The icons across the top of the email tool are labeled with their functionality. The frame along the left side of the tool shows the various mail folders that have been configured on the system. The upper frame on the right side lists all of the emails contained in a particular mail folder. The lower frame on the right displays the text of the selected email.

Before using the email tool, it must be properly configured. To enter configuration mode, touch the "Config" icon in the upper left corner of the email tool. The "Incoming Server" and "Outgoing Server" sections must be filled out completely. Contact the administrator of the mail system if configuration assistance in needed. Also, the user should fill out the "General" and "Composition" sections as completely as they like. When all the sections have been filled out, touch the "Save" icon at the top of the tool. The tool should now be operational. If problems occur, contact the administrator.

1.5.8   News

Selecting the "news" icon on the application launcher brings up a browser window and loads www.dejanews.com. Although the "news" icon is not configurable, the default page can be altered by configuring a user-defined button and changing the www.dejanews.com part of the URL. Once the user-defined button has been configured, the new page can only be accessed via that button. The "news" icon will always launch the original URL.

1.5.9   Browser

The WebPAD system uses the QNX Voyager™ web browser which has been customized for the WebPAD system.

The icons along the top of the browser window provide basic browser functionality: back, forward, reload, and stop loading. To the right of the icons is the URL text box that allows the user to enter a new internet address or view previously selected sites. The icon in the upper right corner is used to close the browser.

The icons on the left side of the browser window provide functionality beyond basic browsing. These functions include: bringing up a favorite web site window, adding a web site to the list of favorites, jumping to the user's favorite search engine and cycling through the various font types and sizes.

The icon in the upper left corner of the browser window has multiple functions. When the icon appears as a sailing ship, the WebPAD system is in the process of loading the requested web site. When the icon appears as a toolbox, the WebPAD system has finished loading the desired page. Touching the icon puts the WebPAD system in Configuration mode and stops the loading of any page currently being loaded (see Section 2.0 "System Configuration").

When a "mailto:" link is selected within the browser, a "Send Mail" window will open. The user then fills out the subject and contents of the email and touches the "Send" button to deliver the mail to the server specified in the "EMail Server" (see Section 2.1.4 "Browser>Network"). Selecting the "Cancel" button in the "Send Mail" window aborts the mail delivery operation.

1.5.10 Low Battery Warning

This application warns the user when the battery is about to run out of power. Upon seeing this warning, the user should power of the tablet.

1.5.11 DECT Monitor (DECT-based systems only)

The DECT Monitor allows the user to interact with the DECT-based base station. This is the application used to scan for DECT-based base stations in the proximity of the tablet, register the tablet and base station with each other, and modify the PIN numbers used in the registration process. This application only appears on systems shipped with the DECT-based base stations.

1.5.12 Internet Dialer (DECT-based systems only)

The Internet Dialer is used to setup and establish connections to a Internet Service Provider (ISP). The application is capable of storing information for multiple ISPs. See Section 4.1.1.4 "Adding a New Dial-up Account" for details on how to configure a new ISP.

2.0 System Configuration

The tablet has several configuration options where modifications can be made. To enter the system configuration mode, touch the sailing ship/toolbox icon in the upper left corner of the web browser. The options that appear on the screen are:

- WebPAD Configuration
  - Browser
  - Buttons
  - Radio
  - Version

Selecting any of the configuration option links takes the user to a screen where modifications can be made.

2.1 BROWSER CONFIGURATION

The Browser Configuration page contains links to configuration screens for customizing the browser. The options are:

- Browser Configuration
  - Cache
  - Fonts
  - Colors
  - Network

Selecting one of these links takes the user to a screen where component configurations can be modified.

2.1.1 Browser>Cache

This screen allows the user to modify the settings for the browser cache. Configuration settings for the cache are as shown in Figure 2.

Max Connections - Specifies the maximum number of simultaneously open TCP/IP connections to the Internet.

Number of Pages to Cache - Specifies the number of pages to cache locally. Increasing the number will speed up the time it takes to open previously visited pages. However, caching more pages uses more memory and may effect overall performance

Image Cache Size KB - Specifies the size of the image cache, in kilobytes. Increasing the size of the cache allows more images to be stored locally, thereby increasing the rate at which previously visited pages will be re-displayed; however, the user must be careful not to assign too much memory.
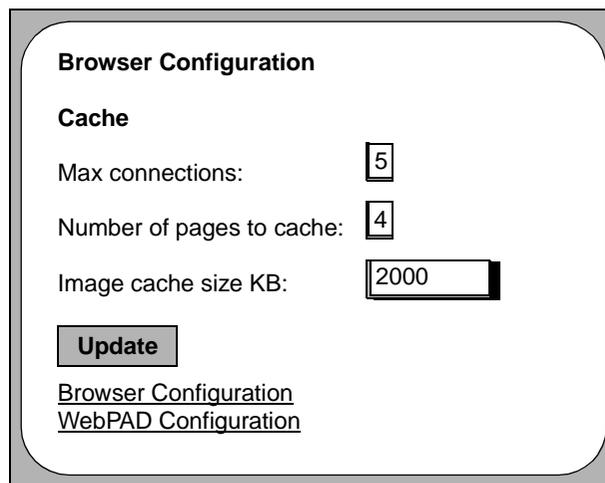

Browser Configuration

Cache

Max connections: `5`

Number of pages to cache: `4`

Image cache size KB: `2000`

Update

Browser Configuration
WebPAD Configuration

FIGURE 2. Browser>Cache Configuration Screen

2.1.2 Browser>Fonts

Figure 3 shows the screen that allows the user to alter the font style and text size. Three options of text feature modification are available: Font style, font size and underlining of links. After making changes, touch "Update" to implement the changes.

Underline Links - Specifies whether the links incorporated in a web page are underlined. If the box is colored, links will be underlined; if not colored, the links will not be underlined.

User Text Size [0-4] - Specifies the default font size. The font size can be changed by touching the font size icon but will revert to the configuration value upon each restart.

Body Font, **Heading Font, and Fixed Font** - Specifies the font styles ("times", for Times Roman, "helv", for Helvetica or "cour" for Courier) available.

Browser Configuration
Fonts

Underline Links: ☐

User text Size [0-4] = 2

Body Font = times

Heading Font = helv

Fixed Font = cour

Update

Browser Configuration
WebPAD Configuration

FIGURE 3. Browser>Fonts Configuration Screen

Browser Configuration
Colors

Active Color (RGB) = FF0000

Visited Color (RGB) = 008080

Link Color (RGB) = 0000FF

HL Color (RGB) = FF00FF

Body Text Color (RGB) = 000000

Body Text Color (RGB) = FFFFFF

Update

Browser Configuration
WebPAD Configuration

FIGURE 4. Browser>Colors Configuration Screen

2.1.3 Browser>Colors

The Browser>Colors screen, as illustrated in Figure 4, allows the user to modify the color attributes of the text, links, and background. Each setting is a hexadecimal value which defines the intensity of each of the color components of the pixel. The first two digits specify the intensity of the red, the middle two digits specify the intensity of the green and the last two digits specify the intensity of the blue. These colors can be overridden by a web page, but upon leaving the web page, the colors revert to the defaults. Touch the keyboard icon to edit the settings. After making any changes to the configuration, touch "Update" to implement the changes.

Active Color - Specifies the color of a link when it has been selected.

Visited Color - Specifies the color of a link on a page after the link has already been visited.

Link Color - Specifies the color of a link before the link has been visited.

HL Color - Specifies the color used to highlight text.

Body Text Color - Specifies the color of the text used in the body of the web page. Any text which is not a link is effected by this setting.

Background Color - Specifies the default color of the background of a web page.

2.1.4 Browser>Network

Figure 5 shows the Browser>Network configuration screen which allows the user to alter proxy and web destination settings. Touch the keyboard icon to edit the settings. After making changes to the settings, touch "Update" to implement the changes. The tablet can only run with a SOCKS proxy or HTTP proxy, but not both. Therefore, if the user selects one of the proxy servers, the other is automatically deselected.

Home Page - Specifies home page for the browser. This is the page displayed when the browser is first started.

Search Page - Specifies the URL for the web page to go to when the Search icon is touched.

SOCKS Proxy Server - Determines whether the browser will use a SOCKS proxy server. If the box is colored, the browser will use the SOCKS proxy server configured on the base station. If the box is not colored, the browser will not use a SOCKS proxy server.

HTTP Proxy Server - Determines whether the browser will use a HTTP proxy server. If the box is colored, the browser will use the proxy server configured on the base station. If the box is not colored, the browser will not use a proxy server.

Proxy Address - Specifies the IP address of the proxy server. This value is ignored if a proxy server is not being used. If using an access point base station, this value needs to be cleared.

Proxy Port - Specifies the port number to which all browser requests are sent. The port must match the type of proxy server being used. If the SOCKS proxy server is selected, set the proxy port to 1080. If the HTTP proxy server is selected, set the proxy port to 80.

Email Server - Specifies where emails are sent when a "mailto:" link is selected.

WebPAD™ 1.5 System User's Guide

Email Address - Specifies the "From" address in emails generated after a "mailto:" link has been selected.

Browser Configuration

Network

Home Page: www.national.com/webpad

Search Page: www.yahoo.com

SOCKS Proxy
Server ◇

HTTP Proxy Server ◇

Proxy Address 191.168.0.1

Proxy Port: 1080

Email Server: 191.168.0.1

Email Address: xxxx@xxx.com

Update

Browser Configuration
WebPAD Configuration

FIGURE 5. Browser>Network Configuration Screen

2.2 BUTTONS CONFIGURATION OPTIONS

This link allows the user to configure the operation of the tablet's buttons. Figure 6 identifies the buttons. Figure 7 shows the button configuration screen and examples of how buttons can be configured. Next to each button identifier is a field defining the button's operation.

To change the function of a button, replace the current operation with a new operation. The operations take the form of:

<action>[<type>]

<action> - defines the type of operation the button provides. The values are: CMD, KEY, MAC. When a button with the action of CMD is pressed, a command is executed. The KEY action is used to define the button as a particular key from the keyboard. The MAC action invokes a macro.

<type> - is dependent on the action defined. For "CMD" actions, the type is the executable command string. For "KEY" actions, the type is either "UP", "DN", "LF", or "RT"

and refer to the Up, Down, Left and Right arrow keys on the keyboard. For "MAC" actions, the type is NXT. NXT cycles between all active windows.

When all of the buttons have been configured, press the "Update" button to implement and save the changes.
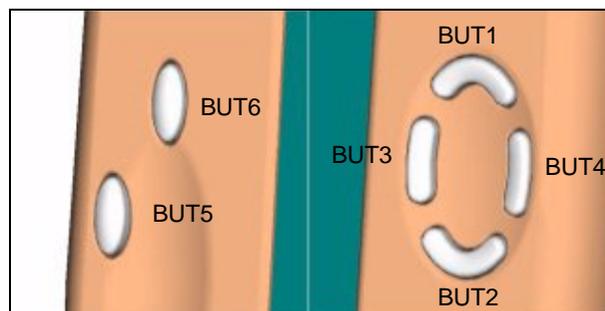
FIGURE 6. Button Identifier Diagram

Hardware Button Configuration

BUTx = action[type]

BUTx is a button identifier for BUT1 thru BUT6
'action' is a key, macro or a command definition – 'KEY', 'MAC' or 'CMD'
'type' for commands should be the actual command string to execute
'type' for key definitions should be: 'UP'; 'DN', 'LF', 'RT'
'type' for macro key definitions should be 'NXT'

BUT1 = KEY[UP]

BUT2 = KEY[DN]

BUT3 = KEY[LT]

BUT4 = KEY[RT]

BUT5 = MAC[NXT]

BUT6 = CMD[/usr/webpad/bin/keypad]

[Update]

WebPAD Configuration

FIGURE 7. Button Configuration Screen

2.3 RADIO CONFIGURATION OPTIONS

The Radio Configuration options screen, shown in Figure 8, allows the user to define the system ID and the RF link channel. The system ID is the 802.11 SS ID shared between the base station and tablet. A base station associates only with a tablet that shares the same SS ID. If the SS ID of the base station and tablet do not match, the base station will ignore data coming from the tablet. The "DS channel" is the radio channel used by the base station.

2.4 SOFTWARE IMAGE VERSION

The software image version indicates the current version of the software. in addition, the page contains release notes on changes made to the previous version. Links at the bottom of the page will go to either the initial WebPAD system configuration page or to the browser configuration page.

Radio Configuration

The System ID is the 802.11 SS ID shared between a base and client pair. A base will only allow a client to associate if they share the same SS ID. You may set the SS ID of the client here. It is a string of up to 32 alphanumeric characters.

System ID: webpad

The radio channel used by the base. A number between 0-11.

DS Channel: 6

[Update]

WebPAD Configuration

FIGURE 8. Radio Configuration Screen

3.0 Favorite Sites Window

Selecting the Favorites icon brings up the Favorite Sites window. From here, the user navigates to favorite web pages. The WebPAD system can store up to 512 site locations.

The Favorite Sites window is split into three sections. The top section contains a list of the web sites that have been saved. Below that is a section that displays the URL address for the selected site in the favorites list. Along the bottom of the window is a series of buttons used to navigate amongst and manage the list of sites. The functions provided by these buttons are:

- Bringing up the designated home page

- Adding a page to the list

- Deleting a page from the list

- Sorting the list

- Navigating to a selected link

Figure 9 shows the Favorite Sites Window.

The browser can be sent to the designated home page at any time by selecting the Home button in the Favorite Sites window. This action does not effect the pages you have already visited in this session, so the Back button still sends the browser to the previously visited page.

Sites are added to the list using one of two methods. The first method uses the icon supplied in the border of the browser. Touching this icon immediately sends the site currently shown in the browser window to the list. The second method is to open the desired site to be saved, bring up the Favorite Sites window and touch the "Add" button.

To delete a page from the list of favorites, highlight the site, then touch the "Delete" button. If a site was accidently deleted, the only way to replace it on the list is by going to the site and selecting the icon in the border of the browser, or selecting the "Add" button in the Favorite Sites window while the site is open.

Sites are listed in the order they are added. As the list grows, use the Sort button to alphabetize the entries. New sites appear at the bottom of the list.

To navigate to a stored web site, select the appropriate link in the list and touch the "Go" To button. This page will be placed on the stack immediately after the page currently being viewed. Pages before the current page will be lost.
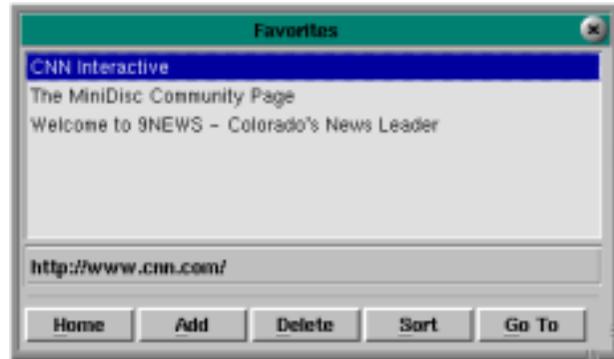

FIGURE 9. Favorite Sites Window

4.0 Setup and Troubleshooting

This section explains how to setup and troubleshoot a WebPAD system. The system consists of the tablet, base station, and cradle.

4.1 SETTING UP A WEBPAD 1.5 SYSTEM

The WebPAD 1.5 System that you receive may come with one of two types of base stations: A DECT-based or an 802.11-based Access Point. Please refer only to the section for the type of base station accompanying your particular WebPAD 1.5 system.

4.1.1 Dect-based Base Station

4.1.1.1 Setup Guidelines

The following is the sequence used for setting up a WebPAD system.

1. Connect the power cord and phone cable(s) to the base station. The phone line and power jack connectors are located at the rear side of the base station. The line to the wall goes in the top dual RJ-11 connector, and the line to the phone set (optional) goes directly below it. The single RJ-11 connector is not used at this time. The power cord plugs into the power jack at the bottom of the unit.

2. Power on the base station, then the tablet. If this is the first time the tablet has been used with this base station, they must be registered with each other (See Section 4.1.1.2 "WebPAD/Base Station Registration"). Otherwise, the tablet establishes a link to the previously registered base station. The system is now ready for use. Upon starting, the browser loads its home page. When the base station receives the request for the web page, it establishes its connection to the internet.

4.1.1.2 WebPAD/Base Station Registration

Before a base station and tablet can communicate with each other, they must be registered together. The registration process is a simple one.

1. Power up the base station and the tablet.

2. Invoke the DECT Monitor utility using the QNX menu button in the lower left corner of the screen.

3. In the Dect Monitor window, select the Utilities menu, followed by the "Scan Base Station" entry. The tablet scans for base stations to be used. A window appears listing all of the base stations found.

4. Select the box next to the base station to be used.

5. Press the Registration button located on the front of the base station. Note: Step 8 (below) must be completed within one minute of pressing the Registration button (step 5). If step 8 is not been completed with one minute of step 5, repeat steps 4 through 8.

6. In the "Scan Base Station" window, touch the Select button. Another window will appear, listing the capabilities of the base station.

7. Once all the capabilities of the base station have been listed, enter the PIN code in the PIN Code text box (See the WebPAD 1.5 System User Guide for more information about the PIN).

8. Press the Register button. Note: This step must be completed within one minute of step 5 (above). If step 8 is not completed within one minute of step 5, repeat steps 4 through 8.

This initiates the registration process. When completed, the tablet and base station will have established a communication link between them. For a more detailed explanation of the registration process, please consult the WebPAD 1.5 System User Guide.

4.1.1.3 Using The System

The browser included in the WebPAD 1.5 system provides the same basic functionality as all standard browsers.

1. Select "Web" from the application launcher or "Browser" from the QNX menu to invoke the web browser.

2. To enter a web page address (URL), touch the address of the current page which appears in the upper border of the browser. This highlights the entire address.

3. Touch the keyboard icon in the lower left-hand corner of the screen.

4. Type in the desired address. (Note: the keyboard contains a "www." and a ".com" button to simplify the typing process).

5. Press "Enter." The desired web site will appear.

The browser is also capable of moving between previously loaded pages, reloading pages and stopping the loading of a page (via the icon in the top border of the browser). To follow links between pages, simply touch the link and the browser will load and displays that page.

4.1.1.4 Adding a New Dial-up Account

To add a new dial-up account to a system containing a DECT base station, use the Internet Dial-up Connector utility, as follows:.

1. Invoke the Internet Dial-up Connector utility via the QNX menu button in the lower left corner.

2. Touch the "New" button to create an new ISP account for the WebPAD 1.5 system.

3. In the "ISP Setup" window, add:
    - ISP Description: Name of the ISP
    - Server Address: IP Address of the DNS server
    - Phone No.: Phone number of the ISP
    - Login Script: Select login script or create new one
    - Idle Time-out: Length of idle time before ISP log off
    - User Name: Logon Identification, provided by ISP
    - Password: Password provided by ISP (optional.) If not entered here, the user will be prompted for it when establishing the connection to the ISP.

4. Verify the modem setup. If you are unsure, leave them at their default settings.To check and/or change the settings, touch the "Modem Settings..." button and make changes. Touch "Apply" to enter the desired changes.

5. When all information is entered, touch the "Apply" button.

The Internet Dial-up Connector utility is now ready to connect to the new ISP.

4.1.1.5 Login Scripts

Login scripts search for particular text strings in a certain order. When the dialer finds the string it is looking for, it replies with the designated text string. These scripts are created and edited in the Internet Dial-up Connector utility, in the ISP Setup window (see 4.1.1.4 "Adding a New Dial-up Account"), on a WebPAD 1.5 system that contains a DECT base station. In the ISP setup window, select either an existing script or enter a new script name, then touch the "Edit Script..." button to open the Script Editor window.

Each step shown in the window is processed, in sequence, starting at the top. Each line is composed of three parts: What to wait for, what to reply with, and what status is to be posted. On the right side of the window are buttons to insert steps or modify/remove the currently selected line. Three boxes at the bottom of the window are used to edit the settings of the currently selected line.

To modify a line, select it. The contents of the line is then shown in the boxes at the bottom. Modify any or all of the selected line. After completing the modifications, touch the "Modify" button to save the changes.

WebPAD™ 1.5 System User's Guide

4.1.2 802.11-based Access Point Base Station

4.1.2.1 Setup Guidelines

The following is the sequence used for setting up a Web-PAD system.

1. Plug the radio card into the PCMCIA slot on the base station.

2. Connect the modem, power cord and phone cables to the base station.

3. After applying power to the base station, power up the tablet. Once the tablet finishes booting, the system is ready for use.

4.1.2.2 Using The System

The browser included in the WebPAD 1.5 system provides the same basic functionality as all standard browsers.

1. Select "Web" from the application launcher or "Browser" from the QNX menu to invoke the web browser.

2. To enter a web page address (URL), touch the address of the current page which appears in the upper border of the browser. This highlights the entire address.

3. Touch the keyboard icon in the lower left-hand corner of the screen.

4. Type the desired address. (Note: the keyboard contains a "www." and a ".com" button to simplify the typing process).

5. Press "Enter." The desired web site will appear.

The browser is also capable of moving between previously loaded pages, reloading pages and stopping the loading of a page (via the icon in the top border of the browser). To follow links between pages, simply touch the link and the browser will load and displays that page.

4.1.2.3 Adding a New Dial-Up Account

Add a new dial-up account to the Access Point via the web browser on the tablet, as follows.

1. Enter the home page URL of the access point in the tablet's browser (http://manage.ap).

2. Touch the "Setup" link in the border on the left side of the page. This provides the user with a summary of the settings for the access point.

3. Before going any further, the access point requires the user to enter a password. Enter the password. If the password shows as a series of asterisks, the password is remembered by the system and need not be re-entered.

4. In the border on the left side of the page is a "Basic Setup" section. Touch on the Internet Access link in this section.

5. Enter "ISP Phone Number," "ISP Login Name" and "ISP Password."

6. Touch the "Enter" button directly beneath where the

information has been entered.

7. Touch the "Save" button to save all changes.

This last step reboots the access point. When the access point completes the reboot process, the new dial-up account will be established.

4.2 TROUBLESHOOTING

4.2.1 Tablet will not power on

If the tablet will not power on when the power button is pressed, the batteries may not have enough power to operate the device. Plug the AC adapter into the tablet to charge the batteries. The tablet can be used during the charging process, but the user should allow the batteries to charge some before using.

If the tablet still does not boot, there may be a serious problem with the device. Return for servicing.

4.2.2 RF link is down

If the RF Link task box reads "RF Link Down", the radio in the tablet is not able to communicate with the radio in the base station. This problem can have several causes:

1. First, make sure the base station has completely booted. If it has not, wait for it to complete booting and check to see if the task box reads "RF Link Up".

2. If the base station has completely booted but the task box still reads "RF Link Down", the radio in the tablet may not be receiving a strong enough signal from the base station. The distance between the tablet and the base station may be too great or interference may be a factor. Try moving the tablet closer to the base station. If the task box now reads "RF Link Up", operate the tablet closer to the base station.

Refer to the following only if using a DECT-based base station:

3. If the base station is DECT-based, run through the registration process. If the tablet and base station are not registered with each other, the system will not function properly. If registered, but still not working, please contact the service representative for assistance.

Refer to the following only if using an Access Point base station:

3. If the radio in the tablet is still not communicating with the radio in the base station, check the system IDs of the radios in both the base station and the tablet. These IDs should match. If they do not match, change them to match.

4. To check the system ID on the tablet, refer to Section 2.3 "Radio Configuration Options".

5. To check the system ID on the access point base station:

   a. Disconnect the modem. Connect a null modem cable to the back of the base station.

b. Connect the other end of the null modem cable to a PC and bring up a terminal emulation program on the PC.

c. Set the serial port on the PC to 9600 baud, 8 data bits, no parity, and 1 stop bit.

d. If "Password:" is not displayed, press the "Enter" key until it appears. Enter the password. The default password is *default*.

e. At the prompt, type in "config". In the information displayed on the screen, look for the entry Network Name. This value should match the system ID on the tablet.

If none of the above recommendations solves the problem, call the service representative for further assistance.

4.2.3 Received an error when trying to bring up a web site

If the link between the tablet and base station is up, problems may still occur when trying to access a web site. Certain problems can be resolved by the user. Others will require assistance from another source, such as from the Internet Service Provider (ISP).

1. Check the network settings on the tablet. Make sure the proper proxy port address is set up for the proxy server selected (see Section 2.1.4 "Browser>Network")

2. Verify that the ISP's phone number, user name and password have been correctly entered (see Section 4.1.1.4 "Adding a New Dial-up Account" for DECT-based base station and Section 4.1.2.3 "Adding a New Dial-Up Account" for the access point base station).

3. Verify the base station has established a connection to the ISP. With an access point base station, bring up the access point's configuration screen by going to the web page http://manage.ap. If an animated GIF is active between the representation of the access point and the world icon, the connection is up and active. If not, touch the "Connect" button to initiate the connection sequence. If you have problems connecting, go to the "Status" web page. Select the "Modem" link, then select "View PPP Log". This log lists all the activity taking place over the modem. This log will help when discussing the connection problem with the ISP.

If a problem still exists, contact your service representative for assistance.

4.3 USING TWO OR MORE TABLETS FROM THE SAME BASE STATION

The ability to support more than one tablet on a base station depends on the type of base station supplied with the device. The 802.11-based access point base station is already set up to handle this topology, without any extra configuration.

The DECT-based base station, however, does not support multiple tablets. These base stations only support a one-to-one topology.

4.4 REALAUDIO/REALVIDEO CONFIGURATION

The WebPAD system contains a RealPlayer application. To configure the RealPlayer on the tablet, follow these steps:

1. On the tablet, bring up a terminal window. Touch the Virtual Keyboard task box to bring up the keyboard.

2. At the "#" prompt, enter the command:
   rvplayer &

3. Once the player window appears, select the "View" menu.

4. Select the "Preferences" submenu. A new window labeled "Preferences" will be displayed. This window has several tabs; select the "Connection" tab. Verify that the bandwidth is correct for the base station's Internet connection.

5. Select the "Proxy" tab. This form notifies the player of the proxy server. If "Use Proxy" is selected (the box next to it is colored), then deselect it by touching it.

6. Touch "OK" to save the changes.

Once the RealPlayer on the tablet has been set up, log onto the network to test it. If the player is not working, call the service representative for assistance.

5.0 Upgrading Tablet Software

As new functionality is developed and modifications are made, the software residing in the tablet will need to be upgraded. The tablet's browser is the main source used to access and implement upgrades. To implement an upgrade, point the browser at the server containing the latest software. Once the image has been selected, the browser will download the image to the tablet. Once the download is completed, the image is unpacked and placed into the current directory structure. The tablet then automatically reboots into the new upgraded system. If, after the upgrade, the system is not working properly, refer to Section 4.0 "Setup and Troubleshooting" or contact the service representative for further assistance.

The tablet image can either be upgraded locally or remotely. The local upgrade can only be done if the Web-PAD system being used has a laptop base station or another PC has been set up to act like a laptop base station. Without a separate PC, WebPAD systems shipped with the access point base station will not be able to perform a local upgrade. All WebPAD systems are capable of performing the remote upgrade.

5.1 REMOTE UPGRADES

A remote upgrade is performed off of a web server, not a laptop base station. This web server could be one operated by the user or the National Semiconductor™ Web-PAD software update site. To perform a remote upgrade:

1. Bring up the browser on the WebPAD tablet, and go to the site which contains a link to the software update file.

2. Locate the link to the latest version of the software and touch it to start the download process.

3. When a question appears in the dialog box, asking if the update should be performed, touch the "Yes" button to install the upgrade.

   If the user has modified any of the settings from the default values, these settings will have to be reset to the desired function upon completion of the upgrade.

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