
Radiant Model P1220 POS Terminal

User Guide V.9 (DRAFT)



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Using this Guide

Format/Contents

This user's guide is designed to help you set up and use the P1220 Point of Sale. The official product name is **P1220 Point of Sale** and offers multiple configurations depending on operating system, memory, touchscreen, motion sensor, or storage configurations. It is designed as a reference guide. All steps and overviews contained in this guide can be used as a functional reference when you are using the system on-site.

Text Notations

Labels on the P1220 box are displayed in **bolded** text.

Text Symbols

This guide contains symbols that identify special emphasis on a function or procedure. Each type of symbol is identified below:

NOTE: This symbol indicates any additional information that you might want to know about a certain function. This information is outside of the flow of the current process.

 **Caution** - This symbol indicates that the user's actions may have an effect on the system.

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1. Introducing the Radiant Model P1220 POS Terminal

The Radiant P1220 Point-of-Sale is the newest member in the Radiant Systems family of open retail platforms. This NEW 12" LCD form factor offers multiple mounting options included tilt stand, wall, and wedge mount. The terminal utilizes Intel's **Celeron M Ultra Low Voltage processor** and 852 chipset for low power and high performance.

Open Platform Highlights

- o Standard Intel Architecture
- o Industry standard storage (hard drive or CF Card), DDR memory, mini-PCI slot, and USB/RS232 connectivity
- o Multiple operating systems including Windows XP or XP-Embedded
- o OPOS drivers available



The new countertop enclosure provides many benefits, including a small footprint and multiple mounting options. The unique **CableStrap™ System** provides for ease of installation, controlled access to connectors, concealed cable routing, and cable restraint for better reliability. This all-in-one solution provides very tight integration of core point-of-sale hardware including a touch screen, magnetic stripe reader, and much more.

This package includes a 12" active matrix, color, 800x600 main display with a resistive or capacitive touch screen. The **high-bright, dual-bulb** active matrix screen provides the best possible display quality, with excellent contrast and brightness. Additionally, the P1220 provides the very best in retail multimedia, including full motion video.

The **resistive touch screen** provides a very durable, accurate, and fast touch interface even with a gloved hand or stylus. Alternatively, the **capacitive touch screen** offers a highly durable, accurate, and fast touch interface for applications that do not require gloved or stylus input.

The P1220 also has **more powered serial ports** than most alternative 12" POS terminals including four RS232, four USB, 1 DVI-I, 2 PS/2, and two dedicated cash drawer ports. This provides greater flexibility to support both legacy and next generation peripherals. Also, the powered serial ports eliminate the need for power bricks, thereby reducing another point of potential failure.

The **retail hardened design** offers a spill resistant, high impact enclosure that is built to withstand tough in-store conditions with continuous operation. Eliminating the active CPU fan increases reliability by preventing forced air through the unit, thereby reducing contaminants in the system. In addition, the P1220 can be configured as a silent, thin client, fanless, solid-state terminal for maximum reliability.

The P1220 supports **multiple operating systems** including Windows XP Professional and XP Embedded. The P1220 provides full support for TCP/IP networking on a 10BaseT or 100 BaseT Ethernet network and it has full support for a wireless network (optional). Upgradeability and serviceability are fundamental to the P1220 and it offers easy access to the hard drive, motherboard, RAM, and expansion slots.



Product Stability

By using Intel's embedded processor family, the P1220 offers **guaranteed product stability** for many years unlike traditional consumer desktop and mobile PCs that have short processor life spans of only a few months. This benefit provides a consistent configuration which is critical for rollouts that might last several years.

Model P1220 Every-Unit-Item Features and Benefits

Features	Benefits
Intel Celeron M 600 MHz uLV processor (or higher)	High performance, low power, and support for multiple operating systems. Long lifecycle commitment from Intel.
Intel 852GM Chipset	Supports USB 2.0 and up to 32MB Dynamic Video Memory Technology (DVMT).
Radiant countertop enclosure	Fully integrated, low-profile, water and tamper resistant housing for high functional retail interaction
CableStrap™ System	Highly functional cable management system that uses a cable strap to secure cable connections for better reliability
Dual-Bulb, Active Matrix, SVGA LCD primary display	Excellent brightness, contrast, and color depth. Enables the proper display of high-quality graphics to ease use and decrease training time for retail employees or to directly engage the consumer
Software-adjustable brightness for main display	Better display characteristics for user as well as <u>significantly increased bulb life for main display</u>
Integrated resistive or capacitive touch screen controller	Resistive screen offers low-cost option with superb ease of use. Can be used with instruments other than fingertip, very high durability, does not "drift" over time. Capacitive screen offers greater durability for applications that do not require gloved or stylus input.
Magnetic Stripe Reader (MSR)	Integrated 2-Track MSR with long life rating for credit and loyalty cards. Barcode and 3-Track readers optional.
3.5" Hard Drive, 2.5" Hard Drive, or Compact Flash™ storage	3.5" or 2.5" large capacity for high reliability and greater mass storage. Compact flash for greater reliability
Sound	Provides buzzer for user interaction.
System Management features	Supports ACPI, SMBIOS, APM, SNMP, and PXE. Also supports metering, remote desktop, remote execution, BIOS update, boot on USB, system inventory and asset management.
4 Powered serial ports (RJ12)	Provides data I/O with any RS-232 peripheral and power, minimizing failure points
4 USB 2.0 ports	Provides data I/O with any USB peripheral. Faster data rates with USB 2.0 at 480 Mbps verses 12Mbps with USB 1.1
2 Dedicated Cash Drawer Ports (RJ, 4-pin)	Provides two powered ports for direct drive cash drawers (12 volt)

2 PS/2 ports	Provides support for mouse and keyboard
1 DVI-I port	Provides port for second display (digital or analog)
1 Mini-PCI expansion slot	Provides expansion slot typically for integrated wireless card

Variable Position Tilt-Stand with power supply

This tilt-stand provides variable tilt positions that are secured without need for pins or locking knobs. The dual hinge allows for continuous, smooth rotation throughout the tilt angle (20° to 105° from vertical). The stand includes CableStrap™ System, a unique cable system with cable strap to prevent accidental disconnect or tampering. It also offers through-counter cable routing, which hides all cabling from view. With the power supply located in the base, thermal dissipation of the power supply is isolated and away from the touch head motherboard electronics, which increases reliability of the terminal.



Wedge Mount option

The P1220 can be configured in a wedge mount option to allow for a low-profile, fixed position form factor. The wedge configuration allows for a slight 9° angle for those situations that require minimal terminal height on the countertop. This is very useful for the passing items over the terminal from the employee to the customer. This configuration also includes an external, fanless power supply (solid state) and storage options of either a solid state Compact Flash™ or an integrated 2.5" laptop hard drive for even greater capacity.



Wall Mount option

The P1220 can be configured in a wall mount option to allow for a thin, fixed position form factor. The wall configuration creates an ADA compliant (less than 4" height from wall) mounting to provide maximum flexibility. Mounting to poles, hallway walls, or other locations is simple by using the wall mount bracket. This configuration also includes an external, fanless power supply (solid state) and storage options of either a solid state Compact Flash™ or an integrated 2.5" laptop hard drive for even greater capacity.

Model P1220 Optional Features

Operating System Options

See configuration options

Microsoft Windows XP Professional Operating System

Microsoft Windows XP Embedded Operating System

Storage

See configuration options

Compact Flash™ - Solid state storage option with XP Embedded OS. 512MB capacity is standard.

3.5" Hard Disk Drive (40GB, 5400 RPM standard) – Large capacity storage option with high performance

2.5" Hard Disk Drive (40GB, 5400 RPM standard) – Large capacity storage option for wedge or wall mount options

Wireless Adapter card

See configuration options

This feature adds an Intel PRO/Wireless 2200BG adapter card to the P1220. The mini-PCI card complies with the IEEE 801.11b/g dual band standard and utilizes the mini-PCI slot. The maximum communication rate is

11Mbps using 802.11b at 2.4Ghz frequency or 54Mbps using 802.11g at 2.4Ghz frequency. The transmission rate will decrease as distance from access point increases. Communication ranges varies from around 300 feet (indoors line of sight) to 1324 feet (outdoors line of sight). Please note that the wireless access point must be ordered separately.

Parallel Port

See configuration options

This feature adds a parallel port to the connectivity panel and provides data I/O with any parallel peripheral.

Radiant Customer Display Options

See configuration options



Radiant offers two options for the customer display including either the color 5.5" Digital Video Order Confirmation Display (OCD) that supports full motion video or the 2x20 VFD Graphical Customer display. Both provide the ability for customers to view orders as they are entered into the point of sale resulting in increased order accuracy. Additionally, they can be used as an advertising medium, allowing clients to display specials and promotions to the customer at the time of purchase. The stand mounted 2x20 is integrated directly on top of the terminal in a fixed position or it can be pole mounted. The Radiant terminal provides the necessary power to operate the OCD or the 2x20 Customer Display. For customer display feature numbers and specifications, see specific General Product Descriptions for displays.

Biometric Reader Option

See configuration options

This feature provides a 6.5 x 6.5 mm, 500 dpi resolution fingerprint reader to the front bezel of the P1220. The biometric reader is typically used for employee login to the application.

Powered USB (24v) Option

See configuration options

This feature adds a **24 volt, powered USB** port into the tilt base of the P1220. Powered USB offers a single connection receptacle that includes both a standard USB connector and a locking power connector (USB+power). It accepts either a standard USB device or a 24 volt USB device such as a printer. Similar to the powered serial ports, the powered USB port eliminates the need for a power brick, thereby reducing another point of potential failure. This option is only available with the tilt base configuration. For more information on powered USB, see <http://www.poweredusb.org/>

RFID Reader

See configuration options

This feature adds a RFID reader. Supports ISO 15693, 14443A/B, and HG Tag-it. Dual Frequency 134.4Khz and 13.56Mhz. Antenna is mounted behind the Radiant logo badge.

USB Keyboard with four USB ports

Feature Number: KB00001

The USB keyboard offers 104 quiet, tactile-feel buttons for excellent user interface. In addition, it has four downstream USB ports on the rear of the keyboard for connecting additional USB devices. The keypad symbols are wear-resistant, durable, and easy to clean for demanding users. The keyboard's size is 470 x 195 x 38 mm.

USB Mini-Keyboard with Storage Tray (Black)**Feature Number: X200F601**

The USB keyboard and tray is a 86 key, mini-keyboard with a USB interface and a slide-out, black metal tray. The keyboard uses quiet, tactile feel technology and has durable, laser printed, keytop legends. The keyboard is black and the size is 462 x 168 x 41 mm.

External USB to 3.5" Floppy Drive**Feature Number: HD00016**

The external USB to floppy drive offers an easy way to transfer files to and from the P1220 if a network connection is not available.

Wall Mount Kit (for head mount)**Feature Number: P120F001**

Used with P1220 in head only option (power brick configuration). This kit includes the wall mount bracket and bracket to hold the power brick. Also, supports VESA (75) mounting needed to mount on swing arm plate.

Countertop Mount Kit (full base)**Feature Number: P120F002**

This kit includes the countertop mount bracket and the bracket to position the touch head vertical if needed to mount to wall.

Specifications

CPU	Intel Celeron M 600 MHz uLV
Volatile Memory	256MB DDR Std, 2 DIMM slots with up to 2GB DDR SDRAM supported
Networking	Auto-selecting 10Base-T/100Base-T Ethernet using TCP/IP
Primary Display	12.1" SVGA (800x600), Active Matrix, High-bright, 300 nit, Dual-bulb, 262,144 colors, long life (50K hrs)
Audio	Piezo Buzzer
Touch Screen	Native support for 5-wire resistive or capacitive
MPEG Video Decoding	Software MPEG decoding supported
Enclosure	Polycarbonate/ABS impact resistant, high strength blend, environmentally sealed
Dimensions (Countertop envelope through tilt angle)	12.4 to 12.7" L x 13.5" W x 10.6 to 13.5" H, 31.5 to 32.3 cm L x 34.3 W x 26.9 to 34.3 cm H
Base Dimension	11.8" L x 9.0" W 30.0 cm L x 22.9 W
Tilt Angle	20° to 105° from vertical
Weight	19.5 lbs., 8.8 kg
Operating Temperature	32°F – 104°F, 0°C – 40°C
Storage Temperature	32°F – 158°F, 0°C – 70°C
Humidity	5% to 85%, non-condensing
EMI Certifications	FCC Class A, CE, C-Tick
Safety Certifications	UL, CUL

Installation Notes

Cable Restraint: The P1220 includes a unique **CableStrap™ System** with cable strap to prevent accidental disconnects and tampering. The clamp strap is opened and peripheral connections are made. The strap is then closed and cables are routed thorough the slot in the base.

Footprint: An area of no less than 15” inches square is necessary to properly install a P1220 unit with MSR. This will accommodate the unit as well as its associated mounting hardware and customer display.

Power: For **tilt stand option**, the P1220 has an integrated power supply rated for 110V and 240V (*manual switch located on power supply*), 50Hz or 60Hz located in the base. For **wedge or wall mount option**, the power supply is an external power brick with auto-sensing for 110V and 240V, 50Hz or 60Hz. Source power is drawn from a regular AC wall outlet. The electronics are “universal” – that is, they will function when connected to standard wall outlets of most nationalities around the world. For use in locales other than North America, special wall outlet adapters or cables will be required. For international configurations of the P1220, typically the county specific power cord is ordered separately.

Moisture: The P1220 is water-resistant. It can easily withstand water over spray and exposure to mild cleaning agents without sustaining damage. The P1220 should not be sprayed directly, however, as the force of pressurized water could potentially compromise the seals around the touch screen, and/or invade the enclosure through the cooling vents. Accordingly, P1220 units should not be installed in areas where they might be exposed to direct water spray. P1220 units are not meant for outdoor installation.

Touch Screen Cleaning: Any standard glass cleaner that is not ammonia based or water can be used to clean the touchscreen. Always spray the glass cleaner on the cloth or towel and then clean the touchscreen to prevent cleaner from running down the glass and gathering on the front bezel.

2. Installing the P1220

Follow these steps to install a P1220 unit:

1. Place the P1220 with stand in a point of sale area (storefront).
The unit will come completely assembled with tilt stand, touch screen, and customer display (optional) attached.
2. The power cord should already be attached to the bottom of the terminal. If not, tilt the terminal to the side and attach the power cord to the bottom of the terminal.
3. Connect the peripheral devices to the appropriate ports (see connectivity diagram below)
4. Connect the network cable to the network port.
5. Open the CableStrap™ System
6. Route the cables from the terminal connectors through the Cable Management System and then down between through the center slot in the plastic base.
7. Connect the power cable to power connector.
➤ Note: The socket-outlet shall be installed near the equipment and shall be easily accessible.
8. The P1220 should boot automatically.

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Touch Screen Cleaning: Any standard glass cleaner can be used to clean the touchscreen. Always spray the glass cleaner on the cloth or towel and then clean the touchscreen to prevent cleaner from running down the glass and gathering on the front bezel.

With Radiant Application Software: Upon the initial boot of the P1220, typically the Back Office server should detect the new P1220 and send all appropriate data files to the unit. After the initial file transfer has completed, the unit will automatically reboot. Following the reboot the P1220 unit should be fully operational.

With Third Party Application Software: The P1220 will boot to the operating system or directly to the third party application.

Wall Mount Installation

The P1220 can be wall mounted using the wall mount bracket below. It includes a bracket that holds the power brick next to the terminal

Secure wall mounting bracket using 4 ¼-inch screws.

Note: The 2 screws must be centered on a stud when mounting to a sheet rock wall.

Install the power brick bracket by sliding on wall mount bracket and locking it in place.

Place terminal on wall mount bracket by aligning 4 round mounting posts on back of P1220 touch head with 4 keyhole slots on the wall bracket.





Wedge Mount Installation

Setting Up the P1220

In order to begin using the P1220 for your POS operations, you must first set up various standard and peripheral components, including connecting the power source, connecting the P1220 to your network, and connecting any necessary peripheral devices. This section outlines these setup processes.

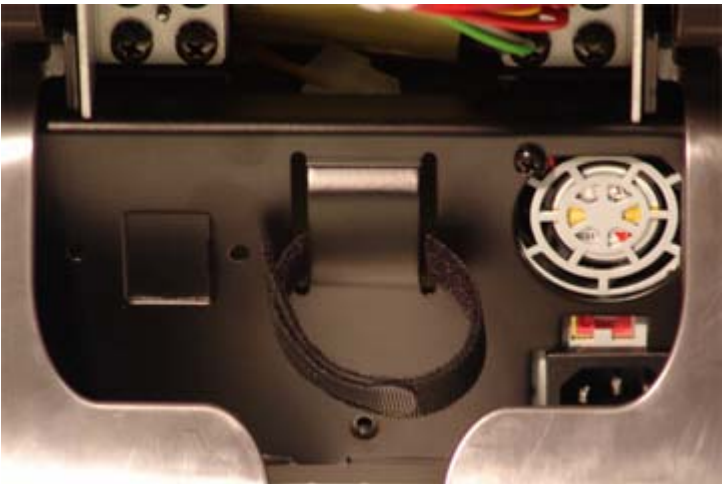
Note: After all connections have been made, always close the **CableStrap™ System** to secure the cables and prevent accidental disconnects.

CableStrap™ System

The CableStrap™ System is an innovative feature on the P1220 that provides for ease of installation, controlled access to connectors, concealed cable routing, and cable restraint for better reliability.

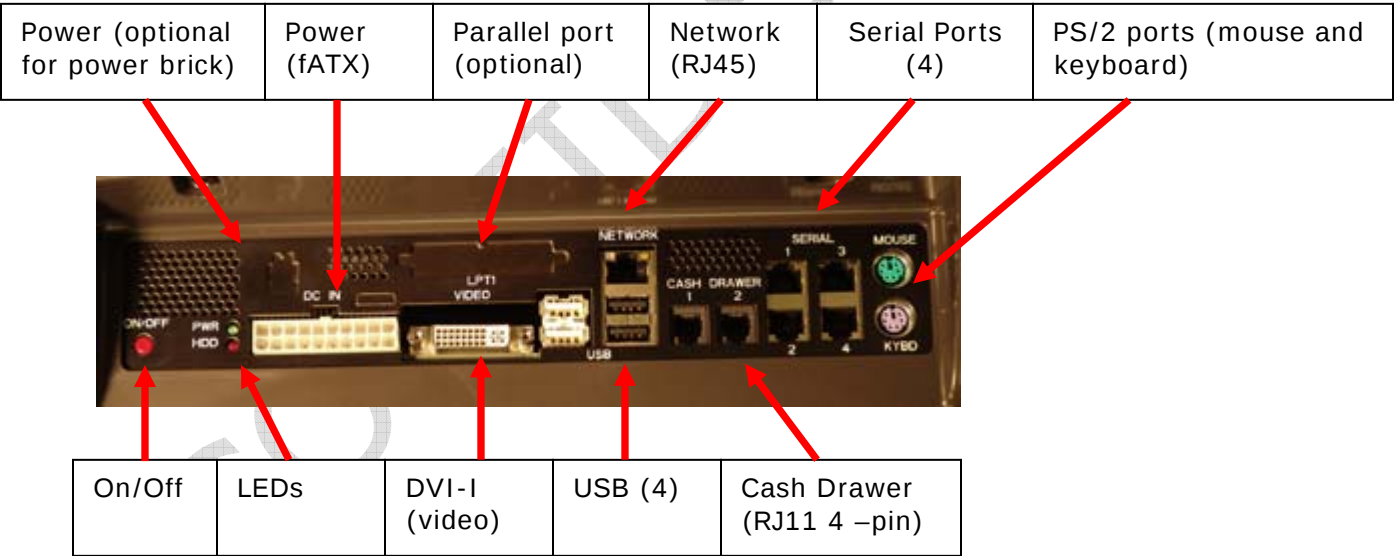
Note: After all connections have been made, always close the CableStrap™ System to secure the cables and prevent accidental disconnects.

1. Tilt touch head back
2. Open CableStrap™ System
3. Plug cables in the input/output connectors
4. Route cables in cable strap and secure strap
5. Tilt unit to user operating position



Connectivity (I/O) panel

Figure 2-1



Terminal Model Number Labels

The P1220 model will be labeled using the Model number (P1220-xxxx) and unique serial number. The P1220-xxxx will identify the product configuration. Some configuration feature would include operating system, storage, RAM, touchscreen, etc. The terminal labels (model number and serial label) are located on the bottom under the connectivity panel.

Operating Systems

The P1220 can be configured with different operating systems including XP Professional, XP Embedded, or Windows Embedded for Point of Service (WEPOS).

Connecting the Power Source

After the power cord is connected into the base of the P1220, you can plug it into a standard U.S. (United States) power outlet.

- To connect the power source to the P1220, plug the power cable from the terminal into the power outlet.

Connecting to a Network

Most business configurations will require you to connect your P1220 system to a network. Connecting to a network will enable you to communicate with other systems and devices also on the network, and depending on your business' configuration, may allow you to connect to the Internet.

- To connect the P1220 to a network, plug the 10/100 Ethernet cable into the port labeled **NETWORK** on the bottom panel. The other end of the 10/100 Ethernet cable should be connected into your network hub.

NOTE: You may need to consult with your business' IT (information technology) representative to determine whether you have a network connection available, and to locate the network hub to connect to your P1220.

Connecting Peripheral Devices

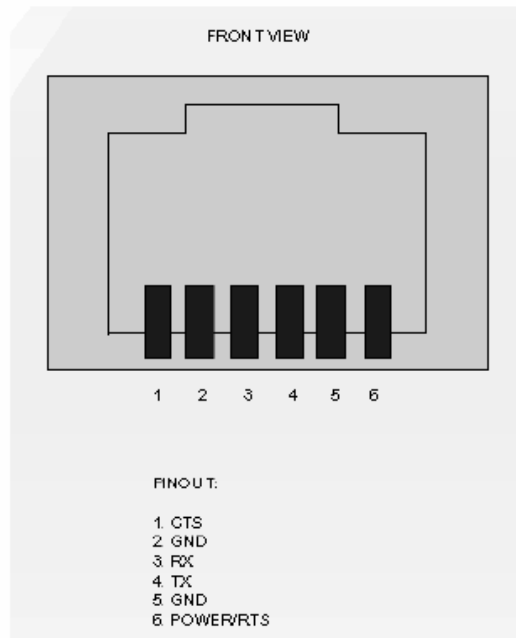
In order to use the P1220 system to run your business' software, you can set up several peripheral components. The P1220 is compatible with standard PC equipment, including a USB mouse, USB keyboard, printer, speakers, network connectivity, as well as any other devices that can be supported by your operating system. This section of the guide covers some of the common peripheral components that you may want to connect to the P1220.

Using the RS-232 Ports

You can connect various peripheral devices to the P1220 by using any of the four powered RS-232 serial ports located on the bottom panel. Some peripherals that are commonly supported by the RS-232 ports include scanners, printers, and cash drawers.

NOTE: Other peripheral devices may also be compatible with the RS-232 serial ports. Please refer to each device's User Manual to determine which type of port it supports.

- To connect a peripheral device to one of the RS-232 serial ports on the P1220, plug the device cord into any of the serial ports (labeled **RS232 1, 2, 3, and 4** on the bottom panel). See picture 2-1 for a visual reference of the ports' location.
- The RS232 ports use RJ11 connectors (12v, 500 mA). Maximum of 12 watts.



Using the USB Ports

You can connect various peripheral devices to the P1220 by using the four USB (2.0) host ports located on the bottom panel. Some peripherals that are commonly supported by the USB ports include a keyboard and mouse.

NOTE: Other peripheral devices may also be compatible with the USB serial ports. Please refer to each device's User Manual to determine which type of port it supports.

- To connect a peripheral device to one of the USB host ports on the P1220, plug the device cord into one of the USB ports (labeled **USB** on the bottom panel). See picture 2-1 for a visual reference of the ports' location.

Using the Direct Drive Cash Drawer Ports

The P1220 can power two different type cash drawers (direct drive or serial) at 12 volts. The terminal has two direct drive cash drawer ports with RJ11 (4 pin) connectors labeled, 1 and 2, on the bottom I/O panel. The cash drawer itself typically has a solenoid for firing the drawer and a switch for determining whether the drawer is open or closed. For serial cash drawers, connection is made to one of the powered serial powers available on the P1220.

Pinout for DDCCD ports

Orientation: looking into the connector with tab on **BOTTOM**, then pin 1 is on the right side

- Pin 1 sense
- Pin 2 Fire
- Pin 3 GND
- Pin 4 GND

Using a Digital Video display with the P1220

The P1220 852 GM chipset supports dual, independent displays. To use a second display on the P1220, a DVI port is available.

- Attach the DVI cable to the P1220 and attach the second display
- From **Start → Settings → Control Panel → Display**
- Hit **Setting (it will show you screen #1 and #2).**
- Hit **#2 screen**
- Select **Extend Desktop** button
- Hit **Apply**
- Select **Locate desktop** and you should get a #2 shown on the second display
- The resolution might need to be adjusted depending on display. For Radiant OCD display, the resolution should be 640x480 (60 hz).
- Hit **Apply**
- It should project or extend the second desktop to the second display.

Using an external VGA display with the P1220

To use a second display or video projector to demo software on the P1220, a DVI to VGA adapter is required.

- Attach the DVI to VGA adapter to the P1220 in the DVI connector.
- Attach the second display or projector to the VGA port.
- From **Start → Settings → Control Panel → Intel Extreme Graphics**
- Hit **Intel Dual Display (Clone)** button
- Hit **Apply**
- It should project the same image as the desktop to the screen or projector. **Note:** If size of projected display is wrong, make sure screen resolution and color are the same for desktop and projected displays (ie 800x600) under **Control Panel → Display → Settings**

LED Diagnostics

On the connectivity panel of the P1220, there are 4 LED lights that can be used for diagnostics.

- Green power - "**Power**" - is active and solid with power is available to the terminal.
- Red - "**Hard disk drive**" - is active if activity is occurring with the hard drive or compact flash card
- Network
- Green - "**Lnk**" - is active and solid with functioning network connection.
- Yellow - "**Act**" - is active if activity (transmit and receive) data is on the network

3. Using the P1220

The P1220 platform functions as a POS terminal for your business. Performance and functionality will differ according to the operating system, software, and peripheral devices you install.

Starting Up the P1220

In order to run your operating system and access your software and data, you must start up the P1220 platform. To start up the P1220, complete the following step:

- Simply plug the power cord into an electrical outlet. The system automatically turns on once plugged into the outlet.

NOTE: Depending on your installed operating system and your selected settings, your system will vary in the amount of time it takes to boot up.

Shutting Down the P1220

It is *highly recommended to properly shut down* the P1220 to avoid operating system corruption due to hard power loss. To shut down the P1220, complete the following steps:

1. If using a software application, typically there is a software shutdown button in the manager's setup screen which should be used to properly shut down the terminal. If a shutdown button does not exist, then exist the application to the operating system and shut down gracefully through the operating system (see #2 below)
2. Properly shut down your operating system. For Windows operating systems (XP-Embedded and XP-Professional), you can do this by selecting **Shut Down** from the **Start** menu.

NOTE: The above steps may vary depending on your installed operating system and software application.

3. If proper shutdown through the software application or operating system is not achievable. Then, press the "On/Off" button located on the I/O connectivity panel at the bottom P1220. This will create an operating system shutdown.
4. If none of the options above are responding or simple not available, then unplug the terminal from the outlet. Note: This should be avoided at all times to avoid operating system corruption due to hard power loss.

Touch Calibration

The P1220 with resistive or capacitive touch screen will already be calibrated before it ships from Radiant Manufacturing. It should not require a recalibration through the life of the terminal. However, if touch issues arise, it is recommended that re-calibration be tried first before returning the terminal.

To determine if you have resistive or capacitive touch screen is to gently touch the screen with an object different from a finger. This could be a plastic part of a pen, cardboard, etc. Resistive screens will accept all input devices including finger or styluses whereas capacitive will just accept finger and/or conductive input devices. If the plastic part of the pen does not register a touch, the terminal is likely to have a capacitive touch screen which requires finger input for best results.

Resistive touch screen

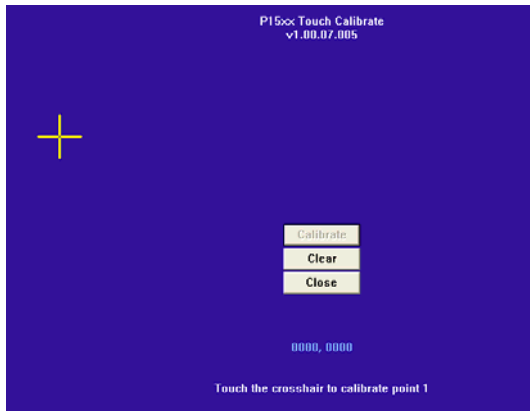
For resistive touch screen, Radiant uses 4 point calibration to achieve the best accuracy. The below steps outline how to re-calibrate the touch screen. Note: Do not use any sharp objects, pens, pencils, or any material expect a finger to contact touch screen sense it could damage the touch sensing layer.

With a Radiant application, from the managers menu, select **calibrate touchscreen**.

From the **desktop or startup menu**→**run**→type: **tcilib**

You can also run the tcilib from the P15xx folder.

See picture below.



Additional Touch settings for Resistive

Below are some variables that can be adjusted in the registry to help with touch parameters such as internet browser buttons. Warning: These are registry settings which are critical to operating system functionality so caution should be taken before changing any settings.

Start → Run → type “regedit”

Touch double-click speed settings

Go to Hkey_current_user → control panel → mouse → doubleclickspeed

The number is the time (in milliseconds) in between clicks to register as a double-click. If it's set extremely low, you can eliminate double-clicking altogether. For example, at the default value of 500 DoubleClickSpeed you have 1/2 a second to click twice. At 100 DoubleClickSpeed you have 1/10 of a second, and at 1500 DoubleClickSpeed you have 1 1/2 seconds. The clicks must happen inside the height and width restrictions, which are in pixels.

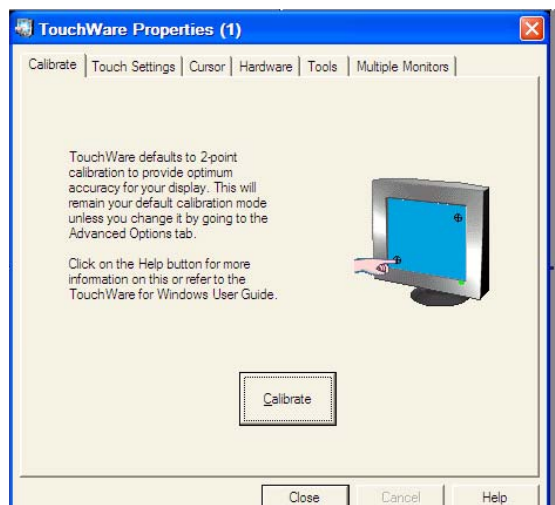
Touch drag settings

Go to Hkey_current_user → control panel → desktop →

This registry file changes the size of the area Windows uses to differentiate between a click and a drag. The user can change the *DragWidth* and *DragHeight* to 30 pixels from the default value of 4. This prevents the 'Forbidden' symbol  from appearing when you try to click buttons that are made with pictures.

Capacitive touch screen

For Capacitive touch screen, Radiant uses calibration to achieve the best accuracy. To re-calibrate, **go to desktop or programs → Touchware → Calibrate**. In addition to calibration, you can adjust touch settings, cursor, etc. from the Touchware interface (see picture below). The capacitive touch screen does not connect to the touch screen port on the top of the terminal. It uses a USB port that is located internally on the right side of the motherboard.



Note: The P1220 will already be calibrated before it ships from Radiant Manufacturing. It should not require a recalibration.

Capacitive – Disabling beep on boot

A capacitive P1220 will typically beep on boot. To disable the beep upon booting, use the device manager

1. Go to device manager or Start→Run→type (devmgmt.msc)
2. Select on the menu View→Show Hidden Devices
3. Expand "Non-Plug and Play Drivers"
4. Go down to the driver named "Beep" and double click it or press <Enter>
5. Select the "Driver" tab
6. Change the "Type" pull-down to "Disabled"
7. Click the "OK" button
8. A box will ask you if you want to restart the computer for changes to take effect, say "Yes"

After disabling the startup of the device in the device manager, you should not hear the beep anymore when the P1220 starts up.

Touch Screen Cleaning

Any standard glass cleaner or water can be used to clean the resistive or capacitive touchscreen. Always spray the glass cleaner on the cloth or towel and then clean the touchscreen.

Important Safety Warning For Coin Battery Replacement and Handling

 **CAUTION: Risk of Explosion if Battery is replaced by an Incorrect Type. Dispose of Used Batteries According to the instructions.**

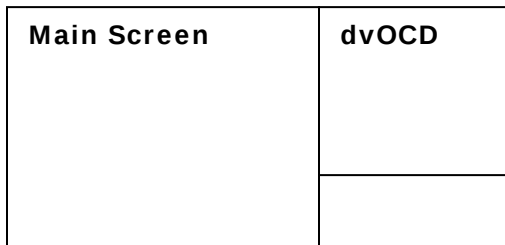
4. P1220 Device Drivers

P1220 (dvOCD) P704Fxxx Software Developers Kit (SDK) - Revision 2

Overview

The Radiant dvOCD plugs into the secondary video port on the P1220 via the DVI-I connector. The P1220 has plug and play logic to detect the screen and adjust video parameters when it is attached or detached. When attached, the windows desktop and the screen in general are extended onto the dvOCD. As shown below, the dvOCD is virtually to the right of the main screen with an upper left corner at x=1024,y=0 and a size of 320x240.

The Intel video driver will recognize the dvOCD as a 640x480 display. There is currently no fix for this. So maximizing a window on the dvOCD is not recommended as you will only see a quarter of it. Applications will need to specifically create their window in and draw only to the 320x240 visible area of this screen.



Application Programming

Applications can draw to the dvOCD by drawing to its area of the virtual screen. For example, an application could draw a 50x50 bitmap to x=1124,y=100.

Applications written on top of Radiant's RadIoApi, a Radiant Systems specific application, can also easily write to the dvOCD. Each Radio video call has a screen number (or device number) parameter. This parameter should be set to 0 for the main screen and to 1 for the dvOCD.

It is possible during runtime to determine if the dvOCD screen is plugged in and recognized by querying Windows for the screen size. The Win32 function for doing this is prototyped below along with 4 pertinent values for nIndex. Querying for SM_CXSCREEN and SM_CYSCREEN will return the size of the Main screen. Querying SM_CXVIRTUALSCREEN and SM_CYVIRTUALSCREEN will return the entire size of all the combined screens. So if GetSystemMetrics reports the virtual screen is larger than the screen, there is a dvOCD attached and configured. Otherwise, there is not.

```
int GetSystemMetrics( int nIndex );
```

nIndex values: SM_CXSCREEN, SM_CYSCREEN, SM_CXVIRTUALSCREEN,
SM_CYVIRTUALSCREEN

Sample Applications

Radiant provides two sample programs for displaying content on the dvOCD. The first, BBDemo.exe, will play a motion video file, positioning and resizing it to fill up the dvOCD. It accepts most motion video file formats. The second, BBSlides.exe, will play a slideshow on the dvOCD. It takes a folder of image files and loops through them, resizing each to fit on the dvOCD and displaying each for a configurable number of seconds. Both apps are part of the driver package and should be in the C:\P15xx folder. BBSlides is a recent addition and may not be on all P1220s.

USAGE:

BBDemo.exe video_file

Example:

BBDemo.exe C:\advertisement.mpg

USAGE:

BBSlides.exe p=Path_to_Folder t=time

Example:

BBSlides.exe p=C:\Slides t=5

5. Removing a Defective P1220

Follow these steps to replace a P1220:

1. Locate the unit to be serviced.
2. Properly shut down the terminal through either the software application, operating system, or by using the “On/Off” button on the bottom panel.
3. Locate the AC power connection at the wall outlet.
4. Disconnect the power cable from the wall outlet
5. Tilt the terminal back
6. Disconnect the network cable from the network port.
7. Note which RJ11 port number each peripheral device is connected to.
This information will be used later to re-connect the peripheral device cables.
8. Disconnect all peripheral device cables from the RJ11 and/or USB ports.
9. Open the CableStrap™ System.
10. Route the cables from the terminal connectors out of the CableStrap™ System and then down between through the center slot in the plastic base. Close the CableStrap™ System clamp.
11. Close the bottom access door and tilt the terminal upright.
12. Place the defective P1220 into the original shipment packaging and return to the appropriate repair center.

6. Hardware Certifications

The certification label is located on the P1220 plastic bottom panel.

Federal Communications Commission Compliance Statement

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and use in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Canadian Compliance Statement

"This Class A digital apparatus complies with Canadian ICES-003."

"Cet appareil numérique de la classe A est conforme à la norme
NMB-003 Canada."

European Union Compliance Statement

This Information Technology Equipment has been tested and found to comply with the following European directives:

EMC Directive 89/336/EEC using EN55022 and EN55024

Australian/New Zealand Compliance Statement

This device has been tested and found to comply with the limits for a Class A digital device, pursuant to the Australian/New Zealand standard AS/NZS 3548:1995 (Deviation for CE's EN55022).

Safety Compliance Statement

This Information Technology Equipment has been tested to the UL 60950 (1999) Third Edition safety standard as developed by Underwriters Laboratories (UL).

Sample of Certifications Label as of xxxxxx

7. Appendix: **P1220 Troubleshooting Guide**

This document provides a checklist of troubleshooting steps to review before replacing a P1220 POS.

Hardware Troubleshooting:

- **Is the P1220 calibrated correctly?**
Re-calibrate through the application managers menu or through the operating system. At command prompt type **tcalib**
- **Is the touch screen going blank when idle?**
This is a critical feature of the P1220. After a period of time (30 minutes or more), the screen will go blank in a screen saver mode. This helps prolong the bulb life of the LCD. If you touch the screen or press any key on the keyboard, it should wake up. Do not replace the touchscreen until this has been checked.
- **Is there no image after touching the screen?**
 - a. Verify that the CPU is powered on by checking the power LED light on the front bezel or one of the lights on the keyboard (by pressing **Caps Lock** a few times). Also check the underside of the touch head. There are network lights that should be on:

Green - "**Lnk**" - is active and solid with functioning network connection.
Yellow - "**Act**" - is active if activity (transmit and receive) data is on the network
 - b. If there are no lights on the underside of the touchscreen or bezel, check to make sure the unit is plugged in at BOTH the wall and at the bottom of the terminal. Also, check the power connection from the base to the touch head located at the I/O panel at the bottom of the touch head.
 - c. If there is still no power, trace the power cable from the terminal to the source (usually a power strip or a battery backup) and verify power there.
 - d. If power is good at the source but still not at the touch head, try swapping out the power cable from another POS. If another power cable provides power, then the cable is the bad part. You will have to replace the power cable.
 - e. If the screen does not come on, check all connections. Reboot the POS. If the screen does not work at this point, you may have to replace the unit.
 - f. If all the above did not work, it is most likely a hardware problem with the touch head or power supply, and the power supply or entire terminal should be replaced.
- **Is the Hard Disk Malfunctioning?**
If there is a message on the screen indicating hard disk failure, try powering down unit using on/off button and rebooting. If no response, pull the power cord. If unit doesn't boot and says hard disk failure or Unmountable Boot Volume error, you will probably have to replace the unit.
- **Is the MSR malfunctioning?**
 - a. You will need to determine if the application is causing the issue or if it appears to be hardware problem. To determine if it is hardware, go to C:/P1220/. Search for MSRWIN.exe. Run this program which will bring up a new window.
 - b. Try swiping a known good card and it should display text. MSR cards can have 1, 2, or 3 tracks of data. If it is reading all errors, "EEE" will be displayed. Try a different card to make sure a bad card is being swiped.
 - c. If it continues to display EEE or does not display any information, reboot the terminal via software or the On/Off button.

- d. If that does not resolve the issue, replace the MSR or terminal.
- e. If MSR is just intermittent, try cleaning the MSR by using a card wrapping in a cleaning cloth with cleaning solution (ie. paper towel sprayed and then wrapped around a card)

Warning! The OS on the P1220 is typically Windows XP. There is a known issue with Windows XP when cold/hard booting which can make the P1220 inoperable and require replacement due to operating system corruption. Use the On/Off button on the P1220 BEFORE unplugging the terminal. Only power down or unplug the P1220 as a last resort.

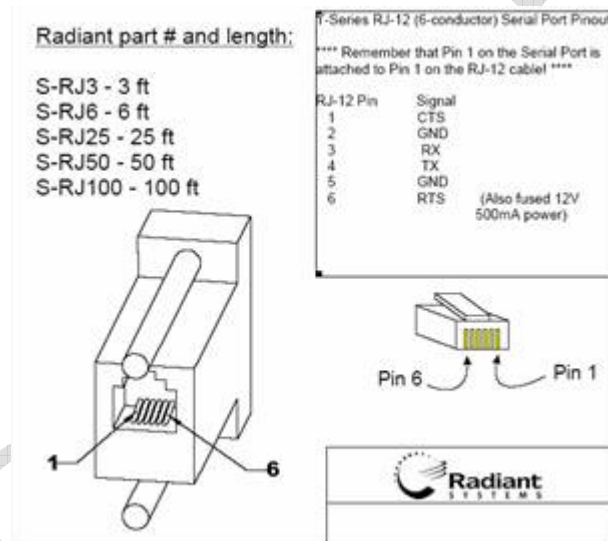
- **Are the serial ports working?**

Using **Hyperterminal** to test COM ports on Radiant Systems POS systems. Basic instructions:

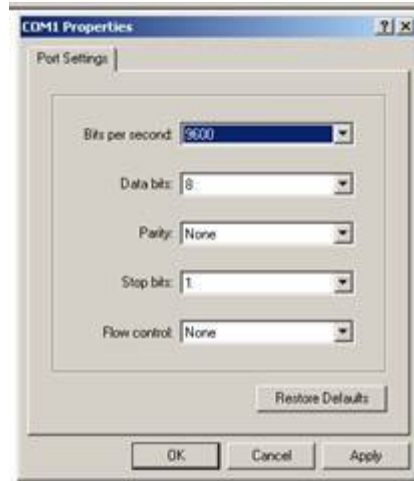
1) Cabling: For Radiant Systems RJ-type ports, you can communicate between ports using any of the standard RJ cables that ship with our products. These cables have a 'half-twist' so that all outbound signals will automatically be routed to the appropriate inputs on the other side. (RJ ports are the ones using the standard telecom modular plugs with the locking tabs).

For standard DB-9 ports, a null modem cable must be used. This is a cable that swaps all of the signal pairs and has a female DB-9 connector on each end. Alternately, if you have a DB-9 to RJ adapter such as CN00322 you can connect a DB-9 port to an RJ-type port or two DB-9 ports together. See RJ_End diagram for details on pinouts.

RJ_End Diagram



- 2) Start the Hyperterminal program. If you cannot find a shortcut in the Start Menu / Programs / Accessories / Communication, use Explorer and look for hypertrm.exe in C:\Program Files\Windows NT.
- 3) The program will have several prompts, some will only appear the first time you run the program:
 - a. Make hyperterminal the default telnet program.
 - b. Specify any area code you wish – the program insists on having this information.
 - c. Just hit OK on prompt to select a location...use 'My Location.'
 - d. If prompted to install a modem, click 'No.'
 - e. Enter a connection name – 'COM' is restricted but 'Comm1' 'Comm2' etc are not.
 - f. Set equal bits per second, etc. Make sure you use the same 'Flow Control' on each – 'None' might be the best choice.



- 4) Once you have one port open, repeat the steps to open a second port. Type text in each of the windows – if it shows up in the other window you’ve got communication. This allows you to test each port’s send and receive functions.