



PC-Doctor Service Center™

Quick Start Guide

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THANK YOU FOR USING PC-DOCTOR SERVICE CENTER!

Industry leaders from manufacturing to refurbishment have relied on PC-Doctor hardware diagnostics for 25 years. Service Center is an affordable hardware diagnostic and information gathering software solution, bringing the same level of diagnostic standards from the factory floor to your organization. Service Center minimizes the time needed to identify and diagnose a variety of hardware issues across a wide variety of platforms, all while reducing the cost of support.

Use this Quick Start Guide to immediately begin diagnosing issues with your PC, Apple, and Android hardware. For more detailed information, please see the Service Center User Guide located in the Documentation subfolder on the Diagnostics DVD or Multipurpose USB Device.

PC-Doctor Test Environments

Service Center consists of multiple test environments, which offer support for the following platforms:

	Personal Computers (PC)	Apple Computers	Android
Service Center for Windows	Windows 7 – 10 & Windows Server 2008 R2 - 2019		
Service Center Bootable Diagnostics with Drive Erase	UEFI & non-UEFI systems with more than 256 MB of RAM	Intel based Macs	
Service Center for Android			Android 4.1 “Jelly Bean” – Android 11
Service Center for Chrome OS	x86_64, arm32, AARCH64		
Service Center for DOS	Legacy Boot enabled and non-UEFI PCs		

Service Center for Windows – provides an ideal testing environment for issues that may only occur in Windows, and with all of the possible software interactions or conflicts that may occur. It offers easy access to the various system tools and events (such as the Device Manager), as well as providing detailed information about any recorded BSODs (Blue Screen of Death; a popular term for a Windows OS crash). The software is compatible with the following releases of Windows: 7, 8, 8.1, and 10, as well as Windows Server 2008 R2 – 2019.

Service Center Bootable Diagnostics – is capable of running on non-UEFI, UEFI, and Secure Boot enabled PCs and Intel based Macs. Bootable Diagnostics offers many of the same diagnostics available when testing in Windows, but with the added benefit of being able to test outside of Windows OS (Operating System). Now with NIST certified Drive Erase, Service Center Bootable Diagnostics offers the ability to wipe SCSI, SAS, ATA, and NVMe devices with various methods, each providing data sanitization on any given system.

Service Center for Chrome OS – is ideally suited for running diagnostics from within Chrome OS on x86_64, ARMHF, and AARCH64 based Chromebooks and Chrome OS tablets, using many of the same diagnostics found in Service Center Bootable Diagnostics.

Service Center for Android – is ideally suited for testing Android devices running both ARM and Intel based Android architectures. Testing is supported on Android version 4.1 “Jelly Bean” – Android 11. This offers testing for memory, touchscreens, wireless adapters and other peripherals. After running automated or ad hoc diagnostics, Service Center can save printable test reports in multiple languages to the Multipurpose USB Device, and remove the diagnostic software from the test Android device.

Service Center for DOS – provides a legacy environment for running diagnostics on any non-UEFI and Legacy Boot enabled system. Since DOS requires a minimum of resources to run, this environment is perfectly suited to run on older systems while offer a greater level of access to the system’s resources on all compatible systems.



Note: It is often a good idea to run diagnostics with multiple environments in order to get the best possible coverage.

Starting Diagnostics

All test environments will provide basic diagnostic test scripts on their home pages that will help you begin the testing process. When beginning to use Service Center, PC-Doctor suggests that you familiarize yourself with the provided test scripts.

For more information about the available test scripts as well as instructions to create your own customized scripts, please see the Service Center User Guide located in the Documentation subfolder on the Diagnostics DVD or Multipurpose USB Device.

Running Service Center for Windows

To run Service Center for Windows, connect the Multipurpose USB Device or insert the Diagnostics DVD. Using File Explorer to navigate to the MUD or DVD, you can run "Setup.exe" to launch the **PC-Doctor Service Center Menu**.

Choose one of the following options to run Service Center for Windows:

- **Install PC-Doctor Service Center:** Choose this option if you plan to keep Service Center installed on the system's hard drive.
- **Quick Install and Run:** Useful for repair center or field-testing environments, this option is designed for one-time use of Service Center. This option will automatically install and launch Service Center, and the software will be uninstalled on the next boot up.
- **Run from DVD/USB:** Runs Service Center directly from the Diagnostics DVD or Multipurpose USB Device. When running from the Multipurpose USB Device, the entry will read, "Run from USB".

Service Center Bootable Diagnostics Boot Menu

In order to use any of the bootable test environments (Bootable Diagnostics, Apple Diagnostics or Android) you must first:

1. Set the BIOS boot order of the system to boot from the Multipurpose USB Device or Diagnostics DVD, depending on your system's requirements. Consult the system's BIOS documentation for details of how to set these parameters.

➔ **Note:** When booting from the Diagnostics DVD, the Multipurpose USB Device must be connected to the system prior to booting for authentication.

2. Once the system has booted the Multipurpose USB Device or Diagnostics DVD you will be presented with a list of test environments in the form of the PC-Doctor Service Center Diagnostics boot menu.

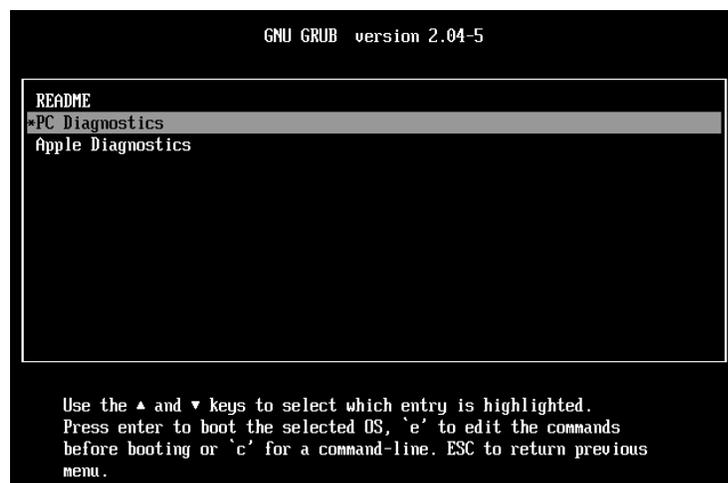


Figure 1: The PC-Doctor Service Center Diagnostics boot menu

➔ **Note:** The available boot options will vary depending on the system configuration.

3. Next choose which test environment you need from the boot menu:
 - a) Service Center Bootable Diagnostics
 - b) Service Center for Android
 - c) PC-Doctor Drive Erase

Note: PC-Doctor Drive Erase is not a testing environment but a separate utility for drive erasure.

4. For Bootable Diagnostics or for Android, there are additional variations available:
 - a) Automated Testing (Bootable Diagnostics only) will load the test environment and begin running a preconfigured diagnostic test script without the need for further user interaction.
 - b) Video Fallback should only be used if you have trouble booting with the other options.

Service Center Bootable Diagnostics for Intel Based Apple Macs

PC-Doctor's Service Center Bootable Diagnostics is also able to test Intel based Apple Macs with the same user interface found in Windows and Bootable Diagnostics. The boot process for Macs requires you to press and hold the Option key to access the Startup Manager (if necessary, see [Apple Support¹](#) for additional instructions).

➔ **Note:** Diagnostics are only available for Intel based Macs. Apple transitioned to Intel based architecture in 2006.

To use Service Center to test Apple Macs:

1. Insert the Service Center Multipurpose USB Device and power on the system while holding the Option/Alt key. You will come to a screen similar to Figure 2. The MUD will likely be labeled as "EFI Boot".



Figure 2: Apple Mac Startup Manager Screen

2. Selecting the MUD will begin the boot process and you should be presented with the screen in Figure 3. From here, select the "Apple Diagnostics" option and press enter.

¹ <https://support.apple.com/en-us/HT201255>

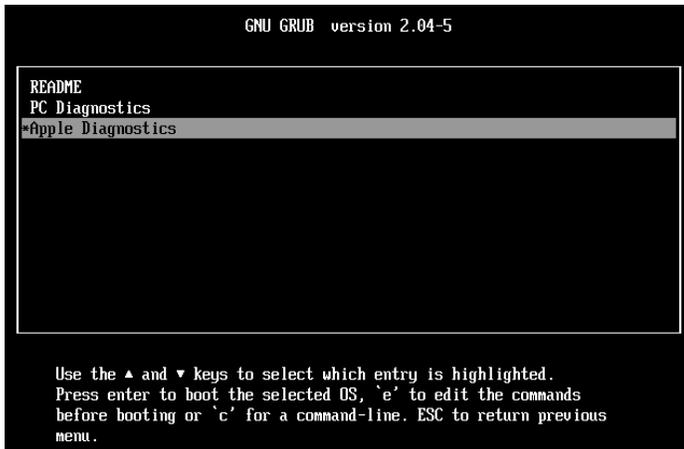


Figure 3: Selecting Apple Diagnostics from the initial GRUB menu

3. From here you can select the Service Center Bootable Diagnostics option.

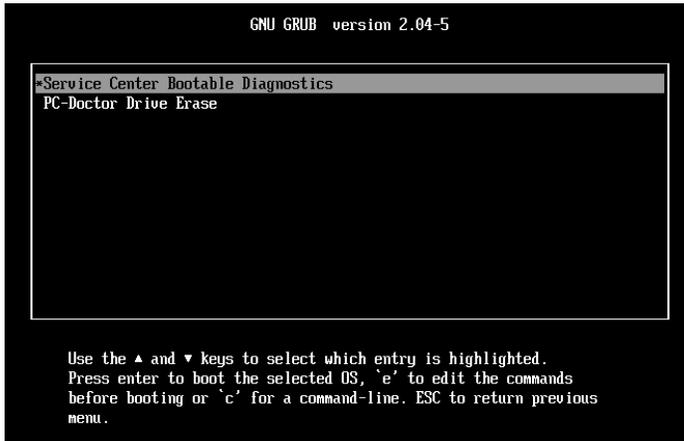


Figure 4: Apple GRUB menu options

4. You can now choose one of the options shown in Figure 5 to begin diagnostics

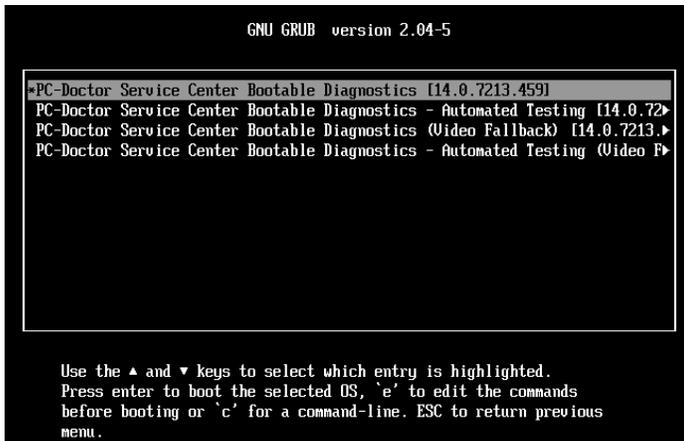


Figure 5: Bootable Diagnostics Boot Options

Multipurpose USB Device and DVD Partitions

There are two partitions on the Multipurpose USB Device (MUD) and the Diagnostics DVD, the Legacy partition and the Primary partition.

The Primary partition contains:

- Service Center for Windows
- Service Center Bootable Diagnostics
- Service Center for Chrome OS
- Service Center for Android
- Service Center Drive Erase

The Legacy partition contains:

- Service Center for DOS

In order to use Service Center for DOS, you must first switch the MUD's active partition from Primary to Legacy from within Windows.

Switching Partitions

1. Insert the MUD into an available USB port.
2. Navigate to the MUD's root directory using Windows File Explorer.
3. Run the "Setup.exe"
4. Click the toggle switch to activate the Legacy partition as seen in Figure 6.



Figure 6: Partition toggle

5. You will now be prompted with a warning dialog seen below in Figure 7: Partition switching warning. Click the OK button to switch partitions.



Figure 7: Partition switching warning

6. After the MUD has switched to the Legacy partition, you can relaunch "Setup.exe" from the MUD to verify that the Legacy partition is now active. You will then see the menu screen below in Figure 8.

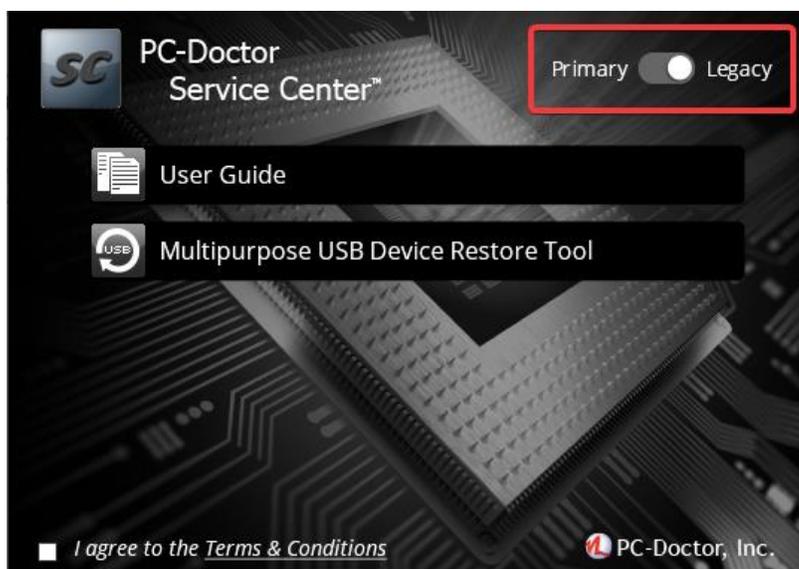


Figure 8: Legacy partition active

7. You can now boot a system from the MUD and run Service Center for DOS.

Note: In order to use Service Center for Windows or other Service Center Bootable products, you will have to switch the MUD back to the Primary partition by following the steps above and toggling the partition switch to Primary in Windows.

Running Service Center for DOS

Service Center for DOS may be run from the Service Center Diagnostics DVD or Multipurpose USB Device. For additional information about Service Center for DOS or the Service Center Diagnostics boot process, see the Service Center User Guide.

 **Note:** In order to run Service Center for DOS from the MUD, you must switch to the Legacy partition. See

 **Note:** Service Center for DOS is only available for Legacy BIOS or CSM enabled systems

Booting from the Diagnostics MUD

1. Ensure the system is set to boot from a USB device in the system BIOS
 - a) Consult your system BIOS documentation to set the boot device
2. Power off the system
3. Power on the system
4. Choose the Service Center for DOS option from the Service Center Diagnostics boot menu

Running Service Center for Chrome OS

Service Center provides the ability to run diagnostics on Chrome OS devices using the same user interface as Bootable Diagnostics and Windows Diagnostics. The following describes the process for launching Service Center in Chrome OS.

Warning: The process for installing and running Service Center in Chrome OS requires putting the device in developer mode. This process will wipe all existing data from the device.

Enabling Developer Mode for Chrome OS

In order to run Service Center for Chrome OS, you must first put the Chrome OS device in Developer Mode. This process may differ depending on the manufacturer. The steps provided here are the typical steps to enable Developer Mode. Refer to the device manufacturer documentation if these steps fail.

To enable Developer Mode for Chrome OS laptops:

1. Press “**Escape**”+”**Refresh Key (F2)**” and the **power button** at the same time. See Figure 9.



Figure 9: Keyboard Shortcut to Enable Developer Mode

2. The device will boot to a screen with the following prompt: “Please insert a recovery USB stick.” At this screen you will need to press “**Ctrl**”+”**D**.”
3. Follow the next prompt, “To turn OS verification OFF, press ENTER.”
4. The device will now reboot and the “OS verification is OFF,” message will now be displayed. You will need to press “**Ctrl**”+”**D**.”
5. A message will show up explaining that the system is transitioning to developer mode and that local data has been cleared. The system will wait 30 seconds to allow you to cancel the action if desired.
6. The last screen will prompt, “Preparing system for Developer Mode.” This may take some time to complete but once it does, the device will be in Developer Mode (NOTE: When the system is rebooted, “**Ctrl**”+”**D**” will take you into the OS).

To enable Developer Mode for Chrome OS tablets:

1. Press “**Volume Up**”+”**Volume Down**” and the **power button** at the same time and hold for about 9 seconds.
2. The device will turn off and then boot to a screen with the following prompt: “Please insert a recovery USB stick”. At this screen you will need to press “**Volume Up**”+”**Volume Down**,” and it will change to a different menu.
3. The new menu will display, “Disabling OS verification,” as an option. Press the “**Power**” key to select “Confirm Disabling OS verification.”
4. A new menu will be presented. Once more select “Developer Options,” followed by “Boot to Internal Disk” (this will boot into Chrome OS).
5. The device will now transition to Developer mode and the additional boot options will display each time the tablet powers on

Installing and Launching Service Center for Chrome OS

To install and launch Service Center:

1. After the device has been placed in Developer Mode, press “**Ctrl**”+”**D**” to launch Chrome OS.
2. Follow the prompts to get Chrome OS started and connected to a network.

➔ **Note:** You do not need to create or log into a Google account to run Service Center for Chrome OS. Simply select the “Browse as guest” option to continue.

3. Once Chrome OS has launched, press “**Ctrl**+“**Alt**+“**T**” to open the “Chrome OS shell” (crash).
4. Input “shell” and hit enter.

➔ **Note:** If you receive the error “ERROR: unknown command: shell”, the device is not in developer mode. To place the device into developer mode, see [Enabling Developer Mode for Chrome OS](#).

5. Connect the Service Center Multipurpose USB device to the system.
6. Change directory to the crouton directory on the MUD from the command line.

```
chronos@localhost / $ cd /media/removable/PC_DOCTOR/
```

7. Launch the installer script with the command below. This will install and start Service Center for Chrome OS.

```
chronos@localhost /media/removable/PC_DOCTOR/ $ bash launchChromebookDiagnostics.sh
```

➔ **Note:** If the script above is cannot be found in the root directory of the MUD, there is a second script that can be launched in the same way as above. The path to the script is below:
`/media/removable/PC_DOCTOR/pcdoctor/sc_lin/crouton/sc_chromebook_installer.sh`

Kit Contents

Your Service Center kits include:

- Multipurpose USB Device
- Diagnostics DVD
- CD and DVD test media
- Loopback adapters for serial, audio, parallel, and network ports
- PCI POST Card (included with the Premier Kit)
- miniPCI POST Card (included with the Premier Kit)
- Power supply tester (included with the Premier Kit)

Diagnostics DVD

The Diagnostics DVD is used to install Service Center for Windows as well as a boot device for DOS, Bootable Diagnostics and Android Diagnostics. The Diagnostics DVD can also be used to restore a Multipurpose USB Device in case of device corruption or failure.

➔ **Note:** When booting from the Diagnostics DVD, the Multipurpose USB Device must be connected to the system prior to booting for authentication.

CD and DVD Test Media

The CD and DVD test media are designed to provide a known good disc for performing the corresponding tests on the optical disc drive. In the event that the test media is damaged or missing, any known good CD or DVD can be used as long as it is full of data.

Note: The provided CD Test Media is a Mixed Mode CD to support both audio and data optical tests.

Multipurpose USB Device

The Multipurpose USB Device must remain connected to a USB port at all times when running Service Center. It is also used to install and run Service Center for Windows, or boot into and run Service Center Bootable Diagnostics, Service Center for Android, Service Center for DOS and PC-Doctor Drive Erase.

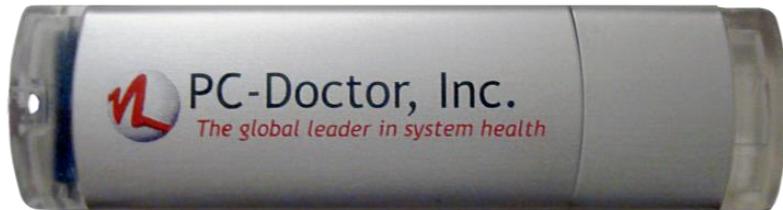


Figure 10: The Multipurpose USB Device

It also indicates the test status of the system under test by using the light combinations listed on the reference card attached to the Multipurpose USB Device. This is particularly useful if working with several units at the same time using a Keyboard/Video/Mouse (KVM) switch or similar device.

Do NOT format the Multipurpose USB Device. This will make the device unusable.

STATE	LIGHT COLOR		
Idle (only flashes while being accessed by the OS)	●	F	●
POST fail	●	●	●
Test/Script running - one or more tests failed	F	F	●
Test/Script running - attention (answer prompt)	F	F	F
Test/Script running - one or more tests in a warning state	S	F	●
Test/Script running - all tests currently in pass state	●	F	F
Test/Script complete - all pass	●	●	S
Test/Script complete - one or more tests in a warning state	●	S	●
Test/Script complete - one or more tests in a fail state	S	●	●

LEGEND
 ● = Light on ○ = Light off F = Light flashing (fast) S = Light flashing (slow)

If device is unusable, use the Multipurpose USB Device Restore Tool in the installer.

3

Figure 11: The Multipurpose USB Device Light Signals

If at any time, the Multipurpose USB Device becomes corrupted, you can use the following method to restore it to its original configuration:

1. Plug the Multipurpose USB Device into an available USB port
2. Insert the Service Center Diagnostics DVD
3. On the **Install Options Menu**, click **Multipurpose USB Device Restore Tool**
4. Follow the on-screen instructions

Note: Restoring a Service Center Multipurpose USB Device restores the necessary files for all diagnostic environments, and can take approximately twenty minutes.

Warning: The Multipurpose USB Device Restore Tool can only be used on Service Center 13 and Service Center 14 Multipurpose USB Devices (Excludes and Japan). Attempting to restore an earlier Service Center Multipurpose USB Device with this utility will result in permanent corruption of the device.

⚠ Caution: Electrostatic discharge (ESD) can damage the motherboard, components, and the USB device. Always install components at an ESD-controlled workbench. If such a workbench is not available, wear an antistatic wrist strap when handling the Multipurpose USB Device.

Loopback Adapters

Serial Port Loopback Adapter

The green serial port loopback adapter is necessary to run the **Serial Port External Loopback Test** in Windows, Bootable Diagnostics, and DOS.



Figure 12: Serial Port Loopback Adapter

Audio Ports Loopback Cable

The black audio ports loopback cable is necessary to run the **Rough Audio Test** in Windows.



Figure 13: Audio Loopback Cable

Parallel Port Loopback Adapter and Software Locking Device

The blue parallel port loopback adapter operates as both a loopback device for parallel port diagnostics and as a software locking device. Some older units do not have USB ports or support USB devices as a bootable device, which would prevent you from running Service Center for DOS. If necessary, you can use this adapter in place of the Multipurpose USB Device in Service Center for DOS.



Figure 14: Parallel Port Loopback Adapter

➡ Note: Only blue parallel port loopback adapters with a hologram on the top will function as a software-locking device.

Network Loopback Adapter

The blue network loopback adapter is required to run the **Network External Loopback Test** in Windows and Bootable Diagnostics.



Figure 15: Network Loopback Adapter

PCI or miniPCI POST Card (Included with the Premier Kit)

The POST (Power On Self-Test) Cards display codes that indicate what the system BIOS (Basic I/O System) is doing prior to loading the operating system. The last POST code from the BIOS is shown on the 2-digit LED display if the BIOS fails to load the operating system. In addition, the POST Cards display voltage levels for the system and the clock speed of the PCI/miniPCI bus.

➔ **Note:** The voltage levels and clock speed are not located on the miniPCI POST Card and are only accessible with the remote display connected.

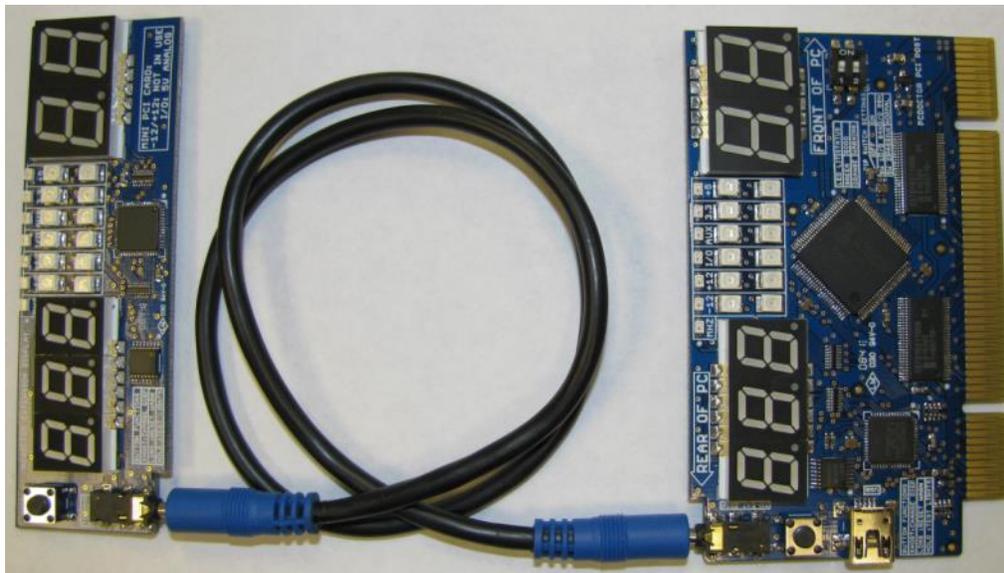


Figure 16: PCI POST Card (right) attached to the remote display (left)

The green and yellow LEDs (one for each bus voltage) indicate if voltage levels are within limits set by the PCI/miniPCI specification. The smaller three digit LED display shows the selected measurement value. A small yellow LED indicates the current selection. Pressing the button briefly will change the current selection.

- **Green:** Selected mode is currently within specifications.
- **Yellow:** Selected mode is outside of specifications. This LED remains lit until reset by the user.
- **Green and Yellow:** Selected mode is currently within acceptable range but was out of range in the past.

To use the POST Cards

1. Attach the remote display to the PCI/miniPCI POST card using the included cable.
2. Make sure to shut down the system and insert the PCI/miniPCI POST card in an available PCI/miniPCI slot.
3. Turn on system power and observe the POST codes in the 2-digit LED display.

POST codes are unique to each PC manufacturer. You can obtain these codes from the technical support websites for the related PC manufacturer, or by visiting <https://www.pcdservicecenter.com/biospostcodes>.

4. Use the button on the remote display or on the main card to select the detail reading shown on the 3-digit LED display. The top row of LEDs indicates the current reading. The available detail selections are:
 - **MHz**: Shows the system bus frequency in MHz
 - **-12V**: The -12V power rail reading
 - **+12V**: The +12V power rail reading
 - **I/O**: The voltage of the I/O bus which will be 5V or 3.3V depending on the system
 - **Auxiliary**: The auxiliary voltage reading (normally 3.3V)
 - **+3.3V**: The +3.3V power rail reading
 - **+5V**: The +5V power rail reading

The yellow LEDs do not switch off by themselves once illuminated. You can manually reset the yellow LEDs by pressing the button on the card or remote display and holding it until the letters *rst* appear on the 3-digit LED display.

⚠ Caution: Electrostatic discharge (ESD) can damage the motherboard, components, and the POST Cards. Always install components at an ESD-controlled workbench or with ESD-controlled tools, such as a properly grounded antistatic wrist strap. Inserting the card incorrectly will result in damage to the card and the system!

Power Supply Tester (Included with the Premier Kit)

The PC-Doctor Power Supply Tester is a test device that verifies the integrity of your power supply and power supply cables. When you attach a power supply cable to the tester, a series of LEDs will illuminate verifying the power supply or cables are functional.



Figure 17: The Power Supply Tester

Testing a Power Supply with a 20/24-pin Connector

1. Disconnect the power supply from the motherboard.
2. Plug the power supply into a power source.
3. Connect the power supply to the tester through the 20/24-pin connector.
4. Confirm that the +3.3V, +5, +12V, -5V, -12V, +5VSB, and PG LED status lights illuminate

➡ Note: Some power supplies do not produce -5V.

Testing the Power Supply Cables

To test a power supply output on secondary cables, individually plug any of the following cables into the tester while connecting the power supply tester to the 20/24-pin power supply cable:

1. Hard drive cable – confirm that the +12V and +5V LEDs illuminate.

2. Any 4, 6, or 8-pin power cable (use 4P, 6P, or 8P connectors) – confirm that the +12V LED illuminates.
3. Floppy drive cable – confirm that the +12V and +5V LEDs illuminate.
4. SATA cable – confirm that the +12V, +5V, and +3.3V LEDs illuminate.

 **Danger:** This product is only to test the output of a power supply. Do NOT leave the tester connected while unattended. This tester generates heat and could damage the power supply and/or cause fire.

Cloud Reporting

By simply creating a free online account with [Service Center Remote](#), you will be able to store your customer reports online and easily access them from any device with an Internet connection. Have a group of technicians? Add your team members to your online account for them to upload reports seamlessly.

1. From the Service Center console choose Tools → Settings → Session Management
2. Check the boxes for each report you would like to upload
3. Click **Upload**, which prompts you to Create Account/Sign in to existing account

If cloud reporting is of interest, you may also consider checking out PC-Doctor Service Center Remote, giving you the ability to diagnose hardware remotely. For more info, visit: <https://www.pcdremote.com>.

PC-Doctor Drive Erase

Service Center's PC-Doctor Drive Erase is a solution that has been certified as NIST 800-88r1 Compliant for media sanitization. PC-Doctor Drive Erase will securely erase SCSI, ATA, SAS, and NVMe devices to the most secure method allowed by the drive.

Product Support

For more information, refer to the Service Center User Guide located in the Documentation subfolder on the Service Center Diagnostics DVD or Multipurpose USB Device.

For any support issues that may arise, you can submit a ticket or check existing FAQs here:

<https://www.pcdservicecenter.com/support>

If you should ever need to submit a support ticket, we ask that you please provide as much information about the issue as possible. Here are some questions to keep in mind:

- Which version of Service Center are you currently having issues with?
- Does Service Center or the Operating System display any error messages?
- Is this issue happening on only one system or on many systems you have tested?
- Are there any errors or test logs that you are able to provide?

Company Information

To learn about other PC-Doctor products, visit:

<https://www.pc-doctor.com>

If you have any questions about Service Center, visit:

<https://www.pcdservicecenter.com>

Follow us on Facebook:

<https://www.facebook.com/pcdoctorinc>

We always appreciate receiving feedback from our customers, if you have other thoughts to share about Service Center, visit:

<https://www.pcdservicecenter.com/feedback>

