

# Service Center 12 Test List

## PC

### Windows Diagnostics

#### Storage

- **Blu-Ray Drive**
  - Funnel Seek
  - Linear Read Compare
  - Linear Seek
  - Random Seek
  - Read Performance
- **BD-R Drive**
  - Read/Write
- **BD-RE Drive**
  - Read/Write
- **Removable Storage**
  - Pattern
  - Linear Read
- **CD-ROM Drive**
  - CD Audio
  - Funnel Seek
  - Linear Read Compare
  - Linear Seek
  - Random Seek
  - Read Performance
- **CD-R Drive**
  - Read/Write
- **CD-RW Drive**
  - Read/Write
- **DVD Drive**
  - Funnel Seek
  - Linear Read Compare
  - Linear Seek
  - Random Seek
  - Read Performance
- **DVD+R DL Drive**
  - Read/Write
- **DVD-R DL Drive**
  - Read/Write
- **DVD+R Drive**
  - Read/Write
- **DVD-R Drive**
  - Read/Write
- **DVD-RAM Drive**
  - Funnel Seek
  - Linear Seek
  - Pattern
  - Random Seek
  - Linear Read Compare
  - Read Performance
- **DVD+RW Drive**
  - Read/Write
- **DVD-RW Drive**
  - Read/Write
- **OBIST Drive**
  - DRAM
  - Flash ROM
  - Main IC
  - Opu
  - Spindle
  - Tray In
  - Tray Out
- **Floppy Drive**
  - Funnel Seek
  - Linear Seek
  - Pattern
  - Random Seek
  - Linear Read
- **Hard Drive**
  - Linear Seek
  - Random Seek
  - Funnel Seek
  - Linear Read

- Pattern
- Cache
- Targeted Read
- **SCSI Command Set**
  - Self-Test
  - Background Short Self-Test
  - Background Extended Self-Test
- **Solid State Drive**
  - Linear Read
  - Pattern
  - Random Seek
  - Wear Level
  - Intel Wear Level
  - Targeted Read
  - SCSI Wear Level
- **NVMe Drive**
  - NVMe Status
  - NVMe Wear Level
- **NVDIMM (NEW)**
  - Status Test (NEW)
- **HD DVD Drive**
  - Funnel Seek
  - Linear Read Compare
  - Linear Seek
  - Random Seek
  - Read Performance
- **SMART**
  - Conveyance Self-Test
  - Extended Self-Test
  - Short Self-Test
  - Status
  - Thresholds
- **Tape Drive**
  - Backup
  - Linear Seek
- **Zip Drive**
  - Pattern
  - Linear Read

## System

- **PCMCIA Bridge**
  - Status

- **CardBus Bridge**
  - Status
- **IEEE 1394**
  - Bus Reset
  - Config ROM
- **Battery**
  - Life
  - Status
- **CMOS**
  - Checksum
  - Pattern
- **CPU**
  - Level 2 Cache
  - Math Register
  - MMX
  - Register
  - SSE
  - SSE2
  - SSE3
  - SSSE3
  - SSE4A
  - SSE4.1
  - SSE4.2
  - AVX
  - AVX2
  - Stress
  - Floating Point Unit
  - Prime Number Generation
- **Memory**
  - Address
  - Advanced Pattern
  - Auxiliary Pattern
  - Bit High
  - Bit Low
  - Checkerboard
  - Modulo20
  - Moving Inversion
  - Nibble Move
  - Walking One Left
  - Walking One Right
  - Windows Memory
- **Parallel Port**

- External Read and Write
- Internal Read and Write
- **PCI Express**
  - Status
- **PCI**
  - Configuration
- **Smart Card**
  - APDU
  - Answer To Reset
  - Card Attributes
- **Serial Port**
  - External Loopback
  - External Register
  - Internal Control Signals
  - Internal Register
  - Internal Send and Receive
- **System Board**
  - RTC Accuracy
- **USB**
  - Status
- **USB Ports**
  - Status
- **Standby/Hibernate**
  - Standby Test
  - Hibernate Test
  - Simple Hibernation (NEW)
  - Simple Modern Standby (NEW)
  - Simple Standby (NEW)

## Audio

- **Microphone**
  - Microphone Interactive Test
  - Frequency Tone Test (NEW)
- **Sound Card**
  - Rough Audio
  - Playback Mixer State
  - Sound Interactive Test

## Video

- **Video Card**
  - AMD Free Sync (NEW)

- Multiple Rendering DX9
- Shader Rendering DX10
- Shader Rendering DX11
- Shader Rendering DX12 (NEW)
- Wireframe Shader Rendering
- Shader Rendering
- Stereo 3D Rendering
- GPU Pipeline Data
- Transformation and Lighting Stress
- Wireframe Stress
- Fixed Transformation and Lighting
- Wireframe Line
- Primary Surface
- Thermal Cycle
- Video Memory
- Address Fault
- Standard Mathematical Operations
- Block Move
- Memory Fault
- Modulo X
- Moving Inversion
- Own Address
- Pattern
- Random Number Sequence
- Advanced Mathematical Operations
- SLI
- **Video Capture**
  - TV Signal
  - Capture To Screen
  - Capture To File
  - FM Radio
  - Digital TV Signal
  - Clear QAM Digital Tuner Signal
- **Video**
  - Video Interactive (NEW)
- **WebCam**
  - Capture To Screen
  - Capture To File
  - RGB Pixel
  - RGB Line Driver
  - RGB Channel
  - RGB Line Amplifier

- RGB Color Depth
- Luminance
- Edge Detection
- **Video Ports**
  - Video Ports Interactive
- **Monitor**
  - Monitor Interactive
  - EDID Checksum
- **Touch Screen**
  - Calibration
  - Coverage
  - Multi-Touch
- **RealSense 3D Camera**
  - RealSense 3D Camera Interactive

## Communications

- **Modem**
  - Dial Tone
  - Fax Command
  - Last Call
  - Modem Loopback
  - Modem Self-Testing Loopback
- **Network Card**
  - Network Cable
  - Network External Loopback
  - Network Link
  - TCP/IP Internal Loopback
  - Local Network Communication
  - Wireless Connectivity
  - Wireless Signal Strength
  - Internet Communication
  - Signal Strength
  - Data Transfer Verification
  - Intel Network Combination
- **Bluetooth Port**
  - Bluetooth Interactive Test
- **Mobile Broadband**
  - Connectivity
  - Signal Strength
- **Near Field Communication (NFC)**
  - NFC Read
  - NFC Write

## Sensor Devices

- **Biometrics Camera**
  - Face Detection
- **GPS**
  - Communication
  - Lock
  - Interactive
- **Fingerprint Reader**
  - Swipe
- **Ambient Light Sensor**
- **Accelerometer**
- **Magnetometer**
- **Gyrometer**
- **Eye Tracker**

## Other Devices

- **Joystick**
  - Joystick Interactive
- **Keyboard**
  - Keyboard Interactive
- **Mouse**
  - Mouse Interactive
  - Touchpad
  - TrackPoint
- **Printer**
  - Printer Interactive
- **Digitizer Stylus**
  - Corners
  - Pressure
  - Stylus Barrel Switch
  - Stylus Eraser
- **AlienFX LED Verification**
  - AlienFX LED Verification Interactive
- **Lid Closure**
  - Lid Closure Interactive

## DOS Diagnostics

### Storage

- **Diskette Drive**

- Hi-Low Seek
- Funnel Seek
- Track to Track Seek
- Random Seek
- Linear Verify
- Random Verify
- Linear Write/Read
- Linear Write/Random Read
- Random Write

- **Fixed Disk**

- Controller
- Funnel Seek
- Random Seek
- Linear Verify
- Random Verify
- SMART Status Check
- SMART Self-Test Short
- SMART Self-Test Long
- SMART Conveyance
- SMART Attribute Check
- Inner/Outer Surface Read
- Read Surface Scan
- Write Surface Scan
- Drive Cache
- Spin Down/Spin Up

- **Optical Drive Scan**

- Insert Media
- Linear Seek
- Random Seek
- Funnel Seek
- Remove Media

- **Optical Drive Write**

- CD-RW Drive
- DVD-RW Drive
- DVD+RW Drive
- DVD-RAM Drive

- HD DVD-RAM Drive
- BD-RE Drive

- **SCSI Fixed Disk**

- Controller
- Funnel Seek
- Track To Track Seek
- Random Seek
- Linear Verify
- Random Verify
- Read Surface Scan
- Write Surface Scan
- Short Self-Test
- Extended Self-Test
- Inner/Outer Read Surface Scan
- Spin Down/Spin Up Test

### System

- **CPU/CoProcessor**

- CPU Registers
- CPU Arithmetics
- CPU Logical Operations
- CPU String Operations
- CPU Misc Operations
- CPU Interrupts/Exceptions
- CPU Buffers/Cache
- CoProc Registers
- CoProc Commands
- CoProc Arithmetics
- CoProc Transcendental
- CoProc Exceptions
- MMX Test
- SSE
- SSE2
- SSE3
- SSSE3
- SSE4A
- SSE4.1
- SSE4.2

- **System Memory**
  - Memory Fault
  - Address Fault
  - Random Pattern
  - Short Advanced Pattern
  - Extended Advanced Pattern
- **Parallel Port**
  - Command and Data Port
  - External Loopback and IRQ
- **Serial Port**
  - Registers and Interrupts
  - Internal Loopback
  - External Loopback
  - FIFO Buffers (16550A)
- **System Board**
  - System Timer
  - BIOS Timer
  - IRQ Controller
  - DMA Channels
  - RAM Refresh
  - RTC Clock
  - CMOS RAM
  - Keyboard
  - PCI
  - PCMCIA
  - PCMCIA Detection
  - USB Port
  - USB Port External Loop
  - IEEE1394 Controller
  - SMBus

## Interactive

- **Keyboard**
- **Video**
- **Internal Speaker**
- **Mouse**
- **Diskette**
- **LCD Panel**
- **System Load**

## Utility

- **Edit CMOS RAM**
- **Benchmark System**
- **Memory Debugger**
- **Battery Rundown**
- **Erase Drive Contents**
- **View SMART Logs**
- **View PCDR Host Logs**

## Video

- **Video Adapter**
  - Video Memory
  - Video Pages
  - VGA Controller Registers
  - VGA Color-DAC Registers
  - VESA Full Video Memory
  - AGP
  - PCI Express

## Bootable Diagnostics

### Storage

- **Blu-Ray Drive**
  - Funnel Seek
  - Linear Read Compare
  - Linear Seek
  - Random Seek
- **CD-ROM Drive**
  - CD Audio Digital Extraction
  - Funnel Seek
  - Linear Read Compare
  - Linear Seek
  - Random Seek
- **DVD Drive**
  - Funnel Seek
  - Linear Read Compare
  - Linear Seek
  - Random Seek
- **DVD-RAM Drive**
  - Funnel Seek
  - Linear Read Compare
  - Linear Seek
  - Random Seek
- **Floppy Drive**
  - Funnel Seek
  - Linear Read
  - Linear Seek
  - Pattern
  - Random Seek
- **Hard Drive**
  - Cache
  - Funnel Seek
  - Linear Read
  - Linear Seek
  - Pattern
  - Random Seek
  - Targeted Read
- **SMART**
  - Conveyance Self-Test
  - Extended Self-Test
  - Short Self-Test
  - Status
  - Thresholds
  - Selective Self Test
- **SCSI Command Set**
  - Self-Test
  - Background Short Self-Test
  - Background Extended Self-Test
- **Solid State Drive**
  - Linear Read
  - Pattern
  - Random Seek
  - Wear Level
  - Intel Wear Level
  - Targeted Read
  - SCSI Wear Level
- **NVMe Drive**
  - NVMe Status
  - NVMe Wear Level
  - NVMe Extended Self-Test (NEW)
  - NVMe Short Self-Test (NEW)
- **NVDIMM (NEW)**
  - Status Test (NEW)
  - Wear Level (NEW)
- **DVD Drive**
  - Funnel Seek
  - Linear Read Compare
  - Linear Seek
  - Random Seek
  - Read Performance
- **Removable Storage**
  - Pattern
  - Linear Read
  - Random Read
- **MMC Storage**
  - Linear Read
  - Pattern
  - Random Read
  - Read Speed

- Read Write Speed

## System

- **IEEE 1394**
  - Bus Reset
  - Config ROM
- **Battery**
  - AC
  - Life
- **CMOS**
  - Checksum
  - Pattern
- **CPU**
  - Cache
  - MMX
  - Math Register
  - Register
  - SSE2
  - SSE3
  - SSE
  - AVX
  - Stress
- **Memory**
  - Address
  - Advanced Pattern
  - Auxiliary Pattern
  - Bit High
  - Bit Low
  - Checkerboard
  - Modulo20
  - Moving Inversion
  - Nibble Move
  - Walking One Left
  - Walking One Right
  - Pattern
- **Parallel Port**
  - Loopback
  - Register
- **PCI**
  - Configuration
- **PC Card**

- CIS Validation
- **Serial Port**
  - External Loopback
  - External Register
  - Internal Control Signals
  - Internal Register
  - Internal Send and Receive
- **System Board**
  - RTC IRQ Accuracy
- **USB**
  - USB Standard Device Requests
  - USB Device Enumeration
  - USB Port Detection
  - Read Speed
  - Read Write Speed
- **IPMI**
  - Chassis Identify
  - Chassis Status
  - Controller Communication
  - Self Test

## Audio

- **Microphone**
  - Microphone Recording
- **Sound Card**
  - Midi
  - Surround Sound
  - Wave Test Both
  - Wave Test Left
  - Wave Test Right

## Video

- **Video Card**
  - Video Data
  - Video Memory
  - Video Text
  - AGP Configuration
  - Basic Render
- **Monitor**
  - Monitor Interactive
- **Touch Screen**



- Multi-Touch
- Calibration
- Coverage
- **Webcam**
  - Capture To Screen
  - RGB Pixel
  - RGB Line Driver
  - RGB Channel
  - RGB Line Amplifier
  - RGB Color Depth
  - Luminance
  - Edge Detection

- **NVIDIA Graphics (CUDA) (NEW)**
  - Address Fault (NEW)
  - Advanced Mathematical Operations (NEW)
  - Block Move (NEW)
  - Memory Fault (NEW)
  - Modulo X (NEW)
  - Moving Inversion (NEW)
  - Own Address (NEW)
  - Pattern (NEW)
  - Random Number Sequence (NEW)
  - Standard Mathematical Operations (NEW)

## Communications

- **Modem**
  - Dial Tone
  - Fax Command
  - Modem Loopback
  - Modem Specific
- **Network Card**
  - ICMP Network Communications
  - Network Connectivity
  - Network External Loopback
  - Network Offline Self Test
  - Network Online Self Test
  - Wireless Connection
  - Wireless Scan
- **Intel Network Card**
  - Intel NIC AMT Test

- Intel NIC EEPROM
- Intel NIC FIFO
- Intel NIC IP Security
- Intel NIC Interrupt
- Intel NIC Link
- Intel NIC Loopback
- Intel NIC Register
- Virtual LAN

- **Bluetooth Port**
  - Bluetooth Communication
  - Bluetooth Detection

## Other Devices

- **Keyboard**
  - Key Test
- **Mouse**
  - Mouse Test

## Other Utilities

- **Drive Erase**
  - ATA Enhanced Secure Erase (NEW)
  - ATA Sanitize Block Erase (NEW)
  - ATA Sanitize Crypto Erase (NEW)
  - ATA Sanitize Overwrite (NEW)
  - ATA Secure Erase (NEW)
  - Drive Wipe
  - MMC Secure Erase
  - NVMe Secure Erase
  - NVMe Advanced Secure Erase
  - NVMe Sanitize Block Erase (NEW)
  - NVMe Sanitize Crypto Erase (NEW)
  - NVMe Sanitize Overwrite (NEW)
  - SCSI Sanitize Block Erase
  - SCSI Sanitize Crypto Erase
  - SCSI Sanitize Overwrite
- **Network Configuration Utility**

# Intel-Based Apple Macs

## Bootable Diagnostics

### Storage

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  - Funnel Seek
  - Linear Read Compare
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- **CD-ROM Drive**
  - CD Audio Digital Extraction
  - Funnel Seek
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  - Linear Seek
  - Random Seek
- **DVD Drive**
  - Funnel Seek
  - Linear Read Compare
  - Linear Seek
  - Random Seek
- **DVD-RAM Drive**
  - Funnel Seek
  - Linear Read Compare
  - Linear Seek
  - Random Seek
- **Floppy Drive**
  - Funnel Seek
  - Linear Read
  - Linear Seek
  - Pattern
  - Random Seek
- **Hard Drive**
  - Cache
  - Funnel Seek
  - Linear Read
  - Linear Seek
  - Pattern
  - Random Seek
  - Targeted Read
- **SMART**
  - Conveyance Self-Test
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  - Status
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- **SCSI Command Set**
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- **Solid State Drive**
  - Linear Read
  - Pattern
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  - Wear Level
  - Intel Wear Level
  - Targeted Read
  - SCSI Wear Level
- **NVMe Drive**
  - NVMe Status
  - NVMe Wear Level
  - NVMe Extended Self-Test (NEW)
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- **NVDIMM (NEW)**
  - Status Test (NEW)
  - Wear Level (NEW)
- **DVD Drive**
  - Funnel Seek
  - Linear Read Compare
  - Linear Seek
  - Random Seek
  - Read Performance
- **Removable Storage**
  - Pattern
  - Linear Read
  - Random Read
- **MMC Storage**

- Linear Read
- Pattern
- Random Read
- Read Speed
- Read Write Speed

## System

- **IEEE 1394**
  - Bus Reset
  - Config ROM
- **Battery**
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  - Walking One Left
  - Walking One Right
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- **Parallel Port**
  - Loopback
  - Register

- **PCI**
  - Configuration
- **PC Card**
  - CIS Validation
- **Serial Port**
  - External Loopback
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  - Internal Control Signals
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  - Internal Send and Receive
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  - Chassis Identify
  - Chassis Status
  - Controller Communication
  - Self Test

## Audio

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  - Surround Sound
  - Wave Test Both
  - Wave Test Left
  - Wave Test Right

## Video

- **Video Card**
  - Video Data
  - Video Memory
  - Video Text
  - AGP Configuration
  - Basic Render

- **Monitor**
  - Monitor Interactive
- **Touch Screen**
  - Multi-Touch
  - Calibration
  - Coverage
- **Webcam**
  - Capture To Screen
  - RGB Pixel
  - RGB Line Driver
  - RGB Channel
  - RGB Line Amplifier
  - RGB Color Depth
  - Luminance
  - Edge Detection
- **NVIDIA Graphics (CUDA) (NEW)**
  - Address Fault (NEW)
  - Advanced Mathematical Operations (NEW)
  - Block Move (NEW)
  - Memory Fault (NEW)
  - Modulo X (NEW)
  - Moving Inversion (NEW)
  - Own Address (NEW)
  - Pattern (NEW)
  - Random Number Sequence (NEW)
  - Standard Mathematical Operations (NEW)

## Communications

- **Modem**
  - Dial Tone
  - Fax Command
  - Modem Loopback
  - Modem Specific
- **Network Card**
  - ICMP Network Communications
  - Network Connectivity
  - Network External Loopback
  - Network Offline Self Test
  - Network Online Self Test
  - Wireless Connection
- Wireless Scan
- **Intel Network Card**
  - Intel NIC AMT Test
  - Intel NIC EEPROM
  - Intel NIC FIFO
  - Intel NIC IP Security
  - Intel NIC Interrupt
  - Intel NIC Link
  - Intel NIC Loopback
  - Intel NIC Register
  - Virtual LAN
- **Bluetooth Port**
  - Bluetooth Communication
  - Bluetooth Detection

## Other Devices

- **Keyboard**
  - Key Test
- **Mouse**
  - Mouse Test

## Other Utilities

- **Drive Erase**
  - ATA Enhanced Secure Erase (NEW)
  - ATA Sanitize Block Erase (NEW)
  - ATA Sanitize Crypto Erase (NEW)
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  - MMC Secure Erase
  - NVMe Secure Erase
  - NVMe Advanced Secure Erase
  - NVMe Sanitize Block Erase (NEW)
  - NVMe Sanitize Crypto Erase (NEW)
  - NVMe Sanitize Overwrite (NEW)
  - SCSI Sanitize Block Erase
  - SCSI Sanitize Crypto Erase
  - SCSI Sanitize Overwrite
- **Network Configuration Utility**

# Android Devices

## Android Diagnostics

### System

- **Memory**
  - Address
  - Advanced Pattern
  - Auxiliary Pattern
  - Bit High
  - Bit Low
  - Checkerboard
  - Modulo20
  - Moving Inversion
  - Nibble Move
  - Pattern
  - Walking Ones Left
  - Walking Ones Right
- **Battery**
  - Health
  - Temperature
  - USB Charge
- **Buttons**
  - Rotation Lock
  - Volume Keys
- **CPU - ARM**
  - Arithmetic
  - Cache
  - Register
  - Stress
- **CPU - x86**
  - Cache
  - Math Register
  - MMX
  - Register
  - SSE2
  - SSE3
  - SSE
  - Stress
  - AVX
- **PCI - x86**
  - Config
- **Internal Storage**

- Pattern

### Multimedia

- **Video Card**
  - Basic Render
- **Screen**
  - Brightness
  - Pixel
  - Touchscreen
  - Touchscreen Coverage
  - Multi-Touch Touchscreen
  - Video Memory
- **Camera**
  - Camera Flash
  - Camera
  - Edge Detection
  - Luminance Depth
  - RGB Channel
  - RGB Color Depth
  - RGB Line Amplifier
  - RGB Line Driver
  - RGB Pixel
- **Sensors**
  - Accelerometer
  - Gyroscope
  - Ambient Light
  - Magnetic Field Sensor
  - Proximity
  - Vibration
- **Audio**
  - Headset Connectivity
  - Microphone
  - Speaker

### Communication

- **Bluetooth**
  - Communication
  - Detection
- **Mobile**
  - Cell Signal Strength Test
  - SIM Communication

## PC-Doctor Service Center 12 Test List

- SIM Detection
- **GPS**
  - Any Signal
  - Minimum Location Signals
- **NFC**
  - Detection
  - NDEF Read
- **Wireless**
  - Wireless Scan

## Other Utilities

- **Device Factory Reset**

### **PC-Doctor, Inc.**

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