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
  o Self-Test
  o Background Short Self-Test
  o Background Extended Self-Test

• Solid State Drive
  o Linear Read
  o Pattern
  o Random Seek
  o Wear Level
  o Intel Wear Level
  o Targeted Read
  o SCSI Wear Level

• NVMe Drive
  o NVMe Status
  o NVMe Wear Level

• NVDIMM (NEW)
  o Status Test (NEW)

• HD DVD Drive
  o Funnel Seek
  o Linear Read Compare
  o Linear Seek
  o Random Seek
  o Read Performance

• SMART
  o Conveyance Self-Test
  o Extended Self-Test
  o Short Self-Test
  o Status
  o Thresholds

• Tape Drive
  o Backup
  o Linear Seek

• Zip Drive
  o Pattern
  o Linear Read

System

• PCMCIA Bridge
  o Status

• CardBus Bridge
  o Status

• IEEE 1394
  o Bus Reset
  o Config ROM

• Battery
  o Life
  o Status

• CMOS
  o Checksum
  o Pattern

• CPU
  o Level 2 Cache
  o Math Register
  o MMX
  o Register
  o SSE
  o SSE2
  o SSE3
  o SSSE3
  o SSE4A
  o SSE4.1
  o SSE4.2
  o AVX
  o AVX2
  o Stress
  o Floating Point Unit
  o Prime Number Generation

• Memory
  o Address
  o Advanced Pattern
  o Auxiliary Pattern
  o Bit High
  o Bit Low
  o Checkerboard
  o Modulo20
  o Moving Inversion
  o Nibble Move
  o Walking One Left
  o Walking One Right
  o 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)

Multi-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
  Digital TV Signal
  Clear QAM Digital Tuner Signal

Multimedia
  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

**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

**Sensor Devices**

- Biometrics Camera
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

- 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

**Video**

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

**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
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
PC-Doctor Service Center 12 Test List

- **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**
    - **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  
- SCSI Sanitize Block Erase  
- SCSI Sanitize Crypto Erase  
- SCSI Sanitize Overwrite  

**Network Configuration Utility**
Intel-Based Apple Macs

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**

- **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**
PC-Doctor Service Center 12 Test List

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

- **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
  - SCI Sanitize Block Erase
  - SCI Sanitize Crypto Erase
  - SCI 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

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
• SIM Detection

• GPS
  • Any Signal
  • Minimum Location Signals

• NFC
  • Detection
  • NDEF Read

• Wireless
  • Wireless Scan

Other Utilities

• Device Factory Reset