Service Center 11 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
- 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
- **PC-Doctor Service Center 11 Test List**

- **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 (NEW)**

- **NVMe Drive**
  - **NVMe Status**
  - **NVMe Wear Level**

- **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

### Audio

- **Microphone**
  - Microphone Interactive Test

- **Sound Card**
  - Rough Audio
  - Playback Mixer State
  - Sound Interactive Test

### Video

- **Video Card**
  - Multiple Rendering DX9
  - Shader Rendering DX10
  - Shader Rendering DX11
  - 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

- **WebCam**
  - Capture To Screen
  - Capture To File
  - RGB Pixel
  - RGB Line Driver
  - RGB Channel
  - RGB Line Amplifier
  - RGB Color Depth
  - Luminance
  - Own Address
  - Pattern
  - Random Number Sequence
  - Advanced Mathematical Operations
  - SLI

- **Video Ports**
  - Video Ports Interactive

- **AVI**
  - AVI 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 (NEW)**
  - Face Detection (NEW)

• **GPS**
  - Communication
  - Lock

• **Fingerprint Reader**
  - Interactive

• **Ambient Light Sensor**
• **Accelerometer**
• **Magnetometer**
• **Gyrometer**
  - **Eye Tracker (NEW)**

**Other Devices**

• **Joystick**
  - Joystick Interactive

• **Keyboard**
  - Keyboard Interactive

• **Mouse**
  - Mouse Interactive
  - Touchpad
  - TrackPoint

• **Printer**
  - Printer Interactive

• **Digitizer Stylus**
  - **Corners (NEW)**
  - **Pressure (NEW)**
  - **Stylus Barrel Switch (NEW)**
  - **Stylus Eraser (NEW)**

• **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 Test

- 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
- LCD Display
  - 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 (NEW)
- NVMe Drive
  - NVMe Status
  - NVMe Wear Level
- 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
• Battery
  o AC
  o Life

• CMOS
  o Checksum
  o Pattern

• CPU
  o Cache
  o MMX
  o Math Register
  o Register
  o SSE2
  o SSE3
  o SSE
  o AVX
  o Stress

• 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 Pattern

• Parallel Port
  o Loopback
  o Register

• PCI
  o Configuration

• PC Card
  o CIS Validation

• Serial Port
  o External Loopback
  o External Register
  o Internal Control Signals

• System Board
  o RTC IRQ Accuracy

• USB
  o USB Standard Device Requests
  o USB Device Enumeration
  o USB Port Detection
  o Read Speed
  o Read Write Speed

• IPMI
  o Chassis Identify
  o Chassis Status
  o Controller Communication
  o Self Test (NEW)

Audio

• Microphone
  o Microphone Recording

• Sound Card
  o Midi
  o Surround Sound
  o Wave Test Both
  o Wave Test Left
  o Wave Test Right

Video

• Video Card
  o Video Data
  o Video Memory
  o Video Text
  o AGP Configuration
  o Basic Render (NEW)

• Monitor
  o Monitor Interactive

• Touch Screen (NEW)
  o Multi-Touch (NEW)
  o Calibration (NEW)
  o Coverage (NEW)

• Webcam
  o Capture To Screen
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 Utilities

- Drive Erase
  - Drive Wipe
  - NVMe Secure Erase
  - NVMe Advanced Secure Erase
  - MMC Secure Erase (NEW)
  - SCSI Sanitize Block Erase (NEW)
  - SCSI Sanitize Crypto Erase (NEW)
  - SCSI Sanitize Overwrite (NEW)

- Network Configuration Utility

Other Devices

- Keyboard
  - Key Test

- Mouse
  - Mouse Test
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**
  - 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 (NEW)**
- **NVMe Drive**
  - NVMe Status
  - NVMe Wear Level
- **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 (NEW)
- 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 (NEW)
  - Monitor
    - Monitor Interactive
  - Touch Screen (NEW)
    - Multi-Touch (NEW)
    - Calibration (NEW)
Coverage (NEW)

Webcam
- Capture To Screen
- RGB Pixel
- RGB Line Driver
- RGB Channel
- RGB Line Amplifier
- RGB Color Depth
- Luminance
- Edge Detection

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 Utilities

Drive Erase
- Drive Wipe
- NVMe Secure Erase
- NVMe Advanced Secure Erase
- MMC Secure Erase (NEW)
- SCSI Sanitize Block Erase (NEW)
- SCSI Sanitize Crypto Erase (NEW)
- SCSI Sanitize Overwrite (NEW)

Network Configuration Utility

Other Devices

Keyboard
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