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# **Hardware Diagnostics Error Reference Guide**

**For HP Vectra PCs and  
HP PC Workstations**

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## Error Reference Guide

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## Who Should Read This Manual

This manual is primarily intended for HP Support and HP-dedicated Support Agencies.

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*NOTE*

This manual is also available, for technical reference only, to advanced users external to HP.

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## Overview of This Manual

This manual lists the error codes that can be produced by the Advanced System Tests in the Vectra Hardware Diagnostics utility. Each error code is listed with a description of the error and a proposal for repairing the error.

This manual has two chapters:

- Chapter 1 lists the error codes in ascending order. Each error code has an explanation and a recommended action.
- Chapter 2 gives background information on what to do if an error occurs in an advanced test, as well as information about the advanced tests and advanced tests error log.

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## What is Hardware Diagnostics?

The Hardware Diagnostics utility helps you diagnose hardware-related problems on HP Vectra PCs and HP PC Workstations. It is a series of tools designed to help you to:

- Verify the correct functioning of a Vectra PC or Workstation PC
- Diagnose hardware-related problems
- Provide precise information about the error and about the PC's configuration.

The Hardware Diagnostics utility is not a repair tool.

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## Where to Get the Diagnostics Software

Always use the latest version of Vectra Hardware Diagnostics.

You can obtain the latest version of Vectra Hardware Diagnostics from HP Electronic Information Services, which are available 24 hours per day, 7 days per week.

One way to access the HP Electronic Information Services is to connect to the HP World Wide Web Site, at <http://www.hp.com/go/vectrasupport> or <http://www.hp.com/go/kayaksupport>. You can download the latest version of the Vectra Hardware Diagnostics utility from this site.

For more information about HP Electronic Information Services and the HP World Wide Web Site, refer to the Vectra Hardware Diagnostics *User's Guide*. (To learn where to get the User's Guide, refer to the section "For More Information" on page vi.)

For More Information

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## For More Information

For more information about the Vectra Hardware Diagnostics utility, refer to the Vectra Hardware Diagnostics *User's Guide*.

The User's Guide is available on the HP World Wide Web Site, at <http://www.hp.com> in PDF (Adobe Acrobat) format.

For more information about error codes not covered in this book, contact HP Support.

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## **The Error Codes**

This chapter lists all the error codes which can be produced by the Hardware Diagnostics advanced tests. A description of the error and a recommended action are provided for each error code.

## Error Code Overview

The error codes are categorized by component in ascending order:

- 0001h – 00AFh: System Error Codes
- 0100h – 01A0h: Memory Error Codes
- 0201h – 02FFh: Hard Disk Error Codes
- 0301h – 03FFh: Flexible Disk Error Codes
- 0400h – 04FFh: Keyboard Error Codes
- 0500h – 0550h: SCSI Error Codes
- 0601h – 0607h: Serial Port Error Codes
- 0701h – 0705h: Parallel Port Error Codes
- 0810h: PC Speaker Error Code
- 0801h – 0812h: Sound Test Error Codes
- 0900h – 090Fh: Video Error Codes
- 0A00h – 0A06h: CD-ROM Error Codes
- 1000h – 100Dh: Multiple Processor Error Codes
- 1100h – 1110h: APM Test Error Codes
- 1301H – 1503h: USB Error Codes

The full list of error codes and the parts to check are provided in the pages that follow.

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## 0001h – 00AFh: System Error Codes

Code	Explanation	Details/Parts to Check
0001h	Cannot load the MSW (Machine Status Word).	Processor error. Check that the processor is correctly installed. If the error persists, install new processor.
0002h	Cannot load the GDT (Global Descriptor Table) Register.	Processor error. Check that the processor is correctly installed. If the error persists, install new processor.
0003h	Cannot load the IDT (Interrupt Descriptor Table) Register.	Processor error. Check that the processor is correctly installed. If the error persists, install new processor.
0004h	ARPL instruction execution error.	Processor error. Check that the processor is correctly installed. If the error persists, install new processor.
0005h	LAR (Load Access Rights Byte) instruction execution error.	Processor error. Check that the processor is correctly installed. If the error persists, install new processor.
0006h	LSL (Load Segment Limit) instruction execution error.	Processor error. Check that the processor is correctly installed. If the error persists, install new processor.
0007h	VERR (Verify a Segment for Reading) instruction execution error.	Processor error. Check that the processor is correctly installed. If the error persists, install new processor.
0008h	VERW (Verify a Segment for Writing) instruction execution error.	Processor error. Check that the processor is correctly installed. If the error persists, install new processor.

## 1 The Error Codes

0001h – 00AFh: System Error Codes

Code	Explanation	Details/Parts to Check
0009h	Cannot enable the A20 line.	Keyboard controller error. Check connections to the keyboard controller. If error persists, install new system board.
0010h	32-bit register read or write error.	Processor error. Check that the processor is correctly installed. If the error persists, install new processor.
0011h	PUSHA(D) or POPA(D) execution error.	Processor error. Check that the processor is correctly installed. If the error persists, install new processor.
0012h	Cannot access data through the FS or GS registers.	Processor error. Check that the processor is correctly installed. If the error persists, install new processor.
0013h	BSF or BSR execution error.	Processor error. Check that the processor is correctly installed. If the error persists, install new processor.
0014h	FLAG Register Set or Reset error.	Processor error. Check that the processor is correctly installed. If the error persists, install new processor.
0015h	Protected mode instruction execution error.	Processor error. Check that the processor is correctly installed. If the error persists, install new processor.
0016h	32-bit multiplication error.	Processor error. Check that the processor is correctly installed. If the error persists, install new processor.
001Eh	The detected processor Speed is not the same as specified.	Processor clock error. Check that correct clock speed is selected by system board switches.

## 1 The Error Codes

0001h – 00AFh: System Error Codes

Code	Explanation	Details/Parts to Check
0020h	NDP (Numeric Data Processor) is not ready.	Processor error. Check that the processor is correctly installed. If the error persists, install new processor.
0021h	Cannot reset the NDP.	Processor error. Check that the processor is correctly installed. If the error persists, install new processor.
0022h – 0025h	NDP control word read or write error.	Processor error. Check that the processor is correctly installed. If the error persists, install new processor.
0026h	Cannot reset the NDP control word.	Processor error. Check that the processor is correctly installed. If the error persists, install new processor.
0027h	NDP Tag word read or write error.	Processor error. Check that the processor is correctly installed. If the error persists, install new processor.
0028h	NDP stack read or write error.	Processor error. Check that the processor is correctly installed. If the error persists, install new processor.
0029h – 002Ah	NDP operation status has failed.	Processor error. Check that the processor is correctly installed. If the error persists, install new processor.
002Bh	Integer load or store error.	Processor error. Check that the processor is correctly installed. If the error persists, install new processor.
002Ch	NDP Tag word read or write error.	Processor error. Check that the processor is correctly installed. If the error persists, install new processor.

## 1 The Error Codes

0001h – 00AFh: System Error Codes

Code	Explanation	Details/Parts to Check
002Dh	NDP stack pop error.	Processor error. Check that the processor is correctly installed. If the error persists, install new processor.
002Eh – 002Fh	NDP Tag word read or write error.	Processor error. Check that the processor is correctly installed. If the error persists, install new processor.
0030h	Read/Write test on DMA controller 1 failed.	Direct Memory Access (DMA) controller error. Install new system board.
0031h	Read/Write test on DMA controller 2 failed.	Direct Memory Access (DMA) controller error. Install new system board.
0032h	Read/Write test on page registers failed.	Direct Memory Access (DMA) controller error. Install new system board.
0040h	Read/Write test on PIC ports failed.	Primary Interrupt Controller (PIC) error. Install new system board.
0041h	Stray or unrecognized interrupts detected.	Primary Interrupt Controller (PIC) error. Install new system board.
0050h	The Timer Periodic Interrupt is not being generated.	Real Time Clock (RTC) error. Install new system board.
0051h	The Timer is counting at a slower rate.	Real Time Clock (RTC) error. Install new system board.
0052h	The Timer is counting at a faster rate.	Real Time Clock (RTC) error. Install new system board.
0060h	The Real Time Clock Periodic Interrupt is not being generated.	Real Time Clock (RTC) error. Install new system board.
0061h	The Real Time Clock is running at a slower rate.	Real Time Clock (RTC) error. Install new system board.

## 1 The Error Codes

0001h – 00AFh: System Error Codes

Code	Explanation	Details/Parts to Check
0062h	The Real Time Clock is running at a faster rate.	Real Time Clock (RTC) error. Install new system board.
0063h	The date and time read from Real Time Clock CMOS RAM are different from that of written.	CMOS RAM error. Install new system board.
0070h	The battery backup unit that powers CMOS RAM has no power.	Install new system board battery.
0071h	Bad CMOS RAM checksum detected.	CMOS RAM error. Install new system board battery. If error persists, install new system board.
0072h	Configuration mismatch in CMOS RAM.	CMOS RAM error. Install new system board battery. If error persists, install new system board.
0073h	CMOS RAM memory size.	CMOS RAM error. Install new system board battery. If error persists, install new system board.
0074h	CMOS RAM time is invalid.	CMOS RAM error. Install new system board battery. If error persists, install new system board.
0075h	Time-base frequency divider set at incorrect value.	CMOS RAM error. Re-start system and check BIOS setup parameters. Install new system board battery. If error persists install new system board.
0076h	Divider output frequency set to an incorrect value.	CMOS RAM error. Re-start system and check BIOS setup parameters. Install new system board battery. If error persists install new system board.

## 1 The Error Codes

0001h – 00AFh: System Error Codes

Code	Explanation	Details/Parts to Check
0077h	Periodic time update cycle not occurring.	Real Time Clock (RTC) error. Install new system board.
0078h	CMOS RAM checksum error detected.	CMOS RAM error. Install new system board battery. If error persists, install new system board.
0079h	CMOS RAM fails to hold data.	CMOS RAM error. Install new system board battery. If error persists, install new system board.
0083h	PCI System Bus scan test failed.	BIOS or system board error. Install new system BIOS. If error persists, install new system board.
0084h	Cannot access PCI devices through the FIND_PCI_DEVICE call.	Install new BIOS or system board.
0085h	Reading configuration space registers on boundary conditions failed.	Install new BIOS or system board.
0086h	Consistency checking of PCI configuration space failed.	Install new BIOS or system board.
0087h	GENERATE_SPECIAL_CYCLE check failed.	Install new system board.
0088h	BIOS32 service directory integrity check failed.	BIOS error. Install new system BIOS.
0090h	PnP function 00 failed.	Install new system BIOS.
0091h	PnP function 01 failed.	Install new system BIOS.
0094h	Number of system device nodes is not the same as reported.	Install new system BIOS. If error persists, install new system board.
0095h	One or more nodes have larger than reported size.	Check all PnP devices.



## 1 The Error Codes

0001h – 00AFh: System Error Codes

Code	Explanation	Details/Parts to Check
0096h	ISA bus detected twice.	Install new system BIOS.
009Ah	PnP function 40 failed.	Install new system BIOS.
009Bh	Invalid number of PnP cards.	Check all PnP devices.
009Ch	One or more unknown PnP cards.	Install new system BIOS.
009Dh	No PCI bus system device node.	Install new system BIOS.
009Eh	Too many PCI buses.	Install new system BIOS.
009Fh	Insufficient memory.	Delete drivers before running DiagTools.
00A0h	PnP function 41 failed.	Install new system BIOS.
00A1h	NVRam buffer size too big.	Install new system BIOS. If error persists, install new system board.
00A2h	ESCD size is too small.	Install new system BIOS. If error persists, install new system board.
00A3h	ESCD size is too big.	Install new system BIOS. If error persists, install new system board.
00A4h	NVRam base address is invalid.	Install new system BIOS.
00A5h	PnP function 42 failed.	Install new system BIOS.
00A6h	PnP function 43 failed.	Install new system BIOS.
00A7h	NVRam test failed.	Install new system BIOS. If error persists, install new system board.
00B1h	DMI structure checksum failed.	Install new system BIOS.
00B2h	DMI Header structure checksum failed.	Install new system BIOS.
00C0h	Non-Intel processor.	Install Intel processor.
00C1h	Non-Pentium processor.	Install Pentium processor.

## 1 The Error Codes

0001h – 00AFh: System Error Codes

<b>Code</b>	<b>Explanation</b>	<b>Details/Parts to Check</b>
00C2h	Non-MMX processor.	Install MMX processor.
00C3h	MMX Registers Read/Write failed.	Install new processor.
00C4h	Wraparound Arithmetic test failed.	Install new processor.
00C5h	Saturation Arithmetic test failed.	Install new processor.
00C6h	Pack with signed saturation failed.	Install new processor.
00C7h	Pack with unsigned saturation failed.	Install new processor.
00C8h	Unpack high packed data failed.	Install new processor.
00C9h	Unpack low packed data failed.	Install new processor.
00CAh	Exit MMX state instruction (EMMS) failed.	Install new processor.
00FFh	Out of memory.	Re-run the HP Hardware Diagnostics utility using keyboard only.

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## 0100h – 01A0h: Memory Error Codes

Code	Explanation	Details/Parts to Check
0100h	ROM read error. HP Hardware Diagnostics utility was not able to read from a ROM location.	System board error. Install new system board.
0101h	ROM not write-protected.	System board error. Install new system board.
0102h	BIOS cannot set the year to 2000 after 1999 midnight.	BIOS error. Install new system BIOS.
0120h	Parity error at absolute memory location XXXXXXXXh.	Memory error. Replace appropriate memory module.
0130h	The pattern written at XXXXXXXXh was qqqqh. The pattern read back from that address was pppph.	Memory error. Replace appropriate memory module.
0131h	Parity failure at XXXXXXXXh during pattern test.	Memory error. Replace appropriate memory module.
0132h	Faulty memory chip in SIMM XXXX.	Install new SIMM XXXX.
0135h	ECC Error Detected	Memory error. Replace appropriate memory module.
0136h	ECC can not be corrected. Error in SIMM socket.	Install new SIMM XXXX.
0140h	Failure at address XXXXXXXXh, bit position bbh.	Memory error. Replace appropriate memory module.
0150h	Failure at XXXXXXXXh, bit position bbh.	Memory error. Replace appropriate memory module.

## 1 The Error Codes

0100h – 01A0h: Memory Error Codes

Code	Explanation	Details/Parts to Check
0160h	There is an address short between bit xxh and yyh.	Processor or system board error. Check that the processor is correctly installed. If error persists, install new processor.
0170h	RAM Refresh is not working.	System timer error. Install new system board.
0171h – 0172h	RAM Refresh is slower or faster than expected.	System timer error. Install new system board.
0180h	The pattern written at address XXXXXXXXh was qqqqh. The pattern read back from that address was pppph.	Memory error. Replace appropriate memory module.
0181h	No Active External Cache Memory.	Cache memory error. Enable external cache memory from BIOS setup.
0182h	No extended memory available from HIMEM.SYS	Memory error. Replace appropriate memory module.
0183h	No detected extended memory.	Memory error. Replace appropriate memory module.
0190h	Test failed at address xxxxxxxh.	Memory error. Replace appropriate memory module.
01A0h	The pattern written at XXXXXXXXh was qqqqh. The pattern read back from that address was pppph.	Memory error. Replace appropriate memory module.

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## 0201h – 02FFh: Hard Disk Error Codes

Code	Explanation	Details/Parts to Check
0201h	Undefined or invalid command.	Hard disk or hard disk controller error. Check your hard disk drive is installed correctly. Install new hard disk drive. If error persists, install new system board.
0202h	Address mark not found.	Hard disk or diagnostic test error. Re-run the diagnostic tests on your hard disk drive. If error persists, install new hard disk drive.
0204h	Requested sector not found.	Hard disk or diagnostic test error. Re-run the diagnostic tests on your hard disk drive. If error persists, install new hard disk drive.
0205h	Reset failed.	Hard disk controller error. Check your hard disk drive is installed correctly. If error persists, install new system board.
0207h	Drive parameter activity failed.	Hard disk configuration error. Check the hard disk drive is correctly configured in the BIOS setup. If error persists, install new hard disk drive.
0208h	DMA Overrun error.	Diagnostic test error. Re-run the diagnostic tests.
0209h	A DMA transfer at a 64 KB segment boundary was rejected by the drive controller BIOS.	Diagnostic test error. Re-run the diagnostic tests.
020Ah	Bad sector flag detected.	Diagnostic test error. Re-run the diagnostic tests.

## 1 The Error Codes

0201h – 02FFh: Hard Disk Error Codes

Code	Explanation	Details/Parts to Check
0210h	CRC or ECC data error.	Diagnostic test error. Re-run the diagnostic tests.
0211h	ECC (Error Correction Coding) corrected data error.	Diagnostic test error. Re-run the diagnostic tests.
0220h	Controller failure.	Hard disk controller error. Check your hard disk drive is installed correctly. If error persists, install new system board.
0240h	Seek operation failed.	Hard disk controller error. Check your hard disk drive is installed correctly. If error persists, install new system board.
0280h	Drive not ready.	Hard disk error. Check your hard disk drive is installed correctly. If error persists, install new hard disk drive.
0281h	All Sectors in Test Cylinder are bad.	Hard disk error. Install new hard disk drive.
02AAh	Drive not ready.	Hard disk error. Check your hard disk drive is installed correctly. If error persists, install new hard disk drive.
02CCh	Bit 5 (write error bit) of the hard disk controller status register is set on completion of a write operation.	Hard disk or hard disk controller error. Check your hard disk drive is installed correctly. Install new hard disk drive. If error persists, install new system board.
02EEh	The Performance test was run on a drive with less than 200 cylinders.	Hard disk configuration error. Check the hard disk drive is correctly configured in the BIOS setup. If possible, select a drive type with more than 200 cylinders.

Code	Explanation	Details/Parts to Check
02F1H	Error Reading the partition table or no valid partition.	Missing partition Run fdisk to partition your hard disk.
02F2H	No Active partition present in the hard disk	Partition not active. Run fdisk to make one of the partitions active.
02F3H	Partitions are overlapping	Partition error. Run fdisk to check the partitions.
02F4H	Boot Sector bootstrap pgm incorrect or virus infection	Possible virus. Check for viruses.
02F5H	Media Descriptor is invalid	Format error. Format the partition.
02F6H	Total sector Number in partition table and boot sector is different.	Partition error. Run fdisk to re-partition.
02FFh	Disk data read/write error.	Hard disk or hard disk controller error. Check your hard disk drive is installed correctly. Install new hard disk drive. If error persists, install new system board.

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### 0301h – 03FFh: Flexible Disk Error Codes

Code	Explanation	Details/Parts to Check
0301h	Undefined or invalid command.	Flexible disk drive or flexible disk controller error. Check your flexible disk drive is installed correctly. Install new flexible disk drive. If error persists install new system board.

## 1 The Error Codes

0301h – 03FFh: Flexible Disk Error Codes

<b>Code</b>	<b>Explanation</b>	<b>Details/Parts to Check</b>
0302h	Address mark not found.	Flexible disk drive error. Check your flexible disk drive is installed correctly. If error persists, install new flexible disk drive.
0303h	Disk is write-protected.	Diskette error. Remove write protection from diskette. If error persists, replace diskette.
0304h	Requested sector not found.	Flexible disk drive error. Check your flexible disk drive is installed correctly. If error persists, install new flexible disk drive.
0305h	Reset failed.	Flexible disk controller error. Check your flexible disk drive is installed correctly. If error persists, install new system board.
0307h	Drive parameter activity failed.	Flexible disk drive or flexible disk controller error. Check your flexible disk drive is installed correctly. Install new flexible disk drive. If error persists, install new system board.
0308h	DMA Overrun error.	Diagnostic test error. Re-run the diagnostic tests.
0309h	Attempt to DMA at 64 KB boundary.	Diagnostic test error. Re-run the diagnostic tests.
030Ah	Bad sector flag detected.	Diagnostic test error. Re-run the diagnostic tests.
0310h	CRC or ECC data error.	Diagnostic test error. Re-run the diagnostic tests.
0311h	ECC-corrected data error.	Diskette error. Replace diskette.



## 1 The Error Codes

0301h – 03FFh: Flexible Disk Error Codes

Code	Explanation	Details/Parts to Check
0321h	Change line not working.	Flexible disk drive error. Check your flexible disk drive is installed correctly. If error persists, install new flexible disk drive.
0322h	Floppy Speed Error Drive.	Flexible disk drive error. Check your flexible disk drive is installed correctly. If error persists, install new flexible disk drive.
0340h	Seek operation failed.	Flexible disk drive or flexible disk controller error. Check your flexible disk drive is installed correctly. Install new flexible disk drive. If error persists, install new system board.
0380h	Drive not ready.	Flexible disk drive error. Check your flexible disk drive is installed correctly. If error persists, install new flexible disk drive.
03AAh	Drive not ready.	Flexible disk drive error. Check your flexible disk drive is installed correctly. If error persists, install new flexible disk drive.
03CCh	Write fault on selected drive.	Flexible disk drive or flexible disk controller error. Check your flexible disk drive is installed correctly. Replace diskette. Install new flexible disk drive. If error persists, install new system board.
03EEh	Data write/data read mismatch.	Flexible disk controller error. Check your flexible disk drive is installed correctly. If error persists, install new system board.
03FFh	Diskette data read/write error.	Flexible disk drive or flexible disk controller error. Check your flexible disk drive is installed correctly. Replace diskette. Install new flexible disk drive. If error persists, install new system board.

1 The Error Codes

0400h – 04FFh: Keyboard Error Codes

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## 0400h – 04FFh: Keyboard Error Codes

Code	Explanation	Details/Parts to Check
0400h	The HP Hardware Diagnostics utility received a KBC interface error.	Keyboard controller error. Install new system board.
0401h	The HP Hardware Diagnostics utility issued commands to KBC and received improper responses.	Keyboard controller error. Install new system board.
0410h – 0411h	Keyboard clock line is stuck low/high.	Keyboard or keyboard controller error. Check that keyboard is connected correctly. If error persists, install new system board.
0412h – 0413h	Keyboard data line is stuck low/high.	Keyboard or keyboard controller error. Check that keyboard is connected correctly. If error persists, install new system board.
0414h	The HP Hardware Diagnostics utility issued a command to the keyboard and either did not receive a response or received an improper response.	Keyboard or keyboard controller error. Check that keyboard is connected correctly. If error persists, install new system board.
0415h	Keyboard LED could not be turned on.	Keyboard error. Replace the keyboard.
0416h	Keyboard diagnostic echo failed.	Keyboard or keyboard controller error. Replace the keyboard. If error persists, install new system board.
0417h	Keyboard is not responding to command.	Keyboard or keyboard controller error. Replace the keyboard. If error persists, install new system board.
0418h	Key strike produces incorrect response.	Install new keyboard.

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## 0500h – 0550h: SCSI Error Codes

Code	Explanation	Details/Parts to Check
0500h	Error in SCSI device.	SCSI device error Check the selected SCSI device is connected and configured correctly. If error persists, replace SCSI device.
0502h	SCSI device not ready.	SCSI device error Check the selected SCSI device is connected and configured correctly. If error persists, replace SCSI device.
0503h	SCSI device read error	SCSI hard disk drive error. Install new SCSI hard disk drive.
0504h	SCSI device write error	SCSI hard disk drive error. Install new SCSI hard disk drive.
0505h	SCSI disk format failed.	SCSI hard disk drive error. Install new SCSI hard disk drive.
0507h	SCSI disk buffer error.	SCSI hard disk drive error. Install new SCSI hard disk drive.
050Ch	Error in Partition Table.	Read error in disk partition table area.
050Dh	Boot sector error.	Boot partition is defined incorrectly. Run disk utilities.
050Eh	Media error.	Media description of partition is incorrect. Partition may not be useable.

1 The Error Codes  
0500h – 0550h: SCSI Error Codes

Code	Explanation	Details/Parts to Check
050Fh	Inconsistent sector numbers.	Sector number information in Partition Table is incorrect. Partition is useable, but error will occur when data accessed exceeds the number of blocks defined in table.
0510h	Cannot allocate memory	Diagnostic test error. Remove any installed device drivers and restart the PC or PC Workstation. Re-run the diagnostic tests.
0511h	Positioning failed on tape drive	SCSI tape drive error. Check the tape drive is connected and configured correctly. If error persists, install new SCSI tape drive.
0512h	Tape read error	SCSI tape drive error. Install new SCSI tape drive.
0514h	Tape write error	SCSI tape drive error. Install new SCSI tape drive.
0515h	Tape Selftest error	SCSI tape drive error. Install new SCSI tape drive.
0516h	Tape buffer error.	Replace tape. If error persists, install new tape drive.
0520h	No CD in drive.	SCSI CD-ROM error. Insert a CD into the CD-ROM drive.
0521h	CD-ROM read error	SCSI CD-ROM error. Insert a CD-ROM into the CD-ROM drive.
0523h	CD-ROM play error	SCSI CD-ROM error. Insert an audio CD into the CD-ROM drive.
0524h	CD Selftest error	SCSI CD-ROM error. Insert a CD-ROM into the CD-ROM drive.

1 The Error Codes

0500h – 0550h: SCSI Error Codes

Code	Explanation	Details/Parts to Check
0525h	CD Open error	SCSI CD-ROM error. Check if SCSI CD drive supports the Open command. If error persists, install new SCSI CD-ROM drive.
0526h	CD Close error	SCSI CD-ROM error. Check if SCSI CD drive supports the Close command. If error persists, install new SCSI CD-ROM drive.
0527h	CD buffer error.	Install new CD-ROM drive.
0528h	Pattern compare failed.	Data read from sector is incorrect.
0550h	Read timeout	SCSI device error Check the selected SCSI device is connected and configured correctly. If error persists, replace SCSI device.

1 The Error Codes

0601h – 0607h: Serial Port Error Codes

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## 0601h – 0607h: Serial Port Error Codes

Code	Explanation	Details/Parts to Check
0601h	Data written to port xxxh was yyyyh. Data read back from the port was zzzh.	Serial port or serial port controller error. Check that external loopback (test) connector is correctly installed. If error persists install new system board.
0602h	Interrupt identification register test failed.	Serial port controller error. Install new system board.
0603h	Data written to port XXXXh was yyyyh. Data read back from the port was zzzh.	Serial port or serial port controller error. Check that external loopback (test) connector is correctly installed. If error persists install new system board.
0604h	Line status register test failed at port XXXXh.	Serial port controller error. Install new system board.
0605h	Interrupt activation test failed at port XXXXh.	Serial port controller error. Install new system board.
0606h	Data transfer test failed at port XXXXh.	Serial port or serial port controller error. Check that external loopback (test) connector is correctly installed. If error persists install new system board.
0607h	Loop back test failed at port XXXXh.	Serial port or serial port controller error. Check that external loopback (test) connector is correctly installed. If error persists install new system board.
0608h	FIFO register test failed at port XXXXh.	Serial port controller error. Install new system board.

Code	Explanation	Details/Parts to Check
0609h	FIFO trigger level test failed at port XXXXh.	Serial port controller error. Install new system board.
0610h	FIFO character timeout indication test failed at port XXXXh.	Serial port controller error. Install new system board.
0611h	FIFO data transfer test failed at port XXXXh.	Serial port controller error. Install new system board.

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### 0701h – 0705h: Parallel Port Error Codes

Code	Explanation	Details/Parts to Check
0701h	Data written to port XXXXh was yyh. Data read back was zzh.	Parallel port or parallel port controller error. Check that external loopback (test) connector is correctly installed. If error persists install new system board.
0702h	IRQ Activation test failed at port XXXXh.	Parallel port controller error. Install new system board.
0704h	ECP register W/R test failed at port XXXXh.	Parallel port controller error. Install new system board.
0705h	ECP FIFO test failed at port XXXXh.	Parallel port controller error. Install new system board.
0706h	Loopback test failed at XXXXh port.	Install new parallel port controller.
0707h	Loopback test failed at XXXXh port.	Loopback connector missing. Connect loopback connector.

## 1 The Error Codes

### 0810h: PC Speaker Error Code

Code	Explanation	Details/Parts to Check
0708h	Loopback test failed at XXXXh port.	Un expected data in the loopback circuit. Install new parallel port controller.

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### 0810h: PC Speaker Error Code

Code	Explanation	Details/Parts to Check
0810h	Speaker test failed	Speaker error. Check the PC speaker is connected correctly. Install new PC speaker.

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### 0801h – 0812h: Sound Test Error Codes

Code	Explanation	Details/Parts to Check
0801h	Stereo test failed	Sound board error. Install new sound board.
0802h	Pitch test failed	Sound board error. Install new sound board.
0803h	Volume test failed	Sound board error. Install new sound board.
0804h	Playback rate test failed.	Sound board error. Install new sound board.



Code	Explanation	Details/Parts to Check
0812h	Sound Blaster test failed	Sound board error. Check that sound board is Sound Blaster-compatible. If problem persists, install new sound board

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### 0900h – 090Fh: Video Error Codes

Code	Explanation	Details/Parts to Check
0900h	Video adapter memory read or write test failed.	Video memory error. Install new video memory. If problem persists, install new: <ul style="list-style-type: none"> <li>• video adaptor (if installed in accessory slot), or</li> <li>• system board (if integrated on system board).</li> </ul>
0901h	Video adapter attribute test failed.	Video controller error. Install new: <ul style="list-style-type: none"> <li>• video adaptor (if installed in accessory slot), or</li> <li>• system board (if integrated on system board).</li> </ul>
0903h	80 x 25 video display test failed.	Video controller error. Install new: <ul style="list-style-type: none"> <li>• video adaptor (if installed in accessory slot), or</li> <li>• system board (if integrated on system board).</li> </ul>
0904h	40 x 25 video display test failed.	Video controller error. Install new: <ul style="list-style-type: none"> <li>• video adaptor (if installed in accessory slot), or</li> <li>• system board (if integrated on system board).</li> </ul>

## 1 The Error Codes

0900h – 090Fh: Video Error Codes

Code	Explanation	Details/Parts to Check
0905h	320 x 200 graphics test failed.	Video controller error. Install new: <ul style="list-style-type: none"><li>• video adaptor (if installed in accessory slot), or</li><li>• system board (if integrated on system board).</li></ul>
0906h	640 x 200 graphics test failed.	Video controller error. Install new: <ul style="list-style-type: none"><li>• video adaptor (if installed in accessory slot), or</li><li>• system board (if integrated on system board).</li></ul>
0907h	Video memory page selection test failed.	Video controller error. Install new: <ul style="list-style-type: none"><li>• video adaptor (if installed in accessory slot), or</li><li>• system board (if integrated on system board).</li></ul>
0908h	Video adapter color test failed.	Video controller error. Install new: <ul style="list-style-type: none"><li>• video adaptor (if installed in accessory slot), or</li><li>• system board (if integrated on system board).</li></ul>
0909h	640 x 350 graphics test failed.	Video controller error. Install new: <ul style="list-style-type: none"><li>• video adaptor (if installed in accessory slot), or</li><li>• system board (if integrated on system board).</li></ul>
090Ah	640 x 480 graphics test failed.	Video controller error. Install new: <ul style="list-style-type: none"><li>• video adaptor (if installed in accessory slot), or</li><li>• system board (if integrated on system board).</li></ul>
090Ch	VESA video mode test failed.	Video memory error. Install new video memory. If problem persists, replace: <ul style="list-style-type: none"><li>• video adaptor (if installed in accessory slot), or</li><li>• system board (if integrated on system board).</li></ul>

Code	Explanation	Details/Parts to Check
090Dh	VESA video memory test failed.	Video memory error. Install new video memory. If problem persists, replace: <ul style="list-style-type: none"> <li>• video adaptor (if installed in accessory slot), or</li> <li>• system board (if integrated on system board).</li> </ul>
090Eh	DDC1 Protocol Failed	DDC Error. Check the DDC display interface.
090Fh	DDC2 Protocol Failed	DDC Error. Check the DDC display interface.

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### 0A00h – 0A06h: CD-ROM Error Codes

Code	Explanation	Details/Parts to Check
0A00h	No CD in drive.	CD-ROM error. Insert a CD in the CD-ROM drive.
0A01h	Eject fails on drive x.	Diagnostic test error. Re-run the diagnostic test.
0A02h	Close failed on drive x.	Diagnostic test error. Re-run the diagnostic test.
0A03h	Data test failed, Drive x, Sector Y.	Diagnostic test error. Re-run the diagnostic test.
0A04h	Play test failed, Drive x, Sector y.	Diagnostic test error. Re-run the diagnostic test.
0A05h	No data CD in drive	CD-ROM error. Insert a data CD in the CD-ROM drive.

## 1 The Error Codes

1000h – 100Dh: Multiple Processor Error Codes

Code	Explanation	Details/Parts to Check
0A06h	No audio CD in drive.	CD-ROM error. Insert an audio CD in the CD-ROM drive.

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### 1000h – 100Dh: Multiple Processor Error Codes

Code	Explanation	Details/Parts to Check
1000h	Processors don't have unique IDs.	Processor ID error. Check that the processor is correctly configured.
1001h	Processor X failed to interrupt processor Y.	Processor error. Install a new processor.
1002h	IPI physical mode test failed on processor X.	Processor error. Install a new processor.
1008h	MPI arbitration test failed.	Processor error. Check that the processor is correctly configured. If the error persists, install new processor.
1009h	Cache coherency test failed.	Processor error. Check that the processor is correctly configured. If the error persists, install new processor.
100Ah	Memory consistency test failed.	Processor error. Check that processor is Install a new processor.
100Bh	I/O access test failed on processor X at port XXXXh.	Processor error. Install a new processor.
100Ch	Memory map I/O access test failed on processor X at address XXXXXXXXh.	Processor error. Install a new processor.

Code	Explanation	Details/Parts to Check
100Dh	Application processors were not detected.	Processor error. Check that the processor is correctly configured. If the error persists, install new processor.
100Eh	CPU speed error	Processor speed error. Check processor Speed stamp and clocks. If the error persists, install new processor.
100Fh	CPU count error	Processor error. Check number of processors present.
1030h	L2 Cache Pattern error	Cache memory error. Check processor, L2 cache and main memory are correctly installed. Run memory tests to confirm correct function of main memory and any external L2 cache memory. If error persists, replace processor.
1031h	L2 Cache Parity error	Cache memory error. Check processor, L2 cache and main memory are correctly installed. Run memory tests to confirm correct function of main memory and any external L2 cache memory. If error persists, replace processor.

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### 1100h – 1110h: APM Test Error Codes

Code	Explanation	Details/Parts to check
1100h	Function error	APM error. An APM function for the device did not complete correctly.

## 1 The Error Codes

1301H – 1503h: USB Error Codes

Code	Explanation	Details/Parts to check
1110h	Power State Error	APM error. Device power state not as expected..

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### 1301H – 1503h: USB Error Codes

Code	Explanation	Details/Parts to Check
1301h	Can not find PCI resource	USB error. Install new system BIOS.
1302h	Register Test Failed	USB error. Install new system BIOS.
1303h	Frame test failed	USB error. Install new system BIOS.
1304h	Status test failed	USB error. Install new system BIOS.
1305h	Interrupt test failed	USB error. Install new system BIOS.
1306h	Transfer Desc. Failed	USB error. Install new system BIOS.

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## Using the Advanced Tests

This chapter gives background information on what to do when an error occurs in an advanced test, as well as information about the advanced tests and advanced tests error log.

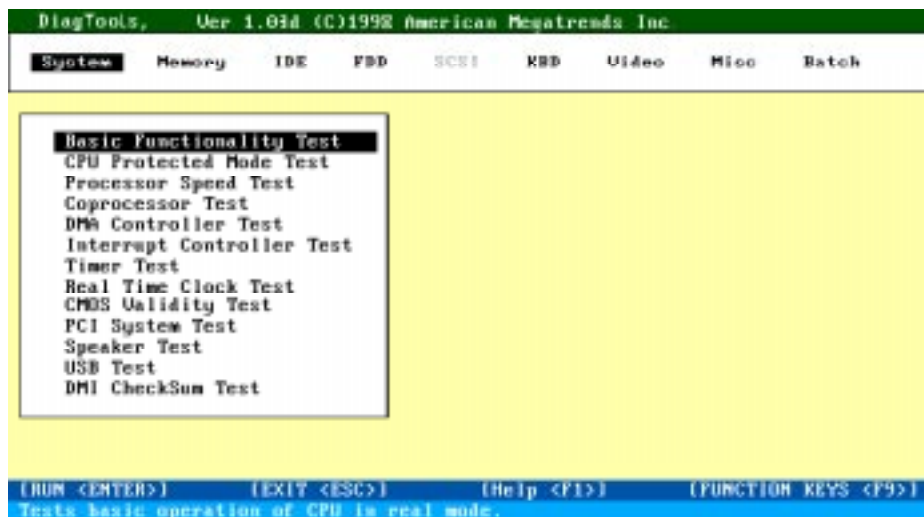
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## Overview of the Advanced System Tests

The advanced system tests can be used to test each of the PC's components. These tests are more thorough and cover a wider range of functionality than the basic system tests.

Unlike the basic system test, each advanced test must be selected and initiated by the user through the on-screen menus. Most of the tests are configurable and all can be repeated any number of times.

The Advanced Tests Screen



To Enter the Advanced Tests

To enter the advanced tests screen, run Vectra Hardware Diagnostics and complete the hardware detection phase and the basic system test. You can then enter the advanced systems tests.



- Help on Advanced Tests You can get more information about each available test. There are two ways to get information about a test:
- At the bottom of the screen there is a one-line explanation of the test currently selected in the menu. To get help for any test, simply move the selection bar onto the corresponding menu item.
  - Press **F1** for more in-depth help on the test currently selected in the menu. To come back from the Help screen to the advanced test screen, press the “B” key.
- Running Advanced Tests Advanced tests can be run individually or in batches. For information about how to run advanced tests, refer to the Vectra Hardware Diagnostics *Users’ Guide*. (To find out where to get the User’s Guide, refer to “For More Information” on page vi.)
- Stopping a Test in Progress Once you have selected **Continue** and the test is running, you can press **Esc** to abort the test while it is running. Some tests are critical and cannot be aborted. If you abort the test, the message **Test Aborted** is displayed.
- Test Results and the Error Log Once the test has completed, a window appears indicating the result: **Test Passed** or **Test Failed**. The window also has several command options so that you can select your next action:
- **Return to Main Menu:** to return to the main screen, allowing you to run another test.
  - **Browse Current Test Errors:** to browse the errors produced in the test you have just done.
  - **Browse All Test Errors:** to browse all the errors that have arisen since you started the advanced system tests (or since you last erased the error list).
  - **Erase Error List:** to delete the complete list of errors.

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**CAUTION**

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Do not use the **Erase Error List** command if you want to create a Support Ticket (test report). The error list is used to create the Support Ticket.

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## What To Do If You Get An Error Code

Consult the error codes lists in chapter 1. For each error code, the source of the error is given, as well as recommended actions. Note that the listed actions are *not* obligatory, instead they are suggested actions only, provided to help you find the most appropriate solution to the problem.

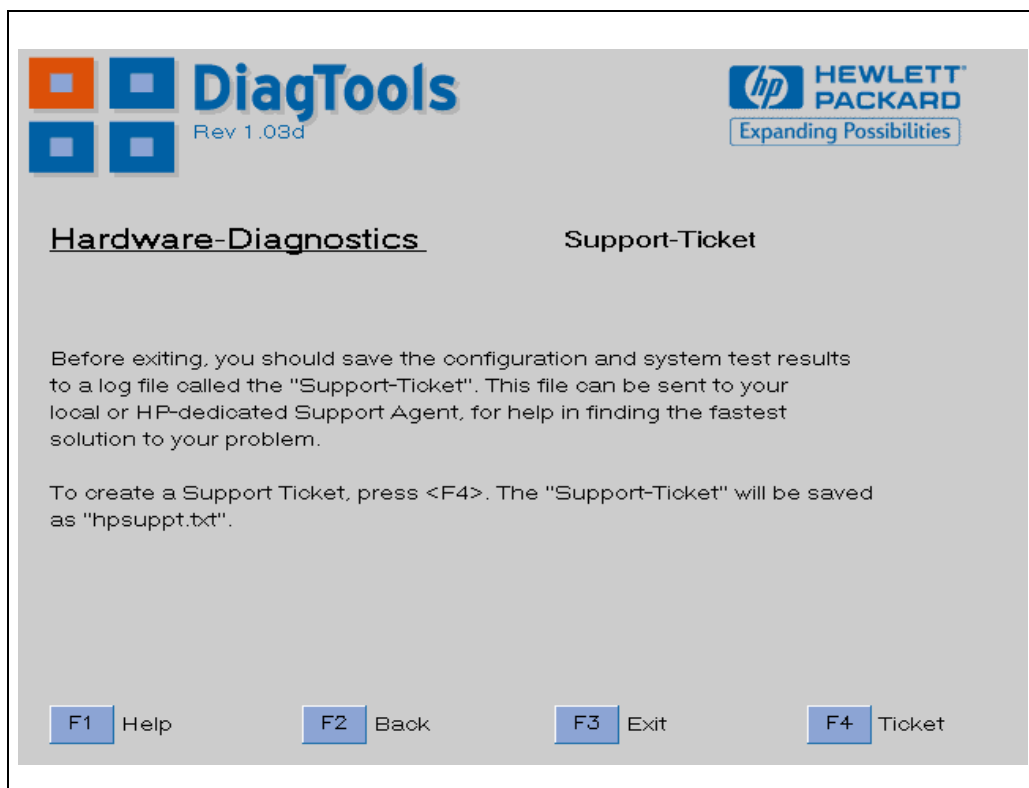
If the Error Code is Not Listed      If the error code you are looking for is not provided in chapter 1, contact HP Support.

Sending Comments and Suggestions to HP      You can email all information about missing error codes, as well as any comments and suggestions to the email address provided in the HP World Wide Web Site, at <http://www.hp.com>.

Error Report: The  
"Support Ticket"

For a full error report, create the Support Ticket. The Support ticket is a text file containing a complete record of the test results and the PC's configuration. To create a Support Ticket when you have completed the advanced tests:

- 1 Press **Esc** to exit the Advanced System Tests. The Vectra Hardware Diagnostics "Support Ticket" screen will appear:



- 2 Press **F4** to create a Support Ticket. Once the Support Ticket has been successfully created, you will be given the filename and location of the Support Ticket File.

To learn more about the Support Ticket, refer to the Vectra Hardware Diagnostics *User's Guide*. To learn where to get the User's Guide, refer to the section "For More Information" on page vi.

## 2 Using the Advanced Tests

### What To Do If You Get An Error Code





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