



- [HOME](#)
- [PRODUCTS](#)
- [SOLUTIONS](#)
- [SUPPORT](#)
- [RESOURCE CENTER](#)
- [PARTNERS](#)
- [MICROSEMI](#)

home > Support

Sense Codes Described

Support Resources

- [Support Updates on Twitter](#)
- [TSID Importance](#)
- [Register My Product](#)
- [Support Options](#)
- [Contact Support](#)
- [RMA Information](#)
- [Compatibility Report](#)

When the Disk Utility option of *SCSISelect* is chosen, two options are displayed, Format Disk and Verify Disk. Selection of either option will invoke a bus scan and display all attached devices. Verify Disk is a non-destructive test and is used to verify sector and block information on hard drives. Format Disk is a SCSI command (Format Unit) which is sent to the hard drive by the host adapter. The firmware on the drive implements the format routine programmed by the vendor. This is not a "true" low level factory format command, but is considered a "low level format" for diagnostic and installation issues.

The Adaptec Format Disk command will display the detected size of the hard drive, prompt you that a format will erase any existing data, and prompt for verification of format. The format utility will flash to a red screen with a "Please Wait!" notation. There will not be a progress bar during format. The time for a format depends on the drive parameters, but can run as much as 15-20 minutes per GigaByte. Do not reboot your system during format!

The Adaptec Verify Disk command will display the detected size of the hard drive, prompt for the verify function, and display the number of sectors checked, and a progress bar or percentage of total blocks checked. You can use the 'escape' key to exit the utility at any time.

If a drive fails either to format or verify, the cause could be the device, cable, termination, host adapter, host adapter settings, compatibility, or other reason. The format or verify utility will return a error code sequence which can indicate the area of failure. Contact your Adaptec Tech Support or your drive vendor for specific information.

Event code sequence for SCSI Select Disk Verify

- SCSI ID of the Device
- SCSI CDB Sent (command descriptor block)
- e.g., 04 xx xx xx xx xx xx xx xx xx (xx-disregard values) Typical codes: 04 (format), 2F (verify), (03) request sense, 25 (read capacity) Host Adapter Status (usually 00h "no host adapter error" Indicated no error on the host adapter)
- Target Status
- Sense key
- Additional Sense Code
- Additional Sense Code Qualifier Typical response if drive jumper is not set to spin up the drive at power on:

```
ID0
SCSI CDB Sent 03 00 00 00 00 00 00 00 00
Host Adapter Status 00h-no host adapter error
Target Status 02h-check condition
Sense Key 02h
Additional Sense Code 04h
Additional Sense Code Qualifier 02h
```

The sense keys description in the lower-order bits of byte 2 of the sense data returned by the Request Sense command are described in the following table. You can find a more detailed description of the error by checking the additional sense code and the additional sense code qualifier in the next section.

Sense key Description

0H	No Sense. In the case of a successful command, no specific sense key information needs to be reported for the drive.
1H	Recovered error. The drive completed the last command successfully with some recovery action. When many recovered errors occur during one command, the drive determines which error it will report.
2H	Not ready. The addressed logical unit cannot be accessed. Operator intervention may be required to correct this condition.
3H	Medium error. The command was terminated with a non-recoverable error condition, probably caused by a flaw in the media or an error in the recorded data.
4H	Hardware error. The drive detected a non-recoverable hardware failure while performing the command or during a self-test. This includes, for example, SCSI interface parity errors, controller failures and device failures.
5H	Illegal request. An illegal parameter in the command descriptor block or in the additional parameters supplied as data for some commands (for example, the Format Unit command, the Mode Select command and others). If the drive detects an invalid parameter in the CDB, it terminates the command without altering the media. If the drive detects an invalid parameter in the additional parameters supplied as data, the drive may have already altered the media.
6H	Unit attention. The drive may have been reset. See the Seagate SCSI-2 Interface Manual for more details about the Unit Attention condition.
BH	Aborted command. The drive aborted the command. The initiator may be able to recover by retrying.
EH	Miscompare. The source data did not match the data read from the media.

Additional sense code and additional sense code qualifier

The additional sense code and additional sense code qualifiers returned in byte 12 and byte 13, respectively, of the Sense Data Format of the Request Sense command are listed in the following table. Some sense codes and qualifiers are vendor specific and may not be on this table.

Error code (hex) Description (Bytes 12 and 13):

00	00	No additional information is supplied.
01	00	There is no index/sector signal.
02	00	There is no seek complete signal.
03	00	A write fault occurred.
04	00	The drive is not ready and the cause is not reportable.
04	01	The drive is not ready, but it is in the process of becoming ready.
04	02	The drive is not ready; it is waiting for the initializing command.
04	03	The drive is not ready; human intervention is required.
04	04	The drive is not ready; the format routine is in process.
05	00	The drive does not respond when it is selected.
06	00	Track 0 was not found.
07	00	More than one drive is selected at a time.
08	00	There was a drive communication failure.
08	01	A drive communication time-out occurred.
08	02	A drive communication parity error occurred.
09	00	A track following error occurred.
0A	00	An error log overflow occurred.
0C	01	A write error occurred, but the error was recovered using auto-reallocation.
0C	02	A write error occurred. Auto-reallocation was attempted, but it failed.
10	00	An ID CRC or ECC error occurred.
11	00	An unrecovered read error occurred.
11	01	The read retries were exhausted.
11	02	The error was too long to correct.
11	03	There were multiple read errors.
11	04	A read error occurred. Auto-reallocation was attempted, but it failed.
12	00	The address mark was not found in the ID field.
13	00	The address mark was not found in the data field.
14	00	No record was found.
14	01	No record was found.
15	00	A seek positioning error occurred.
15	01	A mechanical positioning error occurred.
15	02	A positioning error was detected by reading the media.
16	00	A data synchronization mark error occurred.
17	00	The data was recovered without applying error correction or retrying.
17	01	The data was recovered with retries.
17	02	The data was recovered with positive head offset.
17	03	The data was recovered with negative head offset.
17	05	The data was recovered using the previous sector ID.
17	06	The data was recovered without ECC. The drive uses data auto-reallocation.
18	00	The data was recovered with ECC.
18	01	The data was recovered with ECC and retries.
18	02	The data was recovered with ECC, retries, and auto-reallocation.
19	00	There is an error in the defect list.
19	01	The defect list is not available.
19	02	There is an error in the primary defect list.
19	03	There is an error in the grown defect list.
1A	00	A parameter overrun occurred.
1B	00	A synchronous transfer error occurred.
1C	00	The defect list could not be found.
1C	01	The primary defect list could not be found.
1C	02	The grown defect list could not be found.
1D	00	During a verify operation, a compare error occurred: the source data did not match the data read from the media.
1E	00	An ID error was recovered.
20	00	The drive received an invalid command operation code.
21	00	The logical block address was not within the acceptable range.
22	00	The drive received a CDB that contains an invalid bit. (This error code applies to direct-access devices.)
24	00	The drive received a CDB that contains an invalid bit. (This error code applies to all SCSI devices.)
25	00	The drive received a CDB that contains an invalid LUN.
26	00	The drive received a CDB that contains an invalid field.
26	01	The drive received a CDB containing a parameter that is not supported.
26	02	The drive received a CDB containing an invalid parameter.
26	03	The drive received a CDB containing a threshold parameter that is not supported.
29	00	A power-on reset or a bus device reset occurred.
2A	00	Some parameters were changed by another initiator.
2A	01	The Mode Select parameters were changed by another initiator.
2B	00	The microcode was downloaded.
2F	00	The tagged commands were cleared by another initiator.
30	01	The media cannot be read because the format is not recognized.

30	02	The media cannot be read because the format is incompatible with certain parameters.
31	00	The media format is corrupted.
31	01	The format command failed.
32	00	There are no spare defect locations available.
32	01	An error occurred when the defect list was being updated.
37	00	A rounded parameter caused an error.
3D	00	The identify message contains invalid bits.
3F	00	The target operation command was changed.
3F	01	The microcode was changed.
3F	02	The drive was operating as a SCSI drive and is now operating as a SCSI-2 drive, or vice versa.
3F	03	The inquiry data was changed.
40	00	The RAM failed.
40	8x	A correctable ECC error occurred; x equals the length of the error.
40	90	A configuration error occurred.
40	A0	The self-test routine discovered an error in a ROM.
40	A1	The self-test routine discovered an error in the processor RAM.
40	A2	The self-test routine discovered an error in the buffer RAM.
40	A3	The self-test routine discovered a SCSI protocol error.
40	A4	The self-test routine discovered a DMA error.
40	A5	The self-test routine discovered an error in the disc sequencer.
40	A6	The self-test routine discovered an error in the disc sequencer RAM.
40	A7	A self-test error occurred.
40	A8	The flash memory cannot be read or written.
40	A9	The flash memory directory cannot be read, or it is corrupted.
40	AA	The flash memory contains an incompatible version number.
40	AB	The flash memory contains an incompatible revision number.
40	AC	A flash memory checksum error occurred.
40	AD	The flash memory contains invalid parameters.
40	AE	The flash memory is incompatible with the HDA and the circuit board. The flash memory must be reconfigured.
40	B0	The servo command timed out.
40	B1	The servo command failed.
40	B2	The servo command was rejected.
40	B3	The servo interface does not work.
40	B4	The servo either failed to lock on track during spinup or has wandered off track.
40	B5	An internal servo error occurred.
40	B6	During spinup, a servo error occurred.
40	B7	The servo pattern is inconsistent.
40	B8	A seek recovery error occurred.
40	B9	The actuator did not achieve high-speed calibration.
40	C0	The defect list is full.
40	C1	A failure occurred while the grown defect list was being written.
40	C2	The write life-cycle of the flash memory has been exceeded.
40	C3	There was an attempt to add an illegal entry to the grown defect list.
40	C4	There was an attempt to add a duplicate entry to the grown defect list.
41	00	A data path diagnostic failed.
42	00	A power-on or self-test failure occurred.
43	00	A message reject error occurred.
44	00	An internal controller error occurred.
45	00	An error occurred during a selection or a reselection.
47	00	A SCSI interface bus parity error occurred.
48	00	The initiator has detected an error.
49	00	The initiator received an invalid message from the drive.
4C	00	The drive failed to self-configure.
4E	00	The drive attempted to perform overlapped commands.
5B	00	There was a log exception.
5B	01	A threshold condition was met.
5B	02	The log counter has reached its maximum value.
5B	03	All the log list codes have been used.
5C	00	There was a change in the RPL status. The drive lost synchronization.

Products

Products Overview
 Product selector
 Cables & Accessories
 End of Life Products
 Outlet Store
 All Products

Solutions

Solutions Overview
 Data Center Solutions
 maxCache Solutions
 ZMCP Solutions
 Hybrid RAID Solutions
 Green IT Solutions
 maxView Storage Manager

Support

Downloads
 Knowledgebase
 Register Your Product
 Compatibility Reports
 TSID Importance
 Support Options
 RMA Information
 Contact Support

Resources

Resources
 Datasheets
 Whitepapers & Briefs
 Case Studies
 Videos & Webinars
 Compatibility Reports
 Storage Advisors Blog
 Facebook
 Twitter

Partners

Channel Partners
 Ecosystem Partners
 Industry Alliances
 Contact Us