

X3T9.2/87-76



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To: X3T9.2 SCSI-2 Working Group and X3T9.2 Committee Members

From: Paul R. Nltza (714) 662-5600

Subj: SCSI-2 Auto Sense and Mode Select/Sense Target Option Proposal

Attached for your review is a proposal for Auto Sense on Check Condition and a new page for the Mode Select/Sense command.

The Auto Sense on Check Condition allows the Target to return the Sense Data whenever a Check Condition status is returned without the Initiator having to send a Request Sense command. The Sense Data is sent by the Target to the Initiator immediately after the status phase but before the Command Complete Message is sent.

The Target Options page for the Mode Select/Sense command provides a means for the Initiator to determine which options are supported by the Target and further allows the Initiator to enable/disable these options.

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6.3.1 Auto Sense on Check Condition Option

The Auto Sense on Check Condition option, when enabled, allows the Target to automatically return Sense data when a Check Condition occurs. This option can be enabled/disabled using the Auto Sense bit in the Target Options Mode Select page. When disabled, the Target terminates a command normally, even when a Check Condition occurs, by sending the Status byte followed by the Command Complete message. The Initiator should issue a Request Sense command to receive the Sense Data for any error that occurs. When the Auto Sense option is enabled and an error occurs during a command, the Target will send the Check Condition Status byte, change the phase to Data In, send the Sense Data then complete the command by sending a Command Complete message (status phase, data In phase, message In phase). The Target will send all of the available Sense Data or up to the number of bytes specified in the Mode Select Target Options page, whichever is less.

6.1.7.4 Mode Select/Sense Target Option Page

The Target Options page defines various options which may be supported by the Target device for the current logical unit. The Target may support only one set of these parameters for all Initiators or it may support a set of parameters for each Initiator on the bus.

Bit Byte	7	6	5	4	3	2	1	0
0	Reserved		Page Code (??h)					
1	Parameter Length (04)							
2	Reserved				Cache	CmdQ	ASense	
3	Auto-Sense Allocation Length							
4	Reserved							
5	Reserved							

The Cache Control field (Cache) allows the Initiator to enable/disable caching and provides a means for the Target to report if it supports caching. In the Mode Select command this field enables/disables caching for this logical unit and overrides the FUA (Force Unit Access, see section 6.2.4) field in the CDB. If this field is set to one, caching is enabled and the Target may satisfy the request for data by accessing the cache memory. If this field is set to zero, caching is disabled for the current logical unit and the target shall satisfy the request for data by accessing the physical medium. In the Mode Sense command Changeable Values option, this field reports whether or not the current logical unit supports caching. If this field is set to one caching is supported, while a zero in this field indicates the logical unit does not support caching.

The Command Queue field (CmdQ) allows the Initiator to enable/disable the command queuing option and provides a means for the Target to report if this logical unit supports command queuing (see section 6.6). In the Mode Select command this field enables/disables the command queuing option. If this field is set to one command queuing is enabled, while a zero in this field disables command queuing for the current logical unit. In the Mode Sense command Changeable Values option, this field reports whether or not the current logical unit supports command queuing. If this field is set to one command queuing is supported, while a zero in this field indicates the logical unit does not support command queuing.

The Auto Sense Control field allows the Initiator to enable/disable the Auto Sense option and provides a means for the Target to report if this logical unit supports the Auto Sense option (see section 6.3.1). In the Mode Select command this field enables/disables the Auto Sense option. If this field is set to one Auto Sense on Check Condition is enabled, while a zero in this field disables the Auto Sense option for this logical unit. In the Mode Sense command Changeable Values option, this field reports whether or not the current logical unit supports the Auto Sense option. If this field is set to one the Auto Sense option is supported, while a zero in this field indicates the logical unit does not support the Auto Sense option.

The Auto Sense Data Allocation Length field specifies the maximum number of Auto Sense Data bytes (see section 6.3.1) that the Target shall return. If the Initiator sets this field to zero the Target will set the Auto Sense Data Allocation Length to its default value. Any other value (1 through 255) in this field specifies the maximum number of bytes the Target is to return during the Auto Sense sequence. The Target will return all available Sense Data or up to the number of bytes specified in this field, whichever is less. Note: This field does not affect the number of bytes returned during a normal Request Sense command.