

To: X3T9.2 Committee (SCSI)  
 From: Scott Smyers (Apple Computer)  
 Subject: Proposal to add a "disconnect unconditionally after command phase" mode bit in the SCSI-3 standard  
 Date: June 4, 1992

This proposal is for a new bit in mode page 2. This bit controls whether the target is required to disconnect unconditionally or not following the receipt of a command with the disconnect privilege bit set. After disconnecting, the target may attempt to reconnect according to the setting of the "disconnect time limit" field in mode page 2.

Below is a representation of the proposed change as it would appear if it were to be incorporated into the SCSI-2 standard. Change bars to the right indicate changes from the SCSI-2 rev 10h document. (Note that this proposal is for SCSI-3 and that the text below is only for illustration).

Table 98: Disconnect-Reconnect Page

Bit	7	6	5	4	3	2	1	0
Byte								
0	PS	Reserved	Page Code (02h)					
1	Page Length (0Eh)							
2	Buffer Full Ratio							
3	Buffer Empty Ratio							
4	(MSB)	Bus Inactivity Limit						
5							(LSB)	
6	(MSB)	Disconnect Time Limit						
7							(LSB)	
8	(MSB)	Connect Time Limit						
9							(LSB)	
10	(MSB)	Maximum Burst Size						
11							(LSB)	
12	DImm		Reserved				DTDC	
13			Reserved					
14			Reserved					
15			Reserved					

Changes to the text would include adding the following immediately before section 7.3.3.3:

If DTDC is nonzero and the maximum burst size is nonzero the target shall return CHECK CONDITION status. The sense key shall be set to ILLEGAL REQUEST and the additional sense code set to ILLEGAL FIELD IN PARAMETER LIST.

If the Disconnect Immediate (DImm) bit is set to one, the target shall attempt to disconnect immediately after receiving a command which is preceded by an identify message in which the DiscPriv bit set to one. The target may reconnect for the command according to the settings of the other parameters in this mode page. If the DImm bit is set to zero, then the target has no requirements to disconnect or not disconnect other than those imposed upon it by the other parameters in this mode page.

IMPLEMENTORS NOTE: When the DImm bit is set to one, it is very likely that the target is operating in an environment where there are several targets operating at the same time to satisfy a single request (e.g., in a disk array). Therefore, when the DImm bit is set to one, it is highly desirable for the target to attempt to reconnect only when the buffer full or empty ratios are met. It is also highly desirable in this situation for the target to disconnect immediately when the buffer is completely empty, in the case of a read, or completely full in the case of a write. Only in this way can the use of the bus be maximized across multiple targets.

7.3.3.3 Peripheral Device Page