TEXAS INSTRUMENTS

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MEMORANDUM

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TO: John Lohmeyer, Chairman X3T9.2

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SUBJECT: Proposed SEND DIAGNOSTIC Command Pages

To quote Gene Milligan, this is a candidate for the end of SCSI-2 or the beginning of SCSI-3. We hope it will be useful to give it exposure, either way.

As we understand it, the SEND DIAGNOSTIC and RECEIVE DIAGNOSTIC RESULTS commands were conceived as open-ended tools to facilitate the execution of tests or other operations outside the normal operational activities of SCSI devices, with a large number of pages set aside for vendor-unique operations. A number of pages were reserved for standardization also, however, and one of them, Page 40h, has been utilized for a needed Translate function.

In our diagnostic studies, we have identified additional areas in which it seems that standardized SEND DIAGNOSTIC functions would be broadly useful. To this end, we propose the addition of the following pages under the SEND DIAGNOSTIC Pages section of Scn. 8:

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SEND DIAGNOSTIC Read Physical Page Format

Byte \ Bit	7	6	5	4	3	2	1	0
00	Page Code (41h)							
01	Reserved							
02	(MSB)							
03	Page Parameter Length (000Ch)							(LSB)
04	Reserved						Supplied Format	
05	Address Field							
12								
13	Transfer Length							
14	Reserved							
15	Reserved							

The Read Physical page (Page Code 41h) is used to directly read the physical sector addressed in the Address Field.

The Supplied Format field specifies the format of the Address Field. Valid values for this field are defined in the Format Unit command.

The Address Field contains the address of the sector to be read. The format of this field depends on the value in the Supplied Format field.

The Transfer Length specifies the number of contiguous physical blocks of data to transfer. A transfer length of zero indicates that 256 physical blocks should be transferred. Any other value indicates the number of physical blocks that should be transferred.

The results should be returned to the Initiator by the RECEIVE DIAGNOSTIC RESULTS command.

Refer to Scn. 8.1.8 for command termination with a CHECK CONDITION status.

SEND DIAGNOSTIC Write Physical Page Format

Byte \ Bit	7	6	5	4	3	2	1	0
00	Page Code (42h)							
01	Reserved							
02	(MSB) Page Parameter Length (000Ch)							
03								(LSB)
04	Reserved					Supplied Format		
05	Address Field							
12								
13	Transfer Length							
14	Reserved							
15	Reserved							

The Write Physical page (Page Code 42h) is used to directly write the physical sector addressed in the Address Field.

The Supplied Format field specifies the format of the Address Field. Valid values for this field are defined in the Format Unit command.

The Address Field contains the address of the sector to be written. The format of this field depends on the value in the Supplied Format field.

The Transfer Length specifies the number of contiguous physical blocks of data to transfer. A transfer length of zero indicates that 256 physical blocks should be transferred. Any other value value indicates the number of physical blocks that should be be transferred. The single sector per track block size also applies.

Although no results are to be returned by this command, it should be followed by a RECEIVE DIAGNOSTIC RESULTS command in order to insure the execution of the command and to receive the resulting status.

Refer to Scn 8.1.23 for command termination with a CHECK CONDITION status.

SEND DIAGNOSTIC Format Sector Page Format

Byte \ Bit	7	6	5	4	3	2	1	0
00	Page Code (43h)							
01	Reserved							
02	(MSB) Page Parameter Length (000Ch)							
03								(LSB)
04	Reserved					Supplied Format		
05	Address Field							
12								
13	Reserved							
14	Reserved							
15	Reserved							

The Format Sector page (Page Code 43h) is used to format a single sector according to the current parameters established with the Mode Select command.

The capability to format a track as a single sector is desired.

The drive should not use the defect information when executing this command.

The Supplied Format field specifies the format of the Address Field. Valid values for this field are defined in the Format Unit command.

The Address Field contains the address of the sector to be formatted. The format of this field depends on the value in the Supplied Format field. If the logical block format is specified, the block address is to be in the first four bytes of the field with remaining bytes set to zero.

Although no results are to be returned by this command, it should be followed by a RECEIVE DIAGNOSTIC RESULTS command in order to insure the execution of the command and to receive the resulting status.