16 November 87

TO: X3T9.2 SCSI-2 COMMITTEE X3T9.2/87- 209

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SUBJECT: Write Same command

PURPOSE: To allow the host to transfer one block of data to the target then have the target disconnect and write the data to numerous blocks on the direct access device.

HISTORY: This Write Same command was originally proposed by Dan Moczarny, of Mitsubishi Electronics, but was rejected because it used a new OP code. It was then proposed as a sub-function of the Send/Receive Diagnostic command by Donna Pope of Optimem. The Working Group in Orlando rejected this proposal because there were some wording errors and because the group 2 OP codes (40-5F) are now available.

We are proposing it both as a sub-function of the Diagnostic command and as a new command but prefer it as a new command and **not** as a Diagnostic command.

The command we are proposing would allow two versions of the data and would allow a large device to be written with only one command and one block of data being transfered from the host.

We are not proposing a specific OP code because we are not sure what Group 2 OP codes have been assigned. We suggest a list of all assigned OP codes be added to the manual.

Peripheral Device Type: **Direct Access (Winchester and Flexible disks)**
Operation Code: **??h**

WRITE SAME Command Descriptor Block

Bit / Byte	7	6	5	4	3	2	1	0
0	Operation Code							
1	Logical Unit Number			Reserved			LBA	PS
2	Logical Block Address (MSB)							
3	Logical Block Address							
4	Logical Block Address							
5	Logical Block Address (LSB)							
6	Reserved							
7	# Blocks to Write (MSB)							
8	# Blocks to Write (LSB)							
9	Control Byte							

The WRITE SAME command requests that the target write the block transfered from the initiator to sequential blocks on the medium.

The LBA bit , when set to one, indicates that the first 4 bytes of each block written to the medium will be overwritten with the 4-byte logical block address.

The PS bit, when set to one, indicates that (for devices that have multiple physical sectors per logical block) the first 4 bytes of each physical sector will contain the logical block address.

The Logical Block Address specifies the logical block at which the write operation shall begin.

Only one logical block of data shall be sent during the Data Out phase regardless of the number of blocks to write. This will be used to write all of the contiguous blocks indicated in the description. The Number of Blocks to Write specifies the number of contiguous logical blocks to be written. All logical blocks written shall be written with the same data as the first logical block except for the first four bytes (of each physical sector) which shall depend on the LBA and PS bits.
A transfer length of zero shall indicate that the data be continuously written from the logical block address specified in the command block until the last logical block addressable.

The maximum LBA allowed is the LBA value returned in the READ CAPACITY Data with PMI bit set to zero.

If any of the following conditions occur, this command shall be terminated with a CHECK CONDITION status and the sense key shall be set as indicated in the following table. This table does not provide an exhaustive enumeration of all conditions that may cause the CHECK CONDITION status.

Condition	Sense Key
Invalid logical block address	ILLEGAL REQUEST (see note)
Target reset or medium change since the last command from this initiator.	UNIT ATTENTION
Overrun or other error that might be resolved by repeating the command.	ABORTED COMMAND

NOTE: The extended sense information bytes shall be set to the logical block address of the first invalid address. In this case, no data shall be written on the logical unit.