

preliminary working draft  
Diagnostic Command Set  
for SCSI and SCSI-2

August 21, 1989

**Abstract:** This document is intended to provide an recommendation of commands in addition to those found in the Small Computer System Interface (SCSI) and SCSI-2 (American National Standard X3T9.2). The Diagnostic Command Set will form a common interface for the testing of SCSI peripherals such as rigid disks, flexible disks, magnetic tape devices, and optical disks. The DCS is intended to allow commonality in testing among test equipment manufacturers and peripheral manufacturers.

**Warning:** This is a preliminary working draft document of the proposed DCS. It is subject to change without notice, at the sole discretion of the X3B7.1 Task Group. This draft is distributed solely for the purpose of review and comment, and it should not be used as a design document.

**Notice:** This document will be updated at the next meeting of ANSI X3B7.1 DCS on Nov 6,7 1989 in Phoenix AZ. Interested parties should plan to attend the working group meeting on Oct 27, 1989 in San Jose CA. Testing requirements and command formats will be discussed and added to this document.

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## REVISION HISTORY

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Revision 0, Feb 14, 1989	Created document.
Revision 1, May 16, 1989	Modified per X3B7.1 meeting
Revision 2, Aug 21, 1989	Modified per X3B7.1 meeting

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## GENERAL COMMENTS

Actual interconnection and operation of SCSI peripherals are specified in ANSI X3T9.2. It is assumed that readers are familiar with the techniques and methods outlined in the SCSI. Readers may also wish to consult "Disk Heads and Media test methods", and "Glossary of Disk Terms" X3B7.1

This document is in addition to the work done by the X3T9.2 committee. All recommendations provided are at three levels, Mandatory, Optional, and Vendor Unique.

Required commands must be implemented to be in compliance with this document.

Optional commands provide further functionality, and may be implemented at the discretion of the manufacturer.

Vendor Unique commands are reserved commands for implementation specific operations.

**Overview:** The following functions are required in order to test a SCSI storage peripheral. The remainder of this document will discuss the implementation of these functions.

0. Configuration for testing
1. Logical Block Address to Physical Cylinder Head Sector conv.
2. Physical Read/Write operations
3. DC Erase entire track (for S/N measurement)
4. Format a single track
5. ReadLong, WriteLong operations

### SCSI and SCSI-2 Commands being used.

The following test commands will be used as defined in SCSI specification X3T9.2

00h - Test Unit Ready  
03h - Request Sense  
04h - Format Unit  
08h - Read (also 28h)  
0Ah - Write (also 2Ah)  
0Bh - Seek (also 2Bh)  
12h - Inquiry  
15h - Mode Select (pages 1,3,4,8)  
16h - Reserve  
17h - Release  
1Ah - Mode Sense  
1Bh - Start/Stop Unit  
1Ch - Receive Diagnostic  
1Dh - Send Diagnostic  
25h - Read Capacity  
2Fh - Verify  
3Bh - Write Buffer  
3Ch - Read Buffer  
3Eh - Read Long  
3Fh - Write Long  
4Ch - Log Select  
4Dh - Log Sense

The following test commands will have additional functionality recommended in this document.

1Ch - Receive Diagnostic  
1Dh - Send Diagnostic

## Additions to SCSI-2

### Mode Select Page 1

Use read and write retry count fields in Mode Select Page 1 (Error recovery page). Add positioning retry count (seek retry count) to MS Page 1, byte 7 (currently reserved). Use Head Offset count (byte 5) for off track testing, and Data Strobe offset count (byte 6) to adjust the data separator on the target.

### Erase

Define Erase command (2Ch) for magnetic disk. This function erases the data fields associated with a particular range of logical blocks. Additional care should be taken to ensure that write splices, sync fields, and gaps are properly erased.

### Diagnostic Pages

New Diagnostic Pages for the Send Diagnostic and Receive Diagnostic commands are defined later in this document.

## Diagnostic Mode

The drive is placed in diagnostic mode to provide functionality which is not allowed in the normal operation of the drive. The diagnostic mode is enabled using the SCSI Identify message with DIAGMOD = 1 during the initial selection. The drive remains in diagnostic mode until a reset occurs, or until another Identify message is sent with DIAGMOD = 0.

Diagnostic mode should be enabled for testing purposes only, as data loss is possible. Any test signals or ports will be enabled in Diagnostic mode. Drives will be capable of reporting status immediately after check conditions occur.

### Implementor's Note:

User may elect to disable ECC and retry capabilities using Mode Select page 1, which should guarantee that the Drive will perform no retry nor ECC correction. User may also elect to disable caching when in diagnostic mode, using Mode Select page 8; and error logging using Log Select.

bit*	7	6	5	4	3	2	1	0
*	ID	DISKPRV	LUNTAR	reserved	DIAGMOD	*	LUN	*

## Identify Message

## Diagnostic Pages

Diagnostics are implemented using the Send Diagnostic (1Dh) and Receive Diagnostic (1Ch) commands. Diagnostic pages are exchanged between the host (initiator) and unit under test (target). Diagnostic pages in the range C0h..DFh are reserved, the following pages are defined in this document.

- C4h - Format Track
- C8h - Diagnostic Read
- C9h - Diagnostic Read ID
- CAh - Diagnostic Write
- CBh - Diagnostic Read Buffer
- CCh - Diagnostic Write Buffer
- D8h - Read Long
- DAh - Write Long
- DCh - Diagnostic Erase

## Common Diagnostic Pages

Each diagnostic page consists of 24 bytes transferred from the host to the unit under test. Bytes 00..03 are defined by SCSI-2. Byte 4 is used to specify the supplied format of the address. The following supplied formats are defined, with remaining combinations reserved for future definition:

- 000b - Logical Block Addressing
- 100b - Cylinder, Head, Bytes from Index
- 101b - Cylinder, Head, Sector

### Address Formats

The address appears in bytes 5..12 of the diagnostic page. Address formats 100 and 101 preclude the use of defect management strategies, and allow access to absolute locations.

Transfer length appears in bytes 14..21 of the diagnostic page. Transfer length is the number of blocks when using format code 000; the number of contiguous physical sectors when using format code 101; and the number of contiguous physical bytes when using format code 100.

#### Implementor's note:

A typical diagnostic operation will begin with the Send Diagnostic command, followed by a data phase containing the Diagnostic Page associated with the operation and any data out if applicable. Results of the diagnostic operation (data in) are obtained with the Receive Diagnostic command. It is recommended that microprocessor controlled programmed I/O be used to transfer the diagnostic pages using the Page Parameter Length as a count. High-speed hardware controlled direct memory access should be used to transfer results and data in/out using the Transfer Length field as a count.

The Drive under test should be reserved with the Reserve command. The link command bit should be set to ensure that the Send Diagnostic - Receive Diagnostic command pair is executed without interruption by other SCSI commands.

Templates for diagnostic pages using the three address formats follow.

## Template for Logical Block Addressing

BYTE	bit	7 (MSB)	6	5	4	3	2	1	0 (LSB)
00									Page Code
01								LUN	
02									
03									Page Parameter Length
04							0	0	0
05						Reserved			
06						Reserved			
07						Reserved			
08						Reserved			
09						Reserved			
10					LBA	(MSB)			
11									
12									
13						LBA	(LSB)		
14							Transfer Length (MSB)		
15									
16									
17									
18									
19									
20									
21							Transfer Length (LSB)		
22								Reserved	
23								Reserved	

Page parameter length, Bytes 2-3, is set to 22 bytes. Supplied format of 000b (byte 4 bits 0-2) indicates that logical addressing is used. The desired Logical Block Address of data on the target is specified in bytes 10-13. The target will convert the LBA to a physical address using the algorithm normally used with the Read or Write SCSI command. The Transfer Length specifies the length of data associated with this command, specified in blocks.

## Template for Physical Addressing using Cylinder, Head, Bytes for Index

BYTE	bit:	7	6	5	4	3	2	1	0	(MSB)	(LSB)
00	.	.	.	.	.	.	.	.	.	.	.
01	.	.	.	.	.	.	.	.	.	Page Code	.
02	.	.	.	.	.	.	.	.	.	Reserved	LUN
03	.	.	.	.	.	.	.	.	.	.	Page Parameter Length
04	.	.	.	.	.	.	1	0	0	Reserved	.
05	.	.	.	.	.	.	.	.	.	Reserved	.
06	.	.	.	.	.	.	.	.	.	Cylinder (MSB)	.
07	.	.	.	.	.	.	.	.	.	.	.
08	.	.	.	.	.	.	.	.	.	Cylinder (LSB)	.
09	.	.	.	.	.	.	.	.	.	Head	.
10	.	.	.	.	.	.	.	.	.	Bytes from Index (MSB)	.
11	.	.	.	.	.	.	.	.	.	.	.
12	.	.	.	.	.	.	.	.	.	.	.
13	.	.	.	.	.	.	.	.	.	Bytes from Index (LSB)	.
14	.	.	.	.	.	.	.	.	.	Reserved	.
15	.	.	.	.	.	.	.	.	.	Transfer Length (MSB)	.
16	.	.	.	.	.	.	.	.	.	.	.
17	.	.	.	.	.	.	.	.	.	.	.
18	.	.	.	.	.	.	.	.	.	.	.
19	.	.	.	.	.	.	.	.	.	.	.
20	.	.	.	.	.	.	.	.	.	.	.
21	.	.	.	.	.	.	.	.	.	Transfer Length (LSB)	.
22	.	.	.	.	.	.	.	.	.	Reserved	.
23	.	.	.	.	.	.	.	.	.	Reserved	.

Page parameter length, Bytes 2-3, is set to 22 bytes. Supplied format of 100b (byte 4 bits 0-2) indicates that physical addressing is used, precluding the use of defect management. The desired physical cylinder, head, and bytes from index addresses on the target is specified in bytes 6-13. Cylinders are addressed beginning with 0, with all cylinders being accessible. Reserved cylinders are accessed using 2's complement addressing. Cylinder address FFFFFFFh would refer to reserved cylinder 2. Reserved cylinders are not normally tested, and contain non-volatile information used by the target.

The Transfer Length specifies the length of data associated with this command, specified in bytes. If the size of Transfer Length exceeds the number of bytes per track, the target will perform a head or cylinder switch.

## Template for Physical Addressing using Cylinder, Head, Sector

BYTE	bit:	7	6	5	4	3	2	1	0	(LSB)
00	.									Page Code
01	.								LUN	
02	.									
03	.									Page Parameter Length
04	.						1	0	1	Reserved
05	.									Reserved
06	.									Cylinder (MSB)
07	.									
08	.									Cylinder (LSB)
09	.									Head
10	.									Sector (MSB)
11	.									
12	.									
13	.									Sector (LSB)
14	.									Transfer Length (MSB)
15	.									
16	.									
17	.									
18	.									
19	.									
20	.									
21	.									Transfer Length (LSB)
22	.									Reserved
23	.									Reserved

Page parameter length, Bytes 2-3, is set to 22 bytes. Supplied format of 101b (byte 4 bits 0-2) indicates that physical addressing is used, precluding the use of defect management. The desired physical cylinder, head, and sector addresses on the target is specified in bytes 6-13. Cylinders are addressed beginning with 0, with all cylinders being accessible. Reserved cylinders are accessed using 2's complement addressing. Cylinder address FFFFFEh would refer to reserved cylinder 2. Reserved cylinders are not normally tested, and contain non-volatile information used by the target.

## Format Track

BYTE	bit	7 (MSB)	6	5	4	3	2	1	0 (LSB)
00		Format Track (C4h)							
01		Reserved							
02		LUN							
03		Page Parameter Length							
04		supplied Format							
05		Reserved							
06		Address (MSB)							
07									
08									
09									
10									
11									
12									
13		Address (LSB)							
14		Transfer Length (MSB)							
15									
16									
17									
18									
19									
20									
21		Transfer Length (LSB)							
22		Reserved							
23		Reserved							

Transfer length specifies the number of sectors to be formatted on the track. Transfer length of zero indicates that the drive will use values specified in mode select parameter page 3. Transfer length of one indicates that the drive will format a single sector per track, ignoring sector size, head offset and cylinder offset.

Reserved tracks are accessible for formatting by supplying the 2's complement cylinder address and using supplied format 100b or 101b. Cylinder address FFFFFEh would format a reserved track on reserved cylinder 2.

## Diagnostic Read

BYTE	bit	7 (MSB)	6	5	4	3	2	1	0 (LSB)
00	.								Diagnostic Read (C8h)
01	.							LUN	
02	.								
03	.								Page Parameter Length
04	.								supplied Format
05	.								Reserved
06	.								Address (MSB)
07	.								
08	.								
09	.								
10	.								
11	.								
12	.								
13	.								Address (LSB)
14	.								Transfer Length (MSB)
15	.								
16	.								
17	.								
18	.								
19	.								
20	.								
21	.								Transfer Length (LSB)
22	.								Reserved
23	.								Reserved

Reads data from the Address specified on the target. This data is available for transfer with a succeeding Receive Diagnostic command.

## Diagnostic Read ID

BYTE	bit	7 (MSB)	6	5	4	3	2	1	0 (LSB)
00		Diagnostic Read ID (C9h)							
01		Reserved							
02		LUN							
03		Page Parameter Length							
04		SKDIS							
05		supplied Format							
06		Reserved							
07		Address (MSB)							
08									
09									
10									
11									
12									
13		Address (LSB)							
14		Transfer Length (MSB)							
15									
16									
17									
18									
19									
20									
21		Transfer Length (LSB)							
22		Reserved							
23		Reserved							

Transfer length of 1 Returns the ID of the current sector. Transfer length of zero returns all IDs from Index on the current track. Actual format of the ID is vendor unique.

Enabling implied seeking (SKDIS=0) causes the drive to seek before reading any Sector IDs. The Address field will be ignored when the (SKDIS=1).

## Diagnostic Write

BYTE	bit	7 (MSB)	6	5	4	3	2	1	0 (LSB)
00		Diagnostic Write (CAh)							
01		Reserved							
02		LUN							
03		Page Parameter Length							
04		HF	LF	.	.	.	.	.	supplied Format
05		Reserved							
06		Address (MSB)							
07		.							
08		.							
09		.							
10		.							
11		.							
12		.							
13		Address (LSB)							
14		Transfer Length (MSB)							
15		.							
16		.							
17		.							
18		.							
19		.							
20		.							
21		Transfer Length (LSB)							
22		Reserved							
23		Reserved							

HF	LF	Description
0	0	Write pattern address, transfer length = number of bytes
0	1	Write drive default Low Frequency worst case pattern
1	0	Write drive default High Frequency worst case pattern
1	1	Write Address in Data field

00. A repeating pattern may be specified in the data out phase following the Diagnostic Write page. The pattern length is specified by the Page Parameter Length-20.

01,10. The pattern is specified by the drive, and may depend on the encoding scheme.

11. The address of each block or sector is written into the data field of each block or sector. This address will automatically increment for each block or sector within the transfer length. The address will be repeated throughout the data field.

## Diagnostic Write Buffer

BYTE	bit	7 (MSB)	6	5	4	3	2	1	0 (LSB)
00		Diagnostic Write Buffer (CBh)							
01		Reserved							
02		LUN							
03		Page Parameter Length							
04		CONTXFR							
05		supplied Format							
06		Reserved							
07		Address (MSB)							
08		.							
09		.							
10		.							
11		.							
12		.							
13		Address (LSB)							
14		Transfer Length (MSB)							
15		.							
16		.							
17		.							
18		.							
19		.							
20		.							
21		Transfer Length (LSB)							
22		Reserved							
23		Reserved							

Writes data to the target Buffer.

Diagnostic Write Buffer allows the RAM buffer to be written by the initiator. The Address field contains the offset or index from the start of the RAM buffer, in bytes. Targets with segmented buffers or caches will be addressed sequentially.

If the CONTXFER bit is set to zero (the default) Transfer length specifies the maximum number of bytes to be transferred. Transfers will continue until Transfer Length is exhausted, or the Buffer is exhausted, whichever comes first. If the CONTXFER bit is set to one, the Target will continuously transfer from the buffer until the Transfer Length is exhausted. In this mode some portions of the buffer may be transferred more than once.

## Diagnostic Read Buffer

BYTE	bit:	7 (MSB)	6	5	4	3	2	1	0 (LSB)
Diagnostic Read Buffer (CCh)									
00	.	.	.	.	.	.	.	.	.
01	.	.	Reserved	.	.	.	.	LUN	.
02	.	.	.	.	.	.	.	.	.
03	.	.	.	Page Parameter Length	.	.	.	.	.
04	.	.	.	CONTXFR	.	.	supplied Format	.	.
05	.	.	Reserved	.	.	.	.	.	.
06	.	.	Address (MSB)	.	.	.	.	.	.
07	.	.	.	.	.	.	.	.	.
08	.	.	.	.	.	.	.	.	.
09	.	.	.	.	.	.	.	.	.
10	.	.	.	.	.	.	.	.	.
11	.	.	.	.	.	.	.	.	.
12	.	.	.	.	.	.	.	.	.
13	.	.	.	.	Address (LSB)	.	.	.	.
14	.	.	Transfer Length (MSB)	.	.	.	.	.	.
15	.	.	.	.	.	.	.	.	.
16	.	.	.	.	.	.	.	.	.
17	.	.	.	.	.	.	.	.	.
18	.	.	.	.	.	.	.	.	.
19	.	.	.	.	.	.	.	.	.
20	.	.	.	.	.	.	.	.	.
21	.	.	Transfer Length (LSB)	.	.	.	.	.	.
22	.	.	Reserved	.	.	.	.	.	.
23	.	.	Reserved	.	.	.	.	.	.

Diagnostic Read Buffer allows the RAM buffer to be read and written by the host. The Address field contains the offset or index from the start of the RAM buffer, in bytes. Targets with segmented buffers or caches will be addressed sequentially.

If the CONTXFER bit is set to zero (the default) Transfer length specifies the maximum number of bytes to be transferred. Transfers will continue until Transfer Length is exhausted, or the Buffer is exhausted, whichever comes first. If the CONTXFR bit is set to one, the Target will continuously transfer from the buffer until the Transfer Length is exhausted. In this mode some portions of the buffer may be transferred more than once.

## Physical Configuration

BYTE	bit:	7 (MSB)	6	5	4	3	2	1	0 (LSB)
00	.	.							Physical Configuration (D5h)
01	.	.							Reserved
02	.	.							LUN
03	.	.							Page Parameter Length
04	.	.							supplied Format
05	.	.							Reserved
06	.	.							Address (MSB)
07	.	.							
08	.	.							
09	.	.							
10	.	.							
11	.	.							
12	.	.							
13	.	.							Address (LSB)
14	.	.							Transfer Length (MSB)
15	.	.							
16	.	.							
17	.	.							
18	.	.							
19	.	.							
20	.	.							
21	.	.							Transfer Length (LSB)
22	.	.							Reserved
23	.	.							Reserved

will tell you  
how many phys. LUNs  
sectors, etc.

NEW

Diagnostic Command Set for SCSI and SCSI-2

Physical Configuration Header

BYTE	bit	7 (MSB)	6	5	4	3	2	1	0 (LSB)
00		Page Code (D5h)							
01		Reserved							
02		Page Parameter Length							
03		Number of Notches (MSB)							
04		Number of Notches (LSB)							

Physical Configuration Parameter

00	.	Starting Boundary (MSB)							
01	.								
02	.								
03	.	Starting Boundary (LSB)							
04	.	Ending Boundary (MSB)							
05	.								
06	.								
07	.	Ending Boundary (LSB)							
08	.	Track Length (MSB)							
09	.								
10	.								
11	.	Track Length (LSB)							

Boundary definition, supplied format 000

00	.	LBA (MSB)							
01	.								
02	.								
03	.	LBA (LSB)							

Track Length definition, supplied format 000

08	.	LBAs per track (MSB)							
09	.								
10	.								
11	.	LBAs per track (LSB)							

Boundary definition, supplied format 100

00	.	Cylinder (MSB)
01	.	
02	.	Cylinder (LSB)
03	.	Head

Track Length definition, supplied format 100

08	.	Bytes per track (MSB)
09	.	
10	.	
11	.	Bytes per track (LSB)

Boundary definition, supplied format 101

00	.	Cylinder (MSB)
01	.	
02	.	Cylinder (LSB)
03	.	Head

Track Length definition, supplied format 101

08	.	Sectors per track (MSB)
09	.	
10	.	
11	.	Sectors per track (LSB)

Returns the physical configuration of the target, in the mode specified by the Supplied Format. This command returns the configuration of the entire physical volume.

For targets which utilize notch recording, the number of notches is returned, followed by 12 bytes of parameters for each notch.

Starting boundary is the beginning of the notch. Ending boundary is the end of the notch. Track length specifies the number of Logical blocks, bytes, or sectors per track within the notch.

## Diagnostic Read Long

BYTE	bit:	7 (MSB)	6	5	4	3	2	1	0 (LSB)
00		Diagnostic Read Long (D8h)							
01		Reserved							
02		LUN							
03		Page Parameter Length							
04	ECCDIS	.	.	.	.	.	0	0	0
05		Reserved							
06		Address (MSB)							
07		.	.	.	.	.	.	.	.
08		.	.	.	.	.	.	.	.
09		.	.	.	.	.	.	.	.
10		.	.	.	.	.	.	.	.
11		.	.	.	.	.	.	.	.
12		.	.	.	.	.	.	.	.
13		Address (LSB)							
14		Transfer Length (MSB)							
15		.	.	.	.	.	.	.	.
16		.	.	.	.	.	.	.	.
17		.	.	.	.	.	.	.	.
18		.	.	.	.	.	.	.	.
19		.	.	.	.	.	.	.	.
20		.	.	.	.	.	.	.	.
21		Transfer Length (LSB)							
22		Reserved							
23		Reserved							

Diagnostic Read Long allows Data and ECC fields to be read without modification by the target. Multiple block operations are supported, and targets should be capable of completing multiple blocks in a single revolution. Transfer Length specifies the number of DATA+ECC blocks to be read or written, ECC is appended to the end of each block. Any non-data fields which affect the ECC field should also be transferred with these commands.

When ECCDIS is set to 1, the target will correct errors without notifying the initiator. This prevents the target from posting Check Condition status after each Read Long or Write Long block.

The Read Long should be issued first, so that the ECC length can be calculated and properly appended with Write Long. Data associated with the Read Long is available by issuing the Receive Diagnostic command.

## Diagnostic Write Long

BYTE	bit:	7 (MSB)	6	5	4	3	2	1	0 (LSB)
00	.	.	.	.	.	.	.	.	Diagnostic Write Long (DAh)
01	.	.	.	.	.	.	.	LUN	.
02	.	.	.	.	.	.	.	.	.
03	.	.	.	.	.	.	.	.	Page Parameter Length
04	ECCDIS	.	.	.	.	.	0	0	0
05	.	.	.	.	.	.	.	.	Reserved
06	.	.	.	.	.	.	.	.	Address (MSB)
07	.	.	.	.	.	.	.	.	.
08	.	.	.	.	.	.	.	.	.
09	.	.	.	.	.	.	.	.	.
10	.	.	.	.	.	.	.	.	.
11	.	.	.	.	.	.	.	.	.
12	.	.	.	.	.	.	.	.	.
13	.	.	.	.	.	.	.	.	Address (LSB)
14	.	.	.	.	.	.	.	.	Transfer Length (MSB)
15	.	.	.	.	.	.	.	.	.
16	.	.	.	.	.	.	.	.	.
17	.	.	.	.	.	.	.	.	.
18	.	.	.	.	.	.	.	.	.
19	.	.	.	.	.	.	.	.	.
20	.	.	.	.	.	.	.	.	.
21	.	.	.	.	.	.	.	.	Transfer Length (LSB)
22	.	.	.	.	.	.	.	.	Reserved
23	.	.	.	.	.	.	.	.	Reserved

Diagnostic Write Long allows Data and ECC fields to be written without modification by the target. Multiple block operations are supported, and targets should be capable of completing multiple blocks in a single revolution. Transfer Length specifies the number of DATA+ECC blocks to be read or written, ECC is appended to the end of each block. Any non-data fields which affect the ECC field should also be transferred with these commands.

When ECCDIS is set to 1, the target will correct errors without notifying the initiator. This prevents the target from posting Check Condition status after each Read Long or Write Long block.

The Read Long should be issued first, so that the ECC length can be calculated and properly appended with Write Long.

## Diagnostic Erase Track

BYTE	bit	7 (MSB)	6	5	4	3	2	1	0 (LSB)
00	.	.	.	.	.	.	.	.	.
01	.	.	.	.	.	.	.	LUN	.
02	.	.	.	.	.	.	.	.	.
03	.	.	.	.	.	.	.	.	Page Parameter Length
04	.	.	.	.	.	.	.	.	supplied Format
05	.	.	.	.	.	.	.	.	Reserved
06	.	.	.	.	.	.	.	.	Address (MSB)
07	.	.	.	.	.	.	.	.	.
08	.	.	.	.	.	.	.	.	.
09	.	.	.	.	.	.	.	.	.
10	.	.	.	.	.	.	.	.	.
11	.	.	.	.	.	.	.	.	.
12	.	.	.	.	.	.	.	.	.
13	.	.	.	.	.	.	.	.	Address (LSB)
14	.	.	.	.	.	.	.	.	Transfer Length (MSB)
15	.	.	.	.	.	.	.	.	.
16	.	.	.	.	.	.	.	.	.
17	.	.	.	.	.	.	.	.	.
18	.	.	.	.	.	.	.	.	.
19	.	.	.	.	.	.	.	.	.
20	.	.	.	.	.	.	.	.	.
21	.	.	.	.	.	.	.	.	Transfer Length (LSB)
22	.	.	.	.	.	.	.	.	Reserved
23	.	.	.	.	.	.	.	.	Reserved

Track is DC erased, with the exception of servo information. Transfer length is number of tracks to be erased. The intention is to provide an erased track from index to index.