

Increased Self-Test Polling Time

To: T13 Technical committee
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Change History:

R0:	09/30/2004	Initial proposal
R1	01/13/2005	Removed changes for short & conveyance test, made new proposal for long test time reporting, add new explanatory text
R2	02/24/2005	xxx

1 Introduction

With the advent of larger capacity disk drives, the time required to complete the SMART extended self-test has increased. Currently the maximum time that can be reported (by SMART READ DATA) is 255 minutes. This may not be long enough for some large capacity devices.

In addition, a questionable use of these values must be noted:

While bytes 372-374 indicate a "recommended polling time", some host vendors treat this as the "maximum allowable time". If a device does not complete the extended self-test within xxx% of the stated time, the drive is marked as 'failing'.

Table 49 "Device SMART data structure' reports:

Bytes	F/V	Descriptions
364-365	V	Total time in seconds to complete off-line data collection activity
372	F	Short self-test routing recommended polling time (in minutes)
373	F	Extended self-test routing recommended polling time (in minutes)
374	F	Conveyance self-test routing recommended polling time (in minutes)
375-385	R	Reserved

2 Proposal

2.1 Change this test for SMART READ DATA, section Self-test routine recommended polling time

Current:

The self-test routine recommended polling time shall be equal to the number of minutes that is the minimum recommended time before which the host should first poll for test completion status. Actual test time could be several times this value. Polling before this time could extend the self-test execution time or abort the test depending on the state of bit 2 of the off-line data capability bits.

Proposed:

The self-test routine recommended polling time shall be equal to the estimated number of minutes that is the minimum recommended time before which the host should first poll-check for test completion status. Actual test time could be several times this value. The host should wait at least this long before sending the first SMART READ DATA command to check for test completion status. Polling-Checking before this time could extend the self-test execution time or abort the test depending on the state of bit 2 of the off-line data capability bits. Subsequent checking by the host shall be at a vendor specific interval.

2.2 Modify table 49 as follows

Bytes	F/V	Descriptions
364-365	V	Total time in seconds to complete off-line data collection activity
372	F	Short self-test routine recommended polling time (7:0) (in minutes)
373	F	Extended self-test routine recommended polling time (7:0) (in minutes) If FFh, use bytes 375 and 376 for the polling time.
374	F	Conveyance self-test routine recommended polling time (7:0) (in minutes)
375	F	Extended self-test routine recommended polling time (7:0) (in minutes)
376	F	Extended self-test routine recommended polling time (15:8) (in minutes)
377	F	Reserved
378-385	R	Reserved