

Comments on the Proposal For a Selective Self-test (e01139r0)

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1. ***Log address definition page:***
 - a. We would like to reserve log address 08h for Conveyance Self-Test log, and to assign log address 09h to the Selective Self-Test log. This will reflect the current order of self-tests as they are enumerated in “SMART execute off-line immediate LBA low register values”, where 3 is being currently proposed for the Conveyance Self-Test, while 4 is being currently proposed for the Selective Self-Test.
2. ***Selective self-test log page:***
 - a. It should be indicated whether the support of this self-test is mandatory or optional. We feel this log page should be *optional*.
 - b. If the drive supports this self-test, is it expected to support the entire feature set of this self-test? If not, which features are optional and which are mandatory?
 - c. If the feature set is optional, how does the drive indicate which features it does and does not support? Consequently, what should the drive do if it receives the log page with feature flags set that it does not support?
 - d. What should the drive do if it receives the log page while already working within the context of a previously received selective self-test log page? (We assume that it should terminate the current test and immediately start the new one.)
 - e. What should the status fields (e.g. current LBA under test) be set to when the drive completes the tests successfully?
 - f. The Selective Test (DST4) is actually meant to be a suite of tests similar in nature to DST1 and DST2. In this context, how is the progress of the test suite to be reported? Still the same 10% increments of “remaining time” in addition to the Selective Test log page’s progress parameters?

3. Proposed Selective Self-Test Log Descriptor

Byte	Size (bytes)	Description
0-1	2	Data Structure Revision Number (= 0x0001 for this revision)
2-3	2	Flags (bit 0 – if set, follow up with exclusive full scan; bit 1 – if set, non-volatile follow-up full scan mode; remaining bits reserved = 0)
4-11	8	Current LBA being scanned (zero = no LBA being scanned)
12-13	2	Current LBA span being scanned (zero = no span being scanned; 1..22 - span id being scanned)
14-15	2	Count of LBA span descriptors in list (zero = no spans specified; 1..22 - valid range)
16-23	8	First LBA span descriptor: start LBA
24-31	8	First LBA span descriptor: end LBA
32-367	336	... (additional LBA span descriptors for up to 22 total)
338-590	142	Vendor Specific
510-511	2	Checksum

Notes:

1. Additional drive status conditions in the form of flags are not deemed necessary. The host can figure out what the drive is doing by interrogating test status (e.g. done or in progress), and if the test in progress, then it can infer from the “Current LBA being scanned” and “Current LBA Span being scanned” whether the drive is performing selective span scan (non-zero values) or the follow-up full scan (zero-values).
2. The “Count of LBA span descriptors” field may be useful to systems, which choose to dynamically allocate memory for the list depending on the list size. The count of zero is meaningless but allowed – the drive is to fall into follow-up full scan if such scan is specified with flags; if no follow-up full scan is specified, the drive is to set completion status to non-error status.
3. If the LBA span descriptor list occupies less than the maximum possible space in the log page, the bytes in the remaining space are considered undefined and can be set to anything.
4. Vendor-specific section of 142 bytes has been provided.