

To: T10 Membership
From: Lawrence J. Lamers, Adaptec, Inc. <ljlamers@ieee.org>
Subject: SPC-2 Echo Buffer Size
Date: Wednesday, March 8, 2000

Rev 1: increased field size by 1 bit to allow for a full 4096 byte count. (thanks to Jeff W.)
 Rev 2: changed EBOS description to input from Australia per Rob. Rev 3: Added "the same as"

Background: The domain validation process needs some modifications to SPC-3 in order to function in an efficient manner.

The READ BUFFER echo buffer descriptor mode option should be required for devices supporting echo buffers so that the size of the echo buffer can be determined. Sequences longer than 128 or 252 bytes are needed to adequately test the physical layer so the buffer capacity should be modified to increase the echo buffer size. The 252 byte length gives only 63 leading edge transitions, too short to test for some effects.

Changes to SPC-3:

7.15.6 Echo buffer descriptor mode (1011b)

In this mode, a maximum of four bytes of READ BUFFER descriptor information is returned. The device server shall return the descriptor information for the echo buffer. If there is no echo buffer implemented, the device server shall return all zeros in the READ BUFFER descriptor. The BUFFER OFFSET field is reserved in this mode. The allocation length should be set to four or greater. The device server shall transfer the lesser of the allocation length or four bytes of READ BUFFER descriptor. The READ BUFFER descriptor is defined as shown in table 90.

Table 90 - Echo Buffer Descriptor

Byte	Bit 7	6	5	4	3	2	1	Bit 0
0	Reserved							EBOS
1	Reserved							
2	Reserved							
3	Buffer Capacity							

The BUFFER CAPACITY field shall return the size of the echo buffer in bytes aligned to a four-byte boundary. The maximum echo buffer size is 4096 bytes.

If the echo buffer is implemented then the echo buffer descriptor shall be implemented.

~~An echo buffer overwritten supported (EBOS) bit of one, indicates that the target detects if the data in the echo buffer is overwritten by another initiator or the target reuses the echo buffer and supports the ECHO BUFFER OVERWRITTEN extended sense code in the event this happens. A bit of zero means that the echo buffer is shared by all initiators.~~

An echo buffer overwritten supported (EBOS) bit of one indicates either:

- the target returns the ECHO BUFFER OVERWRITTEN extended sense code if the data being read from the echo buffer is not the data previously written by the same initiator, or
- the target ensures echo buffer data from each initiator is the same as that previously written by the same initiator.

A bit of zero means that the echo buffer may be overwritten by other initiators or intervening commands.