

**To:** T10 Membership  
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**Subject:** Margin Control  
**Date:** Thursday, August 12, 1999

## Margin Control Command

**Table x1 Margin Control Command**

Byte	Bit 7	6	5	4	3	2	1	Bit 0
0	Margin Control Command (nnh)							
1	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved
2	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved
3	Reserved	Reserved	Reserved	Reserved	Reserved	Vendor Specific		
4	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved
5	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved
6	Reserved	Reserved	Reserved	Reserved	Reserved	Signal Ground Bias		
7	Reserved	Driver Strength			Reserved	REQ/ACK Timing Shift		
9	Reserved	Slew Rate			Reserved	Clock Frequency		
10	Reserved							
11	Control Byte							

The margin control command provides a means to adjust the target driver margin parameters during the domain validation sequence. It is recommended that all parameters be adjusted to their nominal setting following the domain validation sequence.

The five fields are self-explanatory based on their titles. The exact adjustment to the parameter is defined by the vendor since it is closely tied the implementation.

**Table x2 - Margin Parameter Adjustment**

Value	Bit 7	6	5	4	3	2	1	Bit 0
111h	Offset three steps in negative direction							
110h	Offset two steps in negative direction							
101h	Offset one step in negative direction							
100h	Nominal Setting							
000h	Not changed							
001h	Offset one step in positive direction							
010h	Offset two steps in positive direction							
011h	Offset three steps in positive direction							

The margin parameter adjustment is a 3-bit two's compliment field allowing for three steps in each direction, a return to nominal and an unchanged option. This allows margin parameters to be tested in various combinations for maximum flexibility.

## Option for Margin Control Message

In some cases, for example communication with terminators, where a minimum of logic is desired defining a two-byte message to convey the margin parameter may be appropriate. Table x2 defines the message format.

**Table x2 - Margin Control Message**

Byte	Bit 7	6	5	4	3	2	1	Bit 0	
0	Message Code (nnh)								
9	Margin Parameter				Reserved		Margin Parameter Offset		

**Table x2 - Margin Parameter**

Value	Margin Parameter
0000b	Reserved
0001b	Signal Ground Bias
0010b	REQ/ACK Timing Shift
0011b	Clock Frequency
0100b	Driver Strength
0101b	Slew Rate
0110b-1110b	Reserved
1111b	Vendor Specific