

To: T10 Technical Committee  
From: Steve Johnson LSI Logic (steve.johnson@lsil.com)  
Date: 2 May 2006  
Subject: 06-213r0 SAS-2 REPORT GENERAL additions for zoning and self configuration

**Revision history**

Revision 0 (2 May 2006) First revision

**Related documents**

sas2r03a - Serial Attached SCSI 2 revision 3a  
06-078r0 SAS-2 Expander Route Table (REPORT EXPANDER ROUTE TABLE)  
06-214r0 SAS-2 Expander Route Table (CONFIGURE EXPANDER ROUTE TABLE)  
06-189r0 SAS-2 Allow table-to-table expander attachment

**Overview**

Add the following new field and bit to the SMP REPORT GENERAL response:

- 1) ZONING ENABLED bit
- 2) NUMBER OF EXPANDER ROUTE TABLE ENTRIES field

The zoning enabled bit indicates that the expander has zoning enabled or not. This bit is not configurable via SMP and the scope of enabling and disabling zoning on any given expander is outside the scope of the spec.

The NUMBER OF EXPANDER ROUTE TABLE ENTRIES field specifies the number of route entries for the expander route table. The expander route table is a single route table for all phys in the expander. The route table does not have to be programmed in any specific order and is aligned with actual expander HW implementations i.e. (a single list, with addresses associated to phys). See proposals 06-078 REPORT EXPANDER ROUTE TABLES and 06-214 CONFIGURE EXPANDER ROUTE TABLE for the SMP functions that will use this field and more details about the expander route table.

**Suggested changes**

Add the following new field and bit to the SMP REPORT GENERAL response:

- 1) ZONING ENABLED bit
- 2) NUMBER OF EXPANDER ROUTE TABLE ENTRIES field

Table 1 defines the response format.

Table 1 — REPORT GENERAL response

Byte\Bit	7	6	5	4	3	2	1	0
0	SMP FRAME TYPE (41h)							
1	FUNCTION (00h)							
2	FUNCTION RESULT							
3	RESPONSE LENGTH (08h)							
4	(MSB)	EXPANDER CHANGE COUNT						(LSB)
5								
6	(MSB)	EXPANDER ROUTE INDEXES						(LSB)
7								
8	Reserved							
9	NUMBER OF PHYS							
10	Reserved						CONFIGURING	CONFIGURABLE ROUTE TABLE
11	Reserved							
12								
19	ENCLOSURE LOGICAL IDENTIFIER							
20								
29	Reserved							
30	(MSB)	STP BUS INACTIVITY TIME LIMIT						(LSB)
31								
32	(MSB)	STP MAXIMUM CONNECT TIME LIMIT						(LSB)
33								
34	(MSB)	STP SMP I_T NEXUS LOSS TIME						(LSB)
35								
<a href="#">36</a>	<a href="#">Reserved</a>						<a href="#">ZONING ENABLED</a>	
<a href="#">37</a>	<a href="#">Reserved</a>							
<a href="#">38</a>	(MSB)	<a href="#">NUMBER OF EXPANDER ROUTE TABLE ENTRIES</a>						(LSB)
<a href="#">39</a>								
<a href="#">40</a>	(MSB)	CRC						(LSB)
<a href="#">43</a>								

A ZONING ENABLED bit set to one indicates that zoning is enabled in the expander device. A ZONING ENABLED bit set to zero indicates that zoning is disabled in the expander device.

The NUMBER OF EXPANDER ROUTE TABLE ENTRIES field contains the number of route indexes in the expander route table. SMP target devices that do not support the REPORT EXPANDER ROUTE TABLE and the CONFIGURE EXPANDER ROUTE TABLE functions shall set this field to zero.