

To: T10 Technical Committee
 From: Tim Symons, PMC-Sierra (Tim_Symons@pmc-sierra.com)
 Date: 9 Jul 2006
 Subject: 06-289r2 SAS-2 SMP ZONE LOCK RELEASE

Revision Information

- Revision 0: First draft.
- Revision 1: Renamed function. Added request codes and moved lock definitions into proposal 06-286.
- **Revision 2: Text edits – CRC.**

Referenced Document

Sas2r04 Serial Attached SCSI – 2 (SAS-2) r4
 06-286r0 SAS-2 Zone Management lock functions.
 06-288r0 SAS-2 SMP ACTIVATE ZONE UPDATE functions
06-304r0 SAS 2.0 SMP Function Result Priority (Zenta Darnell, Vitesse)

Overview

This proposal is for an SMP zone lock release function associated with the zone management client procedure; lock, load, activate and release. When zoning expander devices in a ZPSDS are locked by a zone management client, and either:

- a) all zone configuration tasks are complete and acknowledged; or
- b) an error result from an expander device;
- c) a [tbd] zone lock timer expires;

then the zone management client shall unlock the zoning expander devices. When a zoning expander device receives an SMP ZONE LOCK RELEASE function then it shall set the ZONE LOCKED bit to zero. When the ZONE LOCKED bit is set to zero then the zoning expander device is available for another zone management client lock event.

[Suggested addition to SAS-2 existing text (included in black), new additional text (included in blue) and changes between revisions shown in red]

10.4.3.1 SMP function request frame format

Table 196 – SMP functions (FUNCTION field)

Code	SMP function	Description	Reference
84h	ZONE LOCK	A zone management client sends the ZONE LOCK request to all zoning expanders in the ZPSDS. The zoning expander device shall register the ZONE LOCK ADDRESS and set the zone lock bit to one.	10.4.3.xx
85h	ACTIVATE ZONE LOCKED UPDATE	The zoning expander device shall make the shadow register data operational.	10.4.3.xx
86h	ZONE LOCK RELEASE	The zoning expander device shall set the zone lock bit to zero.	10.4.3.xx

10.4.3.2 SMP function response frame format

Table 198 – FUNCTION RESULT field

Code	Name	SMP function(s)	Description
...			
20h	SMP ZONE VIOLATION	CONFIGURE GENERAL, ZONED BROADCAST, PHY CONTROL, PHY TEST FUNCTION, CONFIGURE PHY EVENT INFORMATION, ZONE LOCK, ACTIVATE ZONE LOCKED UPDATE, ZONE LOCK RELEASE	The SMP target port supports the function, but zoning is enabled and the SMP initiator port does not have access to a necessary zone group according to the zone permission table (see 4.8.3.2).
21h	ZONE LOCK VIOLATION	ZONE LOCK ADDRESS, ACTIVATE ZONE LOCKED UPDATE, ZONE LOCK RELEASE	A zoning expander device that is zone locked, receives an SMP zone locked request function from a source that is not the active zone management client, or when the zoning expander device is not locked.
...			

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Table xx - Function result priority per SMP Function

SMP Function (per table 197)	SMP Function Result Priority
...	
ZONE LOCK RELEASE	1) INVALID REQUEST FRAME LENGTH 2) SMP ZONE VIOLATION 3) ZONE LOCK VIOLATION 4) SMP FUNCTION FAILED 5) SMP FUNCTION ACCEPTED
...	

...

10.4.3.xx ZONE LOCK RELEASE function

This function shall be supported by all zone management client devices and all zoning expander devices. The ZONE LOCK RELEASE function is used by a zone management client to unlock each zoning expander device from a zone lock state used for zone configuration. A ZONE LOCK RELEASE request shall only be originated by a zone management client that has access permission for zone group 2.

Table 1 defines the ZONE LOCK RELEASE request format.

Table 1 – ZONE LOCK RELEASE request

Byte\Bit	7	6	5	4	3	2	1	0	
0	SMP FRAME TYPE (40h)								
1	FUNCTION (86h)								
2	Reserved								
3	REQUEST LENGTH (00h)								
4	(MSB)	CRC							
7							(LSB)		

The SMP FRAME TYPE field shall be set to 40h.

The FUNCTION field shall be set to 86h.

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The REQUEST LENGTH field shall be set to (00h).

The CRC field is defined in 10.4.3.1.

The ZONE LOCK RELEASE response format is defined in Table 2.

Table 2 – ZONE LOCK RELEASE response

Byte\Bit	7	6	5	4	3	2	1	0	
0	SMP FRAME TYPE (41h)								
1	FUNCTION (86h)								
2	FUNCTION RESULT								
3	RESPONSE LENGTH (00h)								
4	(MSB)	CRC							
7								(LSB)	

The SMP FRAME TYPE field shall be set to 41h.

The FUNCTION field shall be set to 86h.

The FUNCTION RESULT field is defined in 10.4.3.2

The RESPONSE LENGTH field shall be set to 00h.

The CRC field is defined in 10.4.3.1.