

06-042r0 ZONE BROADCAST FRAME

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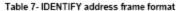
Broadcast frames

- BROADCAST FRAME allows a broadcast notification to be distributed only to devices accessible to the zone of the phy that originated the notification. This reduces infrastructure traffic, and provides event isolation between zones.
- Original proposal defined BROADCAST FRAME based on the defined 32-byte address frame format.
- At the November meeting the working group requested support for a shorter BROADCAST FRAME.
- 06-019r1 includes provision for an 8-byte BROADCAST FRAME.
- For compatibility with existing systems, the IDENTIFY frame provides report fields for the broadcast method supported by a zoning device.



IDENTIFY

Zoning Expander devices shall identify the type of zoning BROADCAST FRAME that it supports in the IDENTIFY address frame for the device.



Byte\BIt	7	6	5	4	3	2	1	0			
0	Restricted (for OPEN address frame)		DEVICE	TYPE	ADDRESS FRAME TYPE (0h)						
1		Restricted (for OPEN address frame)									
2		Res	served		SSP INITIATOR PORT	STP INITIATOR PORT	SMP INITIATOR PORT	Restricted (for OPEN address frame)			
3		Res	served		SSP TARGET PORT	STP TARGET PORT	SMP TARGET PORT	Restricted (for OPEN address frame)			
4		Restricted (for OPEN address frame)									
11											
12			SAS ADDRESS								
19					and ADDRESS	,					
20				F	HY IDENTIFIER	₹					
21		Reserved ZONE ZONE BROADCAST METHOD						ETHOD			
22											
27		Reserved									
28	(MSB)	- CRC									
31		LSB)									

Table 8- Zone broadcast address frame support

ZONE BROADCAST METHOD field	Description
000	A zoning device that only supports
	BROADCAST primitives.
001	A zoning device that supports 32-byte
	ZONE BROADCAST address frames
010	A zoning device that supports both 32-byte ZONE BROADCAST address frames and
	8-byte SHORT ZONE BROADCAST address frames
All others	Pecenied



DISCOVER response

Table 16 - DISCOVER response

Byte\Bit	7	6	5	4	3	2	1	0				
0	SMP FRAME TYPE (41h)											
1	FUNCTION (10h)											
2					ON RESULT							
3					LENGTH (OCh))						
4												
8				Re	served							
9				PHY IC	ENTIFIER							
10				D.	served							
11	Reserved											
12	Reserved	ATT	ACHED DEVIC	E TYPE		Res	erved					
13		Re	served		NE	GOTIATED PHY	YSICAL LINK RA	TE				
14		Re	served		ATTACHED SSP INITIATOR	STP INITIATOR	ATTACHED SMP INITIATOR	ATTACHED SATA HOST				
15	ATTACHED SATA PORT SELECTOR		Reserved		ATTACHED SSP TARGET	ATTACHED STP TARGET	ATTACHED SMP TARGET	ATTACHED SATA DEVICE				
16												
23		SAS ADDRESS										
24												
31	ATTACHED \$A\$ ADDRESS ————											
32	ATTACHED PHY IDENTIFIER											
33	Reserved ZONE ATTACHED ZONE BROADCAST METHOD DEVICE											
34	Reserved											
39				TVL	201100							
40	PROGRAM	MED MINIM	UM PHYSICAL	LINK RATE	HARDW	ARE MINIMUM	PHYSICAL LIN	KRATE				
41	PROGRAMI	MED MAXIN	IUM PHYSICAL	LINK RATE	HARDW	ARE MAXIMUM	PHYSICAL LIN	K RATE				
42				PHY CHA	NGE COUNT							
43	VIRTUAL PHY		Reserved		PARTIAL PATHWAY TIMEOUT VALUE							
44		Re	served				ATTRIBUTE					
45	Reserved				CONNECTOR T							
46					ELEMENT IND							
47					PHYSICAL LIN	ac .						
48	Reserved ZONE PARTICIPA ZONE SUPERVISING PRIORITY TING											
49	Reserved	Reserved ZONE GROUP										
50	(MSB)			Vend	or Specific							
51				VEHIO	- Opening			(LSB)				
52	(MSB)				CRC							
55	(LSB)											

The DISCOVER response indicates the BROADCAST FRAME type supported by the device attached to each phy.



BROADCAST FRAME

Each BROADCAST FRAME has a broadcast type and address frame type identifier



Table 6 - Table 91 - ADDRESS FRAME TYPE field

Code	BROADCAST Primitive Represented
	(see section <u>7.2.5.4</u>)
0h	BROADCAST (CHANGE)
1h	BROADCAST (SES)
2h	BROADCAST (RESERVED1)
3h	BROADCAST (RESERVED 2)
4h	BROADCAST (RESERVED 3)
5h	BROADCAST (RESERVED 4)
6h	BROADCAST (RESERVED CHANGE 0)
7h	BROADCAST (RESERVED CHANGE 1)

Table 12 - Zone broadcast type

Code	Frame Type	Description
0h	IDENTIFY	Identification sequence
1h	OPEN	Connection request
2h	BROADCAST	32-byte zone broadcasts within zones
3h	SHORT BROADCAST	8-byte zone broadcasts within zones
All others	Reserved	

Table 11 – Zone broadcast address frame format

				_	<u> </u>					
Byte\Bit	7	6	5	E	4	3	2	1	0	
0	Reserved ZONE BROAD				ST TYPE ADDRESS FRAME TYPE (2h)					
1					Pasan	ad.				
2		Reserved								
3	Reserved SOURCE ZONE GROUP									
4	Reserved									
27]	Reserved								
28	(MSB)	(MSB) CRC (LSB)								
31										

Table 13 - Short zone broadcast address frame format

Byte\Bit	7	6	5	4	3	2	1	0			
0	Reserved ZONE BROADCAST TYPE ADDRESS FRAME TYPE (3h)										
1				Recen	ed.						
2		Reserved									
3	Reserved	Reserved SOURCE ZONE GROUP									
4	(MSB)	(MSB)									
7		CRC (LSB)									



Broadcast frame rules

The type of broadcast used for each phy connection is defined by the following prioritized rules:

- 1) if either the source or the target device only supports primitives then the broadcast primitive shall be used;
- 2) if both the source and the target devices only support 32byte zone broadcast frames then 32-byte broadcast frames shall be used; and
- 3) if both the source and the target devices support 8-byte zone broadcast frames then 8-byte broadcast frames shall be used.