

1080i59 Dolby E Lip Sync Tests

+ Number = Video leading Audio

Straight through test (no vendor equipment) shows Dolby E encode decode delay is 67-68ms

Vendor Transport Stream Vendor Decoder Audio Type Delay measured in milliseconds over a looped 30 sec ASI transport stream

Comments

NTT	NTT	Dolby E	67	67	67	67	67	67	67	67	67	67	67
NTT	NTT	Dolby E	67	67	67	67	67	67	67	67	67	67	67
NTT	G.V.	Dolby E	67	67	67	67	67	67	67	67	67	67	67
NTT	G.V.	Dolby E	67	67	67	67	67	67	67	67	67	67	67
NTT	Tieman	Dolby E	12	33	22	0	31	19	0	29	17	0	0
NTT	Tieman	Dolby E	12	33	22	0	31	19	0	29	17	0	0
NTT	Tandberg	Dolby E	67	67	67	67	67	67	67	67	67	67	67
NTT	Tandberg	Dolby E	67	67	67	67	67	67	67	67	67	67	67
Scientific Atl. 79Mb	NTT	Dolby E	67	67	67	67	67	67	67	67	67	67	67
Scientific Atl. 79Mb	NTT	Dolby E	67	67	67	67	67	67	67	67	67	67	67
Scientific Atl. 79Mb	G.V.	Dolby E	67	67	67	67	67	67	67	67	67	67	67
Scientific Atl. 79Mb	G.V.	Dolby E	67	67	67	67	67	67	67	67	67	67	67
Scientific Atl. 79Mb	Tieman	Dolby E	28	9	23	3	17	31	12	26	7	20	0
Scientific Atl. 79Mb	Tieman	Dolby E	28	9	23	3	17	31	12	26	7	20	0
Scientific Atl. 79Mb	Tandberg	Dolby E	67	67	67	67	67	67	67	67	67	67	67
Scientific Atl. 79Mb	Tandberg	Dolby E	67	67	67	67	67	67	67	67	67	67	67
Tandberg	NTT	Dolby E	34	34	34	34	34	34	34	34	34	34	34
Tandberg	NTT	Dolby E	34	34	34	34	34	34	34	34	34	34	34
Tandberg	G.V.	Dolby E	34	34	34	34	34	34	34	34	34	34	34
Tandberg	G.V.	Dolby E	34	34	34	34	34	34	34	34	34	34	34
Tandberg	Tieman	Dolby E	-21	-3	-17	-14	-33	-10	-33	-6	-21	-3	-3
Tandberg	Tieman	Dolby E	-21	-3	-17	-14	-33	-10	-33	-6	-21	-3	-3
Tandberg	Tandberg	Dolby E	34	34	34	34	34	34	34	34	34	34	34
Tandberg	Tandberg	Dolby E	34	34	34	34	34	34	34	34	34	34	34
Grass Valley	NTT	Dolby E	67	67	67	67	67	67	67	67	67	67	67
Grass Valley	NTT	Dolby E	67	67	67	67	67	67	67	67	67	67	67
Grass Valley	G.V.	Dolby E	67	67	67	67	67	67	67	67	67	67	67
Grass Valley	G.V.	Dolby E	67	67	67	67	67	67	67	67	67	67	67
Grass Valley	Tieman	Dolby E	26	25	23	22	21	20	18	17	16	15	15
Grass Valley	Tieman	Dolby E	26	25	23	22	21	20	18	17	16	15	15
Grass Valley	Tandberg	Dolby E	67	67	67	67	67	67	67	67	67	67	67
Grass Valley	Tandberg	Dolby E	67	67	67	67	67	67	67	67	67	67	67
Tieman	NTT	Dolby E	6	6	6	6	6	6	6	6	6	6	6
Tieman	NTT	Dolby E	6	6	6	6	6	6	6	6	6	6	6
Tieman	G.V.	Dolby E	6	6	6	6	6	6	6	6	6	6	6
Tieman	G.V.	Dolby E	6	6	6	6	6	6	6	6	6	6	6
Tieman	Tieman	Dolby E	-3	-	-	-	-	-	-	-	-	-	-
Tieman	Tieman	Dolby E	-3	-	-	-	-	-	-	-	-	-	-
Tieman Test 2	Tieman	Dolby E	-66	-66	-66	-66	-66	-66	-66	-66	-66	-66	-66
Tieman Test 2	Tieman	Dolby E	-66	-66	-66	-66	-66	-66	-66	-66	-66	-66	-66
Tieman	Tandberg	Dolby E	6	6	6	6	6	6	6	6	6	6	6
Tieman	Tandberg	Dolby E	6	6	6	6	6	6	6	6	6	6	6
Tieman Test 2 (control test)	Tandberg	Dolby E	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2
Tieman Test 2 (control test)	Tandberg	Dolby E	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2

NEW Streams June 12 2007

100	100	100	100	100	100	100	100	100	100	100
100	100	100	100	100	100	100	100	100	100	100
100	100	100	100	100	100	100	100	100	100	100
100	100	100	100	100	100	100	100	100	100	100
NOTE 1										
100	100	100	100	100	100	100	100	100	100	100
100	100	100	100	100	100	100	100	100	100	100

Tieman transport stream - second pair had one audio missing.

Trouble with audio output dropping Dolby E on recorded stream.

2nd pass done with the Encoder on site.

2nd pass done with the Encoder on site to check against 1st run recorded values.

NOTE 1

No decode - Sci Atl Stream shows "other" on Dolby Decoder - Dolby E 4

Tieman Decoder - config showing Dolby AC3 Pass Thru Uncompressed - audio on decoder rapidly switching between PCM / Dolby

720p59 Dolby E Lip Sync Tests			+ Number = Video leading Audio															
Straight through test (no vendor equipment) shows Dolby E encode decode delay is 78ms																		
Vendor Transport Stream	Vendor Decoder	Audio Type	Delay measured in milliseconds over a looped 30 sec ASI transport stream															
NTT	NTT	Dolby E	73	76	78	81	84	67	67	77	80	84	67	67	78			
NTT	NTT	Dolby E	73	76	78	81	84	67	67	77	80	84	67	67	78			
NTT	G.V.	Dolby E	82	77	67	68	80	67	71	83	79	74	67					
NTT	G.V.	Dolby E	82	77	67	68	80	67	71	83	79	74	67					
NTT	Tieman	Dolby E	34	44	46	49	51	37	40	43	45	48	50	34				
NTT	Tieman	Dolby E	34	44	46	49	51	37	40	43	45	48	50	34				
NTT	Tandberg	Dolby E	79	75	67	82	78	67	69	68	81	67	72	84	79			
NTT	Tandberg	Dolby E	79	75	67	82	78	67	69	68	81	67	72	84	79			
Scientific Atl.	NTT	Dolby E	92	99	84	96	87	94	100	91	98	84	95					
Scientific Atl.	NTT	Dolby E	92	99	84	96	87	94	100	91	98	84	95					
Scientific Atl.	G.V.	Dolby E	86	84	100	90	97	84	94	85	84	98	89	96				
Scientific Atl.	G.V.	Dolby E	86	84	100	90	97	84	94	85	84	98	89	96				
Scientific Atl.	Tieman	Dolby E	Video OK, no Dolby Decode - See NOTE 1															
Scientific Atl.	Tieman	Dolby E	Video OK, no Dolby Decode - See NOTE 1 1080i59 page															
Scientific Atl.	Tandberg	Dolby E	89	96	84	93	100	83	97	88	95	84	92	99				
Scientific Atl.	Tandberg	Dolby E	89	96	84	93	100	83	97	88	95	84	92	99				
Tandberg	NTT	Dolby E	114	104	110	98	98	114	104	111	98	98	114	104				
Tandberg	NTT	Dolby E	114	104	110	98	98	114	104	111	98	98	114	104				
Tandberg	G.V.	Dolby E	103	98	106	108	109	111	113	115	98	102	98	105				
Tandberg	G.V.	Dolby E	103	98	106	108	109	111	113	115	98	102	98	105				
Tandberg	Tieman	Dolby E	75	76	78	80	82	65	68	65	88	81	92	94	96	97	82	
Tandberg	Tieman	Dolby E	75	76	78	80	82	65	68	65	88	81	92	94	96	97	82	
Tandberg	Tandberg	Dolby E	98	98	114	104	111	98	108	114	104	111	98	108	115			
Tandberg	Tandberg	Dolby E	98	98	114	104	111	98	108	114	104	111	98	108	115			
Grass Valley	NTT	Dolby E	81	83	67	70	67	73	67	76	78	79	81	83	67			
Grass Valley	NTT	Dolby E	81	83	67	70	67	73	67	76	78	79	81	83	67			
Grass Valley	G.V.	Dolby E	70	81	67	67	83	78	73	84	79	67	67					
Grass Valley	G.V.	Dolby E	70	81	67	67	83	78	73	84	79	67	67					
Grass Valley	Tieman	Dolby E	51	46	34	50	47	42	54	48	43	34	50	45				
Grass Valley	Tieman	Dolby E	51	46	34	50	47	42	54	48	43	34	50	45				
Grass Valley	Tandberg	Dolby E	74	69	81	67	67	82	77	72	84	79	67	67	80			
Grass Valley	Tandberg	Dolby E	74	69	81	67	67	82	77	72	84	79	67	67	80			
Tieman	NTT	Dolby E	54	57	58	42	52	56	59	63	50	xx	58	58	42	53	One time no decode, came clear on next ASI loop.	
Tieman	NTT	Dolby E	54	57	58	42	52	56	59	63	50	xx	58	58	42	53	just a glitch due to the test loop.	
Tieman	G.V.	Dolby E	60	60	47	51	55	58	58	42	53	57	61	48	51			
Tieman	G.V.	Dolby E	60	60	47	51	55	58	58	42	53	57	61	48	51			
Tieman	Tieman	Dolby E	25	29	33	20	24	25	25	19	22	26	30	17				
Tieman	Tieman	Dolby E	25	29	33	20	24	25	25	19	22	26	30	17				
Tieman	Tandberg	Dolby E	55	59	63	50	54	57	58	42	52	56	60					
Tieman	Tandberg	Dolby E	55	59	63	50	54	57	58	42	52	56	60					

NOTE 1

No decode - Sci Atl Stream shows "other" on Dolby Decoder - Dolby E 4
Tieman Decoder - config showing Dolby AC3 Pass Thru Uncompressed - audio on decoder rapidly switching between PCM / Dolby

Long Term 1080i59 Dolby E Lip Sync Tests

+ Number = Video leading Audio

Straight through test (no vendor equipment) shows Dolby E encode decode delay is 67-68ms
 Delay measured in milliseconds over a looped HDSDI source clip into a live encoder.

Vendor Transport Stream	Vendor Decoder	Audio Type	6/4/07 17:08	6/5/07 8:20
NTT	NTT	Dolby E	67 ms	67 ms
	NTT	Dolby E	67 ms	67 ms
	G.V.	Dolby E	67 ms	67 ms
	G.V.	Dolby E	67 ms	67 ms
	Tiernan	Dolby E	14 ms	14 ms
	Tiernan	Dolby E	14 ms	14 ms
	Tandberg	Dolby E	67 ms	67 ms
Tandberg	Dolby E	67 ms	67 ms	

			6/12/07 18:40	6/12/07 9:00	6/13/07 9:28	6/13/07 9:33
Tandberg Tandberg stream noted to be drifting ~32ms 76 -> 44ms reset to 76ms	NTT	Dolby E	45	61	45	
	NTT	Dolby E	45	61	45	
	G.V.	Dolby E	45	61	46	
	G.V.	Dolby E	45	61	46	
	Tiernan	Dolby E	5	34	5	
	Tiernan	Dolby E	5	34	5	
	Tandberg	Dolby E	46	62	44	76
Tandberg	Dolby E	46	62	44	76	

			6/6/07 16:30	6/7/07 8:30	6/7/07 9:30
Tiernan	NTT	Dolby E	-3 ms	-2ms	-2ms
	NTT	Dolby E	-3 ms	-2ms	-2ms
	G.V.	Dolby E	-3 ms	-1 ms	-2 ms
	G.V.	Dolby E	-3 ms	-1 ms	-2 ms
	Tiernan	Dolby E	-49 ms	-42 ms	-42 ms
	Tiernan	Dolby E	-49 ms	-42 ms	-42 ms
	Tandberg	Dolby E	0 ms	0 ms	0 ms
Tandberg	Dolby E	0 ms	0 ms	0 ms	

DolbyE Verification Testing

Vendor Transport Stream	Vendor Decoder	Audio Type	Rating
NTT	NTT	Dolby E	pass
NTT	NTT	Dolby E	pass
NTT	G.V.	Dolby E	pass
NTT	G.V.	Dolby E	pass
NTT	Tiernan	Dolby E	pass
NTT	Tiernan	Dolby E	pass
NTT	Tandberg	Dolby E	pass
NTT	Tandberg	Dolby E	pass
Scientific Atl.	NTT	Dolby E	pass
Scientific Atl.	NTT	Dolby E	pass
Scientific Atl.	G.V.	Dolby E	pass
Scientific Atl.	G.V.	Dolby E	pass
Scientific Atl.	Tiernan	Dolby E	fail
Scientific Atl.	Tiernan	Dolby E	fail
Scientific Atl.	Tandberg	Dolby E	pass
Scientific Atl.	Tandberg	Dolby E	pass
Tandberg	NTT	Dolby E	pass
Tandberg	NTT	Dolby E	pass
Tandberg	G.V.	Dolby E	pass
Tandberg	G.V.	Dolby E	pass
Tandberg	Tiernan	Dolby E	pass
Tandberg	Tiernan	Dolby E	pass
Tandberg	Tandberg	Dolby E	pass
Tandberg	Tandberg	Dolby E	pass
Grass Valley	NTT	Dolby E	pass
Grass Valley	NTT	Dolby E	pass
Grass Valley	G.V.	Dolby E	pass
Grass Valley	G.V.	Dolby E	pass
Grass Valley	Tiernan	Dolby E	pass
Grass Valley	Tiernan	Dolby E	pass
Grass Valley	Tandberg	Dolby E	pass
Grass Valley	Tandberg	Dolby E	pass
Tiernan	NTT	Dolby E	pass
Tiernan	NTT	Dolby E	pass
Tiernan	G.V.	Dolby E	pass
Tiernan	G.V.	Dolby E	pass
Tiernan	Tiernan	Dolby E	pass
Tiernan	Tiernan	Dolby E	pass
Tiernan	Tandberg	Dolby E	pass
Tiernan	Tandberg	Dolby E	pass

NOTE 1 |

Snell & Wilcox				No Dolby Streams
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NOTE 1

No decode - Sci Atl Stream shows "other" on Dolby Decoder - Dolby E 4
 Tiernan Decoder - status showing PID 41112 & 4128 - Dolby, AC3 Pass Thru, Uncompressed
 audio on decoder rapidly switching between PCM / Dolby