

First draft of proposed outline for SPI-2 draft standard (includes SPI-1, SPI Amendment, Fast-20, LVD, and appropriate parts of SCSI-2).

1	Scope	.....	1
2	Normative references	.....	3
3	Definitions, symbols and abbreviations	.....
4			
3.1	Definitions	.....	4
3.2	Symbols and abbreviations	.....	5
4	General	.....	6
4.1	Overview	.....	6
4.2	Conventions	.....	7
5	SCSI parallel interface connectors	.....	8
5.2	Shielded connector	.....	8
	Low density		
	device (bail locks, 50 pos)		scsi-2 section 5.3.2.2 Fig 7
	cable (bail locks, 50 pos)		scsi-2 section 5.3.2.2 Fig 8
	High density		
	device		
	50 pos (clips)		scsi-2 section 5.3.2.1 Fig 5
	68 pos		
	clips (obsolete)		scsi-2 section 5.3.2.1 Fig 5
	jackscrew		spi-1 section 5.2 Fig 6
	cable		
	50 pos (clips)		scsi-2 section 5.3.2.1 Fig 6
	68 pos		
	clips (obsolete)		scsi-2 section 5.3.2.2 Fig 6
	jackscrews		spi-1 section 5.2 Fig 7
	VHDCI 68 pos -- need EIA reference		
	cable		
	jackscrews		96-175
	clips		96-175
	detent		96-175
	device		96-175
	universal		96-175
5.1	Nonshielded connector	.....	8

	Low density device (50 pos no ret'n)	scsi-2 section
5.3.1.2		Fig 3
	cable (50 pos no ret'n)	scsi-2 section 5.3.1.2
		Fig 4
	High density device	
	50 pos no ret'n (obsolete)	scsi-2 section 5.3.1.1
		Fig 1
Note duplicate references for this:	68 pos no ret'n	scsi-2 section
5.3.1.3		Fig 1
		spi-1 section 5.1
		Fig 4
	cable	
	50 pos no ret'n (obsolete)	scsi-2 section 5.3.1.1
		Fig 2
Note: duplicate references for this:	68 pos no ret'n	scsi-2 section
5.3.1.3		Fig 2
		spi-1 section 5.1
		Fig 5
	SCA-2 (80 pos no ret'n) -- need EIA reference	
	device	96-175
	cable	96-175
5.3	Connector contact assignments	.....
	12	
	A Cable	
	single ended	
	unshielded low density (set 1)	scsi-2
	all others (set 2)	scsi-2
	differential	
	unshielded low density (set 1)	scsi-2
	all others (set 2)	scsi-2
	LVD	
	unshielded low density (set 1)	96-175
	all others (set 2)	96-175
	B Cable (obsolete)	
	single ended	scsi-2
	differential	scsi-2
	Primary bus (P cable)	
	single ended	spi-1
	differential	spi-1
	LVD	96-175
	Secondary bus (Q cable)(obsolete?)	
	single ended	

	differential	
	LVD	
	Mixed width (A/P)(relationship to EPI??)	
	A bus to P bus	spi-1
	P bus - A devices	sff 8017
	A bus - P devices	sff 8017
	multiple A busses to multiple P busses	.....EPI

6 SCSI bus cables

6.1 Cable characteristics for signals

	single ended	
	slow	scsi-2
	fast	spi-1
	fast 20	fast 20
	differential	
	slow	scsi-2
	fast	spi-1
	fast 20	..... spi-1
	LVD	
	slow	96-175
	fast	96-175
	fast 20	96-175
	fast 40/80	96-175

[

The following sections will all be filled out in the same way as started for sections 5 and 6]

6.2 Cable characteristics for TERMPWR and TERMPWRQ lines

6.3	Cable characteristics for RESERVED lines	18
6.4	Cables used with single-ended transceivers	18
6.5	Cables used with differential transceivers	18

7 SCSI parallel interface electrical characteristics 19

7.1	Single-ended alternative	19
7.1.1	Single-ended termination	19
7.1.2	Single-ended output characteristics	19
7.1.3	Single-ended input characteristics	20
7.1.4	Single-ended input and output characteristics	21
7.2	Differential alternative	21
7.2.1	Differential termination	21
7.2.2	Differential output characteristics	22
7.2.3	Differential input characteristics	22
7.2.4	Differential driver protection	23
7.3	Terminator power	23

8 SCSI bus signals 24

8.1	Signal descriptions	25
8.2	Signal states	26
8.3	OR-tied signals	26
8.4	Signal sources	26
9	SCSI parallel bus timing	27
9.1	Arbitration delay	28
9.2	Bus clear delay	28
9.3	Bus free delay	29
9.4	Bus set delay	29
9.5	Bus settle delay	29
9.6	Cable skew delay	29
9.7	Data release delay	29
9.8	Receive assertion period	29
9.9	Receive hold time	29
9.10	Receive negation period	29
9.11	Receive setup time	29
9.12	Receive period tolerance	29
9.13	Reset hold time	30
9.14	Selection abort time	30
9.15	Selection time-out delay	30
9.16	System deskew delay	30
9.17	Transmit assertion period	30
9.18	Transmit hold time	30
9.19	Transmit negation period	30
9.20	Transmit setup time	30
9.21	Transmit period tolerance	30

All of section stays exactly as in SPI-1 for SPI-2

(need to figure out how to describe the SCSI-2 document in SPI-2)

10	SCSI parallel interface services	30
10.1	Bus free service	31
10.1.1	Bus free request	31
10.1.2	Bus free indication	31
10.2	Reset service	31
10.2.1	Reset request	31
10.2.2	Reset indication	31
10.3	Selection service	31
10.3.1	Selection request	31
10.3.2	Selection indication	32
10.3.3	Selection response	33
10.3.4	Selection confirmation	33
10.4	Reselection service	34
10.4.1	Reselection request	34
10.4.2	Reselection indication	34
10.4.3	Reselection response	34
10.4.4	Reselection confirmation	35
10.5	Command service	35
10.5.1	Command request	35
10.5.2	Command indication	36

10.5.3	Command response	36	
10.5.4	Command confirmation		36
10.6	Data out service	36	
10.6.1	Data out request	36	
10.6.2	Data out indication	36	
10.6.3	Data out response	36	
10.6.4	Data out confirmation	37	
10.7	Data in service	37	
10.7.1	Data in request	37	
10.7.2	Data in indication	37	
10.7.3	Data in response	37	
10.7.4	Data in confirmation	37	
10.8	Status service	38	
10.8.1	Status request	38	
10.8.2	Status indication	38	
10.8.3	Status response	38	
10.8.4	Status confirmation	38	
10.9	Message out service	38	
10.9.1	Message out request	38	
10.9.2	Message out indication		38
10.9.3	Message out response	39	
10.9.4	Message out confirmation		39
10.10	Message in service	39	
10.10.1	Message in request	39	
10.10.2	Message in indication	39	
10.10.3	Message in response	39	
10.10.4	Message in confirmation		40
10.11	Information transfer	40	
10.11.1	Asynchronous information transfer		41
10.11.2	Synchronous data transfer		41
10.11.3	Data path width		42
A.1	Case 1 - power-off during removal or insertion		45
A.2	Case 2 - RST signal asserted continuously during removal or insertion		45
A.3	Case 3 - Current I/O processes not allowed during insertion or removal		45
A.4	Case 4 - Current I/O process allowed during insertion or removal		45
B.1	Model	47	
B.2	Definitions	47	
B.3	SCAM requirements	47	
B.3.1	Configuration requirements		47
B.3.2	Timing requirements	48	
B.3.3	Device requirements	49	
B.4	SCAM protocol	51	
B.4.1	Initiation	51	
B.6	SCAM operations	59	
B.6.1	SCAM initiator	59	
B.6.2	Level 1 SCAM target	60	
B.7.3	Level 2 SCAM target	62	
D.1	Cabling	67	
D.2	Cable measurement	67	
D.2.1	Impedance, TDR, single-ended	67	
D.2.2	Impedance, TDR, differential	68	

D.1.3	Attenuation, differential	68	
D.1.4	Velocity (propagation delay) and skew		68
D.1.5	D.C. resistance	68	
F.1	Single-ended alternative	71	
F.2	Differential alternative	72	