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
  cable (bail locks, 50 pos) scsi-2 section 5.3.2.2

High density
  device
    50 pos (clips) scsi-2 section 5.3.2.1
    68 pos scsi-2 section 5.3.2.2
      clips (obsolete) scsi-2 section 5.3.2.2
      jackscrew spi-1 section 5.2
    cable
      50 pos (clips) scsi-2 section 5.3.2.1
      68 pos scsi-2 section 5.3.2.2
        clips (obsolete) scsi-2 section 5.3.2.2
        jackscrews spi-1 section 5.2
  VHDCI 68 pos -- need EIA reference
    cable
      jackscrews 96-175
      clips 96-175
      detent 96-175
    device universal 96-175

5.1 Nonshielded connector ........................................... 8
Low density device (50 pos no ret’n) scsi-2 section 5.3.1.2

5.3.1.2

cable (50 pos no ret’n) scsi-2 section 5.3.1.2

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

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