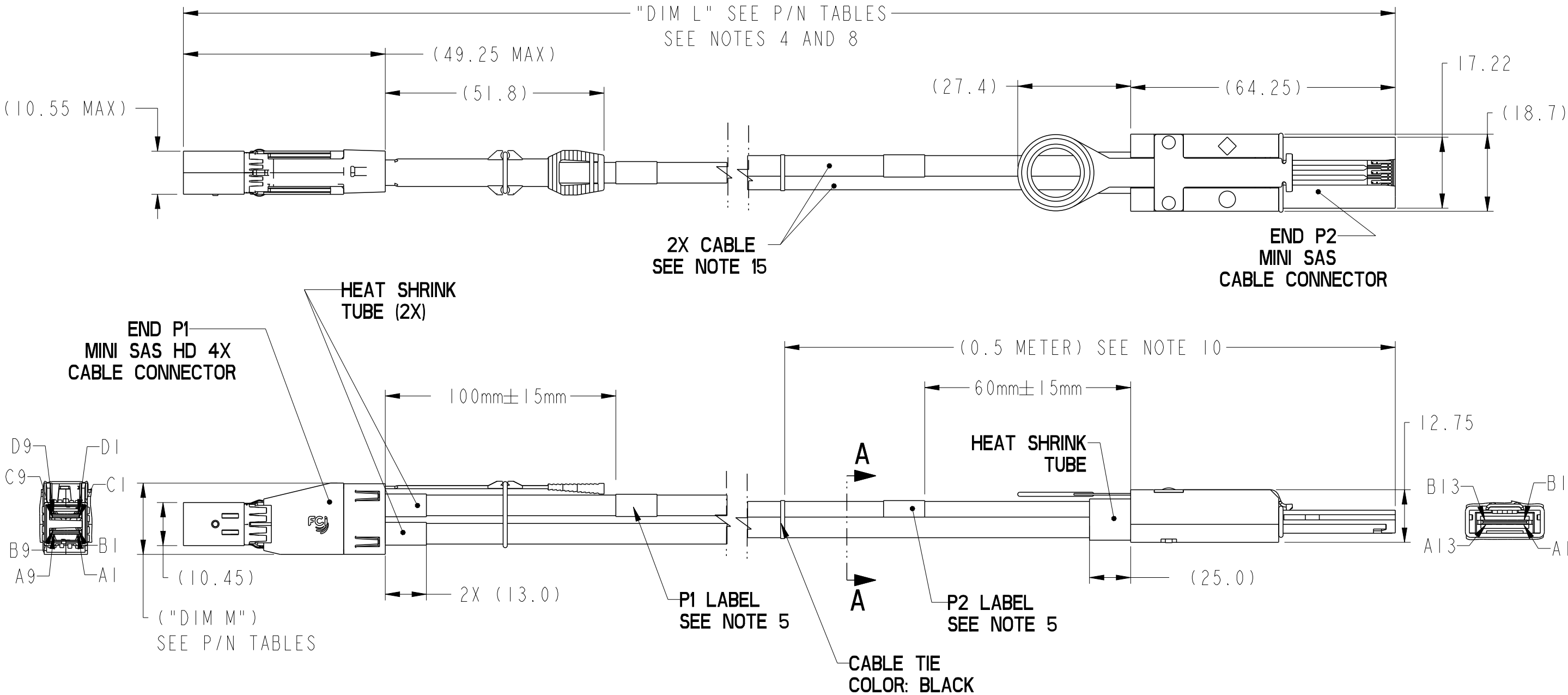


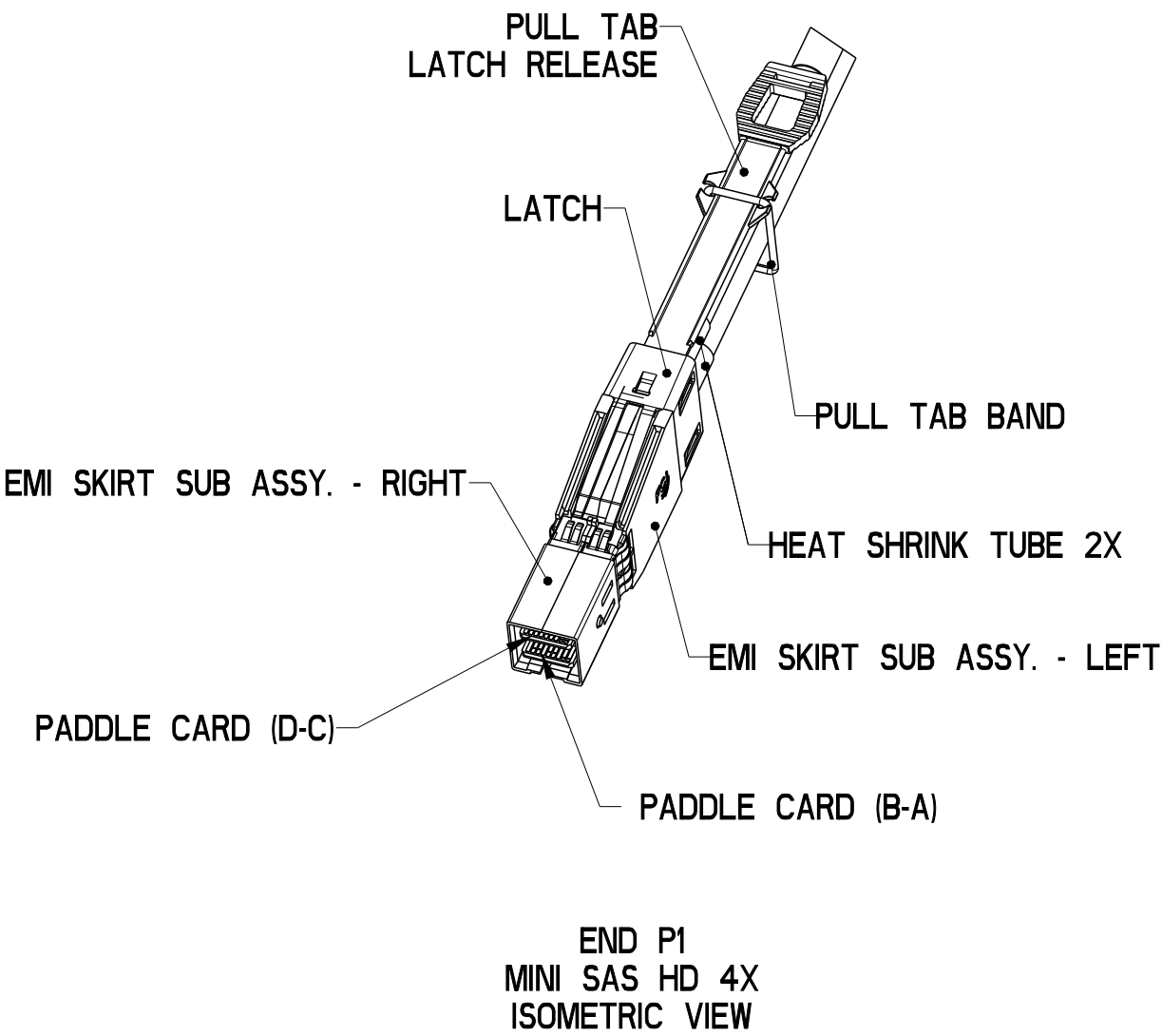
| PRODUCT NUMBER   | DESCRIPTION      | NOTES      |
|------------------|------------------|------------|
| 10117946-XXXXLF  | NON-HF           | SEE SHT. 3 |
| 10117946-XXXXHLF | HALOGEN FREE (H) | SEE SHT. 3 |



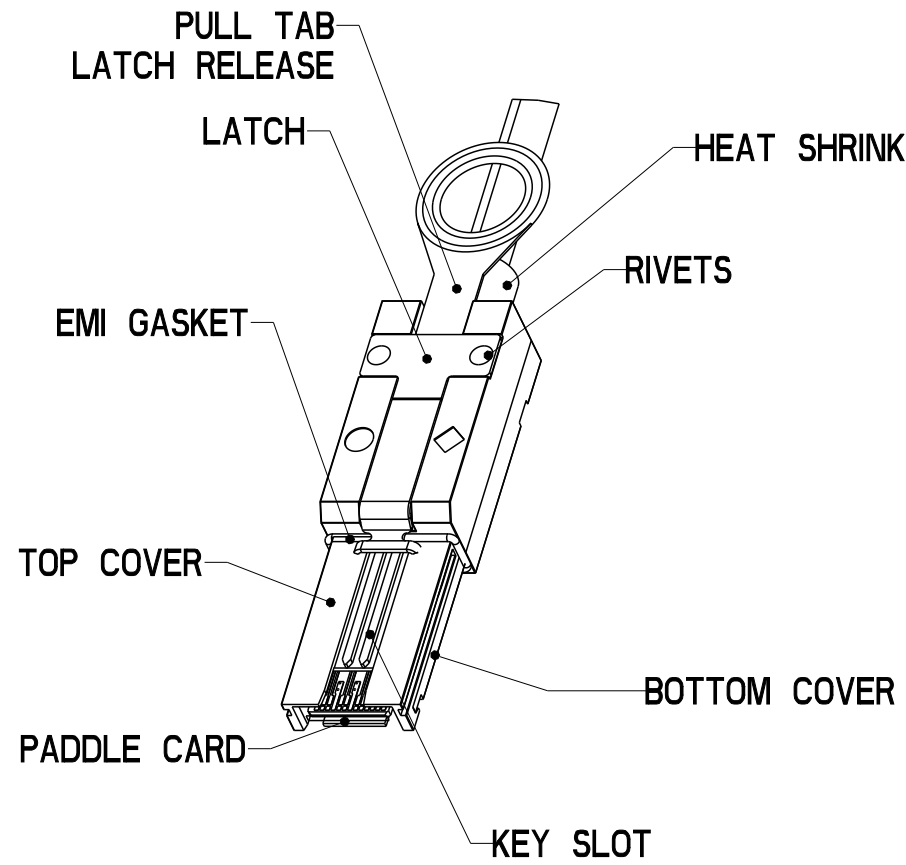
SECTION A-A  
SCALE 2:1  
CABLE ORIENTATION ONLY  
MSAS END P2

|             |                |            |                        |              |           |               |       |     |
|-------------|----------------|------------|------------------------|--------------|-----------|---------------|-------|-----|
| dr          | Deborah Ingram | 2011/06/07 | projection             | MM           | size      | A3            | scale | 1:1 |
| eng         | Tom Feng       | 2015/08/12 |                        |              | ecn no    | ELX-N-21245-1 |       |     |
| chr         | -              | -          |                        |              | rel level | Released      |       |     |
| appr        | Frank Mao      | 2015/08/12 | product family         | C&A          |           |               |       |     |
| www.fci.com | cat. no.       | -          | Product - Customer Drw | sheet 1 of 6 |           |               |       |     |

| PRODUCT NUMBER   | DESCRIPTION      | NOTES      |
|------------------|------------------|------------|
| 10117946-XXXXLF  | NON-HF           | SEE SHT. 3 |
| 10117946-XXXXHLF | HALOGEN FREE (H) | SEE SHT. 3 |



END P1  
Mini SAS HD 4X  
ISOMETRIC VIEW



END P2  
Mini SAS  
ISOMETRIC VIEW

(KEY SLOT 2,4 & 6  
○ ◇ UNIVERSAL PORT)

|             |                |                                                          |                        |              |           |               |       |     |
|-------------|----------------|----------------------------------------------------------|------------------------|--------------|-----------|---------------|-------|-----|
| dr          | Deborah Ingram | 2011/06/07                                               | projection             | MM           | size      | A3            | scale | 1:1 |
| eng         | Tom Feng       | 2015/08/12                                               |                        |              | ecn no    | ELX-N-21245-1 |       |     |
| chr         | -              | -                                                        |                        |              | rel level | Released      |       |     |
| appr        | Frank Mao      | 2015/08/12                                               | product family         | C&A          |           |               |       |     |
| www.fci.com | title          | Mini SAS HD 4X TO Mini SAS 2.1<br>FINAL ASSEMBLY (6Gb/s) | dwg no                 | 10117946     | rev       | D             |       |     |
|             | cat. no.       | -                                                        | Product - Customer Drw | sheet 2 of 6 |           |               |       |     |



Copyright FCI.

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D

| PRODUCT NUMBER   | DESCRIPTION      | NOTES      |
|------------------|------------------|------------|
| 10117946-XXXXLF  | NON-HF           | SEE SHT. 3 |
| 10117946-XXXXHLF | HALOGEN FREE (H) | SEE SHT. 3 |

| PRODUCT NUMBER<br>(HALOGEN FREE)<br>SEE NOTE 9 & 15 | AWG    | "DIM L"<br>LENGTH<br>(Meters) | "DIM M"<br>HIEGHT<br>(mm) |
|-----------------------------------------------------|--------|-------------------------------|---------------------------|
| 10117946-5030HLF                                    | 24 AWG | 3 M                           | (20.1)                    |
| 10117946-5040HLF                                    | 24 AWG | 4 M                           | (20.1)                    |
| 10117946-5050HLF                                    | 24 AWG | 5 M                           | (20.1)                    |
| 10117946-5060HLF                                    | 24 AWG | 6 M                           | (20.1)                    |
| 10117946-5070HLF                                    | 24 AWG | 7 M                           | (20.1)                    |
| 10117946-5080HLF                                    | 24 AWG | 8 M                           | (20.1)                    |
| 10117946-5090HLF                                    | 24 AWG | 9 M                           | (20.1)                    |
| 10117946-5100HLF                                    | 24 AWG | 10 M                          | (20.1)                    |
| 10117946-4020HLF                                    | 26 AWG | 2 M                           | (20.1)                    |
| 10117946-4030HLF                                    | 26 AWG | 3 M                           | (20.1)                    |
| 10117946-4040HLF                                    | 26 AWG | 4 M                           | (20.1)                    |
| 10117946-4050HLF                                    | 26 AWG | 5 M                           | (20.1)                    |
| 10117946-4060HLF                                    | 26 AWG | 6 M                           | (20.1)                    |
| 10117946-4070HLF                                    | 26 AWG | 7 M                           | (20.1)                    |
| 10117946-4080HLF                                    | 26 AWG | 8 M                           | (20.1)                    |
| 10117946-3005HLF                                    | 28 AWG | 0.5 M                         | (17.3)                    |
| 10117946-3010HLF                                    | 28 AWG | 1 M                           | (17.3)                    |
| 10117946-3015HLF                                    | 28 AWG | 1.5 M                         | (17.3)                    |
| 10117946-3020HLF                                    | 28 AWG | 2 M                           | (17.3)                    |
| 10117946-3025HLF                                    | 28 AWG | 2.5 M                         | (17.3)                    |
| 10117946-3030HLF                                    | 28 AWG | 3 M                           | (17.3)                    |
| 10117946-3035HLF                                    | 28 AWG | 3.5 M                         | (17.3)                    |
| 10117946-3040HLF                                    | 28 AWG | 4 M                           | (17.3)                    |
| 10117946-3050HLF                                    | 28 AWG | 5 M                           | (17.3)                    |
| 10117946-3060HLF                                    | 28 AWG | 6 M                           | (17.3)                    |
| 10117946-2005HLF                                    | 30 AWG | 0.5 M                         | (17.3)                    |
| 10117946-2010HLF                                    | 30 AWG | 1 M                           | (17.3)                    |
| 10117946-2020HLF                                    | 30 AWG | 2 M                           | (17.3)                    |
| 10117946-2030HLF                                    | 30 AWG | 3 M                           | (17.3)                    |
| 10117946-2040HLF                                    | 30 AWG | 4 M                           | (17.3)                    |

2

3

PDS: Rev :D

STATUS:Released

Printed: Aug 12, 2015

| PRODUCT NUMBER<br>(NON-HALOGEN FREE)<br>SEE NOTE 15 | AWG    | "DIM L"<br>LENGTH<br>(Meters) | "DIM M"<br>HIEGHT<br>(mm) |
|-----------------------------------------------------|--------|-------------------------------|---------------------------|
| 10117946-5030LF                                     | 24 AWG | 3 M                           | (20.1)                    |
| 10117946-5040LF                                     | 24 AWG | 4 M                           | (20.1)                    |
| 10117946-5050LF                                     | 24 AWG | 5 M                           | (20.1)                    |
| 10117946-5060LF                                     | 24 AWG | 6 M                           | (20.1)                    |
| 10117946-5070LF                                     | 24 AWG | 7 M                           | (20.1)                    |
| 10117946-5080LF                                     | 24 AWG | 8 M                           | (20.1)                    |
| 10117946-5090LF                                     | 24 AWG | 9 M                           | (20.1)                    |
| 10117946-5100LF                                     | 24 AWG | 10 M                          | (20.1)                    |
| 10117946-4020LF                                     | 26 AWG | 2 M                           | (20.1)                    |
| 10117946-4030LF                                     | 26 AWG | 3 M                           | (20.1)                    |
| 10117946-4040LF                                     | 26 AWG | 4 M                           | (20.1)                    |
| 10117946-4050LF                                     | 26 AWG | 5 M                           | (20.1)                    |
| 10117946-4060LF                                     | 26 AWG | 6 M                           | (20.1)                    |
| 10117946-4070LF                                     | 26 AWG | 7 M                           | (20.1)                    |
| 10117946-4080LF                                     | 26 AWG | 8 M                           | (20.1)                    |
| 10117946-3005LF                                     | 28 AWG | 0.5 M                         | (17.3)                    |
| 10117946-3010LF                                     | 28 AWG | 1 M                           | (17.3)                    |
| 10117946-3015LF                                     | 28 AWG | 1.5 M                         | (17.3)                    |
| 10117946-3020LF                                     | 28 AWG | 2 M                           | (17.3)                    |
| 10117946-3025LF                                     | 28 AWG | 2.5 M                         | (17.3)                    |
| 10117946-3030LF                                     | 28 AWG | 3 M                           | (17.3)                    |
| 10117946-3035LF                                     | 28 AWG | 3.5 M                         | (17.3)                    |
| 10117946-3040LF                                     | 28 AWG | 4 M                           | (17.3)                    |
| 10117946-3050LF                                     | 28 AWG | 5 M                           | (17.3)                    |
| 10117946-3060LF                                     | 28 AWG | 6 M                           | (17.3)                    |
| 10117946-2005LF                                     | 30 AWG | 0.5 M                         | (17.3)                    |
| 10117946-2010LF                                     | 30 AWG | 1 M                           | (17.3)                    |
| 10117946-2020LF                                     | 30 AWG | 2 M                           | (17.3)                    |
| 10117946-2030LF                                     | 30 AWG | 3 M                           | (17.3)                    |
| 10117946-2040LF                                     | 30 AWG | 4 M                           | (17.3)                    |

|             |                |                                                                |                                   |                           |                        |               |       |              |
|-------------|----------------|----------------------------------------------------------------|-----------------------------------|---------------------------|------------------------|---------------|-------|--------------|
| dr          | Deborah Ingram | 2011/06/07                                                     | <div>projection</div> <div></div> | <div>MM</div> <div></div> | size                   | A3            | scale | 1:1          |
| eng         | Tom Feng       | 2015/08/12                                                     |                                   |                           | ecn no                 | ELX-N-21245-1 |       |              |
| chr         | -              | -                                                              |                                   |                           | rel level              | Released      |       |              |
| appr        | Frank Mao      | 2015/08/12                                                     | product family                    |                           | C&A                    |               |       |              |
| <div></div> |                | title Mini SAS HD 4X TO Mini SAS 2.1<br>FINAL ASSEMBLY (6Gb/s) |                                   |                           | dwg no 10117946        |               | rev D |              |
| www.fci.com |                | cat. no. -                                                     |                                   |                           | Product - Customer Drw |               |       | sheet 3 of 6 |

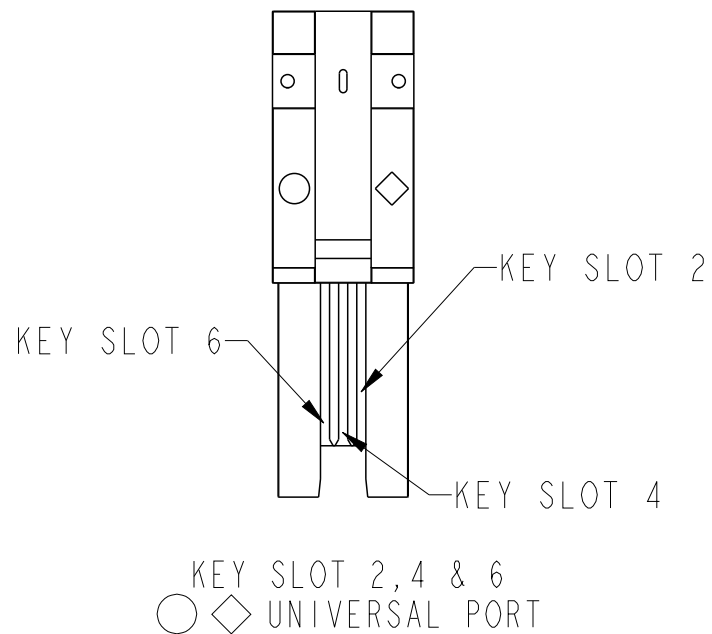
A

B

C

D

| PRODUCT NUMBER   | DESCRIPTION      | NOTES      |
|------------------|------------------|------------|
| 10117946-XXXXLF  | NON-HF           | SEE SHT. 3 |
| 10117946-XXXXHLF | HALOGEN FREE (H) | SEE SHT. 3 |

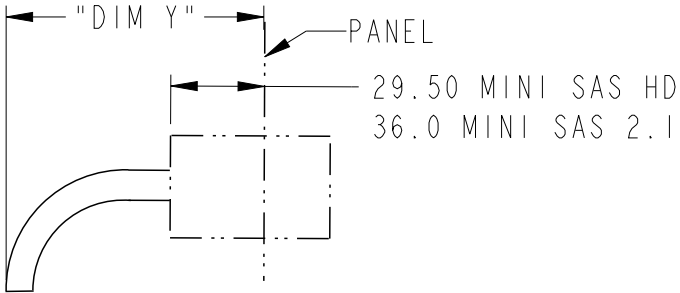


END P2  
MINI SAS

| WIRING LIST (SEE NOTE 6) |      |                    |                  |        |
|--------------------------|------|--------------------|------------------|--------|
| P1<br>(MINI SAS HD)      |      |                    | P2<br>(MINI SAS) |        |
| SIGNAL                   | PIN# | CONDUCTOR #        | PIN#             | SIGNAL |
| GND                      | A9   |                    | B7               | GND    |
| Rx 1-                    | A5   | PAIR 2             | B6               | Tx 1-  |
| Rx 1+                    | A4   |                    | B5               | Tx 1+  |
| GND                      | A3   |                    | B4               | GND    |
| Rx 3-                    | A8   | PAIR 4             | B12              | Tx 3-  |
| Rx 3+                    | A7   |                    | B11              | Tx 3+  |
| GND                      | A6   |                    | B13              | GND    |
| N/C                      | A1   | NO THRU CONNECTION |                  |        |
| Interrupt                | A2   |                    |                  |        |
| GND                      | B9   |                    |                  | GND    |
| RX 0-                    | B5   | PAIR 1             | B3               | TX 0-  |
| RX 0+                    | B4   |                    | B2               | TX 0+  |
| GND                      | B3   |                    | B1               | GND    |
| RX 2-                    | B8   | PAIR 3             | B9               | TX 2-  |
| RX 2+                    | B7   |                    | B8               | TX 2+  |
| GND                      | B6   |                    | B10              | GND    |
| N/C                      | B1   | NO THRU CONNECTION |                  |        |
| Mod_PRS_L (GND)          | B2   |                    |                  |        |
| GND                      | C9   |                    | A7               | GND    |
| TX 1-                    | C5   | PAIR 2             | A6               | RX 1-  |
| TX 1+                    | C4   |                    | A5               | RX 1+  |
| GND                      | C3   |                    | A4               | GND    |
| TX 3-                    | C8   | PAIR 4             | A12              | RX 3-  |
| TX 3+                    | C7   |                    | A11              | RX 3+  |
| GND                      | C6   |                    | A13              | GND    |
| SCL                      | C1   | NO THRU CONNECTION |                  |        |
| SDA                      | C2   |                    |                  |        |
| GND                      | D9   |                    |                  | GND    |
| TX 0-                    | D5   | PAIR 1             | A3               | RX 0-  |
| TX 0+                    | D4   |                    | A2               | RX 0+  |
| GND                      | D3   |                    | A1               | GND    |
| TX 2-                    | D8   | PAIR 3             | A9               | RX 2-  |
| TX 2+                    | D7   |                    | A8               | RX 2+  |
| GND                      | D6   |                    | A10              | GND    |
| N/C                      | D1   | NO THRU CONNECTION |                  |        |
| V+3.3 for EEPROM         | D2   |                    |                  |        |
| SHELL                    |      | BRAID              |                  | SHELL  |

|                |                |            |                                   |                           |                                |               |       |              |
|----------------|----------------|------------|-----------------------------------|---------------------------|--------------------------------|---------------|-------|--------------|
| dr             | Deborah Ingram | 2011/06/07 | <div>projection</div> <div></div> | <div>MM</div> <div></div> | size                           | A3            | scale | 1:1          |
| eng            | Tom Feng       | 2015/08/12 |                                   |                           | ecn no                         | ELX-N-21245-1 |       |              |
| chr            | -              | -          |                                   |                           | rel level                      | Released      |       |              |
| appr           | Frank Mao      | 2015/08/12 | product family                    |                           | C&A                            |               |       |              |
| <div>FCi</div> |                |            | title                             |                           | Mini SAS HD 4X TO Mini SAS 2.1 |               |       | rev          |
|                |                |            | FINAL ASSEMBLY (6Gb/s)            |                           | dwg no                         |               |       | D            |
| www.fci.com    |                |            | cat. no.                          |                           | Product - Customer Drw         |               |       | sheet 4 of 6 |

| PRODUCT NUMBER   | DESCRIPTION      | NOTES      |
|------------------|------------------|------------|
| 10117946-XXXXLF  | NON-HF           | SEE SHT. 3 |
| 10117946-XXXXHLF | HALOGEN FREE (H) | SEE SHT. 3 |



PEND RADIUS  
TOP VIEW OF CONNECTOR

| MINI SAS HD<br>MINIMUM BEND TABLE |                 |                     |
|-----------------------------------|-----------------|---------------------|
| CABLE                             | "DIM Y"<br>(HF) | "DIM Y"<br>(NON-HF) |
| 24 AWG                            | 92.8            | 90.5                |
| 26 AWG                            | 87.5            | 85.1                |
| 28 AWG                            | 81.5            | 79.1                |
| 30 AWG                            | 77.9            | 74.3                |

| MINI SAS 2.1<br>MINMUM BEND TABLE |                 |                     |
|-----------------------------------|-----------------|---------------------|
| CABLE                             | "DIM Y"<br>(HF) | "DIM Y"<br>(NON-HF) |
| 24 AWG                            | 90.6            | 88.3                |
| 26 AWG                            | 85.3            | 82.9                |
| 28 AWG                            | 79.3            | 76.9                |
| 30 AWG                            | 75.7            | 72.1                |

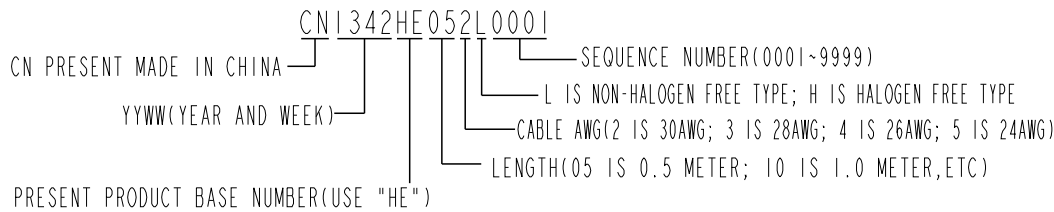
|                        |                |            |                                   |                                |              |                        |           |              |     |   |
|------------------------|----------------|------------|-----------------------------------|--------------------------------|--------------|------------------------|-----------|--------------|-----|---|
| dr                     | Deborah Ingram | 2011/06/07 | <div>projection</div> <div></div> | <div>MM</div> <div></div>      | size         | A3                     | scale     | 1:1          |     |   |
| eng                    | Tom Feng       | 2015/08/12 |                                   |                                | ecn no       | ELX-N-21245-1          |           |              |     |   |
| chr                    | -              | -          |                                   |                                |              |                        |           |              |     |   |
| appr                   | Frank Mao      | 2015/08/12 | product family                    |                                | MiniSAS/SATA |                        | rel level | Released     |     |   |
| <div>FCi</div>         |                | title      |                                   | MIni SAS HD 4X TO Mini SAS 2.1 |              | dwg no                 |           | 10117946     | rev | D |
| FINAL ASSEMBLY (6Gb/s) |                |            |                                   |                                |              |                        |           |              |     |   |
| www.fci.com            |                | cat. no.   |                                   | -                              |              | Product - Customer Drw |           | sheet 5 of 6 |     |   |

| PRODUCT NUMBER   | DESCRIPTION      | NOTES      |
|------------------|------------------|------------|
| 10117946-XXXXLF  | NON-HF           | SEE SHT. 3 |
| 10117946-XXXXHLF | HALOGEN FREE (H) | SEE SHT. 3 |

 CABLE LABEL EXAMPLE:

|                                                                         |           |
|-------------------------------------------------------------------------|-----------|
| FCI CHINA<br>10117946-2005LF<br>REV.D<br>CN1342HE052L0001<br>IIIIIIIIII | <b>CE</b> |
|-------------------------------------------------------------------------|-----------|

FCI SERIAL NUMBER IS ONLY USED FOR TRACKING PRODUCT ,  
SERIAL NUMBER IS DEFINED AS BELOW:



CE MARK VERTICAL DIMENSION MAY NOT BE LESS THAN 5mm,

NOTES:

- 1 - MATERIALS MINI SAS HD (END P1)  
BACK SHELLS: ZINC DIE CAST/ COPPER UNDER PLATE/NICKEL OVER PLATE  
PULL TAB: THERMOPLASTIC POLYMER  
LATCH: STAINLESS STEEL  
FERRULE: BRASS  
EMI GASKETS: STAINLESS STEEL  
LOCTITE  
HEAT SHRINK: HIGH POLYMER  
PADDLE CARD: PRINTED CIRCUIT SUBSTRATE
- MATERIALS MINI SAS (END P2)  
BACK SHELLS: ZINC DIE CAST  
PULL TAB: THERMOPLASTIC POLYMER  
LATCH: STAINLESS STEEL  
JET MELT: POLYAMIDE POLYMER  
HEAT SHRINK: POLYOLEFIN  
PADDLE CARD: PRINTED CIRCUIT SUBSTRATE

2 - ELECTRICAL PERFORMANCE PER CURRENT REVISION: T10/SAS-2.1

3 - THIS PRODUCT MEETS THE RESTRICTION OF HAZARDOUS SUBSTANCES IN  
ELECTRICAL AND ELECTRONIC EQUIPMENT (RoHS) DIRECTIVE (2011/65/EU)

4 - UNLESS OTHERWISE SPECIFIED ASSEMBLED LENGTH TOLERANCE IS TO BE:  
"DIM L" < 1 METERS =  $\pm 25\text{mm}$   
"DIM L" = 1 METER TO 10 METER = 2% OF "DIM L"

5- LABEL DETAILS:

|                                                                                     |                                                                                                                         |                                  |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|----------------------------------|
|  | MANUFACTURER CODE OR NAME<br>FCI P/N<br>FCI CUSTOMER DRAWING REVISION<br>FCI SERIAL NUMBER<br>BAR CODE OF SERIAL NUMBER | COUNTRY ORIGIN<br><b>CE MARK</b> |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|----------------------------------|

- 6 - FONT SHALL BE CLEARLY VISIBLE AND BLACK IN COLOR.  
CE MARK VERTICAL DIMENSION MAY NOT BE LESS THAN 5mm.
- 7 - ALL CABLE ASSEMBLIES SHALL BE 100% TESTED FOR CONTINUITY AS DEFINED IN WIRING LIST.  
-PACKAGING OF LEAD FREE PRODUCTS MEETS LABELING AND PACKAGING PER SPECIFICATION GS-14-920.  
PACKAGE CABLE ASSEMBLIES PER GS-14-1272. DUST COVER IS TO BE APPLIED TO MINI SAS HD CONNECTOR PRIOR TO SHIPPING.  
CE MARK SHOULD BE ADDED ON FCI STANDARD PACKAGE LABEL(G1 LABEL),CE MARK VERTICAL DIM. MAY NOT BE LESS THAN 5mm.

8- THIS DIMENSION IS A FINISHED PRODUCT LENGTH.

9. "H" IN THE PART NUMBER DENOTES USE OF HALOGEN FREE CABLE.

10. PLACE A CABLE TIE EVERY 0.5 METERS, IN THE CASE OF A 0.5 METER CABLE LENGTH, PLACE THE CABLE TIE MIDWAY  
BETWEEN CONNECTORS.

11. A "" SYMBOL WILL BE NEXT TO ANY DIMENSION, VIEW, OR NOTE WHICH HAS BEEN MODIFIED  
WITH THE CURRENT DRAWING REVISION. THE CURRENT REVISION WILL BE SHOWN IN THE SYMBOL.

12. MATES TO SERIES: MINI SAS HD - 10112626 or 10112627 or 10112628

MINI SAS 2.1 - BOARD CONNECTOR 10098870 AND CAGE 10098871

13. OTHER TESTING PERFORMED AS REQUIRED BY PRODUCT SPECIFICATION: MINISAS HD GS-12-651, MINI SAS 2.1 GS-12-548

14. EEPROM INFORMATION OF MSHD SIDE REFER TO FCI PRODUCT SPEC. GS-12-651.

15. CABLE IS OPTIONAL,WHICH HAD BEEN QUALIFIED BY FCI AND MEET FCI PRODUCT SPEC. GS-12-651/548.

|             |                |            |                                   |                           |                                |               |       |                        |
|-------------|----------------|------------|-----------------------------------|---------------------------|--------------------------------|---------------|-------|------------------------|
| dr          | Deborah Ingram | 2011/06/07 | <div>projection</div> <div></div> | <div>MM</div> <div></div> | size                           | A3            | scale | 1:1                    |
| eng         | Tom Feng       | 2015/08/12 |                                   |                           | ecn no                         | ELX-N-21245-1 |       |                        |
| chr         | -              | -          |                                   |                           | rel level                      | Released      |       |                        |
| appr        | Frank Mao      | 2015/08/12 | product family                    |                           | C&A                            |               |       |                        |
| <div></div> |                |            | title                             |                           | Mini SAS HD 4X TO Mini SAS 2.1 |               |       | rev                    |
|             |                |            | FINAL ASSEMBLY (6Gb/s)            |                           | dwg no                         |               |       | D                      |
| www.fci.com |                |            | cat. no.                          |                           | -                              |               |       | Product - Customer Drw |
|             |                |            |                                   |                           | sheet 6 of 6                   |               |       |                        |