

| PRODUCT NUMBER | DESCRIPTION | NOTES |
|------------------|------------------|------------|
| 10117771-XXXXLF | NON-HF | SEE SHT. 3 |
| 10117771-XXXXHLF | HALOGEN FREE (H) | SEE SHT. 3 |



CABLE
SEE TABLE 2 & 3
NOTE 9 & 15

END P2
MINI SAS
CABLE CONNECTOR

END P1
MINI SAS HD 4X
CABLE CONNECTOR

HEAT SHRINK
TUBE (2X)



(10.45)

("DIM M")
SEE P/N TABLES

100mm ± 15mm

2X (13.0)

P1 LABEL
SEE NOTE 5



HEAT SHRINK
TUBE

60mm ± 15mm

P2 LABEL
SEE NOTE 5

CABLE TIE COLOR: BLACK
SEE NOTE 10



12.75

(25mm)

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

| | | | | | | | | |
|-------------|----------------|---|----------------|--------------------|------------------------|---------------|--------------|-----|
| dr | Deborah Ingram | 2011/03/17 | projection | MM | size | A3 | scale | 1:1 |
| eng | Tom Feng | 2015/08/12 | | | ecn no | ELX-N-21649-1 | | |
| chr | - | - | | | rel level | Released | | |
| appr | Frank Mao | 2015/08/12 | product family | C&A | | | | |
| | | title Mini SAS HD 4X TO Mini SAS 2.1 TRAINED UNIVERSAL FINAL ASSEMBLY (6Gb/s) | | dwg no 10117771 | rev C | | | |
| www.fci.com | | cat. no. | - | | Product - Customer Drw | | sheet 1 of 5 | |



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END P1
Mini SAS HD 4X
ISOMETRIC VIEW



END P2
Mini SAS
ISOMETRIC VIEW

| | | | | | | | | |
|-------------|----------------|------------|----------------|------------------------|--------------|---------------|-------|-----|
| dr | Deborah Ingram | 2011/03/17 | projection | MM | size | A3 | scale | 1:1 |
| eng | Tom Feng | 2015/08/12 | | | ecn no | ELX-N-21649-1 | | |
| chr | - | - | product family | C&A | rel level | Released | | |
| appr | Frank Mao | 2015/08/12 | | | | | | |
| www.fci.com | | cat. no. | - | Product - Customer Drw | sheet 2 of 5 | | | |

| | | | | | | |
|-----|-------|--|--------|----------|-----|---|
| FCj | title | Mini SAS HD 4X TO Mini SAS 2.1 | dwg no | 10117771 | rev | C |
| | | TRAINED UNIVERSAL FINAL ASSEMBLY (6Gb/s) | | | | |

| PRODUCT NUMBER | DESCRIPTION | NOTES |
|------------------|------------------|------------|
| 10117771-XXXXLF | NON-HF | SEE SHT. 3 |
| 10117771-XXXXHLF | HALOGEN FREE (H) | SEE SHT. 3 |

| PRODUCT NUMBER (HALOGEN FREE) SEE NOTE 9 & 15 | AWG | "DIM L" LENGTH (Meters) | "DIM M" HIEGHT (mm) |
|---|--------|-------------------------------|---------------------------|
| 10117771-5030HLF | 24 AWG | 3 M | (20.1) |
| 10117771-5040HLF | 24 AWG | 4 M | (20.1) |
| 10117771-5050HLF | 24 AWG | 5 M | (20.1) |
| 10117771-5060HLF | 24 AWG | 6 M | (20.1) |
| 10117771-5070HLF | 24 AWG | 7 M | (20.1) |
| 10117771-5080HLF | 24 AWG | 8 M | (20.1) |
| 10117771-5090HLF | 24 AWG | 9 M | (20.1) |
| 10117771-5100HLF | 24 AWG | 10 M | (20.1) |
| 10117771-4020HLF | 26 AWG | 2 M | (20.1) |
| 10117771-4030HLF | 26 AWG | 3 M | (20.1) |
| 10117771-4040HLF | 26 AWG | 4 M | (20.1) |
| 10117771-4050HLF | 26 AWG | 5 M | (20.1) |
| 10117771-4060HLF | 26 AWG | 6 M | (20.1) |
| 10117771-4070HLF | 26 AWG | 7 M | (20.1) |
| 10117771-4080HLF | 26 AWG | 8 M | (20.1) |
| 10117771-3010HLF | 28 AWG | 1 M | (17.3) |
| 10117771-3020HLF | 28 AWG | 2 M | (17.3) |
| 10117771-3030HLF | 28 AWG | 3 M | (17.3) |
| 10117771-3040HLF | 28 AWG | 4 M | (17.3) |
| 10117771-3050HLF | 28 AWG | 5 M | (17.3) |
| 10117771-3060HLF | 28 AWG | 6 M | (17.3) |
| 10117771-2005HLF | 30 AWG | 0.5 M | (17.3) |
| 10117771-2010HLF | 30 AWG | 1 M | (17.3) |
| 10117771-2020HLF | 30 AWG | 2 M | (17.3) |
| 10117771-2030HLF | 30 AWG | 3 M | (17.3) |
| 10117771-2040HLF | 30 AWG | 4 M | (17.3) |

| PRODUCT NUMBER (NON-HALOGEN FREE) SEE NOTE 15 | AWG | "DIM L" LENGTH (Meters) | "DIM M" HIEGHT (mm) |
|---|--------|-------------------------------|---------------------------|
| 10117771-5030LF | 24 AWG | 3 M | (20.1) |
| 10117771-5040LF | 24 AWG | 4 M | (20.1) |
| 10117771-5050LF | 24 AWG | 5 M | (20.1) |
| 10117771-5060LF | 24 AWG | 6 M | (20.1) |
| 10117771-5070LF | 24 AWG | 7 M | (20.1) |
| 10117771-5080LF | 24 AWG | 8 M | (20.1) |
| 10117771-5090LF | 24 AWG | 9 M | (20.1) |
| 10117771-5100LF | 24 AWG | 10 M | (20.1) |
| 10117771-4020LF | 26 AWG | 2 M | (20.1) |
| 10117771-4030LF | 26 AWG | 3 M | (20.1) |
| 10117771-4040LF | 26 AWG | 4 M | (20.1) |
| 10117771-4050LF | 26 AWG | 5 M | (20.1) |
| 10117771-4060LF | 26 AWG | 6 M | (20.1) |
| 10117771-4070LF | 26 AWG | 7 M | (20.1) |
| 10117771-4080LF | 26 AWG | 8 M | (20.1) |
| 10117771-3010LF | 28 AWG | 1 M | (17.3) |
| 10117771-3020LF | 28 AWG | 2 M | (17.3) |
| 10117771-3030LF | 28 AWG | 3 M | (17.3) |
| 10117771-3040LF | 28 AWG | 4 M | (17.3) |
| 10117771-3050LF | 28 AWG | 5 M | (17.3) |
| 10117771-3060LF | 28 AWG | 6 M | (17.3) |
| 10117771-2005LF | 30 AWG | 0.5 M | (17.3) |
| 10117771-2010LF | 30 AWG | 1 M | (17.3) |
| 10117771-2020LF | 30 AWG | 2 M | (17.3) |
| 10117771-2030LF | 30 AWG | 3 M | (17.3) |
| 10117771-2040LF | 30 AWG | 4 M | (17.3) |

| | | | | | |
|--|----------------|------------|---|---------------------------|--------------|
| dr | Deborah Ingram | 2011/03/17 | projection  | size A3 | scale 1:1 |
| eng | Tom Feng | 2015/08/12 | | | |
| chr | - | - | | | |
| appr | Frank Mao | 2015/08/12 | | | |
| product family | | | C&A | rel level Released | |
|  Mini SAS HD 4X TO Mini SAS 2.1 TRAINED UNIVERSAL FINAL ASSEMBLY (6Gb/s) | | | dwg no 10117771 | rev C | |
| www.fci.com | | cat. no. | - | Product - Customer Drw | |
| | | | sheet 3 of 5 | | |



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KEY 3 & KEY SLOT 2, 4 & 6
 ○ ◇ UNIVERSAL PORT

**END P2
MINI SAS**

| MINI SAS HD MINIMUM BEND TABLE | | |
|-----------------------------------|-----------------|---------------------|
| CABLE | "DIM Y" (HF) | "DIM Y" (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 |



**PEND RADIUS
TOP VIEW OF CONNECTOR**

| MINI SAS 2.1 MINIMUM BEND TABLE | | |
|------------------------------------|-----------------|---------------------|
| CABLE | "DIM Y" (HF) | "DIM Y" (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 |

| WIRING LIST (SEE NOTE 6) | | | | |
|--------------------------|------|--------------------|------------------|--------|
| P1 (MINI SAS HD) | | CONDUCTOR # | P2 (MINI SAS) | |
| SIGNAL | PIN# | | 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 | 2011/03/17 | projection | MM ← → | size | A3 | scale | 1:1 |
| eng | Tom Feng | 2015/08/12 | | | ecn no | ELX-N-21649-1 | | |
| chr | - | - | | | rel level | Released | | |
| appr | Frank Mao | 2015/08/12 | | | product family | C&A | | |
| | | Mini SAS HD 4X TO Mini SAS 2.1 TRAINED UNIVERSAL FINAL ASSEMBLY (6Gb/s) | | | dwg no | 10117771 | rev | C |
| www.fci.com | | cat. no. | - | | Product - Customer Drw | | sheet 4 of 5 | |

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|------------------|------------------|------------|
| 10117771-XXXXLF | NON-HF | SEE SHT. 3 |
| 10117771-XXXXHLF | HALOGEN FREE (H) | SEE SHT. 3 |

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

△ CABLE LABEL EXAMPLE:



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,

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 = ±25mm
 "DIM L" = 1 METER TO 10 METER = 2% OF "DIM L"

5- LABEL DETAILS:

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

FONT SHALL BE CLEARLY VISIBLE AND BLACK IN COLOR.
 CE MARK VERTICAL DIMENSION MAY NOT BE LESS THAN 5mm.

6- ALL CABLE ASSEMBLIES SHALL BE 100% TESTED FOR CONTINUITY AS DEFINED IN WIRING LIST.

7 -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 | 2011/03/17 | projection | MM ←→ | size | A3 | scale | 1:1 |
| eng | Tom Feng | 2015/08/12 | | | ecn no | ELX-N-21649-1 | | |
| chr | - | - | | | rel level | Released | | |
| appr | Frank Mao | 2015/08/12 | | | product family | C&A | | |
| | | Mini SAS HD 4X TO Mini SAS 2.1 | | dwg no | 10117771 | rev | C | |
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