

PLEASE CHECK WWW.MOLEX.COM FOR LATEST PART INFORMATION

Part Number:

0687690022

Status:

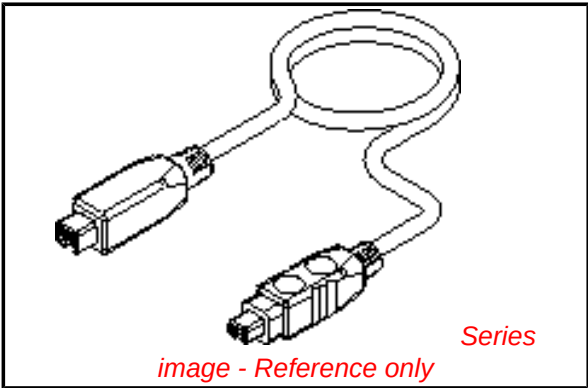
Active

Overview:

ieee\_1394

Description:

IEEE 1394B Bilingual 9-pin-to-4-pin Cable Assembly, 2.0m (6.56' ) Length



Documents:

Drawing (PDF)

Product Specification PS-68769-001 (PDF)

RoHS Certificate of Compliance (PDF)

General

Product Family

Series

Connector to Connector

Overview

Product Name

Cable Assemblies

68769

IEEE1394b-2002 Both Ends

ieee\_1394

IEEE 1394

Physical

Cable Length

Circuits (Loaded)

Color - Resin

Gender

Lock to Mating Part

Material - Resin

Packaging Type

Single Ended

Wire Insulation Diameter

Wire Size AWG

Wire/Cable Type

2.0m (6.56' )

4, 9

Natural

Male-Male

Yes

Low Density Polyethylene

Bag

No

N/A

N/A

Round

Electrical

Current - Maximum per Contact

Impedance

Shielded

Voltage - Maximum

1.5A

110 ohms

Yes

30V

Material Info

Reference - Drawing Numbers

Product Specification

Sales Drawing

PS-68769-001

SD-68769-021

EU RoHS

ELV and RoHS

Compliant

REACH SVHC

Not Reviewed

Halogen-Free

Status

Not Reviewed

China RoHS



Need more information on product environmental compliance?

Email [productcompliance@molex.com](mailto:productcompliance@molex.com)

For a multiple part number RoHS Certificate of Compliance, [click here](#)

Please visit the [Contact Us](#) section for any non-product compliance questions.

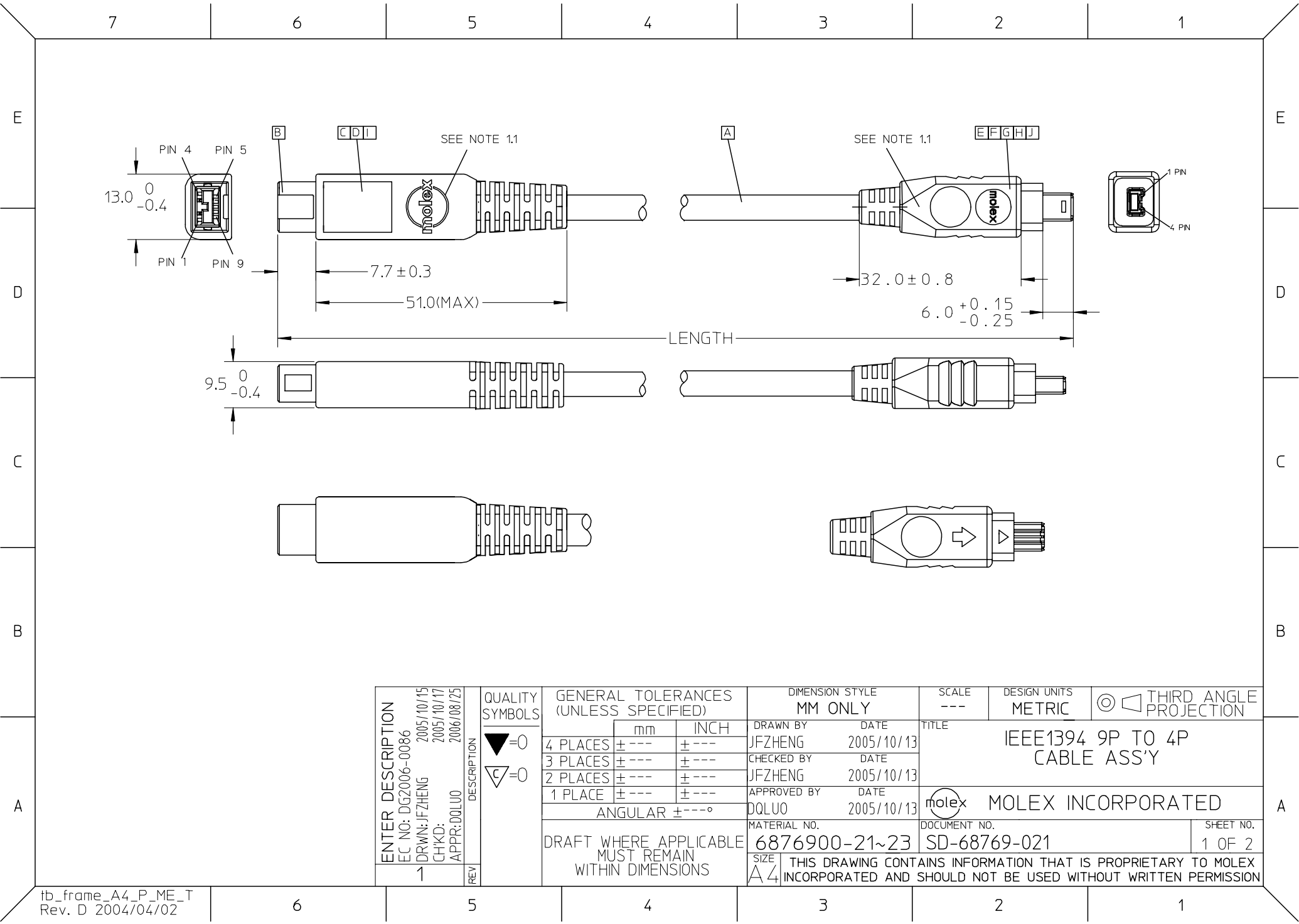
Search Parts in this Series

68769Series

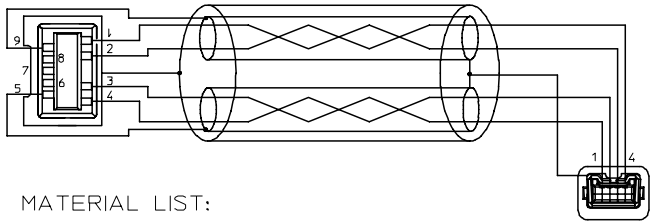
Mates With

44647 IEEE 1394b-2002 Shielded I/O PCB Bilingual Socket. 54515 IEEE P1394a Shielded I/O PCB Socket

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|                                                                                           |  |  |  |                    |  |                                   |  |                                       |  |                               |                            |                                                                                                                                  |              |                                           |                        |                     |  |
|-------------------------------------------------------------------------------------------|--|--|--|--------------------|--|-----------------------------------|--|---------------------------------------|--|-------------------------------|----------------------------|----------------------------------------------------------------------------------------------------------------------------------|--------------|-------------------------------------------|------------------------|---------------------|--|
| ENTER DESCRIPTION<br>EC NO: DG2006-0086<br>DRWN: JFZHENG<br>CHKD:<br>APPR: DQLUO<br><br>1 |  |  |  | DESCRIPTION<br>REV |  | QUALITY SYMBOLS<br><br>▽=0<br>▽=0 |  | GENERAL TOLERANCES (UNLESS SPECIFIED) |  |                               | DIMENSION STYLE<br>MM ONLY |                                                                                                                                  | SCALE<br>--- | DESIGN UNITS<br>METRIC                    | THIRD ANGLE PROJECTION |                     |  |
|                                                                                           |  |  |  |                    |  |                                   |  |                                       |  |                               |                            |                                                                                                                                  |              |                                           |                        |                     |  |
|                                                                                           |  |  |  |                    |  |                                   |  |                                       |  |                               |                            |                                                                                                                                  |              |                                           |                        |                     |  |
|                                                                                           |  |  |  |                    |  |                                   |  |                                       |  |                               |                            |                                                                                                                                  |              |                                           |                        |                     |  |
|                                                                                           |  |  |  |                    |  |                                   |  |                                       |  |                               |                            |                                                                                                                                  |              |                                           |                        |                     |  |
|                                                                                           |  |  |  |                    |  |                                   |  |                                       |  | DRAWN BY<br>JFZHENG           |                            | DATE<br>2005/10/13                                                                                                               |              | TITLE<br>IEEE1394 9P TO 4P<br>CABLE ASS'Y |                        |                     |  |
|                                                                                           |  |  |  |                    |  |                                   |  |                                       |  | CHECKED BY<br>JFZHENG         |                            | DATE<br>2005/10/13                                                                                                               |              |                                           |                        |                     |  |
|                                                                                           |  |  |  |                    |  |                                   |  |                                       |  | APPROVED BY<br>DQLUO          |                            | DATE<br>2005/10/13                                                                                                               |              |                                           |                        |                     |  |
|                                                                                           |  |  |  |                    |  |                                   |  |                                       |  | ANGULAR ±---°                 |                            |                                                                                                                                  |              | MOLEX INCORPORATED                        |                        |                     |  |
|                                                                                           |  |  |  |                    |  |                                   |  |                                       |  |                               |                            |                                                                                                                                  |              |                                           |                        |                     |  |
| DRAFT WHERE APPLICABLE<br>MUST REMAIN<br>WITHIN DIMENSIONS                                |  |  |  |                    |  |                                   |  |                                       |  | MATERIAL NO.<br>6876900-21~23 |                            | DOCUMENT NO.<br>SD-68769-021                                                                                                     |              |                                           |                        | SHEET NO.<br>1 OF 2 |  |
|                                                                                           |  |  |  |                    |  |                                   |  |                                       |  | SIZE<br>A 4                   |                            | THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX<br>INCORPORATED AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION |              |                                           |                        |                     |  |

| 7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 6                                                                | 5                                          | 4    | 3 | 2 | 1 |            |                                    |         |            |                                    |                      |            |                                    |         |                     |             |        |         |                       |      |               |   |                           |                     |                    |                       |                    |                      |                    |   |                            |  |   |   |                             |  |   |   |                                    |  |   |   |                                                 |  |   |      |             |   |      |                                                          |                                                                  |                                            |   |                                  |   |   |                                  |   |   |                                   |   |   |                                   |   |             |                                         |   |               |                  |   |               |               |                  |               |                   |   |             |                                        |   |               |                     |             |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|--------------------------------------------|------|---|---|---|------------|------------------------------------|---------|------------|------------------------------------|----------------------|------------|------------------------------------|---------|---------------------|-------------|--------|---------|-----------------------|------|---------------|---|---------------------------|---------------------|--------------------|-----------------------|--------------------|----------------------|--------------------|---|----------------------------|--|---|---|-----------------------------|--|---|---|------------------------------------|--|---|---|-------------------------------------------------|--|---|------|-------------|---|------|----------------------------------------------------------|------------------------------------------------------------------|--------------------------------------------|---|----------------------------------|---|---|----------------------------------|---|---|-----------------------------------|---|---|-----------------------------------|---|-------------|-----------------------------------------|---|---------------|------------------|---|---------------|---------------|------------------|---------------|-------------------|---|-------------|----------------------------------------|---|---------------|---------------------|-------------|
| <div><div><div>WIRING DIAGRAM:</div></div><div><div>MATERIAL LIST:</div><table><tr><td>I</td><td>1394B SOLDER I/O CONN. 172000528</td><td></td><td>1</td></tr><tr><td>J</td><td>MOLD COVER 887899625</td><td></td><td>1</td></tr><tr><td>H</td><td>MOLD CASE 887899692</td><td></td><td>1</td></tr><tr><td>G</td><td>SHIELD CASE 887899624</td><td></td><td>1</td></tr><tr><td>F</td><td>SHIELD CASE CAP 887899623</td><td></td><td>1</td></tr><tr><td>E</td><td>PLUG 887899622</td><td></td><td>1</td></tr><tr><td>D</td><td>1394B REAR SHELL,172000530</td><td></td><td>1</td></tr><tr><td>C</td><td>1394B FRONT SHELL,172000529</td><td></td><td>1</td></tr><tr><td>B</td><td>1394 9PIN BILINGUAL PLUG 172000533</td><td></td><td>1</td></tr><tr><td>A</td><td>2P*32AWG+F,SHLD,PVC,GY,4.2MM,1394 4P, 887808446</td><td></td><td>1</td></tr><tr><td>ITEM</td><td>DESCRIPTION</td><td>L</td><td>QTY.</td></tr></table></div><div><div>PIN OUT TABLE</div><table><tr><th>Plug1:<br/>IEEE1394-1995 4-circuit<br/>plug contact number</th><th>Signal name at plug 2 end:<br/>IEEE Std 1394-1995 cable reference</th><th>Plug2:<br/>Bilingual plug<br/>contact number</th></tr><tr><td>3</td><td>TPB*(Twisted pair B Minus) (RED)</td><td>1</td></tr><tr><td>4</td><td>TPB(Twisted pair B Plus) (GREEN)</td><td>2</td></tr><tr><td>1</td><td>TPA*(Twisted Pair A minus) (BLUE)</td><td>3</td></tr><tr><td>2</td><td>TPA(Twisted pair A Plus) (Orange)</td><td>4</td></tr><tr><td>plug shield</td><td>TPA(R) Twisted Pair A Ground Rederence)</td><td>5</td></tr><tr><td>no connection</td><td>VG(Power Ground)</td><td>6</td></tr><tr><td>no connection</td><td>NO connection</td><td>7(no connection)</td></tr><tr><td>no connection</td><td>Vp(Power Voltage)</td><td>8</td></tr><tr><td>plug shield</td><td>TPB(R)Twisted Pair B Ground Reference)</td><td>9</td></tr><tr><td>no connection</td><td>Cable Shield Ground</td><td>Plug shield</td></tr></table></div><div><div>NOTE:</div><div>1. 9PIN OVEROLD WITH GREY PVC 887800152.</div><div>4PIN OVERMOLD WITH GREY PVC 887800153</div></div></div> |                                                                  |                                            |      |   |   |   | I          | 1394B SOLDER I/O CONN. 172000528   |         | 1          | J                                  | MOLD COVER 887899625 |            | 1                                  | H       | MOLD CASE 887899692 |             | 1      | G       | SHIELD CASE 887899624 |      | 1             | F | SHIELD CASE CAP 887899623 |                     | 1                  | E                     | PLUG 887899622     |                      | 1                  | D | 1394B REAR SHELL,172000530 |  | 1 | C | 1394B FRONT SHELL,172000529 |  | 1 | B | 1394 9PIN BILINGUAL PLUG 172000533 |  | 1 | A | 2P*32AWG+F,SHLD,PVC,GY,4.2MM,1394 4P, 887808446 |  | 1 | ITEM | DESCRIPTION | L | QTY. | Plug1:<br>IEEE1394-1995 4-circuit<br>plug contact number | Signal name at plug 2 end:<br>IEEE Std 1394-1995 cable reference | Plug2:<br>Bilingual plug<br>contact number | 3 | TPB*(Twisted pair B Minus) (RED) | 1 | 4 | TPB(Twisted pair B Plus) (GREEN) | 2 | 1 | TPA*(Twisted Pair A minus) (BLUE) | 3 | 2 | TPA(Twisted pair A Plus) (Orange) | 4 | plug shield | TPA(R) Twisted Pair A Ground Rederence) | 5 | no connection | VG(Power Ground) | 6 | no connection | NO connection | 7(no connection) | no connection | Vp(Power Voltage) | 8 | plug shield | TPB(R)Twisted Pair B Ground Reference) | 9 | no connection | Cable Shield Ground | Plug shield |
| I                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 1394B SOLDER I/O CONN. 172000528                                 |                                            | 1    |   |   |   |            |                                    |         |            |                                    |                      |            |                                    |         |                     |             |        |         |                       |      |               |   |                           |                     |                    |                       |                    |                      |                    |   |                            |  |   |   |                             |  |   |   |                                    |  |   |   |                                                 |  |   |      |             |   |      |                                                          |                                                                  |                                            |   |                                  |   |   |                                  |   |   |                                   |   |   |                                   |   |             |                                         |   |               |                  |   |               |               |                  |               |                   |   |             |                                        |   |               |                     |             |
| J                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | MOLD COVER 887899625                                             |                                            | 1    |   |   |   |            |                                    |         |            |                                    |                      |            |                                    |         |                     |             |        |         |                       |      |               |   |                           |                     |                    |                       |                    |                      |                    |   |                            |  |   |   |                             |  |   |   |                                    |  |   |   |                                                 |  |   |      |             |   |      |                                                          |                                                                  |                                            |   |                                  |   |   |                                  |   |   |                                   |   |   |                                   |   |             |                                         |   |               |                  |   |               |               |                  |               |                   |   |             |                                        |   |               |                     |             |
| H                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | MOLD CASE 887899692                                              |                                            | 1    |   |   |   |            |                                    |         |            |                                    |                      |            |                                    |         |                     |             |        |         |                       |      |               |   |                           |                     |                    |                       |                    |                      |                    |   |                            |  |   |   |                             |  |   |   |                                    |  |   |   |                                                 |  |   |      |             |   |      |                                                          |                                                                  |                                            |   |                                  |   |   |                                  |   |   |                                   |   |   |                                   |   |             |                                         |   |               |                  |   |               |               |                  |               |                   |   |             |                                        |   |               |                     |             |
| G                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | SHIELD CASE 887899624                                            |                                            | 1    |   |   |   |            |                                    |         |            |                                    |                      |            |                                    |         |                     |             |        |         |                       |      |               |   |                           |                     |                    |                       |                    |                      |                    |   |                            |  |   |   |                             |  |   |   |                                    |  |   |   |                                                 |  |   |      |             |   |      |                                                          |                                                                  |                                            |   |                                  |   |   |                                  |   |   |                                   |   |   |                                   |   |             |                                         |   |               |                  |   |               |               |                  |               |                   |   |             |                                        |   |               |                     |             |
| F                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | SHIELD CASE CAP 887899623                                        |                                            | 1    |   |   |   |            |                                    |         |            |                                    |                      |            |                                    |         |                     |             |        |         |                       |      |               |   |                           |                     |                    |                       |                    |                      |                    |   |                            |  |   |   |                             |  |   |   |                                    |  |   |   |                                                 |  |   |      |             |   |      |                                                          |                                                                  |                                            |   |                                  |   |   |                                  |   |   |                                   |   |   |                                   |   |             |                                         |   |               |                  |   |               |               |                  |               |                   |   |             |                                        |   |               |                     |             |
| E                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | PLUG 887899622                                                   |                                            | 1    |   |   |   |            |                                    |         |            |                                    |                      |            |                                    |         |                     |             |        |         |                       |      |               |   |                           |                     |                    |                       |                    |                      |                    |   |                            |  |   |   |                             |  |   |   |                                    |  |   |   |                                                 |  |   |      |             |   |      |                                                          |                                                                  |                                            |   |                                  |   |   |                                  |   |   |                                   |   |   |                                   |   |             |                                         |   |               |                  |   |               |               |                  |               |                   |   |             |                                        |   |               |                     |             |
| D                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 1394B REAR SHELL,172000530                                       |                                            | 1    |   |   |   |            |                                    |         |            |                                    |                      |            |                                    |         |                     |             |        |         |                       |      |               |   |                           |                     |                    |                       |                    |                      |                    |   |                            |  |   |   |                             |  |   |   |                                    |  |   |   |                                                 |  |   |      |             |   |      |                                                          |                                                                  |                                            |   |                                  |   |   |                                  |   |   |                                   |   |   |                                   |   |             |                                         |   |               |                  |   |               |               |                  |               |                   |   |             |                                        |   |               |                     |             |
| C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 1394B FRONT SHELL,172000529                                      |                                            | 1    |   |   |   |            |                                    |         |            |                                    |                      |            |                                    |         |                     |             |        |         |                       |      |               |   |                           |                     |                    |                       |                    |                      |                    |   |                            |  |   |   |                             |  |   |   |                                    |  |   |   |                                                 |  |   |      |             |   |      |                                                          |                                                                  |                                            |   |                                  |   |   |                                  |   |   |                                   |   |   |                                   |   |             |                                         |   |               |                  |   |               |               |                  |               |                   |   |             |                                        |   |               |                     |             |
| B                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 1394 9PIN BILINGUAL PLUG 172000533                               |                                            | 1    |   |   |   |            |                                    |         |            |                                    |                      |            |                                    |         |                     |             |        |         |                       |      |               |   |                           |                     |                    |                       |                    |                      |                    |   |                            |  |   |   |                             |  |   |   |                                    |  |   |   |                                                 |  |   |      |             |   |      |                                                          |                                                                  |                                            |   |                                  |   |   |                                  |   |   |                                   |   |   |                                   |   |             |                                         |   |               |                  |   |               |               |                  |               |                   |   |             |                                        |   |               |                     |             |
| A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 2P*32AWG+F,SHLD,PVC,GY,4.2MM,1394 4P, 887808446                  |                                            | 1    |   |   |   |            |                                    |         |            |                                    |                      |            |                                    |         |                     |             |        |         |                       |      |               |   |                           |                     |                    |                       |                    |                      |                    |   |                            |  |   |   |                             |  |   |   |                                    |  |   |   |                                                 |  |   |      |             |   |      |                                                          |                                                                  |                                            |   |                                  |   |   |                                  |   |   |                                   |   |   |                                   |   |             |                                         |   |               |                  |   |               |               |                  |               |                   |   |             |                                        |   |               |                     |             |
| ITEM                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | DESCRIPTION                                                      | L                                          | QTY. |   |   |   |            |                                    |         |            |                                    |                      |            |                                    |         |                     |             |        |         |                       |      |               |   |                           |                     |                    |                       |                    |                      |                    |   |                            |  |   |   |                             |  |   |   |                                    |  |   |   |                                                 |  |   |      |             |   |      |                                                          |                                                                  |                                            |   |                                  |   |   |                                  |   |   |                                   |   |   |                                   |   |             |                                         |   |               |                  |   |               |               |                  |               |                   |   |             |                                        |   |               |                     |             |
| Plug1:<br>IEEE1394-1995 4-circuit<br>plug contact number                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Signal name at plug 2 end:<br>IEEE Std 1394-1995 cable reference | Plug2:<br>Bilingual plug<br>contact number |      |   |   |   |            |                                    |         |            |                                    |                      |            |                                    |         |                     |             |        |         |                       |      |               |   |                           |                     |                    |                       |                    |                      |                    |   |                            |  |   |   |                             |  |   |   |                                    |  |   |   |                                                 |  |   |      |             |   |      |                                                          |                                                                  |                                            |   |                                  |   |   |                                  |   |   |                                   |   |   |                                   |   |             |                                         |   |               |                  |   |               |               |                  |               |                   |   |             |                                        |   |               |                     |             |
| 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | TPB*(Twisted pair B Minus) (RED)                                 | 1                                          |      |   |   |   |            |                                    |         |            |                                    |                      |            |                                    |         |                     |             |        |         |                       |      |               |   |                           |                     |                    |                       |                    |                      |                    |   |                            |  |   |   |                             |  |   |   |                                    |  |   |   |                                                 |  |   |      |             |   |      |                                                          |                                                                  |                                            |   |                                  |   |   |                                  |   |   |                                   |   |   |                                   |   |             |                                         |   |               |                  |   |               |               |                  |               |                   |   |             |                                        |   |               |                     |             |
| 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | TPB(Twisted pair B Plus) (GREEN)                                 | 2                                          |      |   |   |   |            |                                    |         |            |                                    |                      |            |                                    |         |                     |             |        |         |                       |      |               |   |                           |                     |                    |                       |                    |                      |                    |   |                            |  |   |   |                             |  |   |   |                                    |  |   |   |                                                 |  |   |      |             |   |      |                                                          |                                                                  |                                            |   |                                  |   |   |                                  |   |   |                                   |   |   |                                   |   |             |                                         |   |               |                  |   |               |               |                  |               |                   |   |             |                                        |   |               |                     |             |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | TPA*(Twisted Pair A minus) (BLUE)                                | 3                                          |      |   |   |   |            |                                    |         |            |                                    |                      |            |                                    |         |                     |             |        |         |                       |      |               |   |                           |                     |                    |                       |                    |                      |                    |   |                            |  |   |   |                             |  |   |   |                                    |  |   |   |                                                 |  |   |      |             |   |      |                                                          |                                                                  |                                            |   |                                  |   |   |                                  |   |   |                                   |   |   |                                   |   |             |                                         |   |               |                  |   |               |               |                  |               |                   |   |             |                                        |   |               |                     |             |
| 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | TPA(Twisted pair A Plus) (Orange)                                | 4                                          |      |   |   |   |            |                                    |         |            |                                    |                      |            |                                    |         |                     |             |        |         |                       |      |               |   |                           |                     |                    |                       |                    |                      |                    |   |                            |  |   |   |                             |  |   |   |                                    |  |   |   |                                                 |  |   |      |             |   |      |                                                          |                                                                  |                                            |   |                                  |   |   |                                  |   |   |                                   |   |   |                                   |   |             |                                         |   |               |                  |   |               |               |                  |               |                   |   |             |                                        |   |               |                     |             |
| plug shield                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | TPA(R) Twisted Pair A Ground Rederence)                          | 5                                          |      |   |   |   |            |                                    |         |            |                                    |                      |            |                                    |         |                     |             |        |         |                       |      |               |   |                           |                     |                    |                       |                    |                      |                    |   |                            |  |   |   |                             |  |   |   |                                    |  |   |   |                                                 |  |   |      |             |   |      |                                                          |                                                                  |                                            |   |                                  |   |   |                                  |   |   |                                   |   |   |                                   |   |             |                                         |   |               |                  |   |               |               |                  |               |                   |   |             |                                        |   |               |                     |             |
| no connection                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | VG(Power Ground)                                                 | 6                                          |      |   |   |   |            |                                    |         |            |                                    |                      |            |                                    |         |                     |             |        |         |                       |      |               |   |                           |                     |                    |                       |                    |                      |                    |   |                            |  |   |   |                             |  |   |   |                                    |  |   |   |                                                 |  |   |      |             |   |      |                                                          |                                                                  |                                            |   |                                  |   |   |                                  |   |   |                                   |   |   |                                   |   |             |                                         |   |               |                  |   |               |               |                  |               |                   |   |             |                                        |   |               |                     |             |
| no connection                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | NO connection                                                    | 7(no connection)                           |      |   |   |   |            |                                    |         |            |                                    |                      |            |                                    |         |                     |             |        |         |                       |      |               |   |                           |                     |                    |                       |                    |                      |                    |   |                            |  |   |   |                             |  |   |   |                                    |  |   |   |                                                 |  |   |      |             |   |      |                                                          |                                                                  |                                            |   |                                  |   |   |                                  |   |   |                                   |   |   |                                   |   |             |                                         |   |               |                  |   |               |               |                  |               |                   |   |             |                                        |   |               |                     |             |
| no connection                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Vp(Power Voltage)                                                | 8                                          |      |   |   |   |            |                                    |         |            |                                    |                      |            |                                    |         |                     |             |        |         |                       |      |               |   |                           |                     |                    |                       |                    |                      |                    |   |                            |  |   |   |                             |  |   |   |                                    |  |   |   |                                                 |  |   |      |             |   |      |                                                          |                                                                  |                                            |   |                                  |   |   |                                  |   |   |                                   |   |   |                                   |   |             |                                         |   |               |                  |   |               |               |                  |               |                   |   |             |                                        |   |               |                     |             |
| plug shield                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | TPB(R)Twisted Pair B Ground Reference)                           | 9                                          |      |   |   |   |            |                                    |         |            |                                    |                      |            |                                    |         |                     |             |        |         |                       |      |               |   |                           |                     |                    |                       |                    |                      |                    |   |                            |  |   |   |                             |  |   |   |                                    |  |   |   |                                                 |  |   |      |             |   |      |                                                          |                                                                  |                                            |   |                                  |   |   |                                  |   |   |                                   |   |   |                                   |   |             |                                         |   |               |                  |   |               |               |                  |               |                   |   |             |                                        |   |               |                     |             |
| no connection                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Cable Shield Ground                                              | Plug shield                                |      |   |   |   |            |                                    |         |            |                                    |                      |            |                                    |         |                     |             |        |         |                       |      |               |   |                           |                     |                    |                       |                    |                      |                    |   |                            |  |   |   |                             |  |   |   |                                    |  |   |   |                                                 |  |   |      |             |   |      |                                                          |                                                                  |                                            |   |                                  |   |   |                                  |   |   |                                   |   |   |                                   |   |             |                                         |   |               |                  |   |               |               |                  |               |                   |   |             |                                        |   |               |                     |             |
| <div><div>TABLE A</div><table><tr><td>68769-0023</td><td>1394B BILINGUAL 9P TO 4P 4.5M GREY</td><td>4500±40</td></tr><tr><td>68769-0022</td><td>1394B BILINGUAL 9P TO 4P 2.0M GREY</td><td>2000±25</td></tr><tr><td>68769-0021</td><td>1394B BILINGUAL 9P TO 4P 1.0M GREY</td><td>1000±25</td></tr><tr><td>MX P/N</td><td>DESCRIPTION</td><td>LENGTH</td></tr></table></div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                  |                                            |      |   |   |   | 68769-0023 | 1394B BILINGUAL 9P TO 4P 4.5M GREY | 4500±40 | 68769-0022 | 1394B BILINGUAL 9P TO 4P 2.0M GREY | 2000±25              | 68769-0021 | 1394B BILINGUAL 9P TO 4P 1.0M GREY | 1000±25 | MX P/N              | DESCRIPTION | LENGTH |         |                       |      |               |   |                           |                     |                    |                       |                    |                      |                    |   |                            |  |   |   |                             |  |   |   |                                    |  |   |   |                                                 |  |   |      |             |   |      |                                                          |                                                                  |                                            |   |                                  |   |   |                                  |   |   |                                   |   |   |                                   |   |             |                                         |   |               |                  |   |               |               |                  |               |                   |   |             |                                        |   |               |                     |             |
| 68769-0023                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 1394B BILINGUAL 9P TO 4P 4.5M GREY                               | 4500±40                                    |      |   |   |   |            |                                    |         |            |                                    |                      |            |                                    |         |                     |             |        |         |                       |      |               |   |                           |                     |                    |                       |                    |                      |                    |   |                            |  |   |   |                             |  |   |   |                                    |  |   |   |                                                 |  |   |      |             |   |      |                                                          |                                                                  |                                            |   |                                  |   |   |                                  |   |   |                                   |   |   |                                   |   |             |                                         |   |               |                  |   |               |               |                  |               |                   |   |             |                                        |   |               |                     |             |
| 68769-0022                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 1394B BILINGUAL 9P TO 4P 2.0M GREY                               | 2000±25                                    |      |   |   |   |            |                                    |         |            |                                    |                      |            |                                    |         |                     |             |        |         |                       |      |               |   |                           |                     |                    |                       |                    |                      |                    |   |                            |  |   |   |                             |  |   |   |                                    |  |   |   |                                                 |  |   |      |             |   |      |                                                          |                                                                  |                                            |   |                                  |   |   |                                  |   |   |                                   |   |   |                                   |   |             |                                         |   |               |                  |   |               |               |                  |               |                   |   |             |                                        |   |               |                     |             |
| 68769-0021                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 1394B BILINGUAL 9P TO 4P 1.0M GREY                               | 1000±25                                    |      |   |   |   |            |                                    |         |            |                                    |                      |            |                                    |         |                     |             |        |         |                       |      |               |   |                           |                     |                    |                       |                    |                      |                    |   |                            |  |   |   |                             |  |   |   |                                    |  |   |   |                                                 |  |   |      |             |   |      |                                                          |                                                                  |                                            |   |                                  |   |   |                                  |   |   |                                   |   |   |                                   |   |             |                                         |   |               |                  |   |               |               |                  |               |                   |   |             |                                        |   |               |                     |             |
| MX P/N                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | DESCRIPTION                                                      | LENGTH                                     |      |   |   |   |            |                                    |         |            |                                    |                      |            |                                    |         |                     |             |        |         |                       |      |               |   |                           |                     |                    |                       |                    |                      |                    |   |                            |  |   |   |                             |  |   |   |                                    |  |   |   |                                                 |  |   |      |             |   |      |                                                          |                                                                  |                                            |   |                                  |   |   |                                  |   |   |                                   |   |   |                                   |   |             |                                         |   |               |                  |   |               |               |                  |               |                   |   |             |                                        |   |               |                     |             |
| <div><div><div><div>ENTER DESCRIPTION<br/>EC NO: DG2006-0086<br/>DRWN:JFZHENG<br/>CHKD:<br/>APPR:DQLUO</div><div>2005/10/15<br/>2005/10/17<br/>2006/08/25</div><div>DESCRIPTION<br/>REV</div></div><div><div>QUALITY SYMBOLS</div><div>▽=0<br/>▽=0</div></div><div><div>GENERAL TOLERANCES<br/>(UNLESS SPECIFIED)</div><table><tr><td></td><td>mm</td><td>INCH</td></tr><tr><td>4 PLACES</td><td>±---</td><td>±---</td></tr><tr><td>3 PLACES</td><td>±---</td><td>±---</td></tr><tr><td>2 PLACES</td><td>±---</td><td>±---</td></tr><tr><td>1 PLACE</td><td>±---</td><td>±---</td></tr><tr><td colspan="3">ANGULAR ±---°</td></tr></table></div><div><div>DRAFT WHERE APPLICABLE<br/>MUST REMAIN<br/>WITHIN DIMENSIONS</div></div><div><div>DIMENSION STYLE<br/>MM ONLY</div><table><tr><td>DRAWN BY<br/>JFZHENG</td><td>DATE<br/>2005/10/13</td></tr><tr><td>CHECKED BY<br/>JFZHENG</td><td>DATE<br/>2005/10/13</td></tr><tr><td>APPROVED BY<br/>DQLUO</td><td>DATE<br/>2005/10/13</td></tr></table></div><div><div>SCALE<br/>---</div><div>DESIGN UNITS<br/>METRIC</div><div><div>THIRD ANGLE<br/>PROJECTION</div></div></div><div><div>TITLE<br/>IEEE1394 9P TO 4P<br/>CABLE ASS'Y</div><div><div>MOLEX INCORPORATED</div><div><div>MATERIAL NO.<br/>6876900-21~23</div><div>DOCUMENT NO.<br/>SD-68769-021</div><div>SHEET NO.<br/>2 OF 2</div></div></div><div><div>SIZE<br/>A4</div><div>THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX<br/>INCORPORATED AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION</div></div></div></div></div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                  |                                            |      |   |   |   |            | mm                                 | INCH    | 4 PLACES   | ±---                               | ±---                 | 3 PLACES   | ±---                               | ±---    | 2 PLACES            | ±---        | ±---   | 1 PLACE | ±---                  | ±--- | ANGULAR ±---° |   |                           | DRAWN BY<br>JFZHENG | DATE<br>2005/10/13 | CHECKED BY<br>JFZHENG | DATE<br>2005/10/13 | APPROVED BY<br>DQLUO | DATE<br>2005/10/13 |   |                            |  |   |   |                             |  |   |   |                                    |  |   |   |                                                 |  |   |      |             |   |      |                                                          |                                                                  |                                            |   |                                  |   |   |                                  |   |   |                                   |   |   |                                   |   |             |                                         |   |               |                  |   |               |               |                  |               |                   |   |             |                                        |   |               |                     |             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | mm                                                               | INCH                                       |      |   |   |   |            |                                    |         |            |                                    |                      |            |                                    |         |                     |             |        |         |                       |      |               |   |                           |                     |                    |                       |                    |                      |                    |   |                            |  |   |   |                             |  |   |   |                                    |  |   |   |                                                 |  |   |      |             |   |      |                                                          |                                                                  |                                            |   |                                  |   |   |                                  |   |   |                                   |   |   |                                   |   |             |                                         |   |               |                  |   |               |               |                  |               |                   |   |             |                                        |   |               |                     |             |
| 4 PLACES                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | ±---                                                             | ±---                                       |      |   |   |   |            |                                    |         |            |                                    |                      |            |                                    |         |                     |             |        |         |                       |      |               |   |                           |                     |                    |                       |                    |                      |                    |   |                            |  |   |   |                             |  |   |   |                                    |  |   |   |                                                 |  |   |      |             |   |      |                                                          |                                                                  |                                            |   |                                  |   |   |                                  |   |   |                                   |   |   |                                   |   |             |                                         |   |               |                  |   |               |               |                  |               |                   |   |             |                                        |   |               |                     |             |
| 3 PLACES                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | ±---                                                             | ±---                                       |      |   |   |   |            |                                    |         |            |                                    |                      |            |                                    |         |                     |             |        |         |                       |      |               |   |                           |                     |                    |                       |                    |                      |                    |   |                            |  |   |   |                             |  |   |   |                                    |  |   |   |                                                 |  |   |      |             |   |      |                                                          |                                                                  |                                            |   |                                  |   |   |                                  |   |   |                                   |   |   |                                   |   |             |                                         |   |               |                  |   |               |               |                  |               |                   |   |             |                                        |   |               |                     |             |
| 2 PLACES                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | ±---                                                             | ±---                                       |      |   |   |   |            |                                    |         |            |                                    |                      |            |                                    |         |                     |             |        |         |                       |      |               |   |                           |                     |                    |                       |                    |                      |                    |   |                            |  |   |   |                             |  |   |   |                                    |  |   |   |                                                 |  |   |      |             |   |      |                                                          |                                                                  |                                            |   |                                  |   |   |                                  |   |   |                                   |   |   |                                   |   |             |                                         |   |               |                  |   |               |               |                  |               |                   |   |             |                                        |   |               |                     |             |
| 1 PLACE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | ±---                                                             | ±---                                       |      |   |   |   |            |                                    |         |            |                                    |                      |            |                                    |         |                     |             |        |         |                       |      |               |   |                           |                     |                    |                       |                    |                      |                    |   |                            |  |   |   |                             |  |   |   |                                    |  |   |   |                                                 |  |   |      |             |   |      |                                                          |                                                                  |                                            |   |                                  |   |   |                                  |   |   |                                   |   |   |                                   |   |             |                                         |   |               |                  |   |               |               |                  |               |                   |   |             |                                        |   |               |                     |             |
| ANGULAR ±---°                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                  |                                            |      |   |   |   |            |                                    |         |            |                                    |                      |            |                                    |         |                     |             |        |         |                       |      |               |   |                           |                     |                    |                       |                    |                      |                    |   |                            |  |   |   |                             |  |   |   |                                    |  |   |   |                                                 |  |   |      |             |   |      |                                                          |                                                                  |                                            |   |                                  |   |   |                                  |   |   |                                   |   |   |                                   |   |             |                                         |   |               |                  |   |               |               |                  |               |                   |   |             |                                        |   |               |                     |             |
| DRAWN BY<br>JFZHENG                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | DATE<br>2005/10/13                                               |                                            |      |   |   |   |            |                                    |         |            |                                    |                      |            |                                    |         |                     |             |        |         |                       |      |               |   |                           |                     |                    |                       |                    |                      |                    |   |                            |  |   |   |                             |  |   |   |                                    |  |   |   |                                                 |  |   |      |             |   |      |                                                          |                                                                  |                                            |   |                                  |   |   |                                  |   |   |                                   |   |   |                                   |   |             |                                         |   |               |                  |   |               |               |                  |               |                   |   |             |                                        |   |               |                     |             |
| CHECKED BY<br>JFZHENG                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | DATE<br>2005/10/13                                               |                                            |      |   |   |   |            |                                    |         |            |                                    |                      |            |                                    |         |                     |             |        |         |                       |      |               |   |                           |                     |                    |                       |                    |                      |                    |   |                            |  |   |   |                             |  |   |   |                                    |  |   |   |                                                 |  |   |      |             |   |      |                                                          |                                                                  |                                            |   |                                  |   |   |                                  |   |   |                                   |   |   |                                   |   |             |                                         |   |               |                  |   |               |               |                  |               |                   |   |             |                                        |   |               |                     |             |
| APPROVED BY<br>DQLUO                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | DATE<br>2005/10/13                                               |                                            |      |   |   |   |            |                                    |         |            |                                    |                      |            |                                    |         |                     |             |        |         |                       |      |               |   |                           |                     |                    |                       |                    |                      |                    |   |                            |  |   |   |                             |  |   |   |                                    |  |   |   |                                                 |  |   |      |             |   |      |                                                          |                                                                  |                                            |   |                                  |   |   |                                  |   |   |                                   |   |   |                                   |   |             |                                         |   |               |                  |   |               |               |                  |               |                   |   |             |                                        |   |               |                     |             |
| <div><div>tb_frame_A4_P_ME_T<br/>Rev. D 2004/04/02</div><div>6</div><div>5</div><div>4</div><div>3</div><div>2</div><div>1</div></div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                  |                                            |      |   |   |   |            |                                    |         |            |                                    |                      |            |                                    |         |                     |             |        |         |                       |      |               |   |                           |                     |                    |                       |                    |                      |                    |   |                            |  |   |   |                             |  |   |   |                                    |  |   |   |                                                 |  |   |      |             |   |      |                                                          |                                                                  |                                            |   |                                  |   |   |                                  |   |   |                                   |   |   |                                   |   |             |                                         |   |               |                  |   |               |               |                  |               |                   |   |             |                                        |   |               |                     |             |