

To: Membership of X3T9.2  
From: Robert C. Herron  
3M Corporation  
Date: May 15, 1992  
Subject: 3M Presentation on MDR Connector

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Attached is the presentation made by 3M on the MDR connector on April 27, 1992. The certificate of conformance from Quanta Laboratories is included along with the electrostatic discharge data.

### **3M MDR**

- **PROVEN SYSTEM - INTRODUCED IN 1985**
- **BECOMING A SCSI DE FACTO STANDARD**
- **MUTIPLE, COMPATIBLE CONNECTOR SOURCES**
- **COMPLETE EXTERNAL AND INTERNAL SYSTEM**  
**15 COMPONENTS**
- **PROVEN HIGH RELIABILITY**  
**200 CYCLES - SUPPORTED BY TEST DATA**  
**1,500 CYCLES - TEST IN PROCESS**
- **HIGH TEMPERATURE, SMT COMPATIBLE**  
**BOARDMOUNT COMPONENTS**
- **DAISY-CHAIN PLUG - UNSHIELDED INTERNAL**
- **EXPANDING USE BY SYSTEM INTEGRATORS FOR SCSI**

## 3M MDR SYSTEM

### EXTERNAL

SHIELDED WIREMOUNT PLUG  
R/A BOARDMOUNT RECEPTACLE  
STR. BOARDMOUNT RECEPTACLE  
SHIELDED PANEL/WIREMOUNT RECEPTACLE  
TERMINATORS

### INTERNAL

UNSHIELDED DAISY-CHAIN PLUG  
BOARDMOUNT RECEPTACLE  
STRADDLE MOUNT PLUG

### ACCESSORIES

BACKSHELLS - 4-40 THUMBSCREWS  
OVERMOLD SHELLS - ROUND AND FLAT

### CABLING

INTERNAL AND EXTERNAL  
FLAT .050", .025" AND .025" PLEATED FOIL  
ROUND TWISTED PAIR

### TOOLING

HAND TOOL  
MANUAL BENCH TOOL  
SEMI-AUTOMATIC TOOL  
FULLY AUTOMATIC TOOL

**CONNECTORS CLAIMING COMPATIBILITY WITH THE  
3M MINI DELTA RIBBON CONNECTOR**

**FUJITSU**

**DDK**

**AMP**

**JAE**

**HONDA**

**HIROSE**



# ***TEST RESULTS***

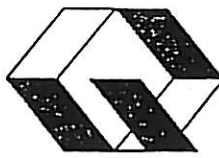
## ***3M MDR***

***(HIGH TEMPERATURE PLASTIC SOCKET)***

***SAMPLE SIZE: 400 MATED PAIR CONTACTS***

|                                                 | <i><b>* High</b></i> | <i><b>* Mean</b></i> | <i><b>* Low</b></i> | <i><b>SD</b></i> |
|-------------------------------------------------|----------------------|----------------------|---------------------|------------------|
| INITIAL CONTACT RESISTANCE                      |                      |                      |                     |                  |
| Incl. wiper, IDC, and<br>15-25mOhms of wire/pcb | 36.6                 | 31.0                 | 25.4                | 3.7              |
| RESISTANCE CHANGES AFTER                        |                      |                      |                     |                  |
| DURABILITY                                      |                      |                      |                     |                  |
| 200 insertion/withdrawals                       | -2.8                 | .331                 | 0.0                 | .567             |
| THERMAL SHOCK                                   |                      |                      |                     |                  |
| -55°C and 105°C<br>for 25 CYCLES                | 3.1                  | .728                 | -0.01               | .645             |
| ENVIRONMENTAL STRESS                            |                      |                      |                     |                  |
| 85°C at 85%Relative Humidity<br>for 720HRS      | 3.5                  | .871                 | .002                | .702             |
| THERMAL LIFE                                    |                      |                      |                     |                  |
| 105°C FOR 264HRS                                | 5.4                  | .796                 | .001                | .862             |

\*Note: All resistance units are milli-ohms



QUANTA  
LABORATORIES

92-118

3199 De La Cruz Boulevard • Santa Clara, CA 95054 • (408) 988 - 0770

## *Certificate of Conformance*

This is to certify that the results from the test(s)  
requested by 3 M are on file under  
Quanta Laboratories Job No. QL-2-356 and conform to  
the specification(s) stated in P. O. No. AU05460

These results apply to the following equipment and  
are available for review upon request.

Model No.: \*\*\*CONNECTOR\*\*\*

S/N: \*\*\*A,B\*\*\*

\_\_\_\_\_  
\_\_\_\_\_

  
\_\_\_\_\_  
Quanta Laboratories Date 4/20/92

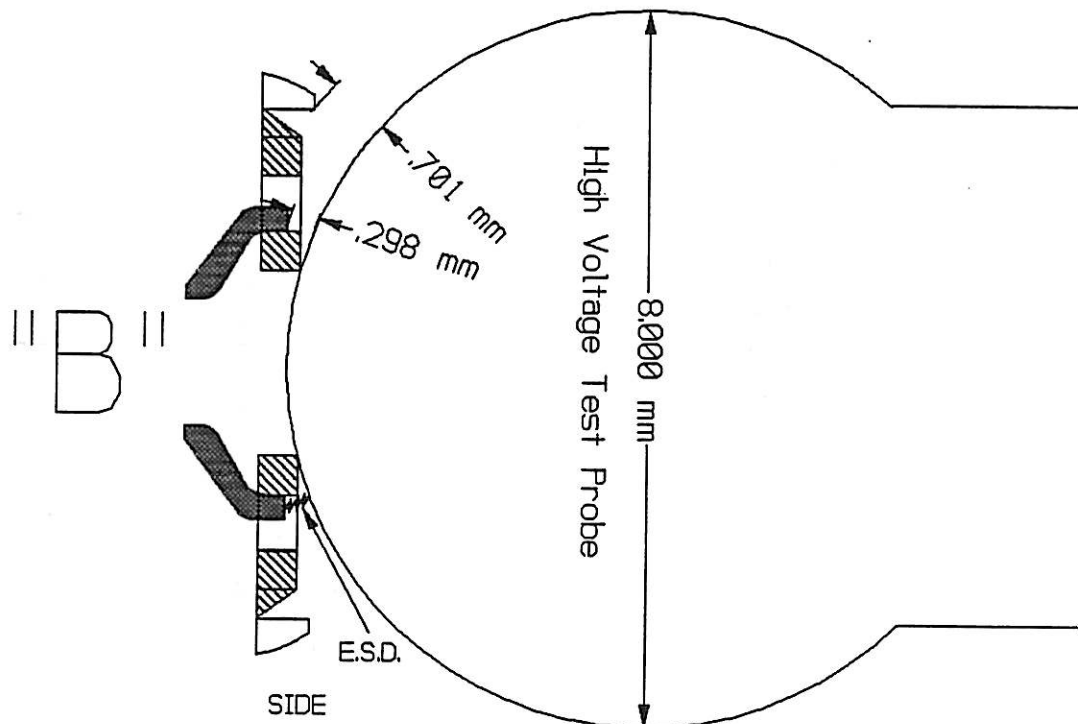
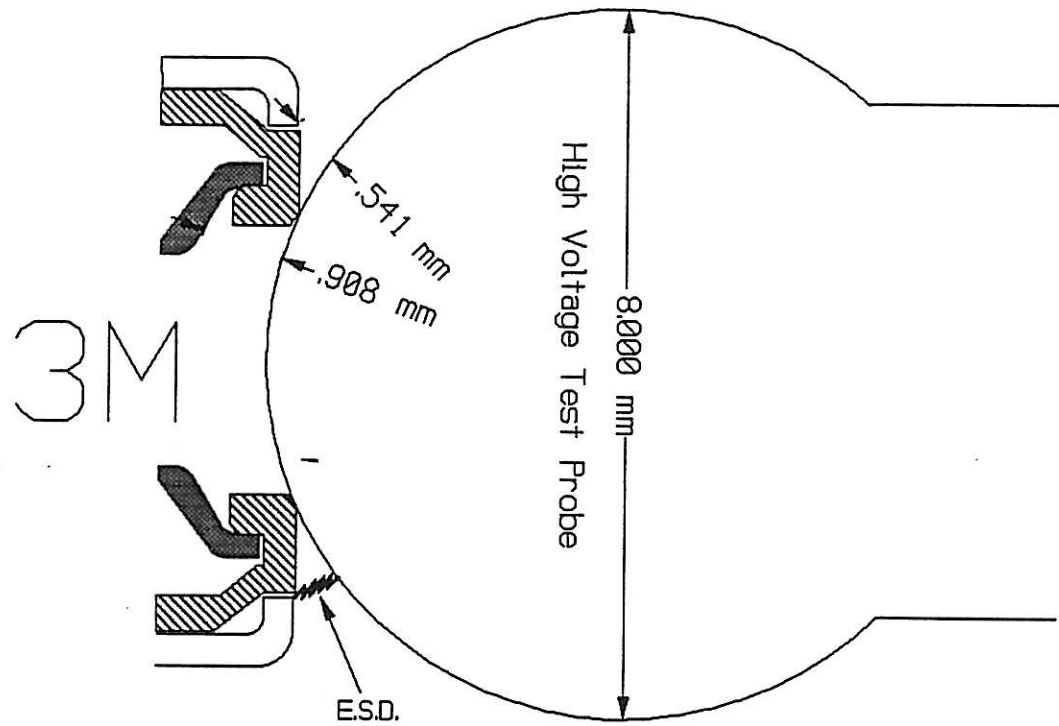
## ELECTROSTATIC DISCHARGE TEST DATA



3199 De La Cruz Blvd.  
Santa Clara, CA 95054  
(408) 988-0770

| CLIENT: 3 M                     |     |                    |    |            |               | P.O. NO: AU05460     |
|---------------------------------|-----|--------------------|----|------------|---------------|----------------------|
| SPECIMEN: CONNECTOR             |     |                    |    |            |               | JOB NO: QL-2-356     |
| SPECIFICATION: PER CUST. SPECS. |     |                    |    |            |               | PAGE 1 OF 1          |
| DATE                            | S/N | LOCATION           | KV | PULSE RATE | NO. OF PULSES | REMARKS              |
| 4-20-92                         | A   | FLAT RIBBON SOCKET | 4  | 1          | 20            | DISCHARGES WENT      |
|                                 |     |                    | 8  | 1          | 20            | THROUGH METAL SHELL  |
|                                 |     |                    | 10 | 1          | 20            | AND NOT THROUGH      |
|                                 |     |                    | 15 | 1          | 20            | CONTACTS             |
| 4-20-92                         | B   | FLAT RIBBON SOCKET | 4  | 1          | 20            | DISCHARGES WENT      |
|                                 |     |                    | 8  | 1          | 20            | THROUGH BOTH SHELL   |
|                                 |     |                    | 10 | 1          | 20            | AND CONTACTS         |
|                                 |     |                    | 15 | 1          | 20            |                      |
|                                 |     |                    |    |            |               | GROUND CONFIGURATION |
|                                 |     |                    |    |            |               | 1- SHELL ONLY        |
|                                 |     |                    |    |            |               | 2- CONTACTS ONLY     |
|                                 |     |                    |    |            |               | 3- BOTH SHELL AND    |
|                                 |     |                    |    |            |               | CONTACTS             |
| <br>DEFINITION OF AXES          |     | TEST CONDUCTOR:    |    |            | DATE: 4/20/92 |                      |
|                                 |     | TEST ENGINEER:     |    |            | DATE: 4/20/92 |                      |
|                                 |     | WITNESS:           |    |            | DATE:         |                      |
|                                 |     | Q.A. ENGINEER:     |    |            | DATE: 4-20-92 |                      |





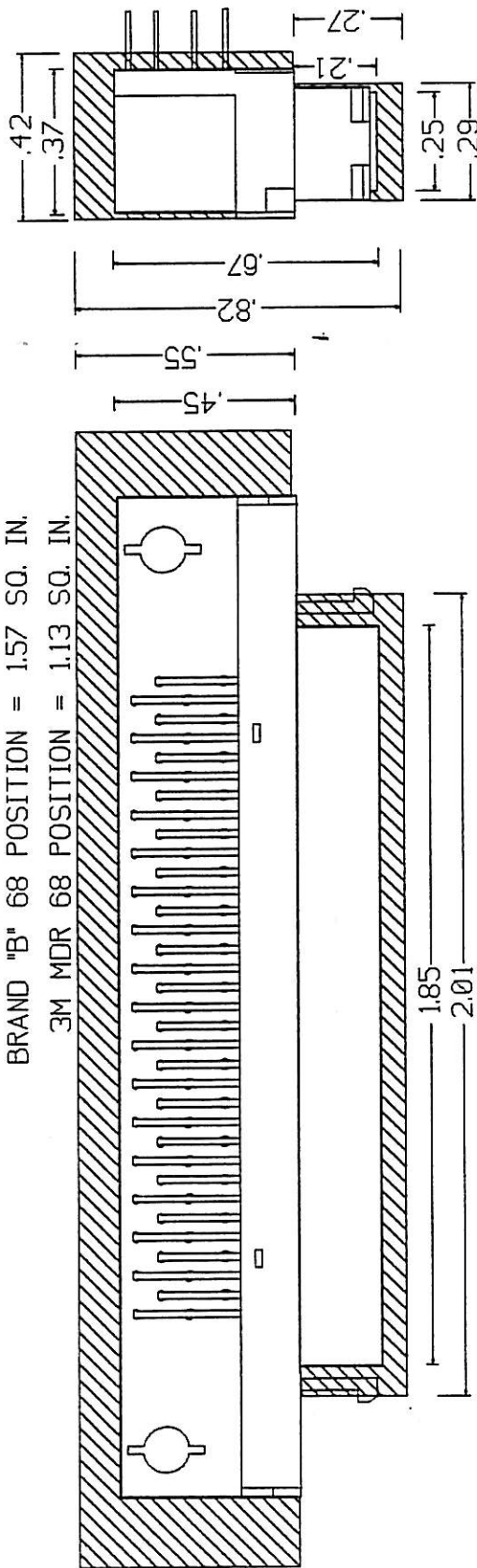
3M vs. "B" CONNECTOR  
 REF. I. E. C. 801-2  
 (Electro Static Discharge Test)

# 3M SPACE SAVING ADVANTAGE RIBBON STYLE CONNECTOR

## BOARD SPACE

BRAND "B" 68 POSITION = 1.57 SQ. IN.

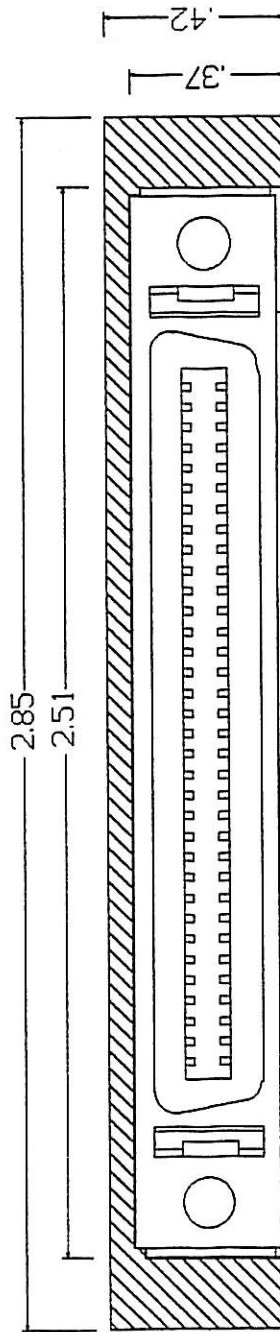
3M MDR 68 POSITION = 1.13 SQ. IN.



## PANEL SPACE

BRAND "B" = 1.20 SQ. IN.

3M MDR = .93 SQ. IN.



▨ = BRAND "B" 68 POS. APPROX .815 CUBIC IN.

□ = 3M MDR 68 POS. APPROX .503 CUBIC IN.