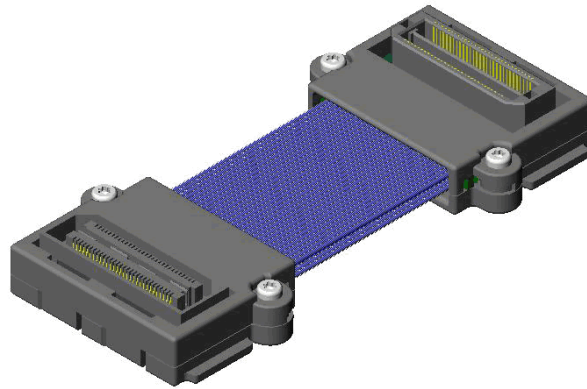




Project Number: NA		Tracking Code: TC0350--0332	
Requested by: John Reid		Date: 12/11/2003	Product Rev: 4
Part #: HQCD-030-STR-TTL-1		Lot #: 21/11/03	Tech: T. Reeveur Eng: J. Tozier
Part description: Micro Co-ax High Speed Cable Assy, 0.5 mm Pitch			Qty to test: 40
Test Start: 12/11/2003	Test Completed: 3/29/2004		



**DVT**

**PART DESCRIPTION**

**HQCD-030-STR-TTL-1**

## CERTIFICATION

All instruments and measuring equipment were calibrated to National Institute for Standards and Technology (NIST) traceable standards according to ISO 10012-1 and ANSI/NCSL 2540-1, as applicable.

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### SCOPE

To perform the following tests: DVT, phase B. Parts arrived 2/4/2004

### APPLICABLE DOCUMENTS

Standards: EIA Publication 364

### TEST SAMPLES AND PREPARATION

- 1) All materials were manufactured in accordance with the applicable product specification.
- 2) All test samples were identified and encoded to maintain traceability throughout the test sequences.
- 3) After soldering, the parts to be used for LLCR testing were cleaned according to TLWI-0001
- 4) Either an automated cleaning procedure or an ultrasonic cleaning procedure may be used
- 5) The automated procedure is used with aqueous compatible soldering materials
- 6) The ultrasonic procedure can be used with either aqueous or non-aqueous soldering components and follows:
  - a) Sample test boards are to be ultrasonically cleaned after test lead attachment, preparation and/or soldering using the following process.
  - b) Sample test boards are immersed into Branson 3510 cleaner containing Kyzen Ionox HC1 (or equivalent) with the following conditions:
    - i) Temperature: -----55° C +/- 5° C
    - ii) Frequency:-----40 KHz
    - iii) Immersion Time: -----5 to 10 Minutes
  - c) Sample test boards are removed and placed into the Branson 3510 cleaner containing deionized water with the following conditions:
    - i) Temperature: -----55° C +/- 5° C
    - ii) Frequency:-----40 KHz
    - iii) Immersion Time: -----5 to 10 Minutes
  - d) Sample test boards are removed and placed in a beaker positioned on a hot plate with a magnetic stirrer containing deionized water warmed to 55° C +/- 5° C for 1/2 to 1 minute
  - e) Upon removal, the sample test boards are rinsed for 1/2 to 1 minute in room temperature free flowing deionized water.
  - f) After the final rinse, the sample test boards are dried in an air-circulating oven for 10 to 15 minutes at 50° C +/- 5° C
  - g) Sample test boards are then allowed to set and recover to room ambient condition prior to testing.
- 7) Parts not intended for testing LLCR and DWV/IR are visually inspected and cleaned if necessary.
- 8) Any additional preparation will be noted in the individual test procedures.

**FLOWCHARTS**

<b>TEST STEP</b>	<b>GROUP A</b> 1 board min 6 Contacts in series, clustered if possible
<b>01</b>	CCC

Tabulate calculated current at RT, 65° C, 75° C and 95° C  
after derating 20% and based on 105° C  
CCC, Temp rise = EIA-364-70

<b>TEST STEP</b>	<b>GROUP 1</b> 2 Boards Ambient	<b>GROUP 2A</b> 2 Boards Ambient	<b>GROUP 2b</b> 2 Boards Thermal
<b>01</b>	IR	DWV/Working Voltage	Thermal Aging
<b>02</b>	Data Review		DWV/Working Voltage
<b>03</b>	Thermal Aging		
<b>04</b>	IR		
<b>05</b>	Data Review		
<b>06</b>	Humidity		
<b>07</b>	IR		

Thermal Aging = EIA-364-17, Test Condition 4, 105 deg C;  
Time Condition 'B' (250 hours)

Humidity = EIA-364-31, Test Condition B (240 Hours)  
and Method III (+25° C to +65° C @ 90%RH to 98% RH)  
delete steps 7a and 7b

<b>TEST STEP</b>	<b>GROUP A, -DV End</b> 5 boards min MOTHER BOARDS Cable Pull, SIG	<b>GROUP A, -DV End</b> 5 boards min MOTHER BOARDS Cable Pull, GND
<b>01</b>	Pull test, Cable Break	Pull test, Cable Break

Secure one cable for SIG test and ALL cables for GND  
Monitor both Signal and GND Continuity  
record forces when SIG and GND continuity fails

**FLOWCHARTS Continued**

<b>TEST STEP</b>	<b>GROUP A, -DV End 5 boards min MOTHER BOARDS Cable Pull, SIG</b>	<b>GROUP A, -DV End 5 boards min MOTHER BOARDS Cable Pull, GND</b>
<b>01</b>	Pull test, Cable Break	Pull test, Cable Break

**Secure one cable for SIG test and ALL cables for GND  
Monitor both Signal and GND Continuity  
record forces when SIG and GND continuity  
fails**

<b>TEST STEP</b>	<b>GROUP 1 2 Boards</b>
<b>01</b>	Cable Resistance
<b>02</b>	Data Review
<b>03</b>	Thermal Aging
<b>04</b>	Cable Resistance
<b>05</b>	Data Review
<b>06</b>	Humidity
<b>07</b>	Cable Resistance

**Thermal Aging = EIA-364-17, Test Condition 4, 105 deg C;  
Time Condition 'B' (250 hours)**

**Humidity = EIA-364-31, Test Condition B (240 Hours)  
and Method III (+25 ° C to +65 ° C @ 90%RH to 98%  
RH)**

**delete steps 7a and 7b**

## ATTRIBUTE DEFINITIONS

Following is a brief, simplified description of attributes.

### THERMAL AGING:

- 1) EIA-364-17, *Temperature Life with or without Electrical Load Test Procedure for Electrical Connectors*.
  - a) Test Condition 4 at 105° C.
  - b) Test Time Condition B for 250 hours.
- 2) Connectors are mated.

### CYCLIC HUMIDITY:

- 1) Reference document: EIA-364-31, *Humidity Test Procedure for Electrical Connectors*.
  - a) Test Condition B, 240 Hours.
  - b) Method III, +25° C to + 65° C, 90% to 98% Relative Humidity excluding sub-cycles 7a and 7b.
- 2) Connectors are mated.

### TEMPERATURE RISE (Current Carrying Capacity, CCC):

- 1) EIA-364-70, *Temperature Rise versus Current Test Procedure for Electrical Connectors and Sockets*.
- 2) When current passes through a contact, the temperature of the contact increases as a result of  $I^2R$  (resistive) heating.
- 3) The number of contacts being investigated plays a significant part in power dissipation and therefore temperature rise.
- 4) The size of the temperature probe can affect the measured temperature.
- 5) Copper traces on PC boards will contribute to temperature rise:
  - a) Self heating (resistive)
  - b) Reduction in heat sink capacity affecting the heated contacts
- 6) A de-rating curve, usually 20%, is calculated.
- 7) Calculated de-rated currents at three temperature points are reported:
  - a) Ambient
  - b) 50 ° C
  - c) 60 ° C
  - d) 70 ° C
- 8) Typically, neighboring contacts (in close proximity to maximize heat build up) are energized.
- 9) The thermocouple (or temperature measuring probe) will be positioned at a location to sense the maximum temperature in the vicinity of the heat generation area.
- 10) A computer program, *TR 803.exe*, ensures accurate stability for data acquisition.
- 11) Hook-up wire cross section is larger than the cross section of any connector leads/PC board traces, jumpers, etc.
- 12) Hook-up wire length is longer than the minimum specified in the referencing standard.

**ATTRIBUTE DEFINITIONS Continued****DIELECTRIC WITHSTANDING VOLTAGE (DWV):**

To determine if the sockets can operate at its rated voltage and withstand momentary over potentials due to switching, surges, and other similar phenomenon. Separate samples are used to evaluate the effect of environmental stresses so not to influence the readings from arcing that occurs during the measurement process.

## 1) PROCEDURE:

- a) Reference document: EIA-364-20, *Withstanding Voltage Test Procedure for Electrical Connectors*.
- b) Test Conditions:
  - i) Between Adjacent Contacts
  - ii) Mated
  - iii) Mounted
  - iv) Rate of Application 500 V/Sec
  - v) Test Voltage (VAC) until breakdown occurs

## 2) MEASUREMENTS/CALCULATIONS

- a) The breakdown voltage shall be measured and recorded.
- b) The dielectric withstanding voltage shall be recorded as 75% of the minimum breakdown voltage.
- c) The working voltage shall be recorded as one-third (1/3) of the dielectric withstanding voltage (one-fourth of the breakdown voltage).

**INSULATION RESISTANCE (IR):**

To determine the resistance of insulation materials to leakage of current through or on the surface of these materials when a DC potential is applied.

## 1) PROCEDURE:

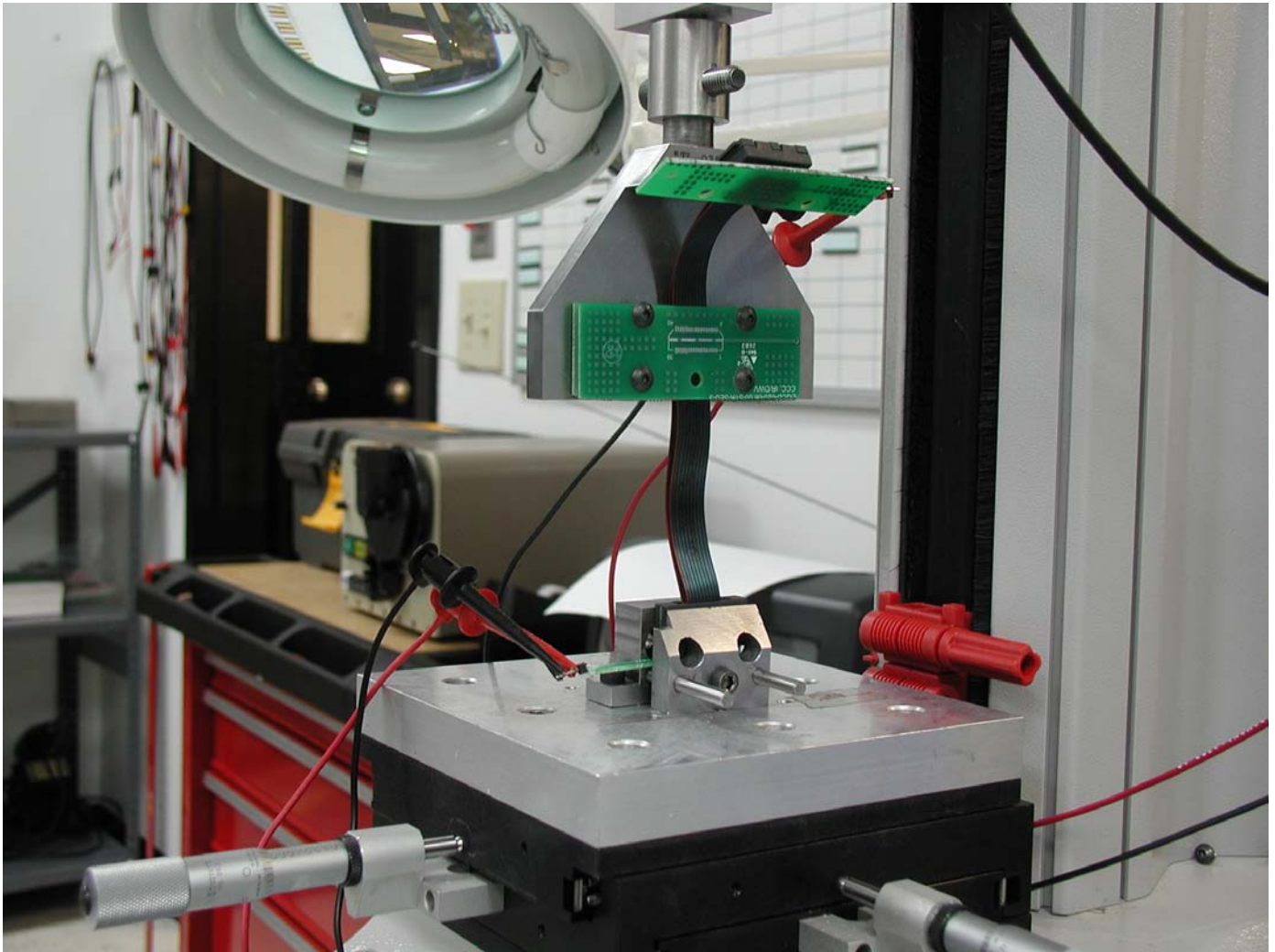
- a) Reference document: EIA-364-21, *Insulation Resistance Test Procedure for Electrical Connectors*.
- b) Test Conditions:
  - i) Between Adjacent Contacts
  - ii) Mated
  - iii) Mounted
  - iv) Electrification Time 2.0 minutes
  - v) Test Voltage (VDC) corresponding to calibration settings for measuring resistances

## 2) MEASUREMENTS:

- a) When the specified test voltage is applied (VDC), the insulation resistance shall not be less than 1000 megohms.

**SUPPLEMENTAL TESTS:**

- 1. Connector Pull ... Secure cable near cable center and pull on connector**
  - a. In-line with cable**



**Fig 1**  
**Connector pull. Notice the electrical continuity hook-up wires**

**RESULTS****Temperature Rise, CCC At 95°C, relative to 105°C and 20% de-rated**

- **At Center of Cable**
  - **6 Adjacent Conductors Powered-----0.46 A**

**Dielectric Withstanding Voltage minimums, DWV**

- **Initial**
  - **Breakdown**
    - **Mated**
      - **Top Cable -----900 VAC**
      - **Bottom Cable -----800 VAC**
    - **Unmated**
      - **Top Cable -----600 VAC**
      - **Bottom Cable -----900 VAC**
  - **DWV**
    - **Mated**
      - **Top Cable -----675 VAC**
      - **Bottom Cable -----600 VAC**
    - **Unmated**
      - **Top Cable -----450 VAC**
      - **Bottom Cable -----675 VAC**
  - **Working voltage**
    - **Mated**
      - **Top Cable -----225 VAC**
      - **Bottom Cable -----200 VAC**
    - **Unmated**
      - **Top Cable -----150 VAC**
      - **Bottom Cable -----225 VAC**
- **Thermal**
  - **Breakdown**
    - **Mated**
      - **Top Cable ----- 1200 VAC**
      - **Bottom Cable ----- 1100 VAC**
    - **Unmated**
      - **Top Cable ----- 1200 VAC**
      - **Bottom Cable ----- 1200 VAC**
  - **DWV**
    - **Mated**
      - **Top Cable -----900 VAC**
      - **Bottom Cable -----825 VAC**
    - **Unmated**
      - **Top Cable -----900 VAC**
      - **Bottom Cable -----900 VAC**
  - **Working voltage**
    - **Mated**
      - **Top Cable -----300 VAC**
      - **Bottom Cable -----275 VAC**
    - **Unmated**
      - **Top Cable -----300 VAC**
      - **Bottom Cable -----300 VAC**



**Insulation Resistance minimums, IR**

- **Initial**
  - **Mated**
    - Top Row -----8,000 Meg  $\Omega$  ----- Pass
    - Bottom Row ----- 15,000 Meg  $\Omega$  ----- Pass
  - **Unmated**
    - Top Row -----8,000 Meg  $\Omega$  ----- Pass
    - Bottom Row ----- 25,000 Meg  $\Omega$  ----- Pass
- **Thermal**
  - **Mated**
    - Top Row -----100,000 Meg  $\Omega$
    - Bottom Row -----100,000 Meg  $\Omega$
  - **Unmated**
    - Top Row ----- 75,000 Meg  $\Omega$
    - Bottom Row ----- 75,000 Meg  $\Omega$
- **Humidity**
  - **Mated**
    - Top Row ----- 50,000 Meg  $\Omega$
    - Bottom Row ----- 35,000 Meg  $\Omega$
  - **Unmated**
    - Top Row ----- 25,000 Meg  $\Omega$
    - Bottom Row ----- 35,000 Meg  $\Omega$

**Supplemental – Connector/Cable Pull**

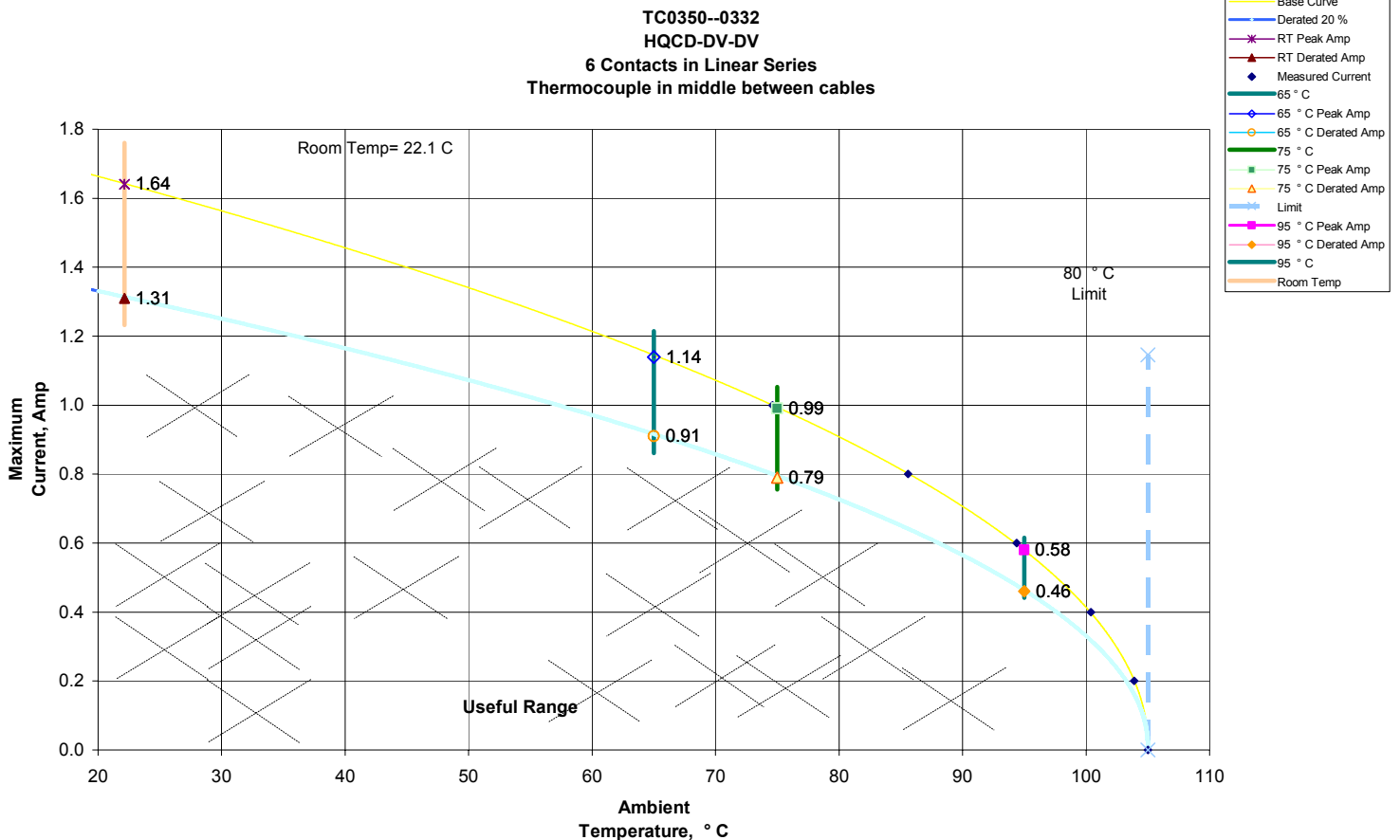
- Sig ----- 38.8 lbs min
- GND ----- 175.0 lbs min

**Supplemental – Conductor Resistances, Snaked Signal Maxima**

- **Initial** ----- 172.9 m $\Omega$
- **Thermal** ----- 172.9 m $\Omega$
- **Humidity** ----- 181.2 m $\Omega$

**DATA SUMMARIES****TEMPERATURE RISE (Current Carrying Capacity, CCC):**

- 1) High quality thermocouples whose temperature slopes track one another were used for temperature monitoring.
- 2) The thermocouples were placed at a location to sense the maximum temperature generated during testing.
- 3) Temperature readings recorded are those for which three successive readings, 15 minutes apart, differ less than 1° C (computer controlled data acquisition).
- 4) Two configurations were tested and temperatures were monitored at the PCB near cable termination and at a point near the center of the cable, remote from the PBC:
  - a) SIX adjacent signal wires powered



**DATA SUMMARIES Continued****DIELECTRIC WITHSTANDING VOLTAGE (DWV):**

<b>Initial, VAC</b>						
<b>Voltage Rate 500 VAC Per Sec.</b>						
<b>Test Voltage Until Breakdown Occurs</b>						
<b>TOP Cable</b>						
<b>Mated</b>			<b>Un Mated</b>			
	<b><u>Breakdown Voltage</u></b>	<b><u>DWV</u></b>	<b><u>Working Voltage</u></b>	<b><u>Breakdown Voltage</u></b>	<b><u>DWV</u></b>	<b><u>Working Voltage</u></b>
<b>Average</b>	900	675	225	600	450	150
<b>Min</b>	900	675	225	600	450	150
<b>Max</b>	900	675	225	600	450	150
<b>BOTTOM Cable</b>						
<b>Mated</b>			<b>Un Mated</b>			
	<b><u>Breakdown Voltage</u></b>	<b><u>DWV</u></b>	<b><u>Working Voltage</u></b>	<b><u>Breakdown Voltage</u></b>	<b><u>DWV</u></b>	<b><u>Working Voltage</u></b>
<b>Average</b>	800	600	200	900	675	225
<b>Min</b>	800	600	200	900	675	225
<b>Max</b>	800	600	200	900	675	225

<b>Thermal</b>						
<b>Voltage Rate 500 VAC Per Sec.</b>						
<b>Test Voltage Until Breakdown Occurs</b>						
<b>BOTTOM Cable</b>						
<b>Mated</b>			<b>Un Mated</b>			
	<b><u>Breakdown Voltage</u></b>	<b><u>DWV</u></b>	<b><u>Working Voltage</u></b>	<b><u>Breakdown Voltage</u></b>	<b><u>DWV</u></b>	<b><u>Working Voltage</u></b>
<b>Average</b>	1200	900	300	1200	900	300
<b>Min</b>	1200	900	300	1200	900	300
<b>Max</b>	1200	900	300	1200	900	300
<b>TOP Cable</b>						
<b>Mated</b>			<b>Un Mated</b>			
	<b><u>Breakdown Voltage</u></b>	<b><u>DWV</u></b>	<b><u>Working Voltage</u></b>	<b><u>Breakdown Voltage</u></b>	<b><u>DWV</u></b>	<b><u>Working Voltage</u></b>
<b>Average</b>	1100	825	275	1200	900	300
<b>Min</b>	1100	825	275	1200	900	300
<b>Max</b>	1100	825	275	1200	900	300

**DATA SUMMARIES Continued****INSULATION RESISTANCE (IR):**

<b>Initial, Meg Ohms</b>				
<i>Electrification Time Two (2) minutes</i>				
	<b>top row</b>	<b>bottom row</b>	<b>top row</b>	<b>bottom row</b>
	<u>Mated</u>	<u>Mated</u>	<u>Unmated</u>	<u>Unmated</u>
	<u>Insulation Resistance</u>	<u>Insulation Resistance</u>	<u>Insulation Resistance</u>	<u>Insulation Resistance</u>
Average	16500	32500	16500	25000
Min	8000	15000	8000	25000
Max	25000	50000	25000	25000

<b>Thermal, Meg Ohms</b>				
<i>Electrification Time Two (2) minutes</i>				
	<b>top row</b>	<b>bottom row</b>	<b>top row</b>	<b>bottom row</b>
	<u>Mated</u>	<u>Mated</u>	<u>Unmated</u>	<u>Unmated</u>
	<u>Insulation Resistance</u>	<u>Insulation Resistance</u>	<u>Insulation Resistance</u>	<u>Insulation Resistance</u>
Average	50000	35000	25000	35000
Min	50000	35000	25000	35000
Max	50000	35000	25000	35000

<b>Humidity, Meg Ohms</b>				
<i>Electrification Time Two (2) minutes</i>				
	<b>top row</b>	<b>bottom row</b>	<b>top row</b>	<b>bottom row</b>
	<u>Mated</u>	<u>Mated</u>	<u>Unmated</u>	<u>Unmated</u>
	<u>Insulation Resistance</u>	<u>Insulation Resistance</u>	<u>Insulation Resistance</u>	<u>Insulation Resistance</u>
Average	100000	100000	75000	75000
Min	100000	100000	75000	75000
Max	100000	100000	75000	75000

**DATA SUMMARIES Continued****SUPPLEMENTAL TESTS: Connector Pull**

Sig	Force (Lbs)
Minimum	38.8
Maximum	99.8
<b>Average</b>	<b>66.9</b>

GND	Force (Lbs)
Minimum	110.0
Maximum	175.0
<b>Average</b>	<b>142.2</b>

**SUPPLEMENTAL TESTS: Conductor Resistance**

Resistance, milli-Ohms/ Signal Line			
	Initial	Thermal	Humidity
Avg	164.5	164.5	166.2
Min	147.9	147.9	147.9
Max	172.9	172.9	181.2
St. Dev.	11.8	11.8	13.7

**DATA****DIELECTRIC WITHSTANDING VOLTAGE (DWV):**

Test Date:	2/20/2004
Operator:	TR
Temperature (C):	22
Humidity (RH):	32%
Equipment ID:	HPM-01

Initial, VAC						
Voltage Rate 500 VAC Per Sec.						
Test Voltage Until Breakdown Occurs						
TOP Cable						
Sample #	Mated			Un Mated		
	Breakdown Voltage	DWV	Working Voltage	Breakdown Voltage	DWV	Working Voltage
1	900	675	225	600	450	150
BOTTOM Cable						
Sample #	Mated			Un Mated		
	Breakdown Voltage	DWV	Working Voltage	Breakdown Voltage	DWV	Working Voltage
1	800	600	200	900	675	225

Test Date:	3/3/2004
Operator:	TR
Temperature (C):	23
Humidity (RH):	38%
Equipment ID:	HPM-01

Thermal						
Voltage Rate 500 VAC Per Sec.						
Test Voltage Until Breakdown Occurs						
TOP Cable						
Sample #	Mated			Un Mated		
	Breakdown Voltage	DWV	Working Voltage	Breakdown Voltage	DWV	Working Voltage
1	1100	825	275	1200	900	300
BOTTOM Cable						
Sample #	Mated			Un Mated		
	Breakdown Voltage	DWV	Working Voltage	Breakdown Voltage	DWV	Working Voltage
1	1200	900	300	1200	900	300

**DATA Continued****INSULATION RESISTANCE (IR):**

Test Date:	2/20/2004
Operator:	TR
Temperature (C):	22
Humidity (RH):	32%
Equipment ID:	HPM-01

Electrification Time <i>Two (2) minutes</i>				
Initial, Meg Ohms				
	<b>top row</b>	<b>bottom row</b>	<b>top row</b>	<b>bottom row</b>
	<u>Mated</u>	<u>Mated</u>	<u>Unmated</u>	<u>Unmated</u>
<u>Sample #</u>	<u>Insulation Resistance</u>	<u>Insulation Resistance</u>	<u>Insulation Resistance</u>	<u>Insulation Resistance</u>
1	8000	15000	8000	25000
2	25000	50000	25000	25000

Test Date:	3/3/2004
Operator:	TR
Temperature (C):	23
Humidity (RH):	38%
Equipment ID:	HPM-01

Thermal, Meg Ohms				
Electrification Time <i>Two (2) minutes</i>				
	<b>top row</b>	<b>bottom row</b>	<b>top row</b>	<b>bottom row</b>
	<u>Mated</u>	<u>Mated</u>	<u>Unmated</u>	<u>Unmated</u>
<u>Sample #</u>	<u>Insulation Resistance</u>	<u>Insulation Resistance</u>	<u>Insulation Resistance</u>	<u>Insulation Resistance</u>
1	50000	35000	25000	35000

Test Date:	3/24/2004
Operator:	TR
Temperature (C):	23
Humidity (RH):	30%
Equipment ID:	HPM-01

Humidity, Meg Ohms				
Electrification Time <i>Two (2) minutes</i>				
	<b>top row</b>	<b>bottom row</b>	<b>top row</b>	<b>bottom row</b>
	<u>Mated</u>	<u>Mated</u>	<u>Unmated</u>	<u>Unmated</u>
<u>Sample #</u>	<u>Insulation Resistance</u>	<u>Insulation Resistance</u>	<u>Insulation Resistance</u>	<u>Insulation Resistance</u>
1	100000	100000	75000	75000

**DATA Continued****SUPPLEMENTAL: Connector Pull**

<b>Test Date:</b>	3/29/2004
<b>Operator:</b>	TR
<b>Temperature (C):</b>	23
<b>Humidity (RH):</b>	43%
<b>Equipment ID:</b>	TCT-03
<b>Load Cell:</b>	LC-2500N(icell)

Sig	<b>SIG ... Secure ONE Cable</b>	
<u>Sample#</u>	<u>Maximum Force</u> (Lbs)	<u>Failure Mode</u>
1	38.8	<i>Cable separated from DV connector.</i>
2	98.3	<i>Cable separated from DV connector.</i>
3	99.8	<i>Cable separated from DV connector.</i>
4	49.1	<i>Cable separated from DV connector.</i>
5	48.7	<i>Cable separated from DV connector.</i>

GND	<b>GND ... Secure ALL Cables</b>	
<u>Sample#</u>	<u>Maximum Force</u> (Lbs)	<u>Failure Mode</u>
1	110.0	<i>Cable separated from DV connector.</i>
2	128.0	<i>Cable separated from DV connector.</i>
3	129.0	<i>Cable separated from DV connector.</i>
4	169.0	<i>Cable separated from DV connector.</i>
5	175.0	<i>Cable separated from DV connector.</i>



Tracking Code: TC0350--0332

Part #: HQCD-030-STR-TTL-1

Part description: Micro Co-ax High Speed Cable Assy, 0.5 mm Pitch

**DATA Continued****SUPPLEMENTAL: Conductor Resistance**

<b>Date</b>	2/20/2004	3/3/2004	9/17/2003
<b>Operator:</b>	Troy Cook	Tim Receveur	Troy Cook
<b>Temperature (C):</b>	21	23	23
<b>Humidity (RH):</b>	33%	38%	48%
<b>Equipment ID1:</b>	MO-01	MO-01	MO-01

<b>Contact Part #:</b>	<u>EQCD-EM</u>	<u>EQCD-EM</u>	<u>EQCD-EM</u>
------------------------	----------------	----------------	----------------

<b>Cable/Signal</b>	<b>Resistance, milli-Ohms/ Signal Line</b>		
	<b>Initial</b>	<b>Thermal</b>	<b>Humidity</b>
1	172.9	172.9	181.2
2	156.2	156.2	156.2
3	172.9	172.9	172.9
4	172.9	172.9	172.9
5	147.9	147.9	147.9

**EQUIPMENT AND CALIBRATION SCHEDULES****Equipment #:** MO-02**Description:** Multimeter /Data Acquisition System**Manufacturer:** Keithley**Model:** 2700**Serial #:** 0780546**Accuracy:** See Manual

... Last Cal: 6/12/03, Next Cal: 6/12/04

**Equipment #:** PS-01**Description:** System Power Supply**Manufacturer:** Hewlett Packard**Model:** HP 6033A**Serial #:** (HP) 3329A-07330**Accuracy:** See Manual 10/16/02

... Last Cal: 6/12/03, Next Cal: 6/12/04

**Equipment #:** TC090601-103/105**Description:** IC Thermocouple-103/105**Manufacturer:** Samtec**Serial #:** TC090601-103/105**Accuracy:** +/- 1 degree C**Equipment #:** MO-03**Description:** Multimeter /Data Acquisition System**Manufacturer:** Keithley**Model:** 2700**Serial #:** 0791975**Accuracy:** See Manual

... Last Cal: 6/12/03, Next Cal: 6/12/04

**Equipment #:** HPM-01**Description:** Hipot Megommeter**Manufacturer:** Hipotronics**Model:** H306B-A**Serial #:** M9905004**Accuracy:** 2 % Full Scale Accuracy

... Last Cal: 6/12/03, Next Cal: 6/12/04

**Equipment #:** OV-03**Description:** Cascade Tek Forced Air Oven**Manufacturer:** Cascade Tek**Model:** TFO-5**Serial #:** 0500100**Accuracy:** Temp. Stability: +/- .1C/C change in ambient

... Last Cal: 6/20/03, Next Cal: 6/30/04

Tracking Code: TC0350--0332

Part #: HQCD-030-STR-TTL-1

Part description: Micro Co-ax High Speed Cable Assy, 0.5 mm Pitch

**Equipment #:** THL-01

**Description:** Temperature/Humidity Chart Recorder

**Manufacturer:** Dickson

**Model:** THDX

**Serial #:** 9316255

**Accuracy:** Temp: +/- 1C; Humidity: +/-2% RH (0 - 60%) Temp: +/- 1C; Humidity: +/-2% RH (0 - 60%)

... Last Cal: 7/03/03, Next Cal: 7/30/04

**Equipment #:** THC-01

**Description:** Temperature/Humidity Chamber

**Manufacturer:** Thermotron

**Model:** SM-8-7800

**Serial #:** 30676

**Accuracy:** See Manual

... Last Cal: 5/28/2003, Next Cal: 5/28/2004

**Equipment #:** LC-2500N(icell)

**Description:** 2500 N Load Cell for Dillon Quantrol

**Manufacturer:** Dillon Quantrol

**Model:** icell

**Serial #:** 01-0132-01

**Accuracy:** .10% of capacity

... Last Cal: 3/27/03, Next Cal: 3/27/04

**Equipment #:** TCT-03

**Description:** Dillon Quantrol TC2 Test Stand

**Manufacturer:** Dillon Quantrol

**Model:** TC2

**Serial #:** 02-1033-03

**Accuracy:** Speed Accuracy: +/- 5% of indicated speed; Displacement: +/- 5 micrometers.

... Last Cal: 6/12/03, Next Cal: 6/12/04

**Equipment #:** MO-01

**Description:** Micro-Ohmmeter

**Manufacturer:** Keithley

**Model:** 580

**Serial #:** 0780546

**Accuracy:** See Manual

... Last Cal: 6/12/03, Next Cal: 6/12/04