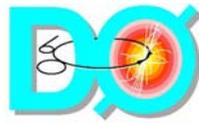


# DJC Testing at LaTech: Update

**30 June 2003**  
**Run2b Readout Meeting**



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**Louisiana Tech University**



# Quality Control Tests of DJC's

1. Continuity and shorts test
2. Resistance testing
3. High voltage standoff testing.

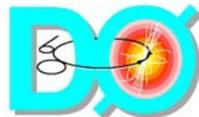
## LaTech Testing Crew:

Moreshwar Dhole

Qun Yu

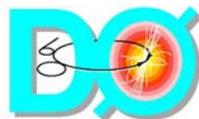
Matthew Bellot

Justin Beam



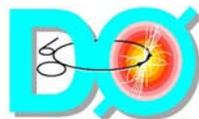
# 1) Continuity and Shorts tests

- Performed to check the continuity of Cu traces inside the flex cable. Discontinuities in Cu traces may exist due to manufacturing defects or mishandling. There are 50 lines in each cable. Continuity and short circuit tests are conducted for each line.
- Tools and equipments: digital multimeter, continuity testing stand

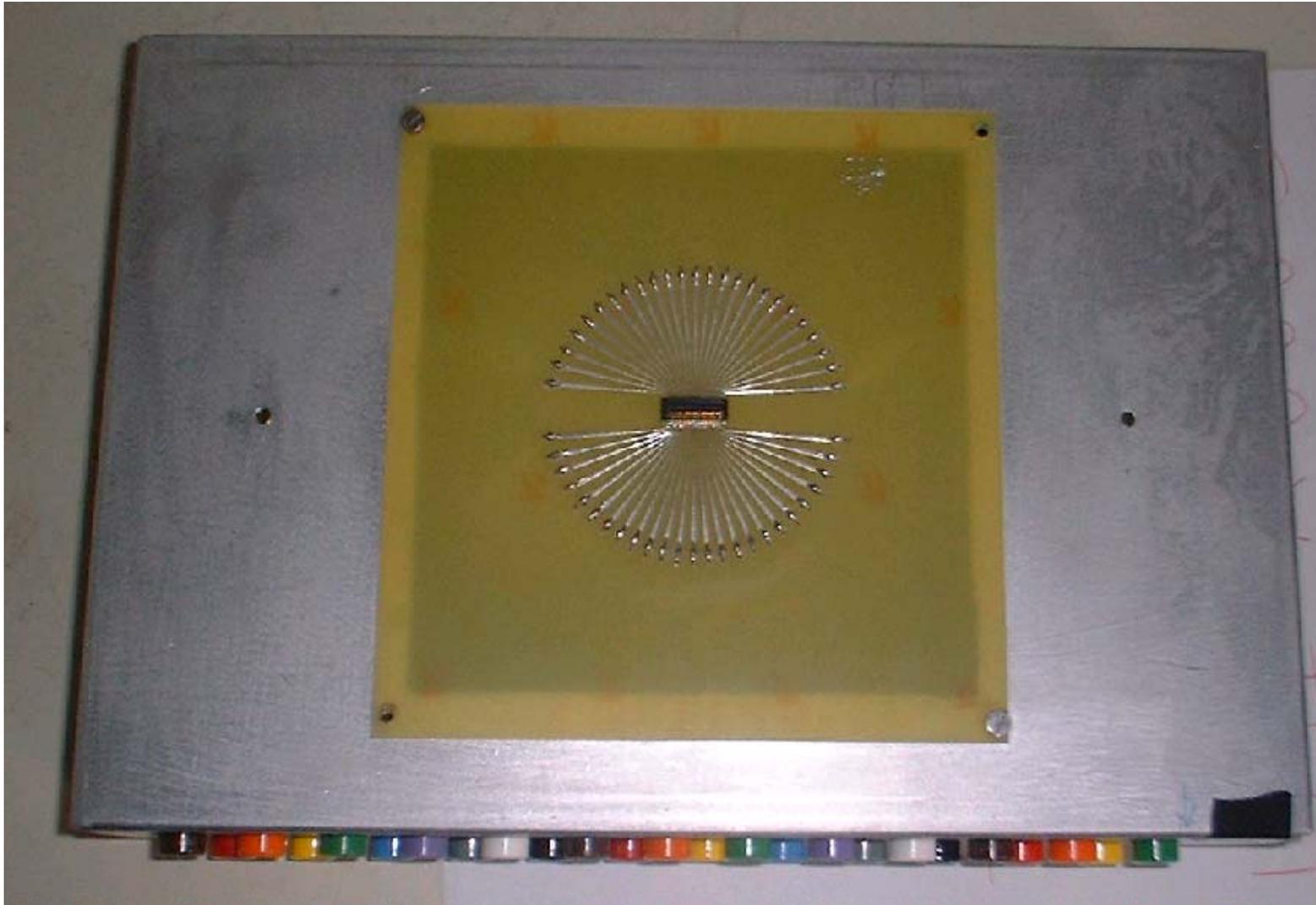


# Test procedure:

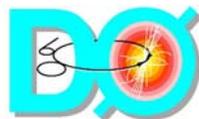
- **Continuity:** two multimeter probes are connected to both ends of the line in a given cable, if the line is good, there will be “beep” from multimeter.
- **Short circuit tests:** each line is tested against the other lines with higher label number. For example, line 1 will be tested against line 2, line 3, ..., line 50; line 2 will be tested against line 3, line 4, ... line 50, and so on.
- So far we have tested 12 cables, and all of them are good.



# Picture of Readout Board



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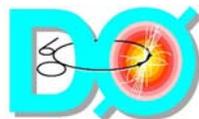


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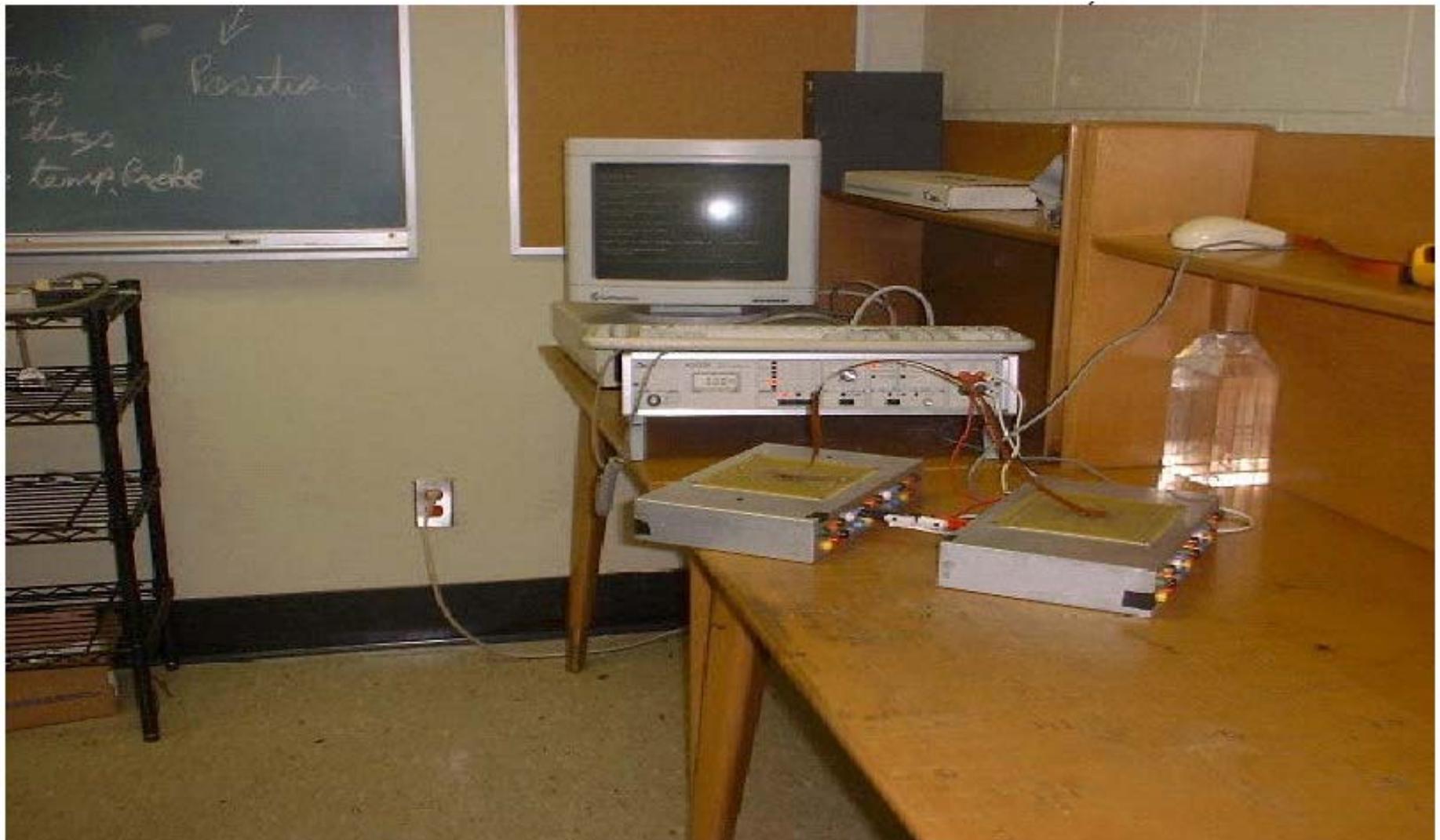


## 2) Cable Resistance Testing:

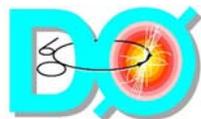
- Purpose of resistance testing is to see whether all the Cu lines in the Digital Cable have uniform and expected low resistance values. To find effective cable resistance, readout board resistance is subtracted from total resistance reading on micro ohmmeter (Total resistance = Readout board resistance + Resistance of cable + resistance of connectors and wires used for testing).
- A Valhalla Scientific 4300B Digital Micro-ohmmeter is used to measure the resistance of the 50 lines.
- The digitized resistances are written to a PC.



# Digital Jumper Cable Readout Setup:



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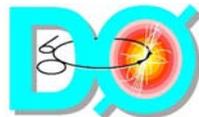


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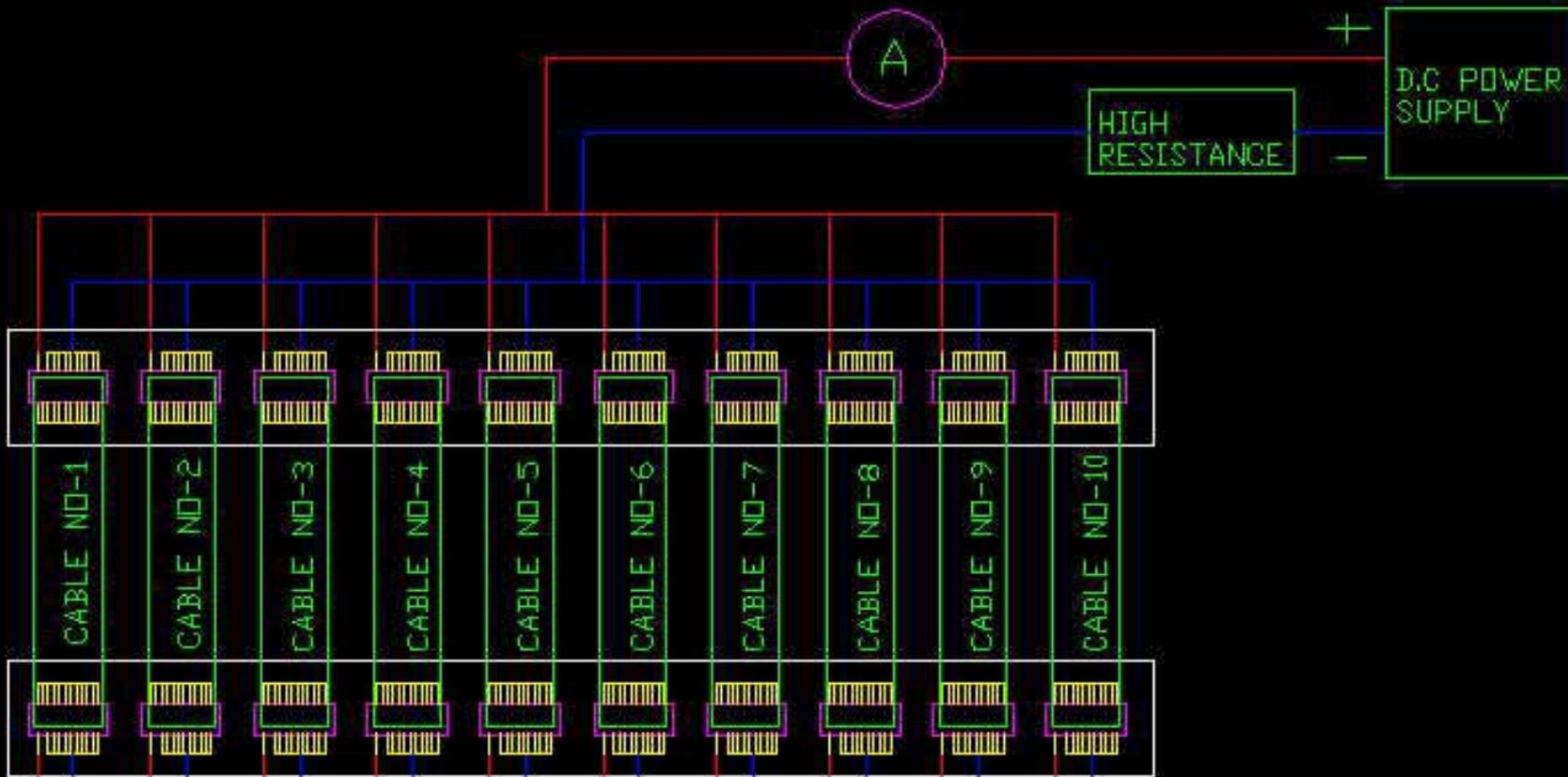
### 3) High Voltage Standoff Test:

- The purpose of this test is to check whether there is any short or current leakage (Arcing) between HV (High Voltage) Cu trace and other adjacent Cu traces.
- For this testing here at LaTech we developed our own High Voltage Testing Jig and it is working fine.
- This High Voltage Testing Jig allows us to test 10 cables at a time for overnight.

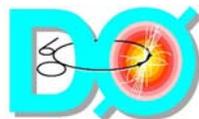


# High Voltage Test Schematic

## HIGH VOLTAGE STAND-OFF TEST SETUP



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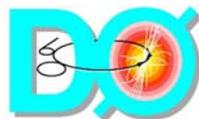
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# Complete Test Setup:



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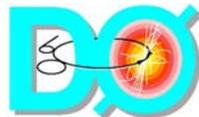


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**Some data from tests of Century Test Cables  
are shown on the next two slides:**

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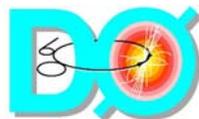


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ID	SerialNumber	Type	Vendor	Location	Length_cm	Tested
				Current		Shorts-Open

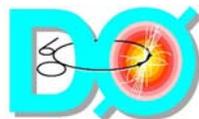
CT	0018	Test	Century	LTU	50	Tested OK
CT	0019	Test	Century	LTU	50	Tested OK
CT	0020	Test	Century	LTU	50	Tested OK
CT	0021	Test	Century	LTU	50	Tested OK
CT	0022	Test	Century	LTU	50	Tested OK
CT	0023	Test	Century	LTU	50	Tested OK
CT	0024	Test	Century	LTU	50	Tested OK
CT	0025	Test	Century	LTU	50	Tested OK
CT	0026	Test	Century	LTU	50	Tested OK
CT	0027	Test	Century	LTU	50	Tested OK
CT	0028	Test	Century	LTU	50	Tested OK
CT	0029	Test	Century	LTU	50	Tested OK
CT	0030	Test	Century	LTU	50	Tested OK



Date Received	Conector Size on Cable End ( mm)		Baking Type (G10)		Ablation Mask	Location
	Hybrid End (Inner)	Junction Card(Outer)	Hybrid End	Junction Card End	Old/New	Tested

6/2/2003	2.5mm	3.5mm	Yes	Yes	New	LTU
6/2/2003	2.5mm	3.5mm	Yes	Yes	New	LTU
6/2/2003	2.5mm	3.5mm	Yes	Yes	New	LTU
6/2/2003	2.5mm	3.5mm	Yes	Yes	New	LTU
6/2/2003	2.5mm	3.5mm	Yes	Yes	New	LTU
6/2/2003	2.5mm	3.5mm	Yes	Yes	New	LTU
6/2/2003	2.5mm	3.5mm	Yes	Yes	New	LTU
6/2/2003	2.5mm	3.5mm	Yes	Yes	New	LTU
6/2/2003	2.5mm	3.5mm	Yes	Yes	New	LTU
6/2/2003	2.5mm	3.5mm	Yes	Yes	New	LTU
6/2/2003	2.5mm	3.5mm	Yes	Yes	New	LTU
6/2/2003	2.5mm	3.5mm	Yes	Yes	New	LTU
6/2/2003	2.5mm	3.5mm	Yes	Yes	New	LTU
6/2/2003	2.5mm	3.5mm	Yes	Yes	New	LTU
6/2/2003	2.5mm	3.5mm	Yes	Yes	New	LTU

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