TEMPERATURE RISE VS. CURRENT

1.0 SCOPE
The purpose of this test was to determine the allowable current per pin of an I-Trac connector.

2.0 PRODUCT DESCRIPTION
2.1 PRODUCT NAME AND PART NUMBER(S)
Series:
76015, 76029, 75705, 75991, 76035, 76030 – Backplane Header Signal Modules
76020, 75710, 76274, 76040 – Daughtercard Receptacle Signal Modules
11 row 6 column DC and BP were used for testing.

2.2 PRODUCT SPECIFICATION TITLE AND DOCUMENT NUMBER
PS-75710-999

3.0 APPLICABLE DOCUMENTS AND SPECIFICATIONS
3.1 TESTING PROCEDURES AND SEQUENCES
T-Type 30 AWG thermocouples were used to monitor surface temperatures of the I-Trac system by placing one thermocouple in a central location on each of the four wafers being powered. In addition one thermocouple was also added to the one outside terminal of the backplane connectors.
This procedure was conducted in accordance with EIA-364-70. The specimens were electrically wired in series and connected to the temperature measurement system and power supply. Some specimens which were not wired for power were used to monitor the room ambient temperature for reference.

The specimens were allowed to thermally stabilize at zero amps before applying a test current. An initial current of 0.5amps was then applied and maintained at a steady DC level. Upon reaching thermal stability, the test current was incremented to the next level.

The current was applied in the following increments until a maximum temperature rise of 30 deg. C was reached: 0.5A, 1A and 1.3A. Temperature rise is computed as absolute temperature of the specimen less the ambient reference temperature. The measurement system automatically records the specimen absolute temperatures throughout the testing. It is important to note that this testing was conducted with no air flow.

4.0 TEST EVENT DESCRIPTION

TEST 1
TEST DATE: 11/22/2006
TESTING SITE: Molex Lisle
MANUFACTURING FACILITY: Molex (Little Rock, AR)
QUANTITY: 4 samples

5.0 TEST PERFORMANCE RESULTS

The test results can be seen in figure 1 below:
CONCLUSION
The results show that four fully powered wafers (22 pins per wafer, 88 total pins) can handle 1amp per pin and meet the 30 degree max temperature rise requirement.

6.0 FIXTURES AND TEST EQUIPMENT
Not applicable

7.0 OTHER INFORMATION
Not applicable