BaBar Calorimeter DAQ Interface Specifications
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1.  REVISION HISTORY

<table>
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<th>Date Issued</th>
<th>Description of Revisions</th>
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<tr>
<td>29-Aug-96</td>
<td>• Changed to US Letter size paper.</td>
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<td>• WWW address corrected.</td>
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Filename: Interface Specifications
2. EXTERNAL INTERFACES

2.1 Fast Control of On-Detector Electronics

Fast Control of on-detector electronics is via the BaBar standard CLINK and DLINK. Except that no event data is returned via the DLINK from the calorimeter.

One DAQ board in each EMC DAQ crate has a BaBar standard SVT personality module to drive the CLINK and DLINK down optical fibres.

These fibres terminate at the transition board, where they are converted from optical to electrical (in both directions). There are then electrical connections between the transition board and ten I/O boards.

For further information:
- The CLINK and DLINK protocols are described in BaBar Note 281.
- The physical interface between transition and I/O boards is described in the transition board description.
- The fast control registers in the EMC DAQ system are described in the ADC and I/O board descriptions.

2.2 Personality Module to DAQ Board

The current interface between personality module and DAQ board is described in the DAQ board description. This interface would be suitable if the calorimeter stays untriggered into the VRAM.

Work is in progress to design a new interface that will be suitable for a pseudo-triggered interface to the VRAM. This will be described in the personality module description when possible. If adopted it will also be added to the DAQ board description.

2.3 Personality Module to Calorimeter Trigger

There are two sixteen bit words to be transmitted from each personality module to trigger every sample (3.7MHz).

The interface is described in the personality module description.

2.4 Interlocks

At this time the only interlock foreseen to protect the on-detector electronics is temperature.

There will be at least one temperature sensor per power supply unit (i.e. I/O board or transition board or environmental monitoring board). This sensor is either open or closed depending on whether the temperature is above or below a given threshold, it is therefore strictly a binary device.

The sensors (total 110+) will be connected to BaBar standard SIAM interlock modules to interlock the supplies. How many supplies will be shut down if one sensor trips?
3. INTERNAL INTERFACES

3.1 Pre-amp to Fan-Out Board
The interface is described in the pre-amp board description.

3.2 Fan-Out Board to ADC Board
The interface is described in the ADC board description.

3.3 ADC to I/O Board
The interface is described in the ADC board description.

3.4 I/O Board to Transition Board
The interface is described in the I/O board description.

3.5 I/O Board to Environmental Monitoring Board
The interface is described in the I/O board description.

3.6 Power Supplies to On-Detector Electronics
The interface is described in the I/O board description.