

HCAL uTCA Slice Test Mapping

Documentation to assist in readout of the MicroTCA slice test system at P5. Fibers from detector, each carrying 3 front-end channels. They are collected in 12-packs (aka 12-pus') for connection to mCTR2 inputs. Some reminders of modularity:

- one crate has two DCCs (each is a FED 700-731)
- each DCC has 15 spigots (numbered 0-14) which each read the top or bottom half of a HTR
- each half-HTR accepts 8 fibers (24 channels) from the detector

uTCA connection details below. The spreadsheets tell which front-end fibers (in the DCC/spigot/fiber space) are grouped in which 12-pus fiber bundles.

- uTCA: the secret sharer [↗](#) – Dick's page with splitter mapping spreadsheets, etc
 - ◆ [uTCA-fiber-map.xls](#) [↗](#) – HBHE map spreadsheet
 - ◆ [HF-fiber-map_uTCA.xls](#) [↗](#) – HF map spreadsheet
- MCTR2Database – page with up-to-date fiber connection status

The following (from an e-mail on 2012-10-30) tells which microTCA slots have mCTR2 modules, and which fiber ribbon (12-pus) is plugged in to it as of now.

Fiber to mCTR2 connections.

```
Slot no : 1, 3, 4, 5, 7, 8
Ribbon : 1, 2, 3, 9, 10, 11
IP      : 4, 12, 16, 20, 28, 32
          (4 times the slot no )
```

Ribbon no 9, 10, 11 has 32 fibers form HF
rest are of HB/HE.

2012 Data collected for uTCA-VME comparison

The HLT path that collects every 1/2²⁰ L1As is called `HLT_HcalUTCA_v1`.

Date	LHC fill number	uTCA DAQ run number	uTCA data location	uTCA nEvents	AMC13 hyperDA
Dec. 4	3372	208510	/afs/cern.ch/user/c/chhill/public/parasiticData/parasitic_12_10_2012.dat	28	basic, exp
Dec. 15	3441	209088	/afs/cern.ch/user/c/chhill/public/parasiticData/parasitic_12_15_2012.dat	19	basic
Dec. 15	3442	209107	hcaldaq12.cms:/tmp/USC_209107.root, cmshcal01.cern.ch:/bigspool/usc/USC_209107.root	25	basic
Dec. 16	3453	209143	hcaldaq12.cms:/tmp/USC_209143.root, cmshcal01.cern.ch:/bigspool/usc/USC_209143.root	25	basic, exp
Dec. 16	3453	209150	hcaldaq12.cms:/tmp/USC_209150.root, cmshcal01.cern.ch:/bigspool/usc/USC_209150.root	75	basic, exp
Dec. 16	3453	209150	/afs/cern.ch/user/c/chhill/public/parasiticData/parasitic_12_16_2012.dat	91 (16 extra events)	basic, exp

2013 Comparison Log

2013-02-04

Mysteries abound. CSV files have 32 fibers for HF and 96 fibers for HBHE listed. This should provide a total of 384 channels, but the software compares only 208 and sees only 180 matches.

2013-02-02

After fixing many minor issues during the week of Jan 27-Feb 1st (thanks Ted and Jeremy!) things look pretty good. Comparison firmware package is available for check-out at SVN [↗](#). If you don't have an account you can use the hcal daq user and password.

Using the mapping spreadsheets posted here [↗](#) as a start and trying all possible permutations, and +/-4 timesamples give pretty good results [HERE](#) [↗](#).

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