

Use of the TTC System

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<http://www.hep.ph.qmw.ac.uk/~landon/talks>

Overview

- Document
- Programming model
- Addressing scheme
- Broadcast commands

Document

- Draft document on TTC (and BUSY) circulated
- Modified after comments from various people
- Latest draft 0.3 (19 Jan 2001)
<http://www.hep.ph.qmw.ac.uk/~landon/l1soft/docs>
- Some further updates needed...
- ROS interaction: DIG issue?

Programming model

- Same approach on all modules if possible.
- Access to all internal registers.
- CPM, CMM (and JEM?) will probably use low level scheme from Richard Staley: handle I2C from C++. What about PPM, RODs?

TTC Addressing Scheme

Addressing Scheme

TTCrx Address	Module Type and Addresses	I2C
ccc nnnnn 000001	PPM: slot nnnnn=0–31 in crates ccc=0–3	1
00cc nnnn 000010	CPM: module nnnn=1–14 in crates cc=0–3	2
010c nnnn 000011	JEM: module nnnn=0–15 in crates c=0–1	3
0ccc 000n 000100	CMM: module n=0–1 in crates ccc=0–5	4
ccc nnnnn 000101	PPROD: slot nnnnn=0–31 in crates ccc=0–7	5
00c nnnnn 000110	CPROD: slot nnnnn=0–31 in crates c=0–1	6
xxxx xxxx xxxxxx	Reserved for ROS etc	>6

Crate Numbering

Crate	Range	Crate Type
0ccc	ccc=0–7	PP crates 0–7
10cc	cc=0–3	CP crates 8–11 (0–3 in CP/JEP GEOADD scheme)
110c	c=0–1	JEP crates 12–13 (4–5 in CP/JEP GEOADD scheme)
111c	c=0–1	ROD crates 14–15

TTC Broadcast Commands

Overview

- Short format: all 6 bits with ClkDes1
- NB conflict with existing DSS commands!

Broadcast Commands

Command	Modules	Required	Description
000000xx	PPM	Mandatory	Stop playback
000001xx	PPM	Mandatory	Start playback
000010xx	PPM	Useful	Stop LVDS sync
000011xx	PPM	Useful	Start LVDS sync
001000xx	CPM	Mandatory	Stop playback
001001xx	CPM	Mandatory	Start playback
001100xx	CPM	Not reqd?	Stop backplane timing calibration
001101xx	CPM	Not reqd?	Start backplane timing calibration
010000xx	JEM	Mandatory	Stop playback
010001xx	JEM	Mandatory	Start playback
010011xx	JEM	Mandatory	Do 256 playback cycles and stop
011000xx	CMM	Mandatory	Stop playback
011001xx	CMM	Mandatory	Start playback
111000xx	PPM, CPM, JEM, CMM	Useful?	Freeze pipelines
111001xx	PPM, CPM, JEM, CMM	Useful?	Restart pipelines
000000xx	DSS	Mandatory	Stop playback
010000xx	DSS	Mandatory	Start playback