

LV channels pairing with TRM piggy-back

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V 1.1

Revision History

21/01/2010 V1.0

24/01/2010 v 1.1 Renumbered LV channels for RIGHT crates according to Andrea's scheme

1. Introduction

This document is done preparing software to allow HPTDC programming consequent to LV FEA channel status, according a protocol described in section 2. This requirement will add a new direct link of dependencies between the PVVS project and the FEE configuration software, notably the DIM and VME servers running for each crate (`dimsrv` and `vmesrv`).

This document describes pairing between LV FEA channels (providing power to specific FEAC and – in turn – to FEAs) inside TOF SuperModules and TRM inputs (“piggy-back”) in section 3 (for crate LEFT) and section 4 (for crate RIGHT).

The pairing description is based on two documents present in the ALICE TOF Twiki:

a) PA Cabling Instructions (PA)

<https://twiki.cern.ch/twiki/pub/AliceTOF/SuperModuleInstallation/cablaggio-tof-rev8.doc>

b) Fea-FEAC Cable Lengths (AA)

https://twiki.cern.ch/twiki/pub/AliceTOF/SuperModuleInstallation/fea_feac_cabling.xls

2. Protocol

1. if a LV channel is found OFF while moving a TRM from STANDBY to STBY_CONFIGURED all relevant TRM channels are programmed OFF in the corresponding HPTDC. The LV status taken while moving to configure is hereafter called registered setup.
2. a consistency check is done moving the card from STBY_CONFIGURED to READY
3. if a LV channel modification of the registered setup is noted and the FEE status of the affected crate is not in data taking, affected TRMs will be moved to STANDBY if found in an upper state (i.e. STBY_CONFIGURED and READY)
4. if a LV channel modification of the registered setup is noted and the FEE status of the affected crate is in data taking affected TRMs will not be notified. This will allow the run to continue. Note the DCS will, however, stop the run if 3 or more LV channels will fail during a run.
5. at each EOR reception a check between the actual status and the registered setup will be done. If found different, affected TRMs will be moved to STANDBY.

LV channels are numbered from 0 to 7. The numbering of LV channels is then obtained taking into account the conventions used in PVSS (e.g. channel FEAC 0 is always the closest to the crate and this takes into account of an asymmetry between RIGHT and LEFT crates). Additionally in the TOF crate a spare can be used instead. However to the purpose of this document this is transparent: proper remapping is always guaranteed by PVSS to the `dimsrv`.

TRM piggy-back (PB) are numbered from 0 to 9 as shown in the first line of the table.

3. LV channel pairing to TRM piggy-back: LEFT crate

SLOT #	PB 0	PB 1	PB 2	PB 3	PB 4
	PB 5	PB 6	PB 7	PB 8	PB 9
SLOT # 3	L-1-INT				LTM-OUT (LEFT)
	0				
	L-1-EXT				LTM-OUT (RIGHT)
	0				
SLOT # 4	L-6-INT	L-5-INT	L-4-INT	L-3-INT	L-2-INT
	0	0	0	0	0
	L-6-EXT	L-5-EXT	L-4-EXT	L-3-EXT	L-2-EXT
	0	0	0	0	0
SLOT # 5	L-11-INT	L-10-INT	L-9-INT	L-8-INT	L-7-INT
	1	1	1	1	1
	L-11-EXT	L-10-EXT	L-9-EXT	L-8-EXT	L-7-EXT
	1	1	1	1	1
SLOT # 6	L-16-INT	L-15-INT	L-14-INT	L-13-INT	L-12-INT
	2	2	2	2	1
	L-16-EXT	L-15-EXT	L-14-EXT	L-13-EXT	L-12-EXT
	2	2	2	2	1
SLOT # 7	I-2-INT	I-1-INT	L-19-INT	L-18-INT	L-17-INT
	3	3	3	2	2
	I-2-EXT	I-1-EXT	L-19-EXT	L-18-EXT	L-17-EXT
	3	3	3	2	2
SLOT # 8	I-7-INT	I-6-INT	I-5-INT	I-4-INT	I-3-INT
	4	4	4	3	3
	I-7-EXT	I-6-EXT	I-5-EXT	I-4-EXT	I-3-EXT
	4	4	4	3	3
SLOT # 9	I-12-INT	I-11-INT	I-10-INT	I-9-INT	I-8-INT
	5	5	4	4	4
	I-12-EXT	I-11-EXT	I-10-EXT	I-9-EXT	I-8-EXT
	5	5	4	4	4
SLOT # 10	I-17-INT	I-16-INT	I-15-INT	I-14-INT	I-13-INT
	6	5	5	5	5
	I-17-EXT	I-16-EXT	I-15-EXT	I-14-EXT	I-13-EXT
	6	5	5	5	5
SLOT # 11	C-3-INT	C-2-INT	C-1-INT	I-19-INT	I-18-INT
	7	6	6	6	6
	C-3-EXT	C-2-EXT	C-1-EXT	I-19-EXT	I-18-EXT
	7	6	6	6	6
SLOT # 12	C-8-INT	C-7-INT	C-6-INT	C-5-INT	C-4-INT
	7	7	7	7	7
	C-8-EXT	C-7-EXT	C-6-EXT	C-5-EXT	C-4-EXT
	7	7	7	7	7

4. LV channel pairing to TRM piggy-back: RIGHT crate

SLOT #	PB 0	PB 1	PB 2	PB 3	PB 4
	PB 5	PB 6	PB 7	PB 8	PB 9
SLOT # 4	L-1-INT	L-2-INT	L-3-INT	L-4-INT	L-5-INT
	0	0	0	0	0
	L-1-EXT	L-2-EXT	L-3-EXT	L-4-EXT	L-5-EXT
SLOT # 5	L-6-INT	L-7-INT	L-8-INT	L-9-INT	L-10-INT
	0	1	1	1	1
	L-6-EXT	L-7-EXT	L-8-EXT	L-9-EXT	L-10-EXT
SLOT # 6	L-11-INT	L-12-INT	L-13-INT	L-14-INT	L-15-INT
	1	1	2	2	2
	L-11-EXT	L-12-EXT	L-13-EXT	L-14-EXT	L-15-EXT
SLOT # 7	L-16-INT	L-17-INT	L-18-INT	L-19-INT	I-1-INT
	2	2	2	3	3
	L-16-EXT	L-17-EXT	L-18-EXT	L-19-EXT	I-1-EXT
SLOT # 8	I-2-INT	I-3-INT	I-4-INT	I-5-INT	I-6-INT
	3	3	3	4	4
	I-2-EXT	I-3-EXT	I-4-EXT	I-5-EXT	I-6-EXT
SLOT # 9	I-7-INT	I-8-INT	I-9-INT	I-10-INT	I-11-INT
	4	4	4	4	5
	I-7-EXT	I-8-EXT	I-9-EXT	I-10-EXT	I-11-EXT
SLOT # 10	I-12-INT	I-13-INT	I-14-INT	I-15-INT	I-16-INT
	5	5	5	5	6
	I-12-EXT	I-13-EXT	I-14-EXT	I-15-EXT	I-16-EXT
SLOT # 11	I-17-INT	I-18-INT	I-19-INT	C-1-INT	C-2-INT
	6	6	6	6	6
	I-17-EXT	I-18-EXT	I-19-EXT	C-1-EXT	C-2-EXT
SLOT # 12	C-3-INT	C-4-INT	C-5-INT	C-6-INT	C-7-INT
	7	7	7	7	7
	C-3-EXT	C-4-EXT	C-5-EXT	C-6-EXT	C-7-EXT
	7	7	7	7	7

/ends