

BM@N DAQ — Current Status and Development Prospects

Alexey Shutov
BM@N DAQ working group

A. Baskakov, S. Bazylev, A. Egorov, A. Fediunin, I. Filippov, S. Kuklin,
A. Shchipunov, A. Shutov, I. Slepnev, V. Slepnev, N. Tarasov, A. Terletskiy

Joint Institute for Nuclear Research

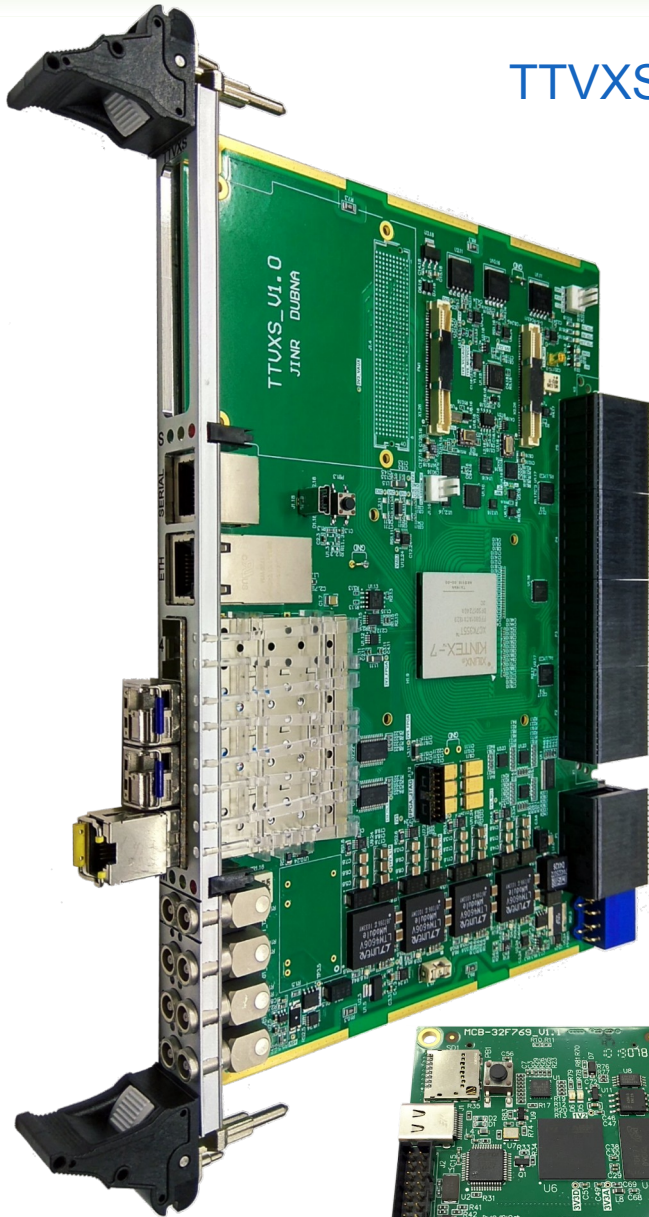


10th Collaboration Meeting of the BM@N
Experiment at the NICA Facility



TTVXS

TTVXS is a Time, Trigger and Management module for VXS crate



IPMI mezzanine board

- Clock, timestamp and trigger distribution to VXS payload boards: backplane FE-Link protocol
- 4 SFP+ sockets for Detector Readout, Trigger Distribution and Clock & Timing connections
- Reference frequency and timestamp provided by White Rabbit Network or FE-Link (with CRU-16)
- Additional clock and trigger interface by FMC (VITA-57) card slot – integration with other systems

Status: implemented in TOF700, TOF400 and T0 systems

IPMI mezzanine board

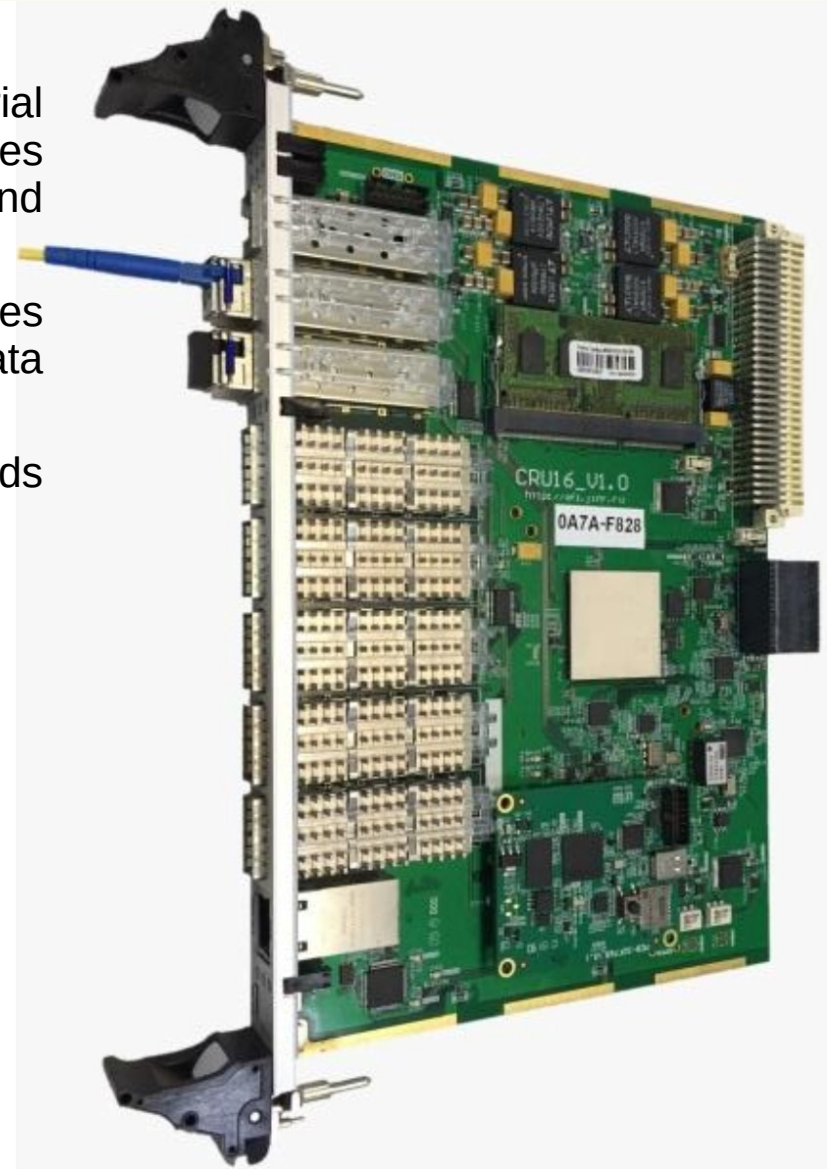
- IPMI (Intelligent Platform Management) function for automatic topology discovery, module status monitoring and control, firmware update

Status: basic functions implemented, improvements ongoing

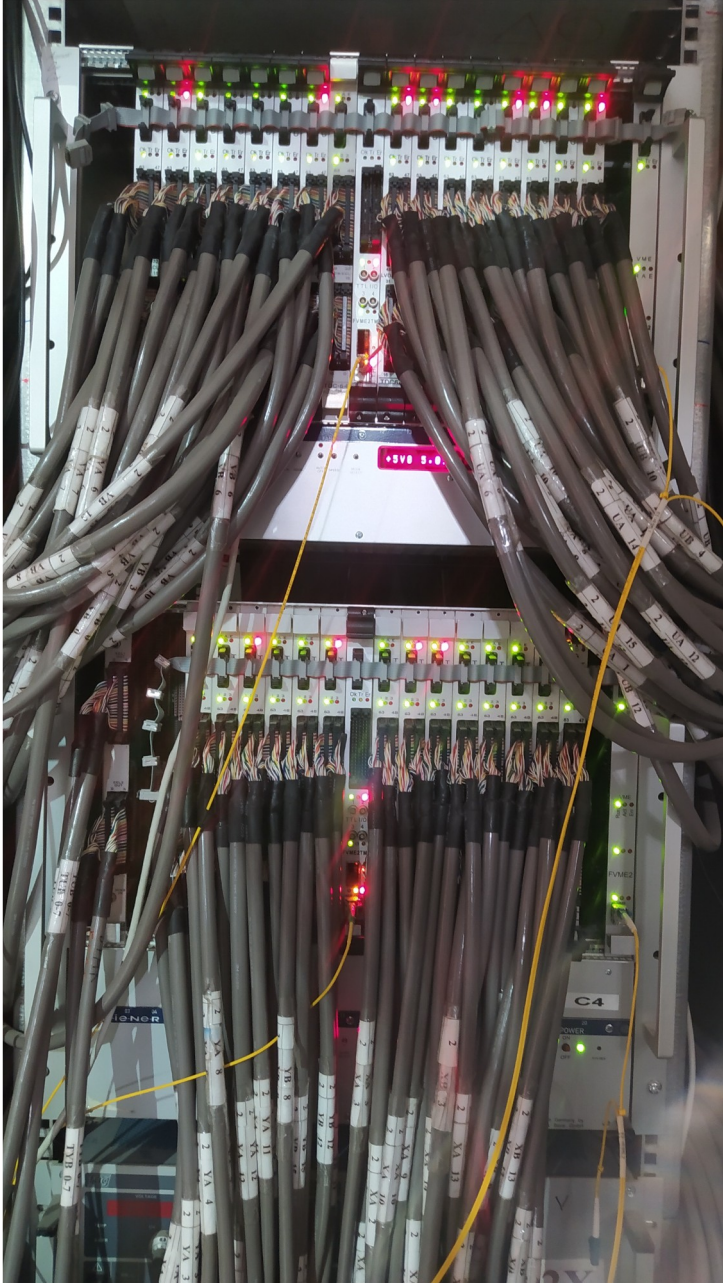
CRU-16

Common Readout Unit for 16 DRE boards

- FE-Link interface to DRE boards - multi-gigabit duplex serial synchronous interconnect with deterministic latency. Provides clock and trigger information for downstream boards and receives raw data stream
- 4 GB SO-DIMM DDR3 memory for data buffers. Decouples realtime hardware data flow from high latency software data receivers
- 4 QSFP downlink sockets for 16 Detector Readout boards connections grouped by 4
- 1 QSFP uplink socket for 40 Gb Ethernet data transfer
- 3 SFP sockets for Trigger Distribution, Clock & Timing
- Management mezzanine board
- Timing synchronization by White Rabbit network



DCH DAQ



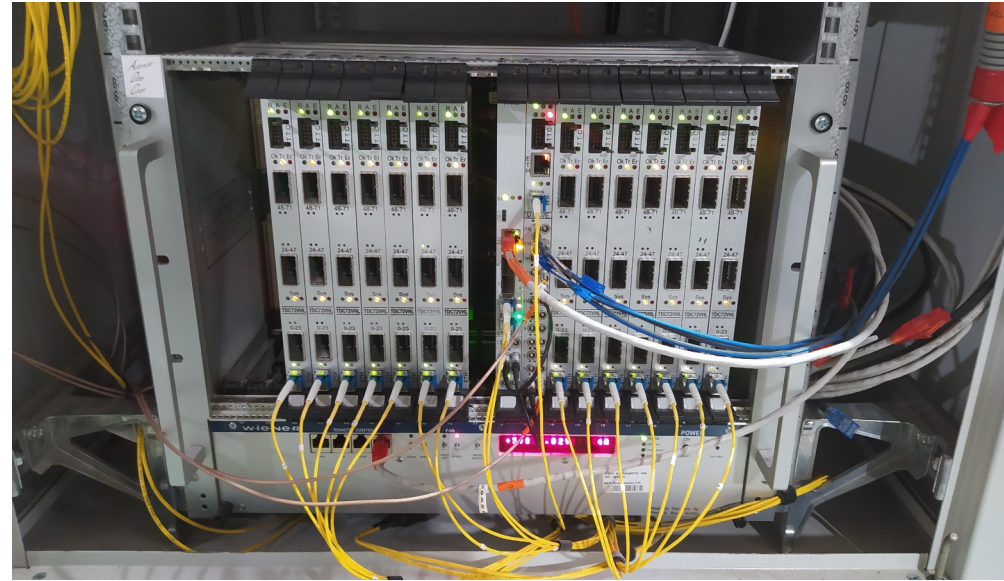
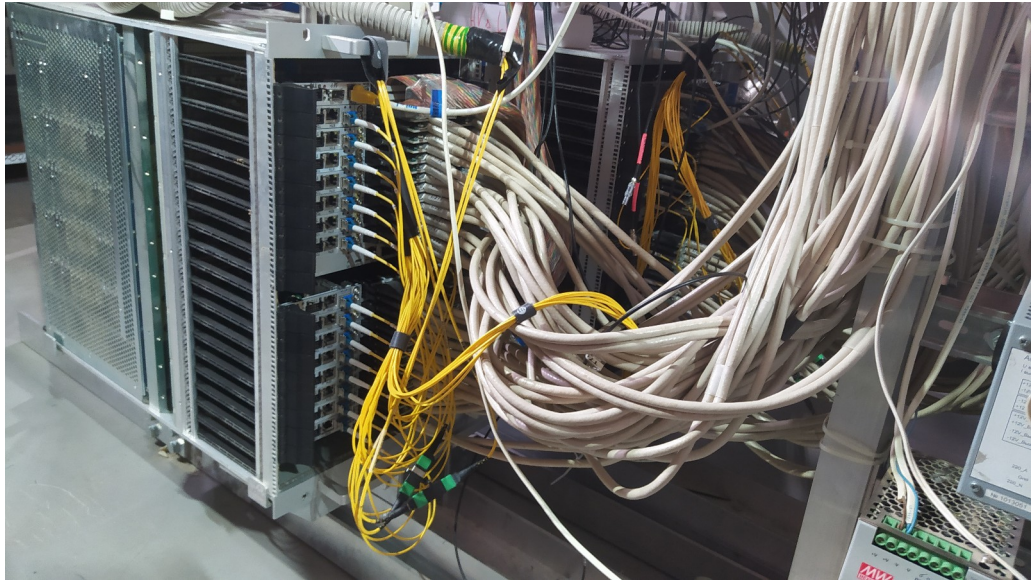
Current status:

- 60 TDC64V readout modules
- TTC synchronization and trigger distribution inside one VME crate
- Last VMEDAQ readout system

Future plans:

- Replace by 2 CSC chambers

TOF700 & TOF400 DAQ



Current status:

- TOF700 51 TDC64VHLE readout modules
- TOF400 28 TDC72VHL readout modules
- TTVXS time sync and trigger via backplane
- Replace VMEDAQ with 1G ethernet readout

Future plans:

- Add 1 VXS crate(14 TDC72VHL) for TOF400

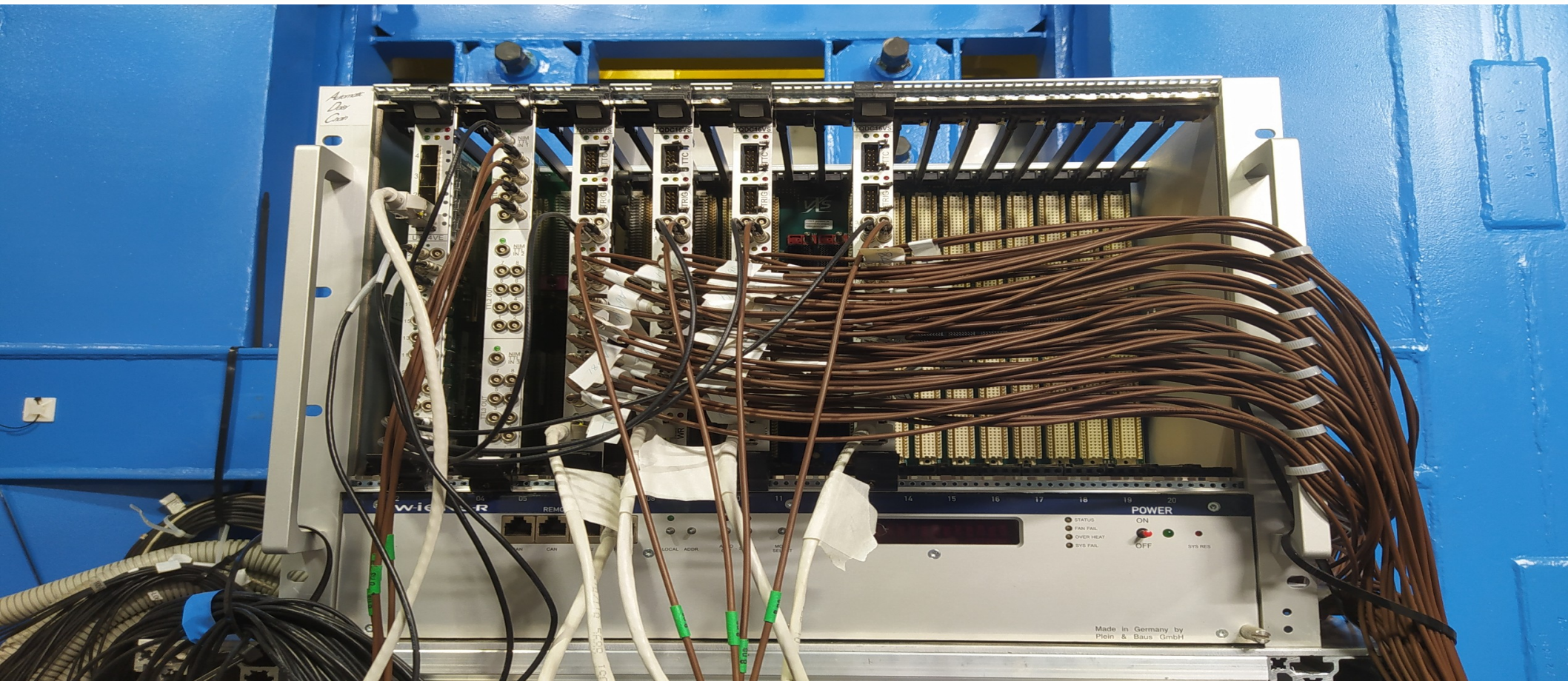
Neutron detector



Current status:

- 9 TQDC16VS readout modules
- 1G ethernet readout via optical cable
- TTVXS time sync and trigger via backplane

BH DAQ



Current status:

- 4 TQDC16VS readout modules
- 1G ethernet readout via UTP cable

Future plans:

- 1G ethernet readout via optical cables

FHCAL and SCW DAQ



Current status of FHCAL DAQ:

- 8 ADC64s2_v5 readout modules
- WR synchronization
- 1G ethernet readout via UTP cable

Future plans:

- 1G ethernet readout via optical MTP and breakout cables

Current status of SCW DAQ:

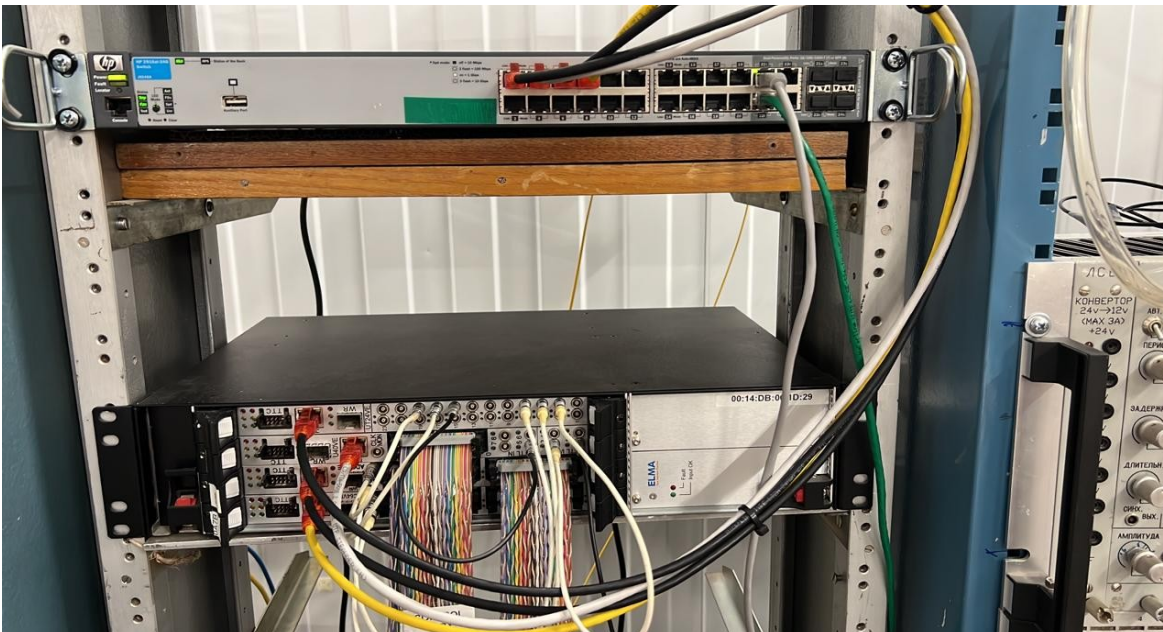
- 3 ADC64s2_v5 readout modules
- 1G ethernet readout via UTP cable

Future plans:

- 1G ethernet readout via optical cables



CSC DAQ



CSC Current status:

- 8 ADC64VE_v1 readout modules
- 4 U40VE module as sequencers
- 10G optical link to each ADC board

CSCB Current status:

- 4 ADC64VE_v1 readout modules
- 2 U40VE module as sequencers
- 10G optical link to each ADC board

Future plans:

- Replace second DCH with new CSC
- Firmware update
- Software update

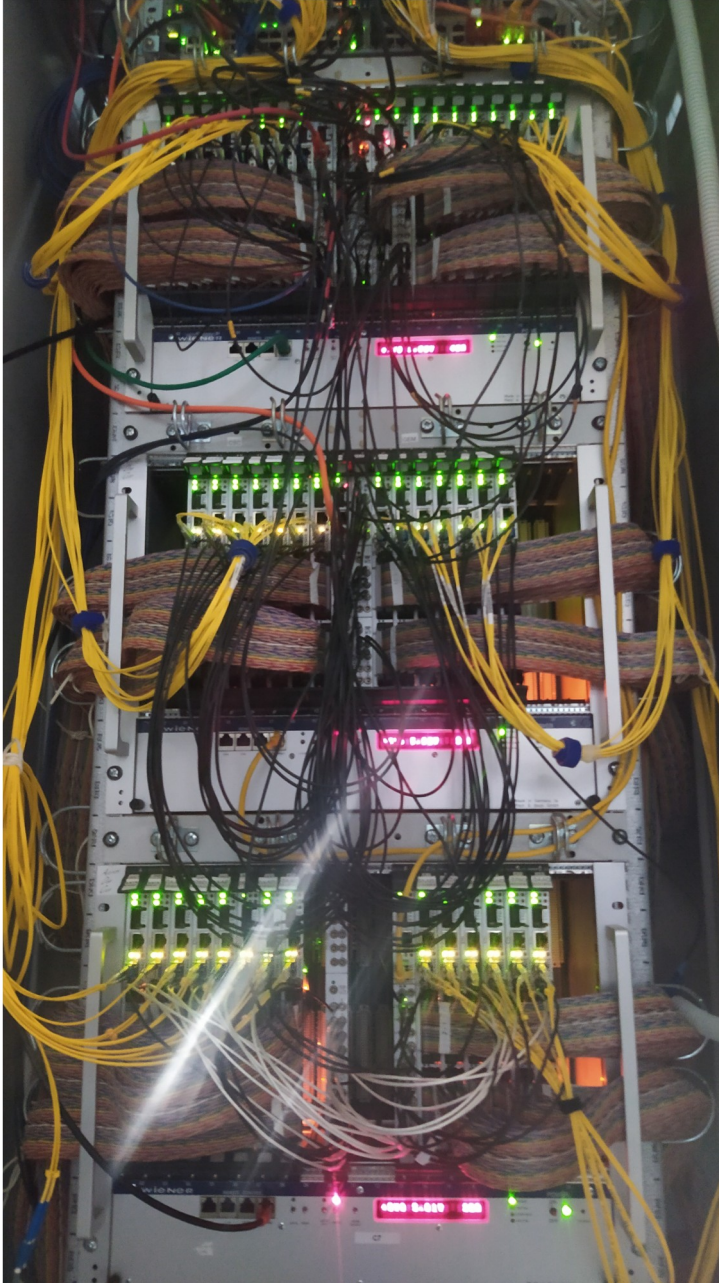
GEM DAQ

Current status:

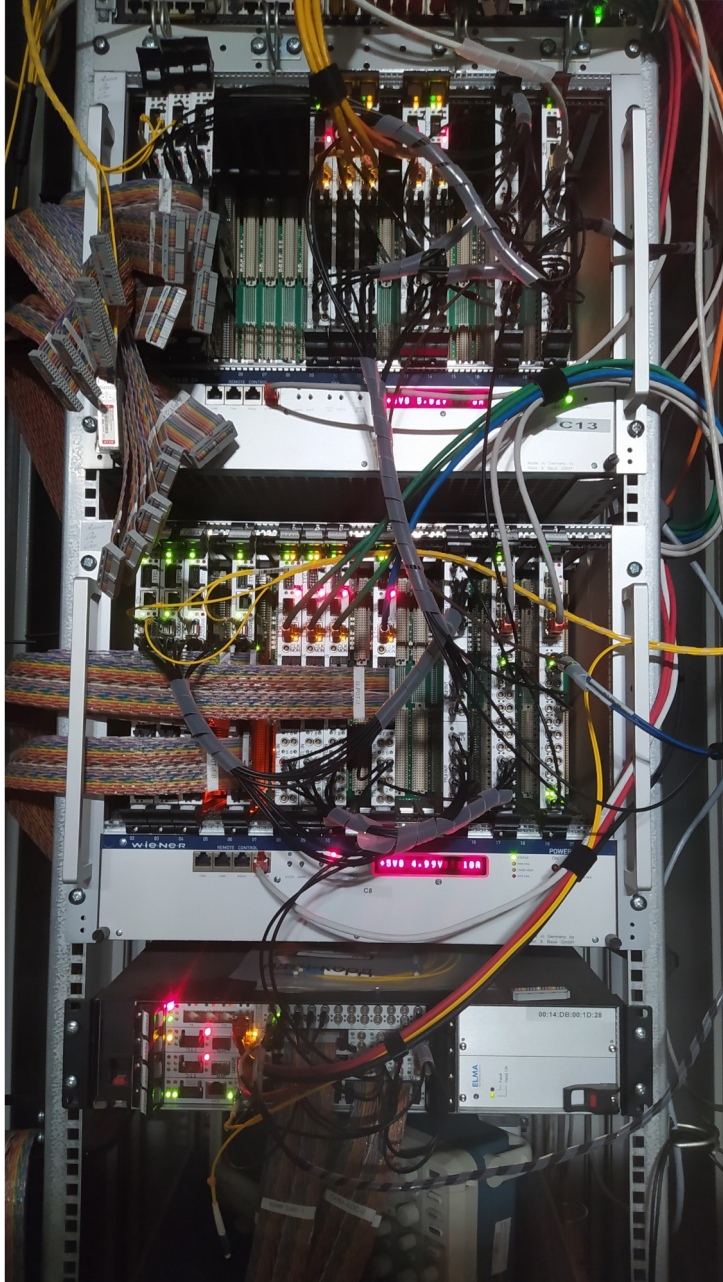
- 44 ADC64VE_v1 readout modules
- 1 U40VE module as common sequencer for all GEMS
- 10G optical link to each ADC board

Future plans:

- Firmware update
- Software update



FSD & BT DAQ



FSD Current status:

- 9 ADC64VE_v1 readout modules
- 9 U40VE module as sequencers
- 10G optical link to each ADC board

Future plans:

- Firmware update
- Software update

BT Current status:

- 1 ADC64VE_v1 board
- 2 U40VE module as sequencers
- 10G optical link to each ADC board

Future plans:

- Firmware update
- Software update

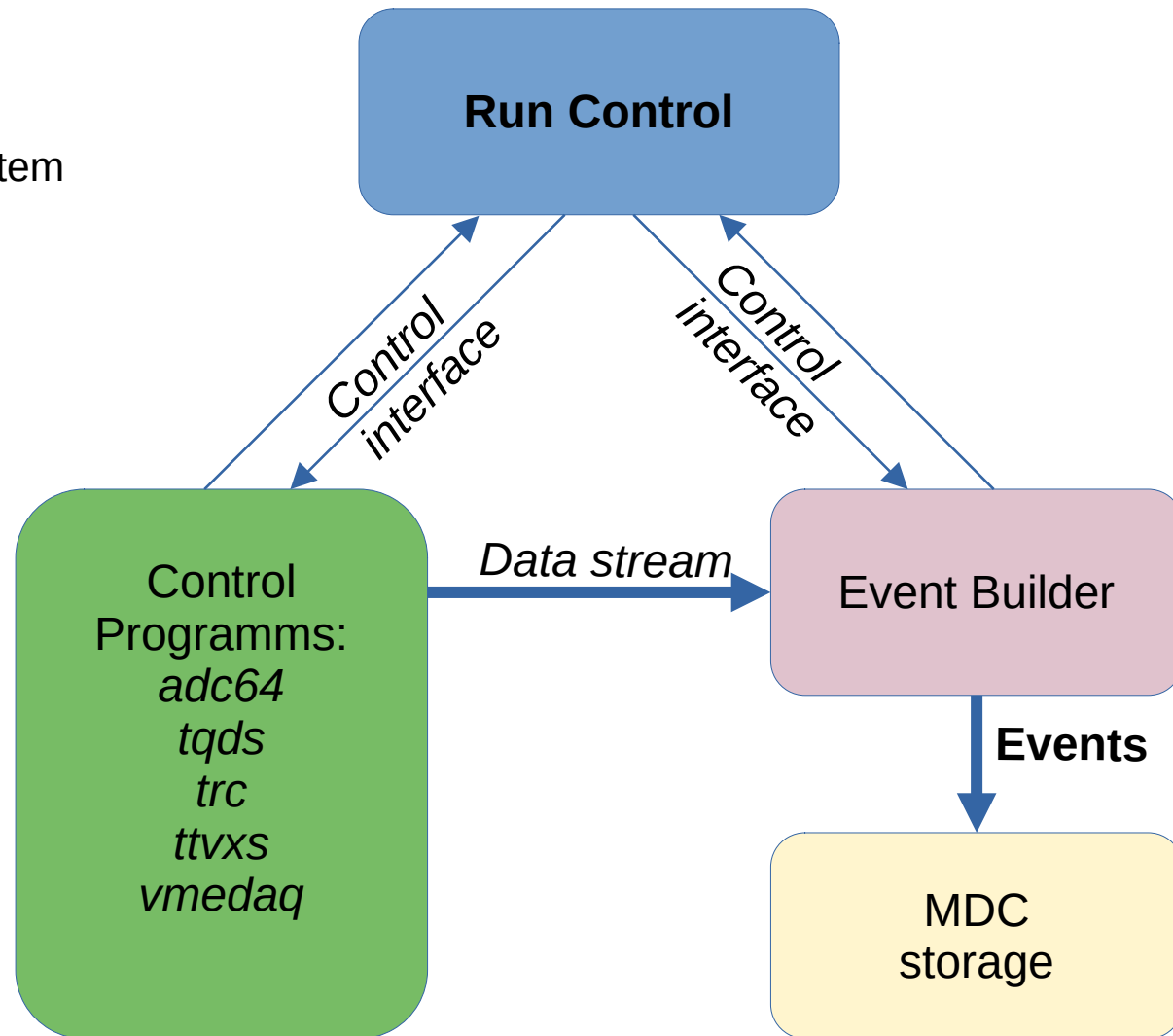
Software

Current status :

- Global software rework for modular system
- Developed TRC software
- TDC & TQDC software rework
- Event Builder significant improve (file split, flex parameters etc..)

Next RUN:

- Reworked ADC64 programm
- Reworked Run Control programm



AFI-TQDC2

TQDC

File Options Tools Debug Help

Start Stop

Run Logic

Time: 1.000s

Events: 1

Reset Start

Idle: 0%

En	Online	Slot	IP Address	Device Type	Serial	FPGA f/w	Temp	Run	Clock	Deser.	Tr. accepted	Tr. blocked	Busy	Busy Time	Ev. #	HPTDC St.	WaveRec	WR Time	WR Offset	MStream	Pkt/s	M
✓	7.4	14	10.18.69.139	TQDC16V5-V2-XGE	0CD0-89AF	2.9-0-gc3e322d	35.5 - 40.7	Idle	local/PLL	01010101	0	0	0000			Ok	Ok	No SFP		Open	0	0.
✓	7.4	3	10.18.69.226	TQDC16V5-V2-XGE	0CD0-CB06	2.9-0-gc3e322d	38.3 - 56.0	Idle	local/PLL	01010101	0	0	0000			Ok	Ok	No SFP		Open	0	0.
✓	7.4	7	10.18.69.204	TQDC16V5-V2-XGE	0CD0-CB18	2.9-0-gc3e322d	36.2 - 54.6	Idle	local/PLL	01010101	0	0	0000			Ok	Ok	No SFP		Open	0	0.
✓	7.4	8	10.18.69.212	TQDC16V5-V2-XGE	0CD1-1414	2.9-0-gc3e322d	35.7 - 52.6	Idle	local/PLL	01010101	0	0	0000			Ok	Ok	No SFP		Open	0	0.
✓	7.4	5	10.18.69.218	TQDC16V5-V2-XGE	0CD1-3AD9	2.9-0-gc3e322d	38.3 - 56.9	Idle	local/PLL	01010101	0	0	0000			Ok	Ok	No SFP		Open	0	0.
✓	7.3	13	10.18.69.220	TQDC16V5-V2-XGE	0CD9-684E	2.9-0-gc3e322d	34.3 - 41.4	Idle	local/PLL	01010101	0	0	0000			Ok	Ok	No SFP		Open	0	0.
✓	7.4	1	10.18.69.134	TQDC16V5-V2-XGE	0CD9-7DE2	2.9-0-gc3e322d	37.7 - 55.1	Idle	local/PLL	01010101	0	0	0000			Ok	Ok	No SFP		Open	0	0.

Trigger Source

External TTL

VXS FE-Link

Analog Thr. 1 24 ns

Digital Thr. 1 24 ns

Timer 1,000.0 Hz

Random 1,000.0 Hz

Min Period 10.0 us

Dead Time 1.0 us

Baseline Correction

Polarity Positive

Mode Bypass

MAF length 16

Threshold 100

Offset 0

Digital Shaper

Mode Bypass

Truncate 0

Filter Design...

Set filter...

Name	Inv	TrigEn	Antg Thr	DigTrigEn	DigTrigEdge	DigTrigThr	ZsDigEn	ZsDigEdge	ZsDigThr	Rate, Hz	Level
✓ All			0 mV	✓		0	✓		0		
✓ 0CD0-89AF			0 mV	✓		0	✓		0		
✓ 0			0 mV	✓		0	✓		0		0.0 •
✓ 1			0 mV	✓		0	✓		0		0.0 •
✓ 2			0 mV	✓		0	✓		0		0.0 •
✓ 3			0 mV	✓		0	✓		0		0.0 ■
✓ 4			0 mV	✓		0	✓		0		0.0 ■
✓ 5			0 mV	✓		0	✓		0	37,383.0 •	
✓ 6			0 mV	✓		0	✓		0		0.0 •
✓ 7			0 mV	✓		0	✓		0		0.0 •
✓ 8			0 mV	✓		0	✓		0		0.0 •
✓ 9			0 mV	✓		0	✓		0		0.0 •
✓ 10			0 mV	✓		0	✓		0		0.0 •
✓ 11			0 mV	✓		0	✓		0	328,547.6 •	
✓ 12			0 mV	✓		0	✓		0		3.0 •
✓ 13			0 mV	✓		0	✓		0		0.0 •
✓ 14			0 mV	✓		0	✓		0		0.0 ■
✓ 15			0 mV	✓		0	✓		0		0.0 •
✓ 0CD0-CB06			0 mV	✓		0	✓		0		
✓ 0			0 mV	✓		0	✓		0		•
✓ 1			0 mV	✓		0	✓		0		•
✓ 2			0 mV	✓		0	✓		0		•
✓ 3			0 mV	✓		0	✓		0		•
✓ 4			0 mV	✓		0	✓		0		•
✓ 5			0 mV	✓		0	✓		0		•
✓ 6			0 mV	✓		0	✓		0		•
✓ 7			0 mV	✓		0	✓		0		•
✓ 8			0 mV	✓		0	✓		0		•
✓ 9			0 mV	✓		0	✓		0		•
✓ 10			0 mV	✓		0	✓		0		•
✓ 11			0 mV	✓		0	✓		0		•
✓ 12			0 mV	✓		0	✓		0		•
✓ 13			0 mV	✓		0	✓		0		•
✓ 14			0 mV	✓		0	✓		0		•
✓ 15			0 mV	✓		0	✓		0		•
✓ 0CD0-CB18			0 mV	✓		0	✓		0		
✓ 0			0 mV	✓		0	✓		0		0.0 •
✓ 1			0 mV	✓		0	✓		0		0.0 •
✓ 2			0 mV	✓		0	✓		0		0.0 ■

TTL Setup

LEMO #1 Out: Busy

LEMO #2 In: Trigger

LEMO #3 In: EvNumReset

LEMO #4 Out: Pps

Readout Setup

ADC Gain x1

ZS mode Disabled

Threshold: 0 mV

Latency: 8 192 ns

Match win: 8 192 ns

ADC win: 8 64 ns

Leading

AFI-ADC64

c4n03.he.jinr.ru.0 (noafi) - TigerVNC

ADC64 #SPb

Status ADC64VE-V3-XG 0E75-50E5

Info Sdb Ports WR FeLink

ADC64VE-V3-XG 1.4

Commit 1.4-14-g413d923 on 04.04.2023
Build by jenkins on 05.04.2023
SDB checksum correct

```

00000800-000000bf | 0040-005f | 41a37c29 | MLink-CSR | 1.0 | +
00001000-0000013f | 0080-009f | e5ea34bf | WR Status | 1.0 | +
00002c00-000002df | 0160-016f | dd07b826 | ads52j90_spi | 1.0 | +
00007000-0000077f | 0380-03bf | e89b0a06 | board_mgmt_regs | 1.0 | +
00007800-000007ff | 03c0-03ff | 2e0160f8 | lemo_control_regs | 1.0 | +
00002000-0000203f | 1000-101f | f4da37e8 | Run Logic | 1.0 | +
00002200-000023ff | 1100-11ff | 7477e01e | Waveform Recorder | 2.0 | +
00002400-000025ff | 1200-12ff | 76b80b88 | Trigger Control | 1.0 | +
00002600-000027ff | 1300-13ff | 510be12 | Trigger Info | 1.0 | +
00002800-0000281f | 1400-140f | 2fc0a72a | zs_regs | 1.0 | +
00002a00-00002a1f | 1500-150f | a5fd23ba | erc_regs | 1.0 | +
00003000-000033ff | 1800-19ff | c32e925e | BLC | 1.1 | +
00003400-000035ff | 1a00-1aff | 3d1ca270 | Waveform Trig | 1.0 | +
00008000-000081ff | 4000-40ff | 47567e3c | MCU | 2.0 | +
0000a000-0000a0ff | 5000-507f | 371a0421 | FELink-CSR | 1.0 | +
0000e000-0000e1ff | 7000-70ff | 6e0f7007 | Flash | 1.0 | +
0000e400-0000e7ff | 7200-73ff | e05f724f | SFP0 Eth Port | 1.0 | +
0000e800-0000e83f | 7400-741f | 3efb27ee | Deserializers Contr | 1.0 | +
0000e880-0000e8bf | 7440-745f | 286e99bb | ADC Pattern Test | 1.0 | +
0000f800-0000ffff | 7c00-7fff | 9d754a61 | SDB | 1.1 |
    
```

Slot	Device Type	Serial	FPGA f/w	BMC f/w	Temp	Run	Clock	Deser.	Tx. accepted	Tx. blocked	Busy Time	Ev. #	WaveRec	MStream	Pkt/s	MB/s	Last Ev. #	Ev. count	Ev. rate	Mode	
6	ADC64VE-V3-XG	0E75-50E5	1.4-14-g413d923	2.32.6	36.6 - 49.5	Run		01010101	1 device			71,204	Ok	Open	147,410	203.7	70,540	117,985	1,000		Stop
10	ADC64VE-V3-XG	0E75-50E5	1.4-14-g413d923	2.32.6	37.3 - 49.6	Run		01010101				71,160	Ok	Open	121,218	167.5	70,541	114,157	1,000		Stop
15	ADC64VE-V3-XG	0E75-50EE	1.4-14-g413d923	2.32.6	34.8 - 48.0	Run		01010101				71,167	Ok	Open	135,081	186.6	70,541	114,174	1,000		Stop

Start Stop Write file... Channels setup... All channels

Channels setup

Name	DigTrigEn	DigTrigEdge	DigTrigThr	ZsDigEn	ZsDigEdge	ZsDigThr
All	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
0E75-50E5	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

FSM: Run

Ev 70,540-70,541

15:04

AFI-ADC64

c4n03.he.jinr.ru0 (noafi) - TigerVNC

ADC64 #SPb

Status ADC64VE-V3-XG 0E75-50E5

Options: Allow Remote Control, Sparse parameters, Lemo output..., Stream mode, Use native dialogs

Baseline Correction: Polarity: Positive, Mode: Bypass, MAF length: 16, Threshold: 100, Offset: 0

Slot	Device Type	Serial	FPGA f/w	BMC f/w	Temp	Run	Clock	Deser.	Tx. accepted	Tr. blocked	Busy Time	Ev. #	WaveRec	MStream	Pkt/s	MB/s	Last Ev. #	Ev. count	Ev. rate	Mode
6	ADC64VE-V3-XG	0E75-50E5	1.4-14-g413d923	2.32.6	36.8 - 49.7	Run		01010101				50,850	Ok	Open	174,719	241.4	49,015	804,879	3,088	Stop
10	ADC64VE-V3-XG	0E75-50E5	1.4-14-g413d923	2.32.6	37.6 - 49.9	Run		01010101				35,484	Ok	Open	175,039	241.9	34,190	759,242	2,155	Stop
15	ADC64VE-V3-XG	0E75-50EE	1.4-14-g413d923	2.32.6	35.0 - 48.2	Run		01010101				36,851	Ok	Open	175,403	242.4	35,638	763,565	2,247	Stop

Start Stop Write file... Channels setup... All channels

Channels setup

Name	DigTrigEn	DigTrigEdge	DigTrigThr	ZsDigEn	ZsDigEdge	ZsDigThr
All	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0
0E75-50E5	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0
0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0
1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0
2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0
3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0
4	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0
5	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0
6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0
7	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0
8	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0
9	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0
10	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0
11	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0
12	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0
13	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0
14	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0
15	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0
16	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0
17	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0
18	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0
19	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0
20	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0
21	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0
22	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0
23	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0
24	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0

FSM: Run

Ev 34,190-49,015

15:15

Thank you!