

JLab Prototype RTP HV Driver Installation Timeline

September 30, 2024

Friday September 13, 2024:

1. Bench Test in TL 1137: ePAS sign in, Pre-Job Brief, and MSD
2. Measure rise time, ringing, and circular polarization and document results – Matt and Shukui
3. Kent visit: measure rise time in TL 1137

Week of September 16, 2024:

Monday

1. Start long burn-in at operating frequency (15 Hz then 960 Hz) and voltages – Steve, Jim
2. Rewire of xport fiber converter chassis – Jim

Tuesday

1. CEBAF Laser Room Planning Walk-thru – Riad, Shukui, Jim
 1. Where to put drivers on laser table
 2. Where to install xpot in rack
 3. How / where to re-route fibers, com cables, power cables
 4. What goes where, who will do

Wednesday

1. Kent visit: measure rise time in TL 1137

Thursday

1. Team review of planning and ePAS

Friday

1. CEBAF Laser Room Planning Walk-thru – Riad, Shukui, Steve
 1. Measure rise time, ringing, and circular polarization of existing RTP and document results
 2. Carefully plan connection process of RTP to new drivers

Week of September 23, 2024:

Monday

1. Slowed down transition time – Steve

Tuesday

1. Uploaded new firmware to Helicity Generator Board to provide Hel and nHel signals in laser room – ePAS and ATLis approved (Riad, Ed)

Week of September 30, 2024:

1. General installation ePAS and ATLis – **Submitted**, waiting on approval – Riad
2. Find rise time (resistor value) that gives 2% ringing
3. Screen updates – Jim
4. Follow-up on software operation in Accelerator – Jim
5. **non-NRTL inspection and QR sticker**, add plastic cover – Jim
6. Plan to measure RTP eight applied HVs from UVA Prototype – **ePAS and ATLis submitted** (Jim)
7. Measure applied HV to RTP in TL 1137. Is there any cross-talk? Jim
8. Plan to provide electrical ground to rack in laser room - Jim
9. Plan to provide electrical ground to floating HV Driver – use BNC cable to electrical helicity output. MOLLER might use to check ground loops.
10. Plan to measure IA rise time

Week of October 14, 2024:

1. Cut off HV cables to RTP cell, re-connect to old HV drivers and measure again
2. Ethernet cables pull to xport controller chassis
3. Route comms fibers from controller to drivers on laser table.
4. Install and connect drivers
5. Set drivers to operational voltages
6. Measure new driver rise time, ringing, and circular polarization and document results

Week of October 21, 2024:

1. Measure electrical pickup in laser room and ISB using Parity DAQ – MOLLER Collaboration

NEW RTP Cell Controls

TP Cell Counts Set (0 - 65535 Counts = 0 - 10 Volts)

Voltage	Counts Set	Counts Read	DLTS OUT	HV OUT
Voltage 1	65000	65000	1984	1755
Voltage 6	60000	60000	1831	2
Voltage 3	25000	25000	763	732
Voltage 8	25000	25000	763	786
Voltage 2	62000	62000	1892	2048
Voltage 5	60000	60000	1831	1872
Voltage 4	25000	25000	763	782
Voltage 7	15000	15000	458	571

QTR Wave Counts

V L/4	0
V L/4,1	0
V L/4,2	0

PITA Counts

V PITA	0
V PITA,1	0
V PITA,2	0

Alpha Position UV Counts

V apos,U	0
V apos,V	0

Delta Position UV Counts

V dpos,U	0
V dpos,V	0

Inver Calc Counts

C1	0
C2	0
C3	0
C4	0
C5	0
C6	0
C7	0
C8	0

APPLY TO CELL

Green = ON

RTP1 HELICITY
RTP1 HV
RTP1 ALARM
 OFF ON

RTP1 HV1 RDY
RTP1 HV2 RDY
RTP1 HV5 RDY
RTP1 HV6 RDY

Green = ON

RTP2 HELICITY
RTP2 HV
RTP2 ALARM
 OFF ON

RTP2 HV3 RDY
RTP2 HV4 RDY
RTP2 HV7 RDY
RTP2 HV8 RDY

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