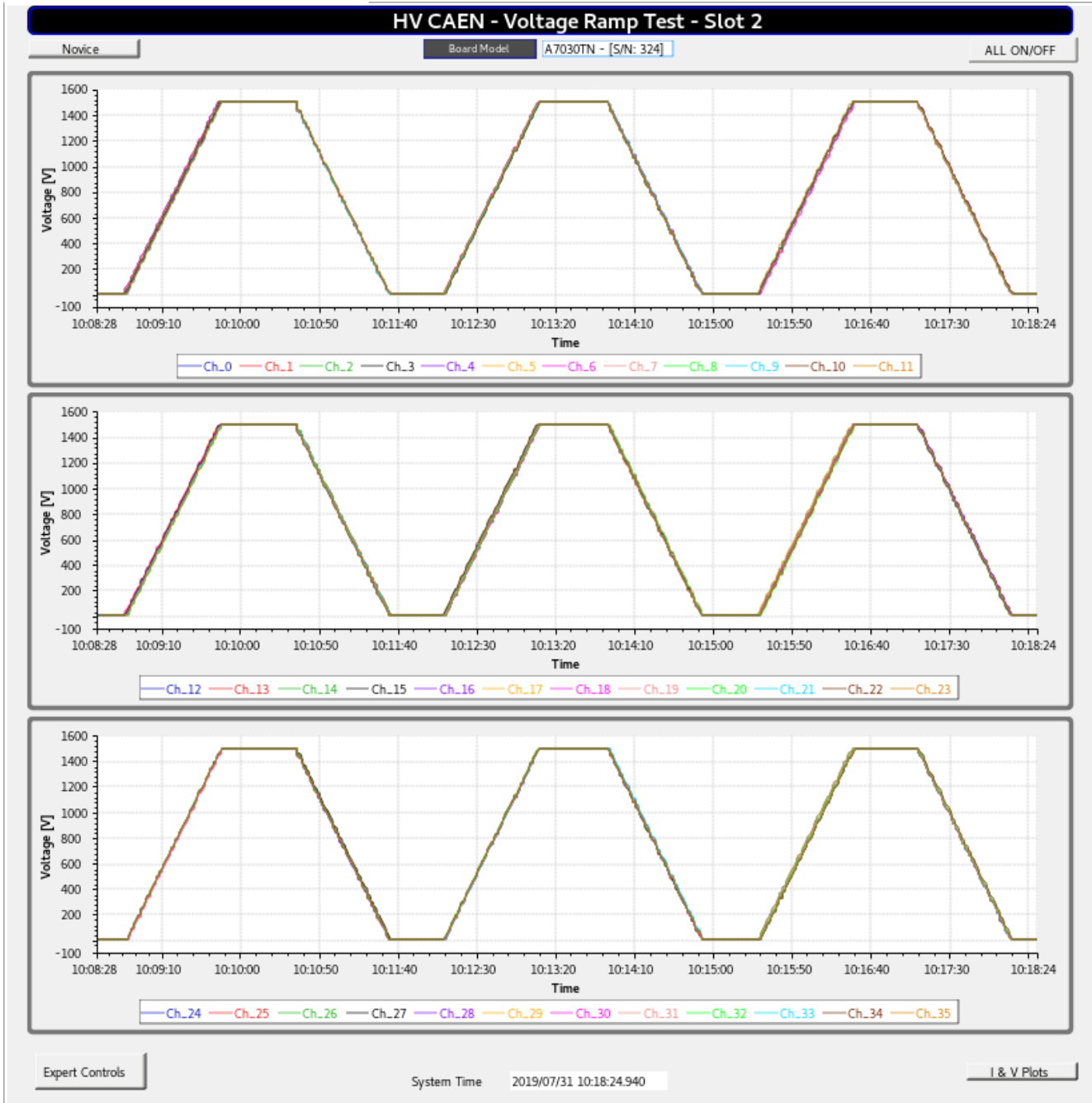


HV-EPICS Test Station Status Report

July 31, 2019

DSG Staff: Pablo Campero, Peter Bonneau

1. Developed CSS-BOY screen to test voltage ramp up/down of the HV board model CAEN-A7030TN
 - 1.1. *Voltage Ramp Test* CSS-BOY screen works in conjunction with the *Expert Controls* CSS-BOY screen to control and monitor any voltage drops or voltage increments.
 - 1.2. *Voltage Ramp Test* CSS-BOY screen plots the voltage vs time for all 36 channels of CAEN-A7030TN; the plots are displayed in three panels, 12 channels/panel.



HV-CAEN-A7030TN Voltage Ramp Up/Down Test CSS-BOY screen

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2. HV board model: A7030TN, (S/N: 304)

Board Model	7030TN	Set Voltage: 1500 V	
Serial Number	304	Ramp Up/Down Rate : 25 V/s	
Total Test	3	Load: 0 Ω	IMon: 0 uA
Total # Ramp Up/Down	14/14	Vmax: 1800 V	Imax: 1000 uA

- 2.1. Channel 0 and 8: Vmax changed from 1800 V to 0 V for no reason and trip channel (changes on GECCO2020 and PV).
 Solution: Re-entered value for VMax and Vset
- 2.2. Channel 18: Iset changed from 1000 uA to 1 uA (changes on GECCO-2020 and PV), this change did not trip the channel.
 Solution: Re-enter value for Imax and reset Ch On/Off
- 2.3. Channel 31: Voltage ramp up value changed from 25 V/s to 1 V/s for no reason (Both GECCO-2020 and PV). Event occurred twice.
 Solution: Re-enter voltage ramp up value.
- 2.4. Channel 22: "Vset" changed from 1500 V to 0 V for no reason (Both GECCO-2020 and PV).
 Solution: Re-entered set value for "Vset" and ramp up channel to set voltage.
- 2.5. Channel 32: Iset changed from 1000 uA to 1 uA (Both GECCO-2020 and PV)
 Solution: Re-entered Iset value.

3. Tested HV board model: A7030TN, (S/N: 297)

Board Model	A7030TN	Set Voltage: 1500 V	
Serial Number	297	Ramp Up/Down Rate: 25 V/s	
Total Test	3	Load: 0 Ω	IMon: 0 uA
Total # Ramp Up/Down	15/15	Vmax: 1800 V	Imax: 1000 uA

- 3.1. Channel 3, 6, 14, and 25: Iset value changed from 1000 uA to 0 uA (changes noticed on both GECCO-2020 and PV) for no reason. Channel tripped.
 Solution: Re-entered Iset value and reset channel On/Off.
- 3.2. Channel 7: VRup value changed from 25 V/s to 1 V/s and Vset value changed from 1500 V to 3 V for no reason (changes on GECCO-2020 and PV)
 Solution: Re-entered VRup and Vset values (x2 times)
- 3.3. Channel 19: Vmax value changed from 1800 V to 900 V and Vset value changed from 1500 V to 900 V for no reason (changes on GECCO-2020 and PV)
 Solution: Re-entered Vmax and Vset values (x2 times)
- 3.4. Channel 20: Vmax value changed from 1800 V to 0 V and Vset value changed from 1500 V to 0 V for no reason (changes on GECCO-2020 and PV)
 Solution: Re-entered Vmax and Vset values

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- 3.5. Channel 22: Left Vset value at 1500 V overnight and changed to 0V (no reason).
- 3.6. Channel 27: PV used for VRup changed its value from 25 V/s to 0 V/s (Only PV changed) while GECO-2020 indicated as the expected set value 25 V/s.
 Solution: Changed VRup PV value to 25 V/s and reset channel.

4. Tested HV board model: A7030TN, (S/N: 324)

Board Model	A7030TN	Set Voltage: 1500 V	
Serial Number	324	Ramp Up/Down Rate: 25 V/s	
Total Test	3	Load: 0 Ω	IMon: 0 uA
Total # Ramp Up/Down	15/15	Vmax: 1800 V	Imax: 1000 uA

- 4.1. Channel 3: Iset value changed from 1000 uA to 0 uA (changes noticed on both GECO-2020 and PV) for no reason. Channel tripped.
 Solution: Re-entered Iset value and reset channel On/Off.
- 4.2. Channel 6: Vset value changed from 1500 V to 25 V for no reason (changes on GECO-2020 and PV)
 Solution: Re-entered Vset value (x2 times).
- 4.3. Channel 21 and 24: Vset value changed from 1500 V to 25 V and Vmax from 1800 V to 25 V for no reason (changes on GECO-2020 and PV). Status displayed overvoltage condition.
 Solution: Re-entered Vset and Vmax values.
- 4.4. Channel 34: Overvoltage condition displayed, Vset value changed from 1500 V to 0 V for no reason (changes on GECO-2020 and PV)
 Solution: Re-entered Vset value

- 5. Generated spreadsheet with the details of the test performed for three HV CAEN A7030TN boards.
- 6. Wrote Java script to turn all channels On/Off for all 16 HV boards at once by clicking a push button showed in the HV-CAEN-A7030TN Expert Controls CSS-BOY screen
- 7. Added “Voltage Ramp Up/Down Test” CSS-BOY screen for HV-CAEN A7030TN to drop down menu in SY4527 Main screen to allow navigation between screens.

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8. Modified "HV CAEN- Expert Controls" CSS-BOY screen for HV board model A7030TN.

TEST HV CAEN - Expert Controls - Slot 2

Novice
Board Model: A7030TN - [S/N: 324]
ALL ON/OFF

Ch#	Location	Click to Turn	Status	VMon [V]	Imon [uA]	Vset [V]		Iset [uA]		Vmax [V]		RUp [V/s]		RDwn [V/s]		Trip [s]	
						Readback	Set	Readback	Set	Readback	Set	Readback	Set	Readback	Set	Readback	Set
00	DSG-Lab	OFF	ON	1499.93	-0.002	1500.00	1500	1000.00	1000.00	1800	1800	25	25	25	25	3.0	3.0
01	DSG-Lab	OFF	ON	1499.89	0.022	1500.00	1500	1000.00	1000.00	1800	1800	25	25	25	25	3.0	3.0
02	DSG-Lab	OFF	ON	1499.84	-0.046	1500.00	1500	1000.00	1000.00	1800	1800	25	25	25	25	3.0	3.0
03	DSG-Lab	OFF	ON	1499.80	-0.010	1500.00	1500	1000.00	1000.00	1800	1800	25	25	25	25	3.0	3.0
04	DSG-Lab	OFF	ON	1499.75	-0.024	1500.00	1500	1000.00	1000.00	1800	1800	25	25	25	25	3.0	3.0
05	DSG-Lab	OFF	ON	1499.95	0.034	1500.00	1500	1000.00	1000.00	1800	1800	25	25	25	25	3.0	3.0
06	DSG-Lab	OFF	ON	1499.92	-0.004	1500.00	1500	1000.00	1000.00	1800	1800	25	25	25	25	3.0	3.0
07	DSG-Lab	OFF	ON	1499.79	-0.046	1500.00	1500	1000.00	1000.00	1800	1800	25	25	25	25	3.0	3.0
08	DSG-Lab	OFF	ON	1499.97	-0.014	1500.00	1500	1000.00	1000.00	1800	1800	25	25	25	25	3.0	3.0
09	DSG-Lab	OFF	ON	1499.75	-0.016	1500.00	1500	1000.00	1000.00	1800	1800	25	25	25	25	3.0	3.0
10	DSG-Lab	OFF	ON	1499.93	0.032	1500.00	1500	1000.00	1000.00	1800	1800	25	25	25	25	3.0	3.0
11	DSG-Lab	OFF	ON	1499.98	0.012	1500.00	1500	1000.00	1000.00	1800	1800	25	25	25	25	3.0	3.0
12	DSG-Lab	OFF	ON	1499.80	-0.058	1500.00	1500	1000.00	1000.00	1800	1800	25	25	25	25	3.0	3.0
13	DSG-Lab	OFF	ON	1499.88	-0.020	1500.00	1500	1000.00	1000.00	1800	1800	25	25	25	25	3.0	3.0
14	DSG-Lab	OFF	ON	1499.91	0.018	1500.00	1500	1000.00	1000.00	1800	1800	25	25	25	25	3.0	3.0
15	DSG-Lab	OFF	ON	1499.91	-0.022	1500.00	1500	1000.00	1000.00	1800	1800	25	25	25	25	3.0	3.0
16	DSG-Lab	OFF	ON	1499.89	0.002	1500.00	1500	1000.00	1000.00	1800	1800	25	25	25	25	3.0	3.0
17	DSG-Lab	OFF	ON	1499.91	0.050	1500.00	1500	1000.00	1000.00	1800	1800	25	25	25	25	3.0	3.0
18	DSG-Lab	OFF	ON	1499.96	0.018	1500.00	1500	1000.00	1000.00	1800	1800	25	25	25	25	3.0	3.0
19	DSG-Lab	OFF	ON	1499.87	0.016	1500.00	1500	1000.00	1000.00	1800	1800	25	25	25	25	3.0	3.0
20	DSG-Lab	OFF	ON	1499.83	0.022	1500.00	1500	1000.00	1000.00	1800	1800	25	25	25	25	3.0	3.0
21	DSG-Lab	OFF	ON	1500.00	0.056	1500.00	1500	1000.00	1000.00	1800	1800	25	25	25	25	3.0	3.0
22	DSG-Lab	OFF	ON	1499.87	-0.002	1500.00	1500	1000.00	1000.00	1800	1800	25	25	25	25	3.0	3.0
23	DSG-Lab	OFF	ON	1499.88	0.010	1500.00	1500	1000.00	1000.00	1800	1800	25	25	25	25	3.0	3.0
24	DSG-Lab	OFF	ON	1499.87	0.020	1500.00	1500	1000.00	1000.00	1800	1800	25	25	25	25	3.0	3.0
25	DSG-Lab	OFF	ON	1499.90	0.018	1500.00	1500	1000.00	1000.00	1800	1800	25	25	25	25	3.0	3.0
26	DSG-Lab	OFF	ON	1499.85	0.034	1500.00	1500	1000.00	1000.00	1800	1800	25	25	25	25	3.0	3.0
27	DSG-Lab	OFF	ON	1499.95	0.038	1500.00	1500	1000.00	1000.00	1800	1800	25	25	25	25	3.0	3.0
28	DSG-Lab	OFF	ON	1500.01	-0.020	1500.00	1500	1000.00	1000.00	1800	1800	25	25	25	25	3.0	3.0
29	DSG-Lab	OFF	ON	1499.97	0.016	1500.00	1500	1000.00	1000.00	1800	1800	25	25	25	25	3.0	3.0
30	DSG-Lab	OFF	ON	1499.85	0.000	1500.00	1500	1000.00	1000.00	1800	1800	25	25	25	25	3.0	3.0
31	DSG-Lab	OFF	ON	1499.85	0.038	1500.00	1500	1000.00	1000.00	1800	1800	25	25	25	25	3.0	3.0
32	DSG-Lab	OFF	ON	1499.80	-0.006	1500.00	1500	1000.00	1000.00	1800	1800	25	25	25	25	3.0	3.0
33	DSG-Lab	OFF	ON	1499.85	0.002	1500.00	1500	1000.00	1000.00	1800	1800	25	25	25	25	3.0	3.0
34	DSG-Lab	OFF	ON	1499.82	-0.016	1500.00	1500	1000.00	1000.00	1800	1800	25	25	25	25	3.0	3.0
35	DSG-Lab	OFF	ON	1499.85	-0.002	1500.00	1500	1000.00	1000.00	1800	1800	25	25	25	25	3.0	3.0

HV- CAEN MAIN

Max Current Hwd	0 microAm
Max Voltage Hwd	1 Volt
Board Temperature	30 Celsius

I & V Plots

Ramp Up Test

All Channels

Vset [V]	I Set [uA]	VMax [V]	Rup [V/s]	RDown[V/s]	Trip [s]
1500.0	1000.0	1800.0	25.0	25.0	3.0

Next Slot >
< Previous Slot

Modified HV-CAEN-A7030TN Expert Controls CSS-BOY screen