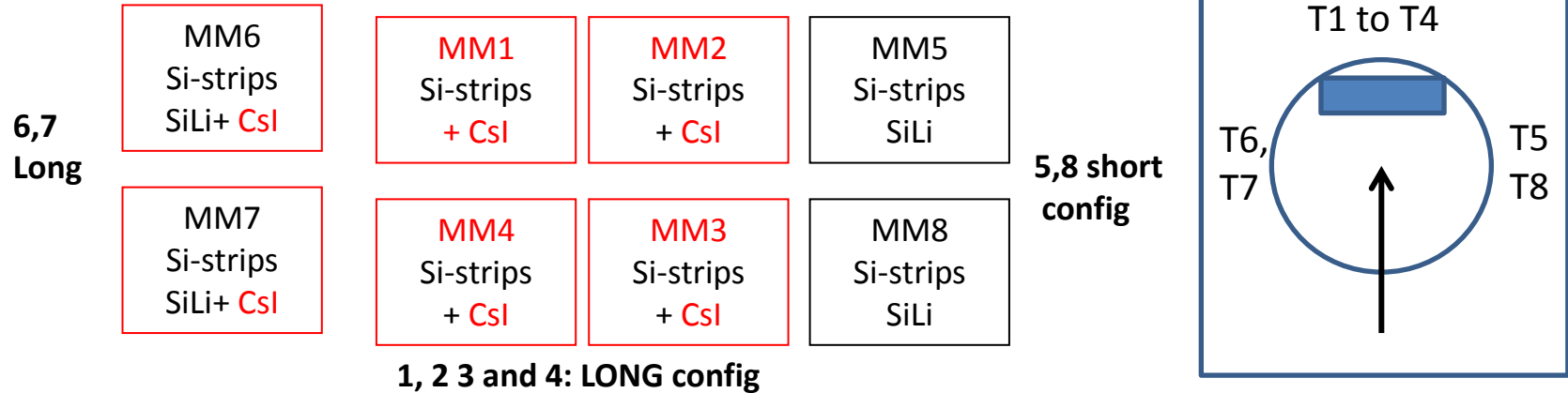


Mounting of the telescopes in the M2C chamber

Wednesday 3rd July: assembly and configuration of the MUST2 telescopes by Patrice GANGNANT and Laurent MENAGER



SiLi mounted on telescopes:

LEFT: MM6 ST9-12 ST9-13

MM7 ST9-27 ST9-14

RIGHT: MM5 ST9-7 ST9-20

MM8 ST9-4 ST9-26

DSSD Si detectors of MM: bonding of Sin^o7 mounted in telescopes T1 of exp E582

was repaired at Marseille for the bondings, but one part of the DSSD is still damaged on the connectors>>>going to be repaired at LPC.

Now DSSD of MM1 is n^o6 (previous E582 exp)

DSSD MM2 = same as before (serial number 2489-8)

DSSD MM3 = same as before

DSSD MM4 = n^o5 of previous exp, serial number: 2274-24

DSSD MM5 = n^o4 of previous exp (because it seemed to have a large current at end of exp E582)

DSSD MM6, MM7, MM8 = same as before

Temperature probes are on T2, T4 and T5, T6

Mounting of the telescopes in the M2C chamber

Wednesday 3rd July: assembly and configuration of the MUST2 telescopes

On Thursday July 4th 4-wall BLOCK 1st mounting: T3 (bottom right) then T4 (bottom left) then T2 and at the end T1

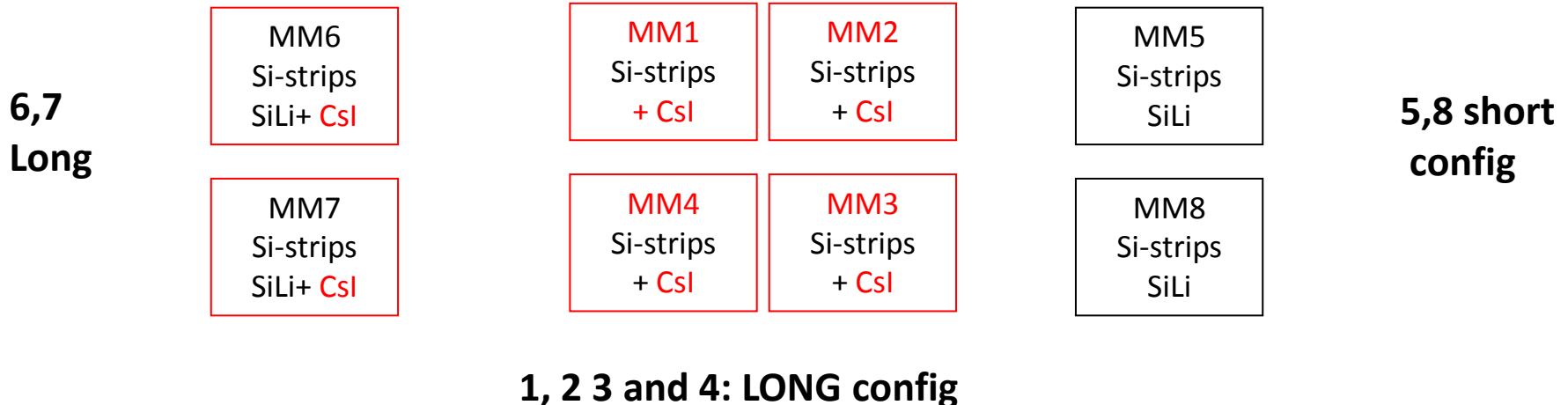
LEFT BLOCK T7 then T6 ; RIGHT BLOCK: T8, then T5,

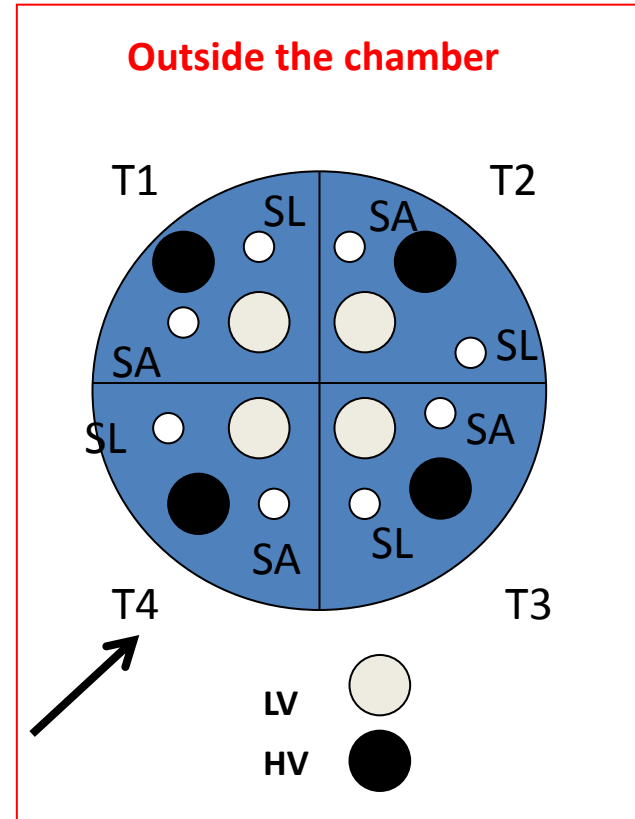
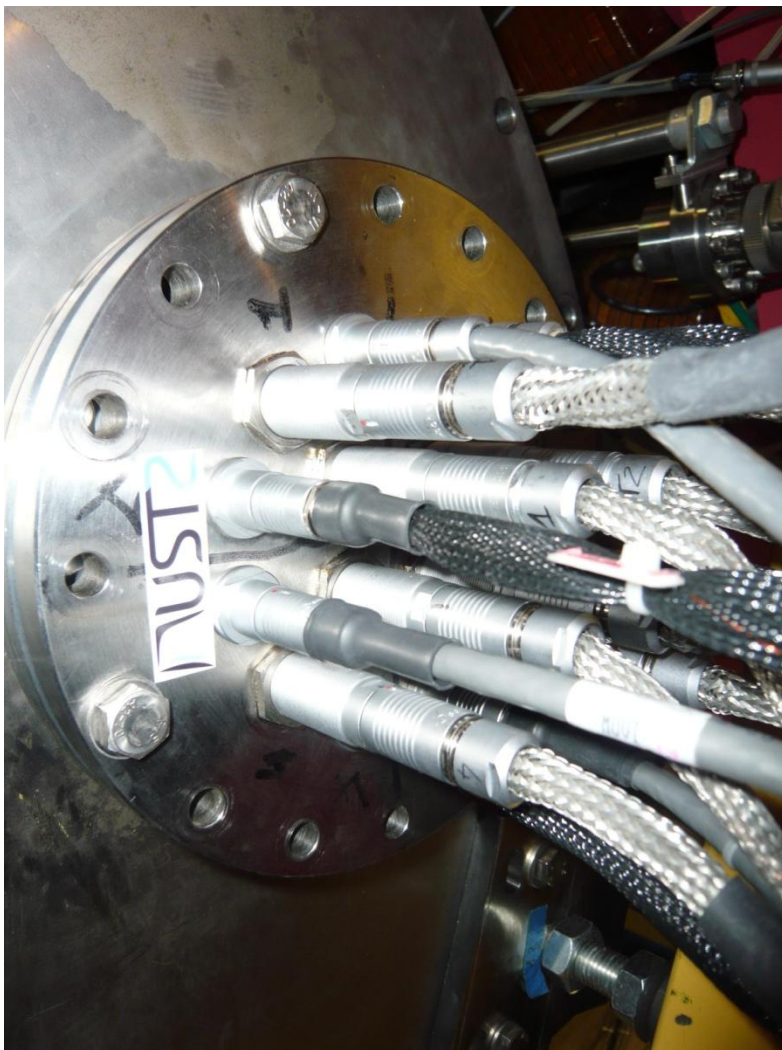
Temperature probes are on T2, T4 and T5, T6

When telescopes are already prepared the mounting on the mechanical support for 4 can be done quietly in 1 hour (1/4h per telescope) for two persons.

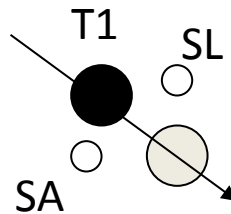
Operation on the 3 flanges (removal or set-up) takes around 1/2h for 4 persons

HV/BV for T1 to T4 , HV/LV for T5 to T8 and cooling flange





SL (logic, I2C, grey cable)
connector at the left
when looking to the center
(connector color on the flange is black)



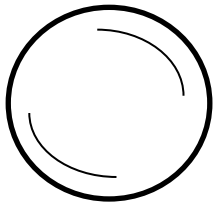
SA (analog, I2C, black cable)
connector at the right
when looking to the center
(connector color on the flange is grey-brown)

The opposite inside the reaction chamber

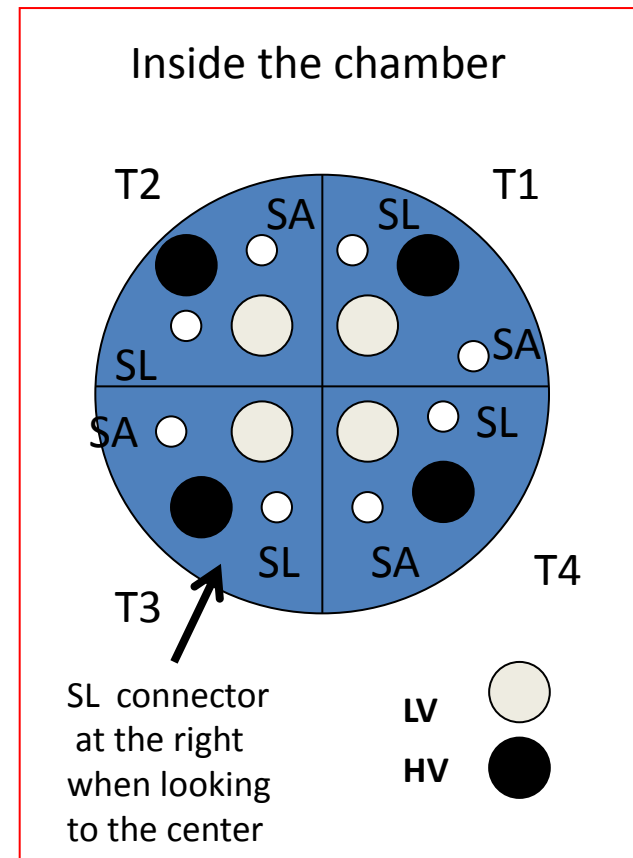
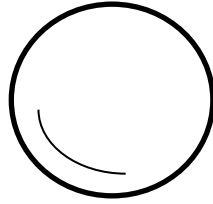
CABLES / FLANGES / CONNECTORS

NB: The number of pins for SA
> number for SL

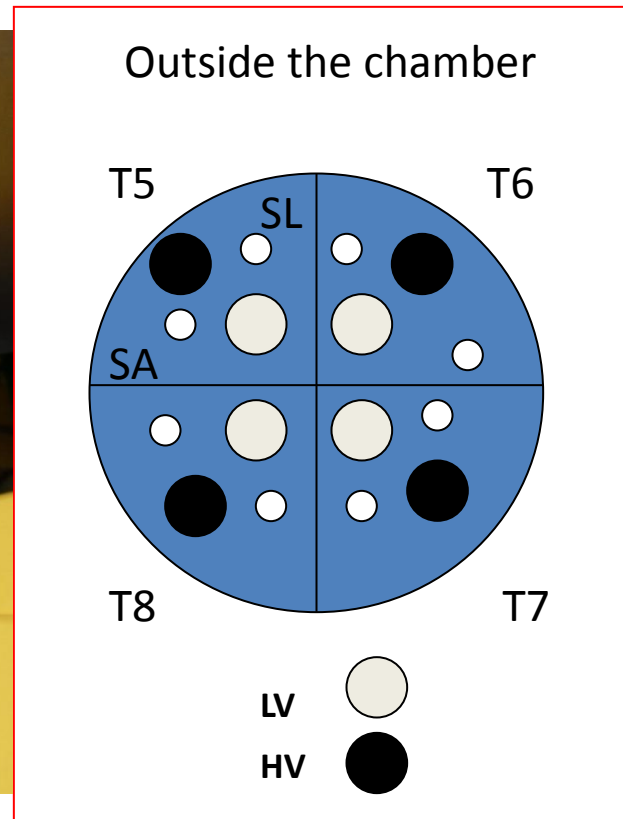
“BT” LV connector
2 détrompeurs



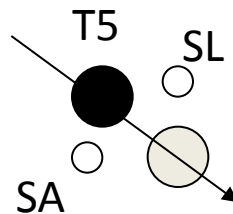
“HT” LV connector
1 détrompeur



CABLES / FLANGES / CONNECTORS



SL (logic, I2C, grey cable)
 connector at the left
 when looking to the center
 (connector color
 on the flange is black)



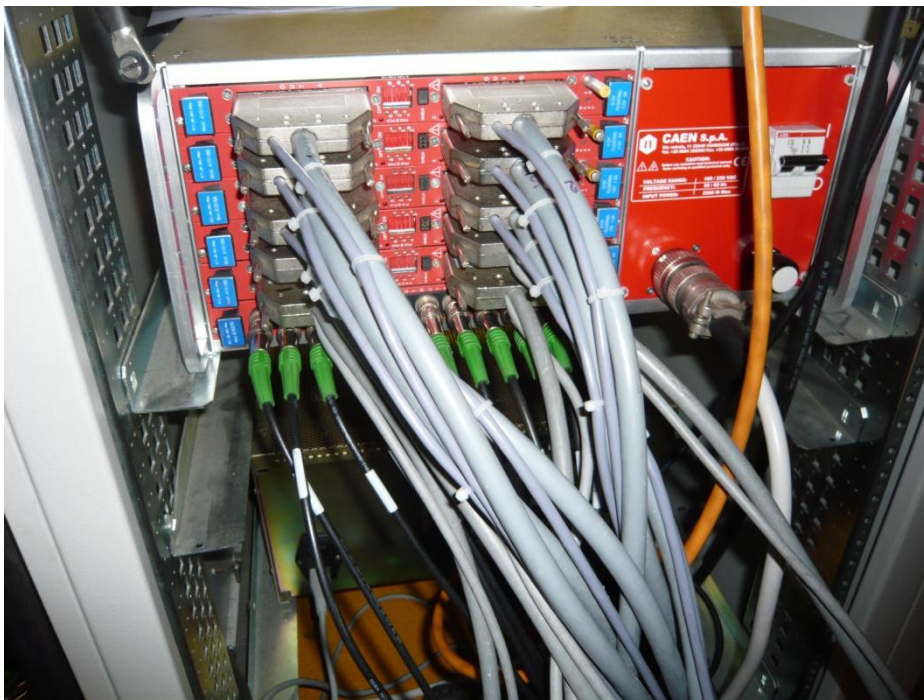
The opposite inside the reaction chamber

SA (analog, I2C, black cable)
 connector at the right
 when looking to the center
 (connector color on the flange is grey-brown)

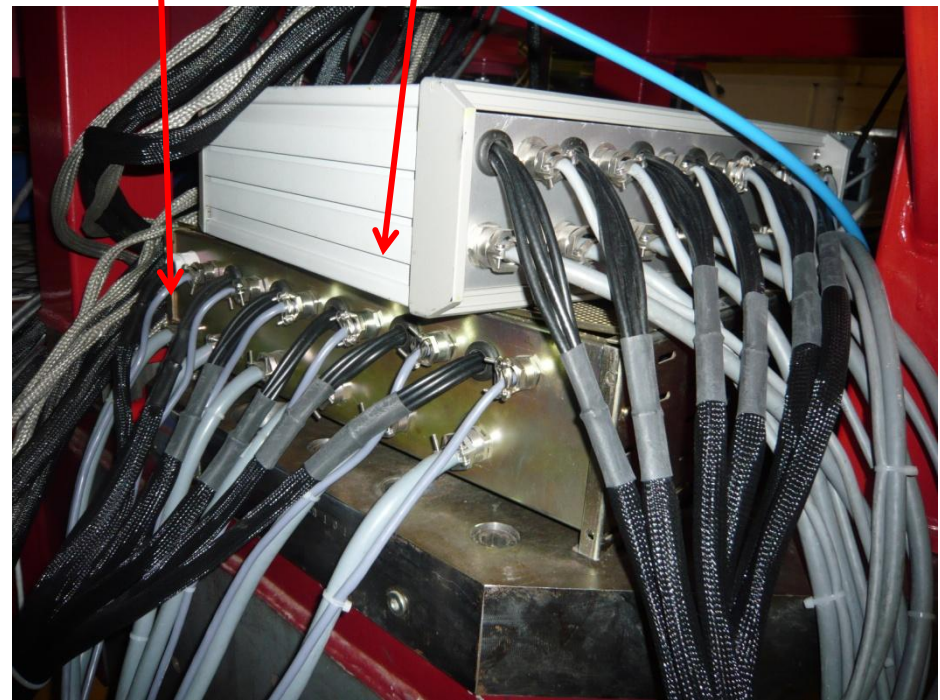
Cables of MUST2, distribution boxes

*BT ok for the 6 telescopes T1 to T6; HT ok for dssd of T1 to T6 (tests done with V_{oset}= 5V)
(for T3dssd current is large @5V, I=4.1μA)*

BOX for 6 telescopes T1 to T6



BOX for telescopes T7, T8



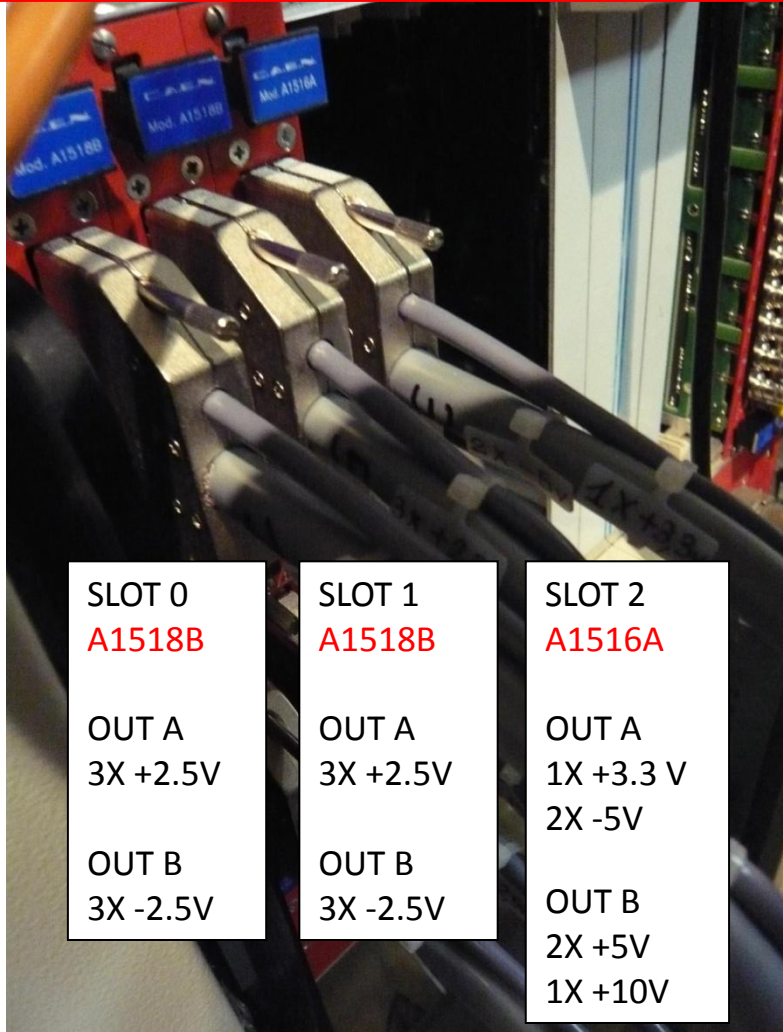
E655S, Final Configuration for Power supply SY1527 CAEN CRATE

Normal Configuration for 8 telescopes in SY1527 Caen
(HT for 8 telescopes, DSSD and Csi, SiLi)

Slot In SY1527	Module	Quantity	Type	Nb of channels	Power for MUFEE
0, 1	A1518	2	4.5V/6A	6	+2.5V, -2.5V
2	A1516	1	15V/1.5A	6	+3.3V, +5V, -5V, +10V
4	A1518	1	4.5V/6A	6	+2.5V, -2.5V
5	A1518	1	15V/1.5A	6	+3.3V, +5V, -5V, +10V
12	A1837N	1	-250V/1mA(100 μ A)	12	-50V (Csi), -100V(Si)
13	A1835P	1	+1.5kV/7mA(200 μ A)	12	+HT SiLi de Julich
14	A1837N	1	-250V/1mA(100 μ A)	12	-50V (Csi), -100V(Si)

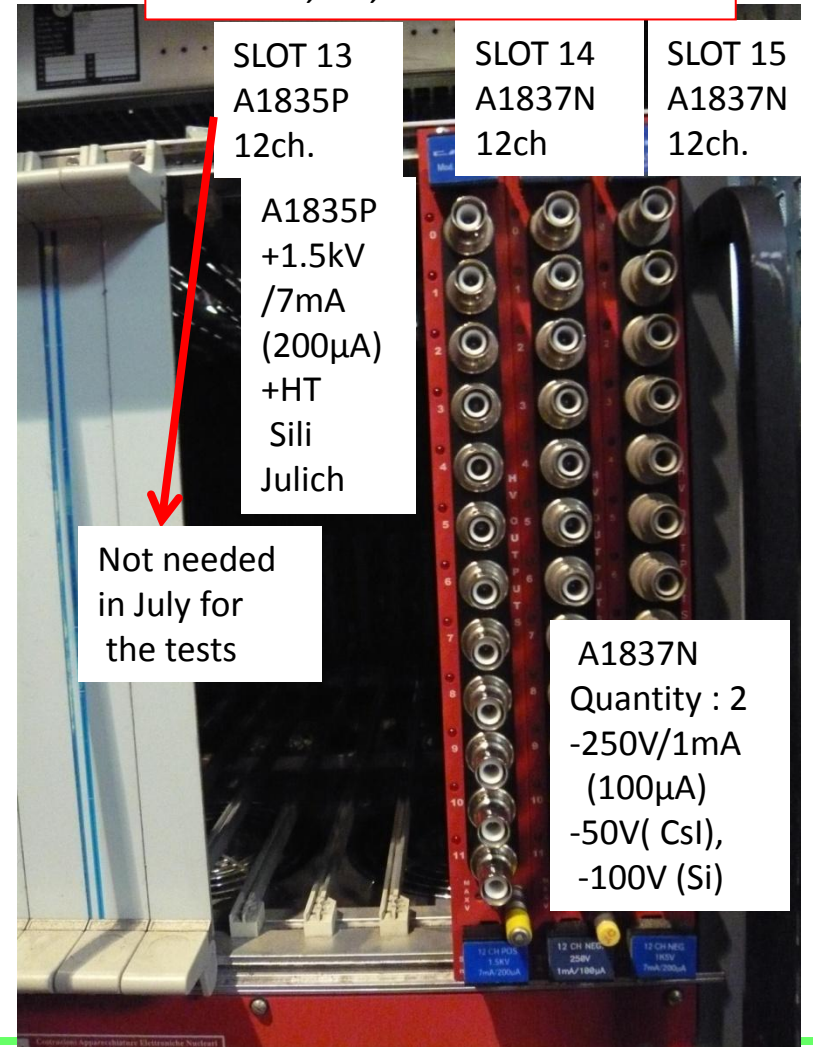
Power supply CAEN SY1527 configuration for 6 telescopes LOW/ HIGH VOLTAGES

Distribution box for telescopes T1 to T6 with power supply (low voltage) from Slots 0, 1 and 2



SLOT 0	SLOT 1	SLOT 2
A1518B	A1518B	A1516A
OUT A 3X +2.5V	OUT A 3X +2.5V	OUT A 1X +3.3 V 2X -5V
OUT B 3X -2.5V	OUT B 3X -2.5V	OUT B 2X +5V 1X +10V

For telescopes T1 to T6 power supply (high voltage) Slots 13, 14, 15



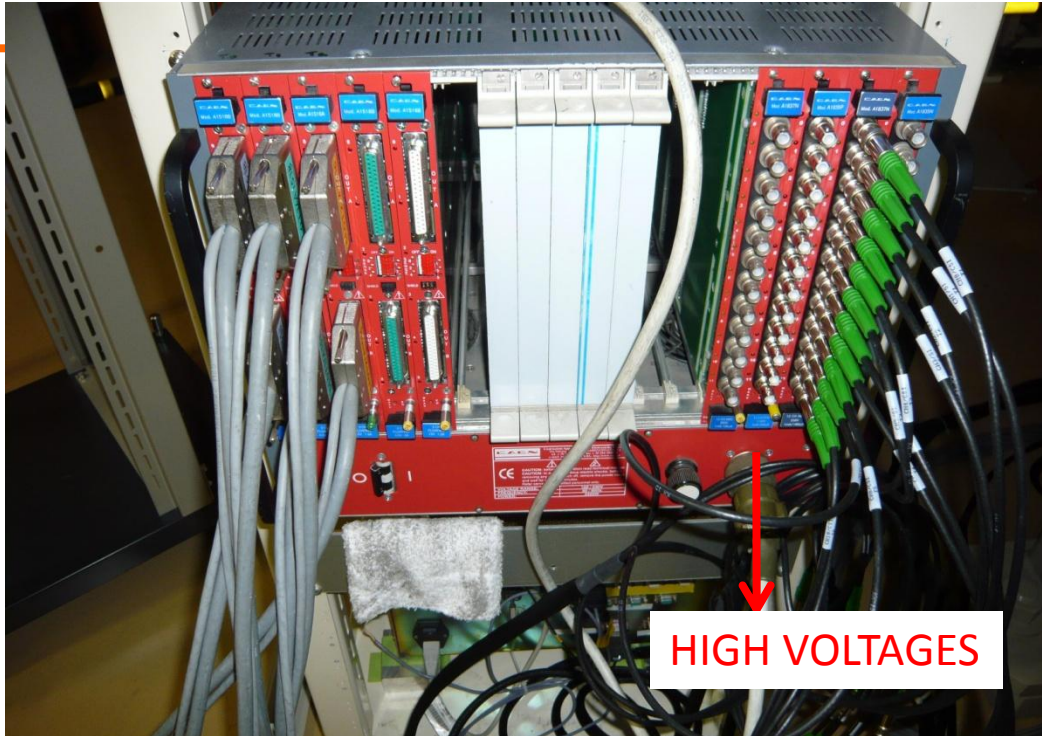
SLOT 13	SLOT 14	SLOT 15
A1835P	A1837N	A1837N
12ch.	12ch	12ch.

A1835P
+1.5kV /7mA (200µA)
+HT
Sili
Julich

Not needed in July for the tests

A1837N
Quantity : 2
-250V/1mA (100µA)
-50V(Csi),
-100V(Si)

Power supply CAEN SY1527 FULL configuration for 8 telescopes LOW/ HIGH VOLTAGES



SY1527 max number of boards per crate 16
 19 " wide
 depth 720 mm
 8U-high
 Euro-mechanics rack

SLOT 14
 A1837N
 12ch.
A1837N
 -250V/1mA
 (100µA)
 -50V(Csl),
 -100V (Si)

HIGH VOLTAGES

SLOT 0
A1518B
 OUT A
 3X +2.5V
 OUT B
 3X -2.5V

SLOT 1
A1518B
 OUT A
 3X +2.5V
 OUT B
 3X -2.5V

SLOT 2
A1516A
 OUT A
 1X +3.3 V
 2X -5V
 OUT B
 2X +5V
 1X +10V

SLOT 3
A1518B
 "1"
 3X +2.5V
 "2"
 3X -2.5V

SLOT 4
A1518B
 "3"
 2X -5V
 1X +3.3 V
 "4"
 2X +5V
 1X +10V

SLOT 12
A1837N
 12ch.

SLOT 13
A1835P
 12ch
A1835P
 +1.5kV /7mA
 (200µA)
 +HT Sili
 Julich

Distribution box T7 to T8
 (T9,...T12)

Power supply CAEN HIGH VOLTAGE

POWER SUPPLY MODULES (in red only for 4 TELESCOPES):

SLOT	Slot 11	Slot 12	Slot 13	Slot 14
Module	A1835P	A1837N	A1835P	A1837N
MUST2	+HT SiLi de Julich	-50V (Csl) -100V(Si)	+HT SiLi de Julich	-50V (Csl), -100V(Si)
	+1.5kV/7mA(200μA)	-250V/1mA(100μA)	+1.5kV/7mA(200μA)	-250V/1mA(100μA)
Ch0		T7 Csl	T5/ SiLi 1	T1 Csl
Ch1		T7 Si DSSD	T5 / SiLi 2	T1 Si DSSD
Ch2				T2 Csl
Ch3		T8 Si DSSD		T2 Si DSSD
Ch4				T3 Csl
Ch5				T3 Si DSSD
Ch6			T8 / SiLi 1	T4 Csl
Ch7			T8 / SiLi 2	T4 Si DSSD
Ch8				
Ch9				T5 Si DSSD
Ch10				T6 Csl
Ch11				T6 Si DSSD

CABLES from DISTRIBUTION BOXES TO SY1527 CRATE

Low voltages

slot T0 : A1518B ; grey cables BT (OUT_A) +2,5V ; BT (OUT_B) -2,5V (BT telescopes 1,2, et 3)

slot T1: A1518B ; grey cables BT (OUT_A) +2,5V ; BT (OUT_B) -2,5V (BT telescopes 4, 5 and 6)

slot T1: A1518B ; grey cables BT (OUT_A) -5V and +3,3V ; BT (OUT_B) +5V +10V

...

High voltages

slot T13 A1835P : for SiLi Julich (polar +) // black cables

slot T14 A1837N : T1 Csi / T1 Si / T2 Csi / T2 Si etc... // black cables

slot T15 A1835N for SiLi Orsay (polar -)

On cables labeling is the following:

“50 T1” means power supply for Csi, Tel 1 of the distribution box, which distributes power for 6 telescopes

(on the 2nd distribution box, 1st telescope is T7)

“100 T1” means Si DSSD

“1000-1” or SiLi 1 means SiLi Pad 1

“1000-2” or SiLi 1 means SiLi Pad 2

PRESENT (4th JULY) Configuration for Power supply SY5527 CAEN CRATE

Present Configuration for 8 telescopes in SY5527 Caen

(HT only for 6 telescopes, DSSD and Csi, only BT for telescopes 7 and 8)

Slot In SY5527	Module	Quantity	Type	Nb of channels	Power for MUFEE	Cables
5	A1518B	1	4.5V/6A	6	+2.5V, -2.5V	Grey "outA -1 "outB -2"
4	A1516A	1	15V/1.5A	6	+3.3V, +5V, -5V, +10V	Grey "5""6"
3	A1518B	1	4.5V/6A	6	+2.5V, -2.5V	Grey "3""4"
2	A1518B	1	15V/1.5A	6	+3.3V, +5V, -5V, +10V	Grey "outA - A1516" "outB -A1516"
1	A1518B	1	4.5V/6A	6	+2.5V, -2.5V	Grey "1""2"
0	A1837N	1	-250V/1mA(100 μ A)	12	-50V (Csi), -100V(Si)	Black cables