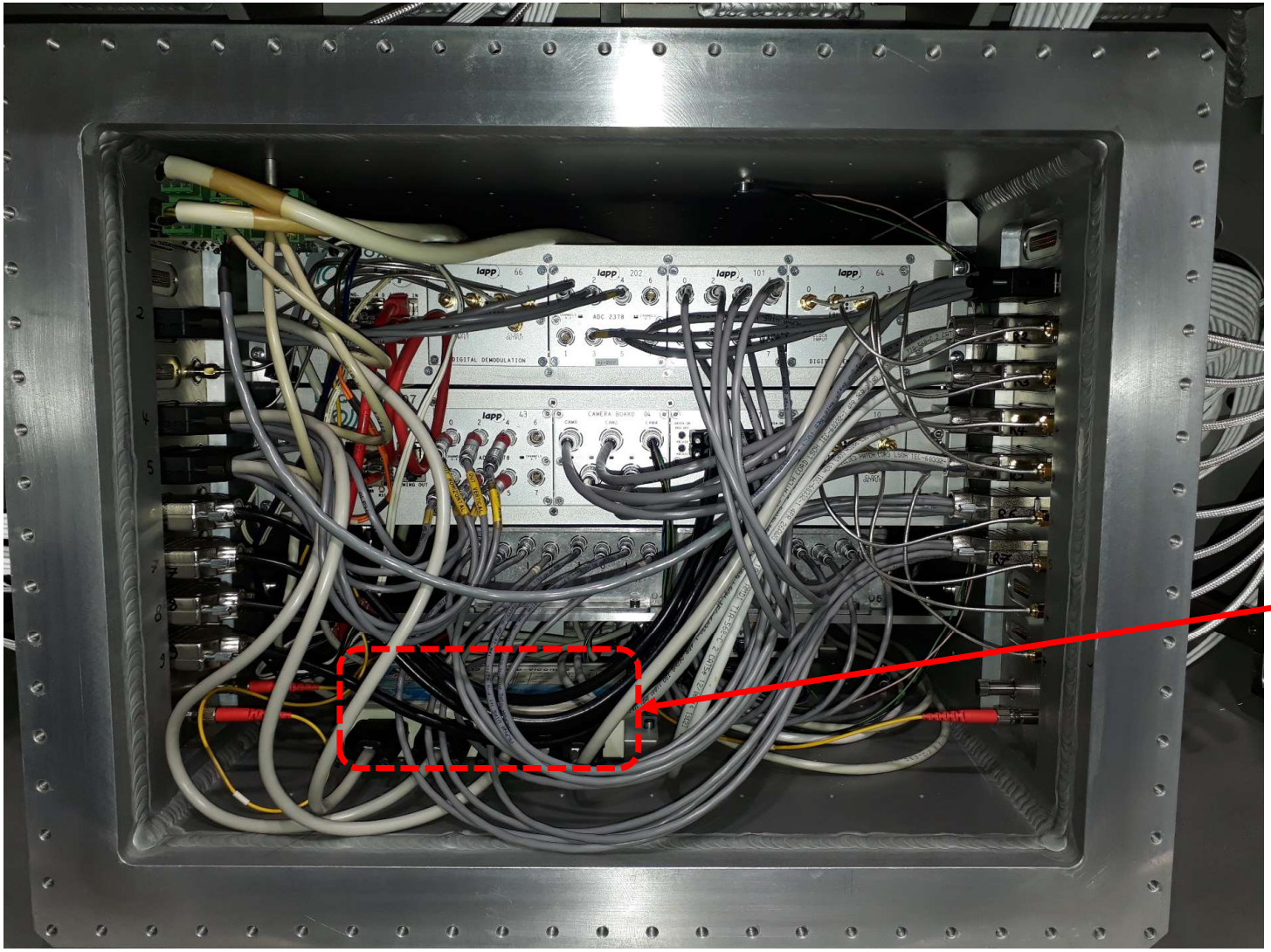
SDB2 intervention on ethernet bridge

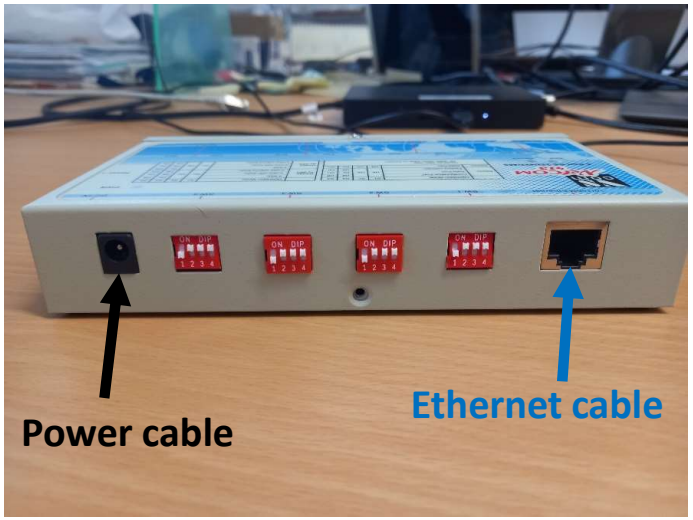
R. Gouaty, 17/05/2021

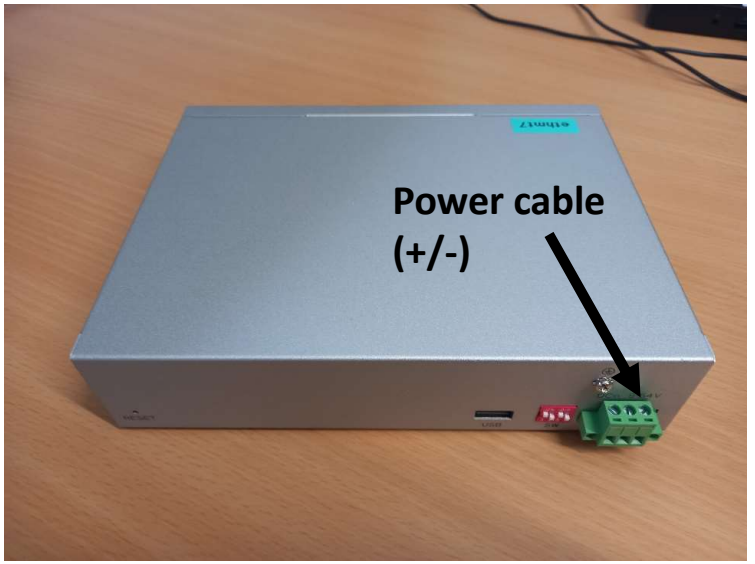
SDB2 electronic tank, south

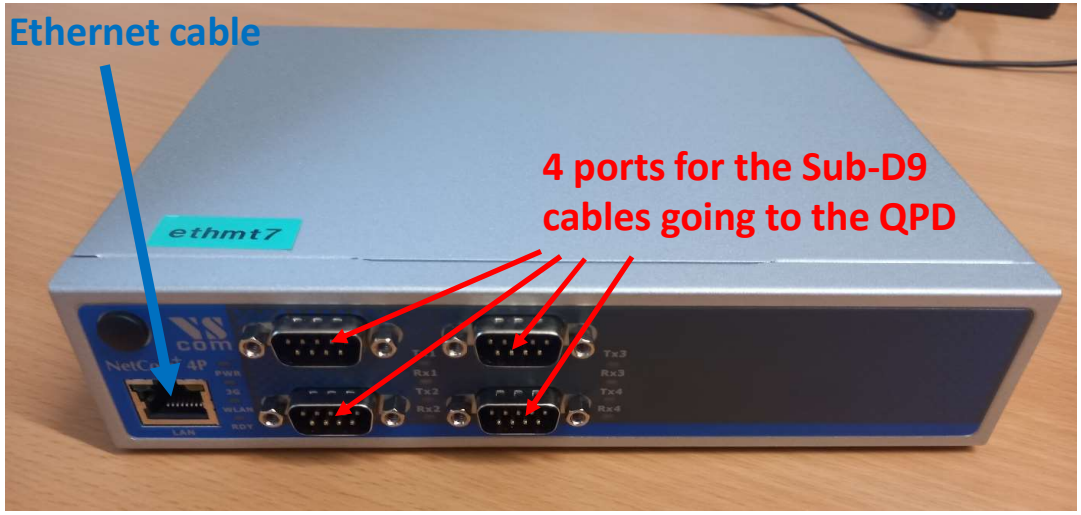


Ethernet bridge ethmt3

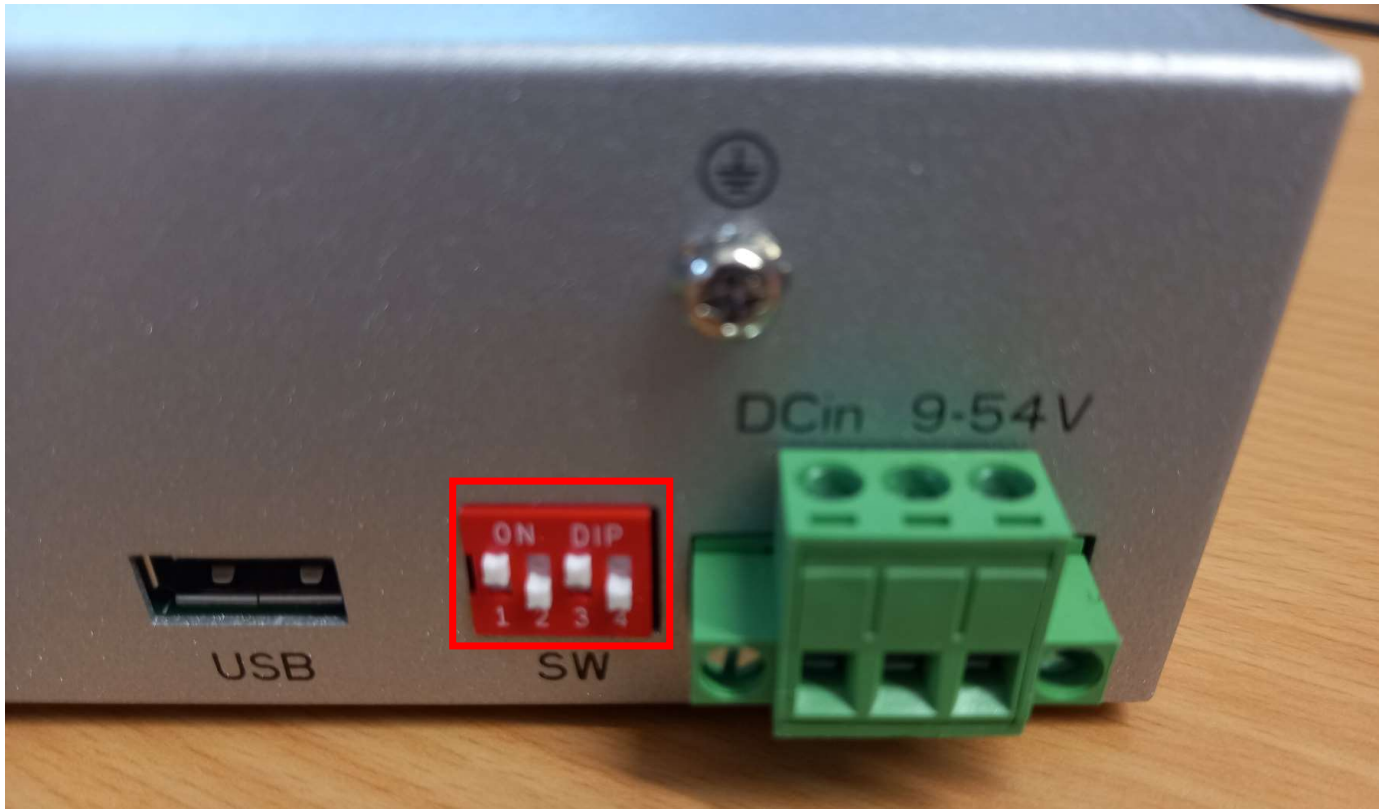
Comparison old/new ethernet bridge

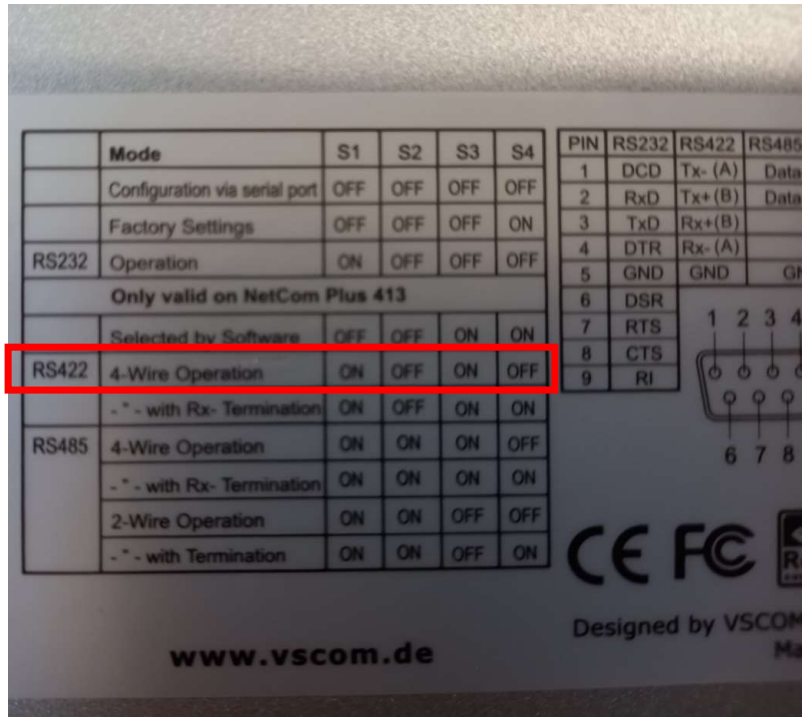






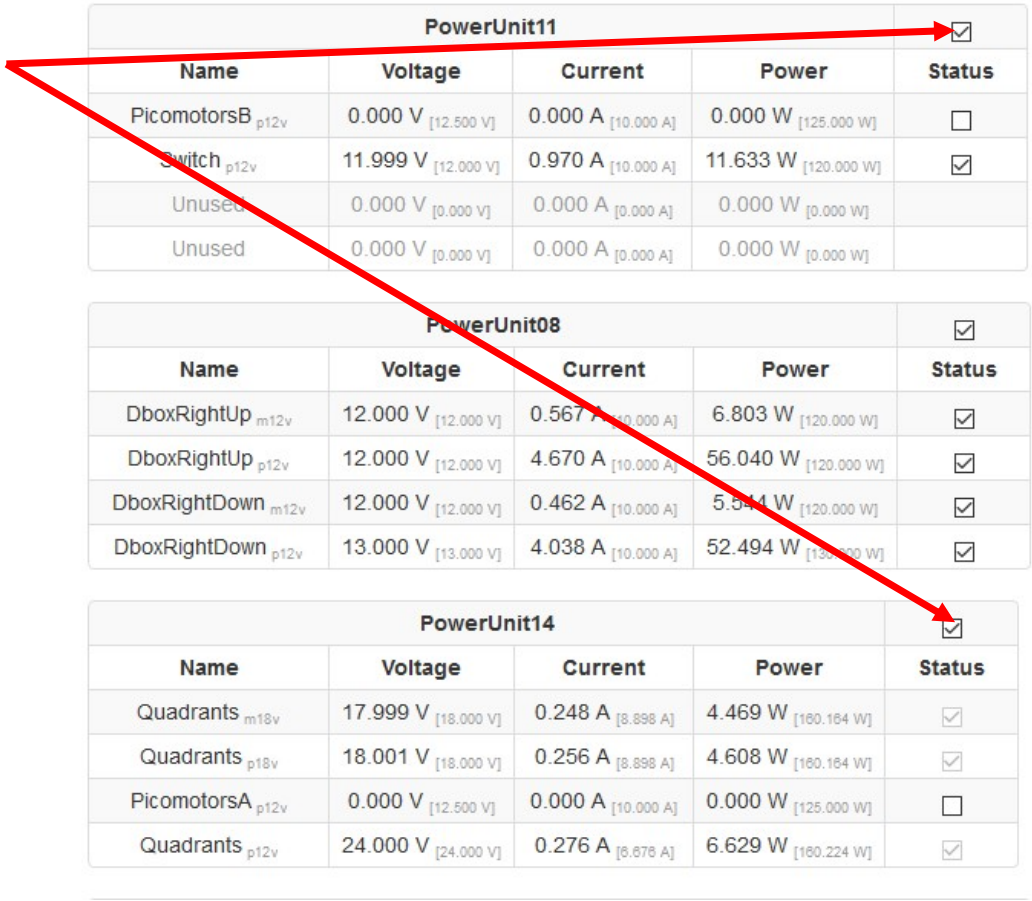
New ethernet bridge: RS422 settings





Procedure of replacement (1/4)

- Open SDB2 local controls (SDB2_SBE + SDB2_LC process)
- Vent the SDB2 minitower
- Open the two minitower doors (access to the two sides of the bench will be required to rebalance the bench)
- Block the SDB2 bench
- Switch off power unit 14 and power unit 11
- Open the **south door** of the electronic tank



PowerUnit11				☑
Name	Voltage	Current	Power	Status
PicomotorsB p12v	0.000 V [12.500 V]	0.000 A [10.000 A]	0.000 W [125.000 W]	☐
Switch p12v	11.999 V [12.000 V]	0.970 A [10.000 A]	11.633 W [120.000 W]	☑
Unused	0.000 V [0.000 V]	0.000 A [0.000 A]	0.000 W [0.000 W]	
Unused	0.000 V [0.000 V]	0.000 A [0.000 A]	0.000 W [0.000 W]	

PowerUnit08				☑
Name	Voltage	Current	Power	Status
DboxRightUp m12v	12.000 V [12.000 V]	0.567 A [10.000 A]	6.803 W [120.000 W]	☑
DboxRightUp p12v	12.000 V [12.000 V]	4.670 A [10.000 A]	56.040 W [120.000 W]	☑
DboxRightDown m12v	12.000 V [12.000 V]	0.462 A [10.000 A]	5.544 W [120.000 W]	☑
DboxRightDown p12v	13.000 V [13.000 V]	4.038 A [10.000 A]	52.494 W [130.000 W]	☑

PowerUnit14				☑
Name	Voltage	Current	Power	Status
Quadrants m18v	17.999 V [18.000 V]	0.248 A [8.898 A]	4.469 W [160.164 W]	☑
Quadrants p18v	18.001 V [18.000 V]	0.256 A [8.898 A]	4.608 W [160.164 W]	☑
PicomotorsA p12v	0.000 V [12.500 V]	0.000 A [10.000 A]	0.000 W [125.000 W]	☐
Quadrants p12v	24.000 V [24.000 V]	0.276 A [6.676 A]	6.629 W [160.224 W]	☑

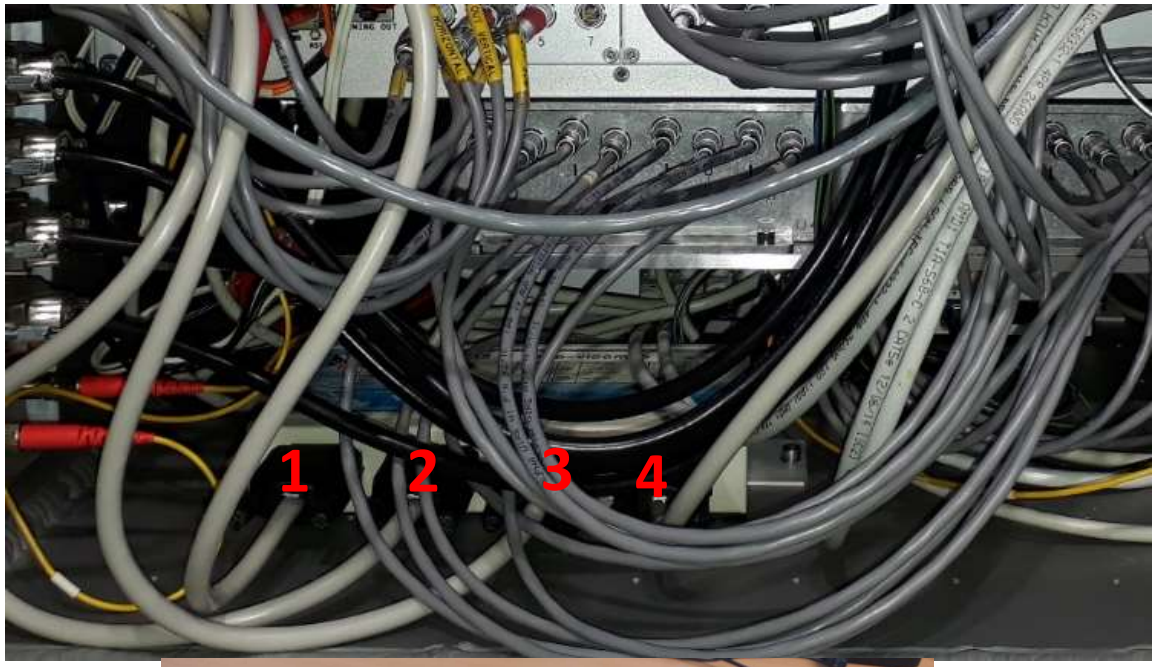
Procedure of replacement (2/4)

- Check the Sub-D9 cables in order to be able to replug them on the same ports on the new driver
- Uncable the old ethernet bridge

The following steps should be done outside of the minitower (if the power cable is long enough):

- Cut the connector of the power supply cable
- Separate the two pins along a few cm
- Strip the end of the two conductors

- Switch back on the power unit 11
- With a multimeter check voltage between the two pins of the power supply cable
- The absolute value of the voltage should be about 12V.
- The sign of the voltage indicates which pin is positive and which pin is negative.
- **Switch back off the power unit 11**



Procedure of replacement (3/4)

- Weight the old ethernet bridge and the old connector of the power supply cable that was cut.
- Weight the new ethernet bridge.
- Compute the difference between the two previous weights: **this mass should be removed from the bench.**

- Install the new ethernet bridge inside the container and plug it:
  - The positive pin of the power supply cable should be plugged to the positive plug of the new bridge.
  - The negative pin of the power supply cable should be plugged to the negative plug of the new bridge.
  - Plug the ethernet cable, and the quadrant Sub-D9 cables to the new ethernet bridge
- Fix the new ethernet brige on the floor of the electronic tank
- Switch back on the power supplies power unit 14 and power unit 11
- Wait for a few minutes
- Try to ping the ethmt7: the communication with the bridge should be restored
- Call a DAQ expert that will update the configuration of the QPD to work with the new ethernet bridge ethmt7
- Then, test the commands of the QPD with VPM: check status, enable Vbias, disable Vbias, open shutter, close shutter.

- If all the tests are successful:
  - Switch off the power supplies power unit 14 and power unit 11
  - Go on with the final steps (see next slide)

Procedure of replacement (4/4)

- Close the electronic tank
- Adjust the mass on the bench
- Release the bench
- Adjust the position of the counter-weights in order to rebalance the bench in TX and TZ

- Close SDB2 minitower
- Start minitower evacuation