Ecogas - CMS-GT-2-0: Rate Scan

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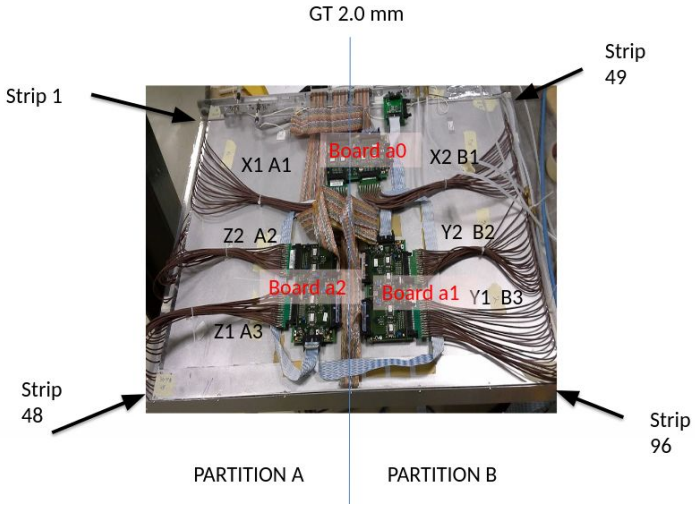
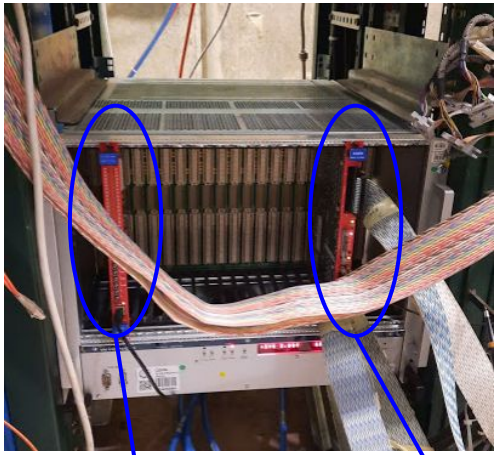
Eco-gas meeting - 17/Mar/2021

System Setup

Chamber: CMS-GT-2-0

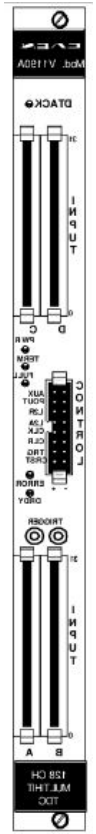


Trigger setup

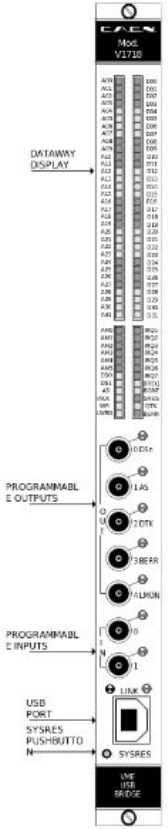


V1718 Bridge module

TDC module V1190A



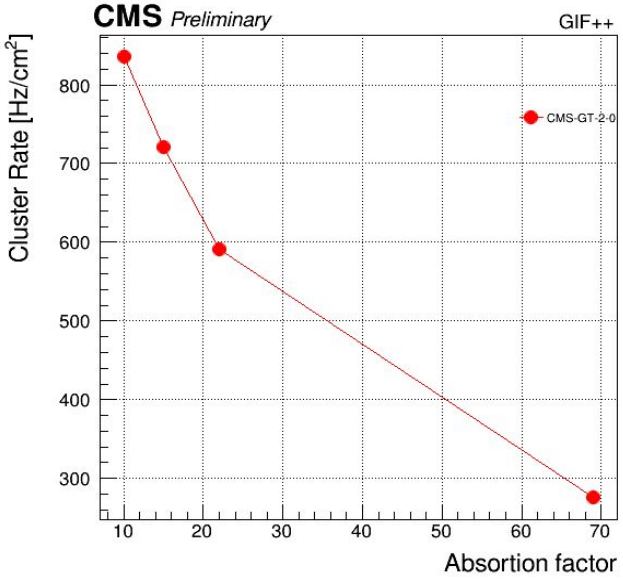
TDC

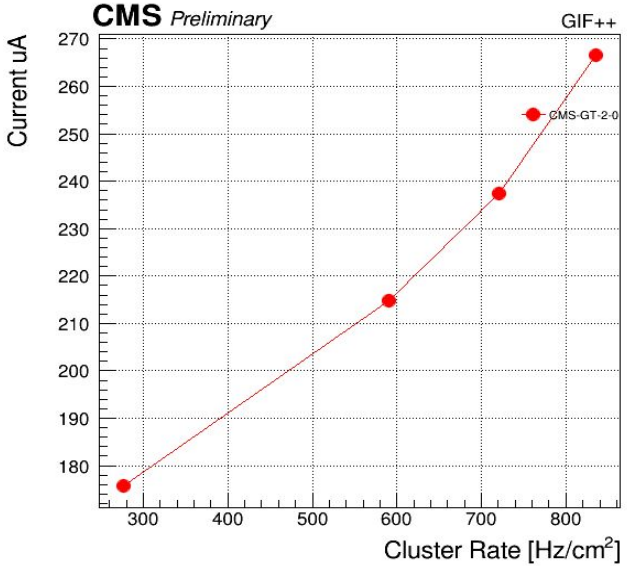


Bridge

Characteristics:
- Gas gap thickness: 2 mm
- Electrodes thickness: 2mm
- Two partitions: A and B
- 3 CMS RPC FEBs
- 96 strips, 32 per FEB
- Area: 7000 cm² (according to Webdcs) -> To be checked with colleagues
- WP: ??

Rate Scan - plots





Scan ID	ABS
145	69
146	22
147	15
148	10
149	6,9

- Voltage considered: 11.8 kV
- Data with ABS 6.9 very strange -> Removed (you can see the plots with this ABS on backup)

Cluster Rate = Rate/ ClusterSize

- We see that the higher the ABS factor (less gammas), the lower the Cluster Rate, as expected

Current = I_{Top} + I_{Bot} / 2

- We see that the higher the background (cluster rate) higher the current as expected

Summary and next steps

- Plot the charge per gamma cluster as a function of Cluster Rate.
- Repeat the scan with ABS 6.9 to see any improvement
- Repeat the scan with only one gap.

BACKUP

Rate Scan - plots -> abs 6.9 included