***Imad PetiRoc Power***

Date: Fri, 13 May 2016 13:49:12 +0200

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Subject: Re: Power System Intro Wrap up

Dear Anton,Here after the needed information for the GRPC as well as the the

new electronics consumption

Please donât hesitate to ask me for more precision if needed.

Regards

Imad

GRPC:

For Dual bi-gap only one cable is needed. We have the same scheme as for the

BakeliteÂ

the electronics PCB is in between two Â bi-gap. Â The side of the two bi-gap

in contact with the PCB is the HV ground. On the the opposite sides Â we

apply HV. This will not go beyond 12 kV.

For the new electronics

We have 640 channels per chamber ( 320 strips X2)Â

The total consumption is 2.3W

If TDC is included then Â we need to add 3W

if the TDC is on a FPGA

the maximum will be 50 W.

Concerning the DAQ

on each chamber of 20° there will be an FPGA to collect the data from the

ASIC. The consumption of such FPGA is about 20 W

There will be per chamber one GBT optical ink (one fiber to go outside the

chamber to a concentrator card that is common for a whole station) Â whose

consumption is 1 W

So in total on one chamber of 20° the consumption should be between

27 and 77 W (27 W with the TDC embedded in the PETIROC ASIC and 77 if not

embedded)

For each Station of 18 chambers

we need a concentrator board that includes

18+2 GBT (20 W) Â optical links and 1 FPGA (20 W) which leads to a Â total

consumption of 20+20 = 40 W

So our estimate for one Â station is between 526 W and 1428 W