***GRPC 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 Bakelite

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 opposite sides we apply HV. This will not go beyond 12 kV.

For the new electronics

We have 640 channels per chamber ( 320 strips X2)

The total consumption is 2.3 W

If TDC is included then  we need to add 3 W

if the TDC is on a FPGA

the maximum will be Â 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)  whose consumption is 1 W

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

27 and 77 W (27 W with the TDC embedded in the PETIROC ASIC and 77W 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 total consumption of

20+20 = 40 W

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

Le 12 mai 2016 Ã  18:09, Anton Dimitrov <Anton.Dimitrov@cern.ch> a Ã©crit :

Dear colleagues,

Kindly find in attachment a proposal for LV powering of the RPC Upgrade chambers based on baseline 1: standard

(existing) RPC electronics, 10 FEBs per 20 degree RPC chamber, powered from a crate located at mid height (X3).

Regards, Anton