

SX5 HV Monitoring

Mu Barrel Technical Board
CMS week June 20th 2006

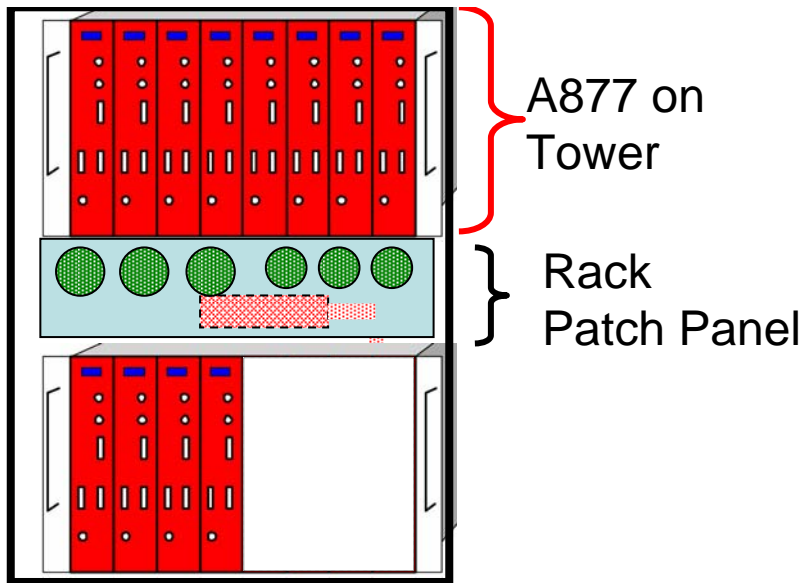
A. Benvenuti
INFN Bologna

Motivations

- HV spikes (wire to ground, wire to cathode,...) have been observed with various frequencies in many chambers at SX5 ([see table](#))
- HV monitoring done with stand alone system:
CAEN SY127, home made distribution boxes, SHV cables
Granularity = 1 channel/chamber
- One bad HV cable (A877 to HV patch panel) found at ISR
- Accelerate readiness of final HV system for SX installation
- Final check to entire wheel with final components

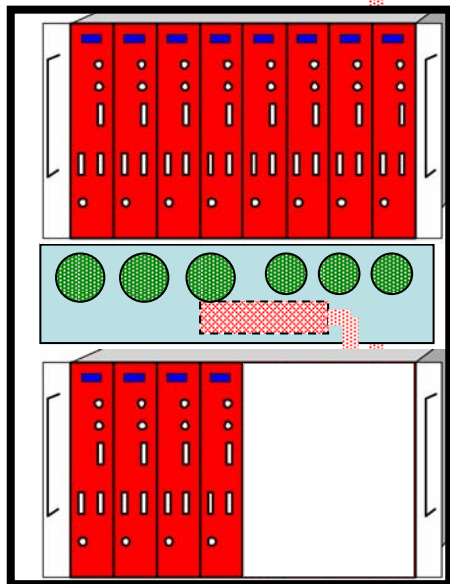
Type	HV OK	Some spikes	Frequent discharges	Wheel
MB1	4	0	0	YB0
MB4/9-11	0	0	0	
MB2	4	0	0	
MB4/10	0	0	0	
MB3	3	1	0	
MB4/4	0	0	0	
MB4	2	0	0	
Total	13	1	0	
MB1	10	0	0	YBP1
MB4/9-11	0	0	0	
MB2	6	1	3	
MB4/10	2	0	0	
MB3	8	2	0	
MB4/4	2	0	0	
MB4	4	0	2	
Total	32	3	5	
MB1	10	0	0	YBP2
MB4/9-11	2	0	0	
MB2	5	2	3	
MB4/10	2	0	0	
MB3	10	0	0	
MB4/4	1	0	1	
MB4	5	1	0	
Total	35	3	4	
Grand Total	80	7	9	
	0.83	0.07	0.09	

SX5 Monitoring
 April 10th 2006
 Summary

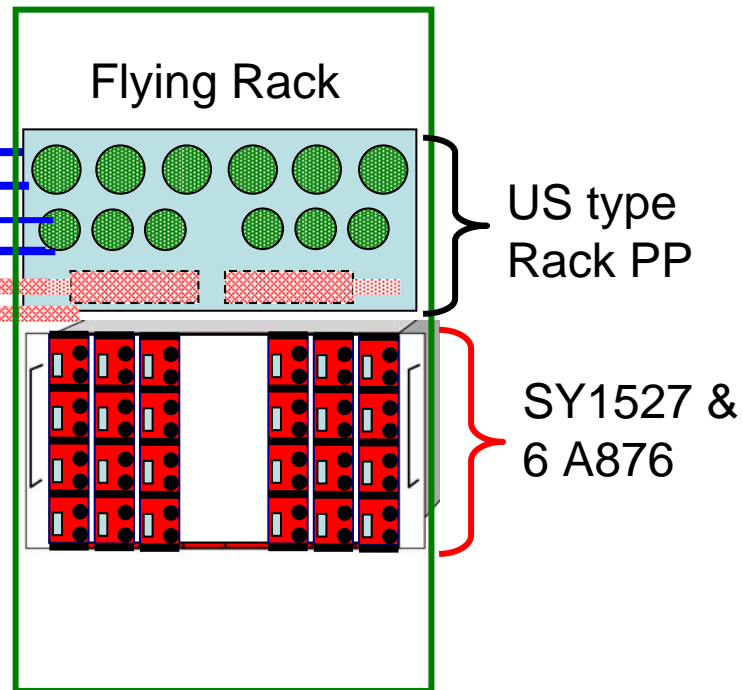
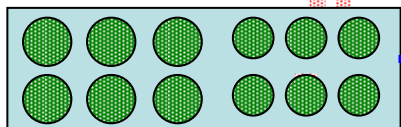


Additional items needed/Tower

- 1) 6 HV_LV power cables (~10m)
- 2) 6 HV_LV control cables (~10m)
- 3) 2 HV cables (~20m)



Feet PP



Implementation

- For the movable wheels it is straightforward:
 - Replace US racks with “flying racks”
 - Prepare additional cables of adequate (short) length
 - Estimated Cost 3000 kEu (Enrico B.)
- For YB0 it is more complicated because:
 - There are no “feet PP”
 - One rack is located on the balcony

One possibility is to put the balcony rack in SX5 and make the connections to the chambers.

For the tower rack, we can make the LV control cables of sufficient length to reach directly the “flying rack”

- All components should be ready by the beginning of October, the PP are the most crucial items, they are needed for YB+2 and YB+1.

Implementation

- Another critical item is the availability of wider rails “glissieres” to support the A877 baskets in the racks. Those provided with the racks are too narrow.
- These rails (ordered by Padova) should be at CERN at the beginning of August in order to install the A877 modules in YB+2 when the detector is opened to remove the tracker.
- During the field mapping phase of the MT we will put YB+2 under gas flow
- The HV monitor will start as soon as YB+2 is accessible and should last ~2 weeks