

Minutes RF structure meeting 19.07.2007

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news & facts:

high-power test of Russian CCDTL prototype

Rolf checked the calibration of the detectors in the high power test stand and found that:

- HP detectors should only be used as indicators, since they produce a significant amount of harmonics that might be reflected back from unmatched components (pick ups, ... ! at the frequencies of the harmonics!). As a result, the measured voltage can easily suggest a RF power level that is twice as high as the real one.
- The red box is not suited for 352 MHz as the reflection of the defector is only -1 dB! (almost a short)
- Yellow and grey boxes are suited for 350 MHz. The red box and the "Jean-Michel detector" could be modified to be suited for 350 MHz.
- The precision of power measurements with yellow and grey boxes that can be achieved depends mainly on the accuracy of the measured voltage. As the power is proportional to voltage², an 5% error in the voltage transforms to 10% error in power (~0.4 dB). Including also the errors of the calibration (unfortunately not 0), the precision of power measurement with these RF detectors wont be better than +- 10 to 15%! If more precise measurements are needed, the only way is to connect a power meter directly to the pick up.
- calibration curve of all detectors
- measurements of the detectors and calibration tables

with the calibrated yellow detectors the following values were measured (at Linac4 duty cycle):

- 260 kW in tank1 (the one with the power coupler)
- 245 kW in tank2
- the measurements will repeated using detectors with "more equal" readings,

other news:

- following a geometric study of the position of SPL tunnel, which now starts slightly higher due to the higher position of Linac4, it was found that several tunnels are within 2 - 5 metres distance of the SPL tunnel. This distance is too small from the radiation protection point of view. Frank will verify will Simon Baird if these tunnels are still used.
- Jean-Michel Lacroix started on the drawings for the PIMS cold model
- Planning for the PIMS has to be prepared, action of Frank

decisions taken:

- none

new actions

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Assigned to	Start date	Description	State	Result	
FrankGerigk	2005-06-19	PIMS: planning		preliminary (optimistic) planning	edit
SuitbertRamberger	2007-06-19	companies that can supply PMQs for the DTL		CompaniesPMQs	edit
FrankGerigk, RolfWegner, CarloRossi	2007-07-19	define amount and type of copper for PIMS assuming 3% coupling		Copper for Linac4 ?	edit
FrankGerigk	2007-07-19	check if tunnels with small distances to the SPL tunnel are still in use		TunnelDistances	edit

updated ActionListRF

minutes by Frank Gerigk

-- FrankGerigk - 24 Jul 2007

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