TDR Snapshot Review
SCRF in TDR1 and TDR2

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General

- Almost no description about X-ray (only as diagnostics in TDR1 2.2.6) TDR1 2.3.3 cavity data base does not mention at all.
- HOM coupler
- Alignment within cryomodule
- Cryogenics
  - 2 pages in TDR2 3.4.1 overview
  - half page in TDR2 3.4.3.5
- TDR2 3.5.2 Marx modulator → mostly TDR1. Leave here only the final specs.
  (3.5.2 cites TDR1 but no such section in TDR1)
- Chap4 & 5 (flat & mountain)
  - should be combined into one chapter,
  - or should be absorbed in Chap3 (3.5 RF Sources)
  - The latter seems to be more reasonable because
    - These 2 chapters concern only HLRF issues
    - The difference in the cryogenic system is described in 3.4
- TDR1 relatively in good shape.

TDR2 Chap 3 to 5

- 3.1.1 Overview. Orbit control comes as the first sentence of SCRF. Bizarre.
- 3.1.3 System description
  - Schematic diagram of 1 RF unit is needed for understanding
  - 10Hz should be mentioned
- 3.1.4 Accelerator physics.
  - 1st line. Eliminate the word “weak focusing” (This is the word against alternating grad.)
  - 7th line. “Beta about 80m in both planes” True? Phase advance in x and y are different.
  - 2nd paragraph . IP vertical emittance 40nm → 35nm
- 3.1.5 Operation and Upgrades . Is it necessary to give upgrade scenario here.?Needed only when the upgradablility imposes constraint in the baseline design.
- 3.2.1 Table 3.7 Spec for HOM Qext. This sounds like HOM Qext is measured for every cavity.

TDR2 Chap 3 to 5 (continued)

- 3.3.1 Table 3.9. Is this the plug-compatibility table mentioned in 3.3.5.1 ?
- 3.3.2 Frequency tuner. I could not find the reason why blade tuner has been adopted for TDR. (TDR1 2.2.4 describes the conclusion from S1-Global but does not say why blade tuner.) Same for couplers.
- Relation between Fig 3.12 in 3.3.6 and Fig 3.13 in 3.3.7. The latter and the right hand side of the former are the same process?
- 3.4.2 Fig 3.17 “longitudinal view” missing? Font pr oblem.
- 3.4.3.8 Quad package. Missing specs for quad, correction dipole, BPM . (TDR1 table 2.18 for quad?)

TDR2 Chap 3 to 5 (continued)

- 3.5.1 power source overview
  - 1st paragraph. 8x10^9 should be 1x10^10 ?
  - 3rd paragraph from the end. 200~300MW sounds too crude. Should give max value.
- 3.5.5. Power requirements. Hard to understand Fig 3.28 and sentences below. My problem only?
- 3.6.1 Table 3.17 field vector sum tolerance, check with Kubo table (revised)
- 3.6.4 Gradient flatness: give tolerance number and measured values at FLASH
- 4.1 end of first paragraph mentions about optics difference (`somewhat' large). True? This is not mentioned in Kubo chapter.
- Figures in 4.3 contains font problem
- Missing 4.2 & 5.2 (layout)

TDR1

- 2.1 Overview. Subheadings are needed
- 2.2.4 Production and test facilities. Peking university should be mentioned at least a little somewhere if not this section.
- 2.3.1.1 cavity shape. Table 2.3. Q factor. “installed quality factor $>10^{10}$ ” & “quality factor during qualification $>0.8\times10^{10}$ ”. $>10^{10}$ used to be $>10^{10}$ at 31.5MV/m and $>0.8\times10^{10}$ at 35MV/m. Same meaning?
- 2.3.1.2 very long. Subheadings needed.
- 2.3.2 Results of cavity gradient. The present preamble fits more to the overview section.
- 2.3.3.1 Fig 2.21. Must be magnified. The legends in tiny letters are needed.
- 2.5 S1-Global. 16pages. A bit long.
- 2.6 Cryomodule etc. Deformation of cryomodule.
- 2.7 RF. Marx modulator to be included.
- 2.8.2 Fig 2.82.
  - What is vertical axis? Quantities for entire ILC?
  - Near the end. To give name “Toshiba” not appropriate.