

Notes from the 09/19/06 MI BPM Upgrade Meeting
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These notes can be found in Beams docDB #1526.

Agenda as announced:

Project announcements - Steve and Bob
Transition board modifications - Manfred, Andrea
Transition board controller status - Stefano
& Board by board gains - Stefano + Steve + Bob W.
Alarms - Dave, Steve, Luciano, Brian
Diagnostic/testing - Marv, Manfred, Peter, Steve
Software - Steve, Luciano, Brian
2.5 MHz pbar measurements - 1st, last turn
MI BPM status list ("punch list") - Dave
Validation - Rob
AOB

0. Announcements.

- No new announcements this week.

1. Transition board modifications - Manfred, Andrea

- Manfred described a change to the 2.5 MHz path on the transition board. A 100nf capacitor is being replaced with a 1nf capacitor, giving an effective high pass rolloff of 1.5 MHz with an insertion loss of 1dB at 2.5 dB. The change was checked on a prototype transition board. The change is relatively simple but the tolerance of the caps is not good enough to avoid recalibration (rebalancing) of the A and B channels.

- MI60N was modified on Monday 9/18/06. The modification took about one day.

- The next crate to be done is MI60S and it is proposed that it be done Wednesday 9/20/06. Dave pointed out that there are some additional notifications that are needed. It was also noted that the larger crates have enough transition boards that it will either take the crate offline for 2 days or the spares will have to be recovered from the teststand before the remaining crates can be upgraded.

- MI60S will also have a new Echotek added to allow us to get the seam in the right place in the ring.

2. Assorted topics - Steve Foulkes

- Steve presented status and progress on a list of topics. His slides can be found in beams-doc-2458.

- 2.5 MHz 1st turn/last turn changes have been implemented. Description can be found in the slides.

- The extra turns in the 2.5 MHz buffer in TBT mode problem has been fixed on the teststand and will be pushed out to the ring.

- "User-definable" thresholds will be implemented for 2.5MHz and 53MHz, CO and TBT.

- Alarms for the timing signals are implemented.

- A group involved in implementing diagnostics and test signals got together to discuss and decide on implementation. Bob West is working on the online software.

- Board by board gains setting is moving forward. The units for gain will be dB and will be set on an engineering page - probably I43. Waiting for the final firmware and testing and values to set before this can be implemented.

3. Transition board controller status - Stefano & Board by board gains - Stefano + Steve + Bob W.

- Bill is back and is working on the changes that will allow for readback of transition board settings. Once this is available the system will be tested at FCC with 10 transition boards. 3 FGGA's need to be reprogrammed to implement these changes. It should take about 1 hour per house/building. This should all occur in the next couple of weeks.

- Bob Webber showed a series of slides (will be put into docDB) of attenuation variation around the ring based on cable measurements and also based on beam measurements. In most cases these are consistent, with some notable exceptions (see below).

- Bob then adjusts the gain on each board and is able to produce gains that vary by less than or about 2 dB (using cable measurements) or 3 dB (using beam measurements). Bob proposes correcting using the cable measurements.

- Bob then showed for each house the differences between the cable measurements and the beam measurements. In almost all cases the BPM channels that have large differences either have a splitter, are the old wide-angle BPMs, or are the new extra-wide BPMs.

- Bob will release his note and a table of numbers for board-by-board setting of the gain correction required to flatten out the 53 MHz response of the BPMs. The 2.5 MHz signal path does not need any such correction since the attenuation variation is much smaller at this frequency.

4. MI BPM status list ("punch list") - Dave

- Dave showed a couple of slides proposing some changes to I44. A new I44 command would use a value to specify which turn counter to use to define the first and last turns at injection and extraction. There are still issues to think about like the seam and the injection and extraction locations for different cycles. He also reinforced the request for different thresholds. Grounding issues are being explored to potentially reduce noise.

5. Validation - Rob Kutschke

- Rob's slides can be found in beams-doc-2459. Rob looked at the Echotek response to various input frequencies, ranging from 160kHz to 37.5 MHz.

6. AOB.

- The new LOW, MEDIUM and HIGH 53MHz gains will be implemented by Bob Dysert and Dave Capista.