Minutes for AMiBA Engineering Telecon

Meeting Date: 15-July-2004

Participants: Australia: USA: Ming-Tang, Derek, Pierre, Ferdinand, Johnson Taiwan: Paul Shaw, Ted, West, Homin, C.T., Joshua, Tashun

USA Dial-in = 1-800-653-5390, 6668081# Outside USA Dial-in = 1 773 843 6301 Minutes Recorder: C.T. Li previous weeks comments

I.<u>New Action Items:</u>

II. Previous Action Items (still open):

III.Closed Action Items (as of this meeting):

AI-July08-1: Steven - To summarize the progress of balancing LO output power between two phase switching states. From Steven's email -

- Additional IF amplifier: Due to the unreasonable price from agent in Taiwan, I would like to ask the people in Hilo for the quotation of the following items: Miteq AVG4-02001800-40, AFS-0200-1800-24-10P-3
- 2. Mechanical Modification: As the IF amplifier be decided, the mechanical drawing will be finished in one week.
- 3. Circuit board for the additional amplifier: As we might use the Miteq AVG4 series variable gain amplifier, we need to design new boards for power and control voltage.
- 4. DRO: We found the DRO power is 5-6 dB lower than prototype, the each 21GHz output power reduce to 5-6dBm. As the cable loss is around 7-8dB, we might have -2dBm power input to the LO module. It should be fine in #1 to #3 to have more than 10dBm output power. Please make sure how much power we do need for LO output.
- 5. Schedule: Professor Chu agrees the schedule we made, one set per month. But I do need a schedule for #4, I think I can not finish it before end of August. Only the IF/LO without the additional amplifier on it could be shipped before 8/E. As Professor Chu agrees to give us more space in Lab, we will try to assembly all the other parts first. Please make sure of the schedule for #4 and deadline of the all 7 IF/LO modules.
- 6. #3 power consumption: I think Joshua had turned on all the components. I made a mistake of the information to Homin about the signal input will influence the total current. After check the records, the difference is only several mA in each components, +5 or +12 Vdc. There would be no impact in this situation.

Miscellaneous Discussions:

MMIC:

 ${\tt C.T.}$ - We plan to have Wisewave help us on the packaging of some MMICs for LO chains. We will come up with the specs and discuss with Wisewave about the cost and the way of cooperation.

Receiver:

Homin - Tashun is doing leak detection on Rx #3. Once it's done, Rx #3 will be shipped out. Joshua has done the DC power test of Rx electronics, 1^{st} section of correlator, and IF/LO. The total power consumption is around 100W (with 48V DC), much lower than expected.

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Johnson - After measuring the spectra of receiver outputs, each channel has about 5dB difference (or slope) in output power across the band. I am trying to find where the slope comes from, prior to or after the IF amplifier.

Homin - We're still working Rx #3 and 4. Joshua is taking the temperature data when Rx is cooled down. Johnson is testing Rx #1, 2 in Hilo. The bias current for MMICs looks fine.

LO/IF:

C.T. - The revised slope equalizer and additional gain stage will be installed in IF/LO modules. The 20-dB slope correction, additional to the 13-dB in correlator 1st section, is used to compensate those due to Rx, IF cables, and correlator section. It will replace the existing equalizer in IF/LO. The loss is about 14dB, with 4dB IL. Derek - For the additional IF amplifier to compensate the loss due to the slope equalizers and low output power of receivers, Prof. Chiueh and I were discussing using of variable gain amplifiers. I found an amplifier with gain of about 25dB, and 10dB gain variation due to control voltage.

Steven - I am still checking the delivery of DRO with Prof. Chu's students. The other thing is that we try to make two LO output power to be the same (not the LO power between 2 states). We might use Mylar sheets in one path to balance the LO power.

Calibration System:

Kyle - I am leaving for Hilo next Tuesday to work on the calibration system with Ferdinand before he leaves.

Correlator:

C.T. - We received the frame last week. However, machine shop made some mistakes. We will have them revise it, expecting to have it back in next week. I plan to ship the frame with all the other components the week after next week.

C.T. - I am waiting for the frame and enclosure. I plan to ship components by this month.

Platform/Mount:

Ming-Tang - Vertex has dissembled the mount and planed to ship it with two containers. Jackie is working with TECO to get the custom clearance for it. We received the quotation from CMA for 3^{rd} fix of the platform. I'll work with Philippe on the in-plant test program.

Ted - For the mount, Vertex started to dissemble the wiring last week. Philippe and I also dissembled the platform and had it shipped out yesterday. In this week, Vertex will start to dissemble the jackscrews, U-joints, and support cone. According to schedule, mount should be shipped out by next Friday. It will take about 40-day for shipping from Germany to Hilo. It also depends on the custom clearance. I will go to Florida for the shelter with Ferdinand.

Dish:

Ming-Tang - Sun has agreed to proceed with 1.2-m dishes. I have asked Jeff how to revise his current ones for our use.

<u>Site:</u> Ferdinand - We got the container to Hilo this Tuesday. We plan to ship it up to the summit on the 29^{th} , and then have the electrical hooked up in a week.

Pierre - About the container, I have been in contact with Ferdinand to find out what to put in, power distribution and so on. I plan to go to Hilo during the weekend. Joshua - I got a quote from a local company for the equipment cabinets, which will be placed inside the container. The total cost of two cabinets is about 1500 US dollars.

2-Element Prototype Testing:

Derek - MLO is shutting down the primary power today. Johnson is going up to shut everything down.

Administration: Paul Shaw - Please take a look at the email I sent out about Cospa presentation and give us the update.