

Minutes for AMiBA Engineering Telecon

Meeting Date: 22-Apr-2004

Participants:

Australia: Michael

USA: Paul Ho, Ming-Tang, Ferdinand, Ted, T.H. Chiueh

Taiwan: Huei, Johnson, C.J., Paul Shaw, Kyle, C.T., Homin, Steven

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Minutes Recorder: C.T. Li

[previous weeks comments](#)

I. New Action Items:

AI-01Apr22-1: Philippe/Ted - To form a solution about how to deal with Bob Romeo, and decide whether he is responding to the components that we need.

AI-01Apr22-2: Philippe/Ted - To check on Along's analysis and come up with a conclusion on how to repair the platform.

II. Previous Action Items (still open):

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

IV. Miscellaneous Discussions:

MMIC:

Huei - NJST asked us (Derek and Milton) to initiate a document about the change in chip counts by email. We plan to have the initial test on those chips within a month or two.

Homin - MMICs have arrived. We spent 2 to 3 hours to count them (thousands of them) last week. All the chips were stored in the desiccator.

Ming-Tang - Will ask Prof. Wang to come out a (rough) test plan for those chips.

Receiver:

Homin - We're preparing the document for the shipping of Rx #2, 2 weeks in advance for Jackie to get a quote for the shipping. We're working on the alignment of Rx #3. 3 sets of phase shifter housing have arrived. We will start testing them. For the OMTs, NRAO people replied that they're having some problem with manufacturing. Right now we have 5, and we're waiting another 7.

Johnson - I tested the noise coupler from ITRI. The maximum insertion loss from square to square port in the passband is about 0.3 dB, better than Nan-Jou's (about 0.5 dB). Its spectrum has better flatness than AT's or Nan-Jou's. I'll circulate the report for more details.

Ming-Tang - Rx #1 in Hilo has been cooled down. The output spectrum is much flatter than at room temperature. The overall slope is about 3 dB.

Homin - Rx #2 was cooled down again yesterday. We're taking the temperature data. 3rd iteration of noise coupler has arrived (from ITRI). It looks pretty good. Ted or Johnson is going to test it.

Johnson /Ming-Tang - After calibration, the big power level jump of receiver output around 14 GHz became smaller. For receiver #1 at room temperature, from 2 to 12 GHz, the output power density varies about 3 dB. After 13 GHz, there is a drop about 2 dB. Beyond 14 GHz, the power is further down by 3 dB. The spectrum could change after we cool it down.

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Ming-Tang - For the open issues on the receiver, please have Jackie check on the delivery of OMTs. We still need 4 more sub-harmonic mixers that Johnson will package them after he gets back to Taipei. We also miss 4 - 5 LNAs. I will ask Todd to provide them.

LO/IF:

Steven - Prof. Chu will calculate the maximum cable length that IF/LO modules can accept and give us the result today. The alternative is to ramp up the output power of the LO module. For IF/LO modules, there is one component (one of 5 doublers) that we might reject to accept.

Homin - Steven has tested the IF/LO cables used for prototype (2m long). The loss is about 2dB at higher frequencies. We will wait for his more complete report.

Calibration System:

Ferdinand - Something is not quite working with the photonic calibration system so far. Try to go up on Friday to do more work on it.

Ferdinand - On 2nd of May, We will have John Payne here in Hawaii to run a week long test on photonic calibration.

Correlator:

C.T. - Continue testing the datacq circuit. There are some procedures (or precaution) we need to follow to turn on the electronics. Otherwise you will get some glitch.

C.T. - The circuit has been tested up to readout. It seems to work so far. I will modify the circuit inside the FPGA to simulate the entire process and check on the data transfer. Still need to work on it for few weeks.

Platform/Mount:

Ted - So far we haven't received reply from Bob Romeo. Along sent us the analysis result two days ago. They also sent us their suggestion for repairing platform. We will check on their analysis and think about how to repair the platform. Along will send us a final, complete report later.

Ferdinand - For the mount, we received the testing procedure (or template) from Vertex. I will need one more week to go through this document.

Homin - C.J. is working on the interface software to optical telescope, and installed some software on the linux machine (the observation computer) in the lab.

Ted - We have asked Bob Romeo about the de-lamination. He is going to fix this problem. We will talk to him again about how to fix it in details. Though he hasn't answered other issues, e.g. weld-nuts, end-fitting. Along finished the platform analysis yesterday. In their simulation with full load, the deformation would be 4 times larger than our specs. They will come up with some suggestions in next few days.

Ming-Tang - Philippe sent out a list of items for platform and mount installation in Hawaii. (attached below)

Michael - The most pressing issue is when Vertex delivers the mount, we will have to make pointing observation in order to provide them with data for generating the pointing model. What we always plan is to use the optical telescope to observe various bright stars, distributed uniformly over the sky. We will catch image of each star in the optical telescope. Then pointing error can be derived for that particular observation. We will need to integrate several software packages (optical telescope software and the observing program)

Dish:

Site:

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Ferdinand - The construction has started. Maybe by Friday, we're able to pin point the exact site location on the back rock. Ludwig sent us a construction schedule. Everything looks very much on track. On Monday, we had a pre-construction meeting with the electrical sub-contractor. It went well and smoothly. Ted is working on the equipment container layout, making some blue prints. I got a quote for the shelter. The delivery is 60 days from reception of P.O. and down payment.

Ferdinand - We had a pre-construction meeting with the contractor, the architect, and the inspector. On Friday, we will have the ground breaking. On next Monday, Ludwig will start the work. The construction period is 45 days. Around end of May, all of major concrete work should be finished.

2-Element Prototype Testing:

T.H. Chiueh - We looked into the beam pattern by looking into the Sun. For Rx#2, there appears to have two peaks. Maybe there is a mis-alignment between the feedhorn and the dish.

Administration:

Paul Shaw - According to the AMiBA funding agency, officially the phase I project is ended by end of March. There is a following review. By end of this month, we have to send the overall income and outcome reports for the past 4 years. We also need to submit the overall project report by end of June. By mid of Sept. the funding agency will come to have an overall project review, and performance, achievement inspection. We will appreciate all your inputs.