

## Minutes for AMiBA Engineering Telecon

Meeting Date: 19-August-2004

Participants:

Australia:

USA: Ming-Tang, Kyle, Pierre, Jeff

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

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Minutes Recorder: C.T. Li

[previous weeks comments](#)

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### **I. New Action Items:**

### **II. Previous Action Items (still open):**

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

### **IV. Miscellaneous Discussions:**

MMIC:

C.T. - There are some minor issues, e.g. exact MMIC chip dimensions, dimensions of chip capacitors and 50-ohm transmission lines that need to be resolved before finalizing doubler housing drawing. In the mean time, we will get a quote from the machine shop.

C.T. - West updated the drawing and sent it to Wisewave. We hope to finalize the drawing by next week. It takes two weeks for fabrication, and another two weeks for packaging. We expect to see the modules sometime in September.

Receiver:

Ming-Tang - Kyle put IF/LO module #3 into Rx #2. However, one of the IF/LO channels is not working. Steven should have a report about pre-shipment inspection of IF/LO modules, and send a copy of schematic to Pierre that he can look into it in Hilo. Tashun is cooling down Rx #4 in Taipei. Kyle will send IF/LO module #2 back to Taipei for repairing.

Ming-Tang - Rx#3 is in Hilo. We're shipping its control electronics.

Kyle - The LO module for Rx#2 is broken. The 42 GHz power amplifier has some problem, not drawing any current. We're thinking to exchange the IF/LO modules for Rx#2 and #3.

LO/IF:

Ming-Tang - We're putting together IF/LO #4.

Calibration System:

Kyle - I am looking for components for the CW calibration system. So far I have located the supplier for doublers, amplifiers, and power dividers, not the phase shifter yet. The plan is to generate 21-26 GHz CW signals, and then feed to each receiver. With power dividers and phase shifters, we can change the relative phase between each receiver. Using the 4<sup>th</sup> harmonic of the harmonic generator, we can have signals from 84 to 104 GHz.

Correlator:

C.T. - The machine shop and Tashun retrofitted the frame. It's working right now. Tashun is putting them together. As I was checking the phase switching signals to the IF/LO module, we found the digital signals contaminate the analog ones from the total power detectors. I might need to revise layouts of two PCBs. In the mean time, I will ship the current modules to Hilo at first, and then swap them later on. We still can test the correlation, but not the total power detection at first.

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C.T. - Today the machine shop will bring in the revised frames that they have checked with our modules. We fixed the bug in data acquisition due to a short circuit in a FPGA.

### Platform/Mount:

Ming-Tang - According to Philippe, the platform is in L.A. and has been cleared of the custom. It hasn't been shipped to CMA yet, although we have an agent in L.A. to work on the shipment. Philippe is discussing with CMA on the details of the 3<sup>rd</sup> fix. We need to finalize it in order to issue the P.O. For the mount, Vertex hasn't shipped the computers yet, still working on the open issues.

Ming-Tang - The platform is in L.A. and cleared of custom. It will be shipped to CMA then. Philippe and CMA were discussing some of the items for the modification. Therefore we haven't issued the P.O. yet. But CMA has started procuring some material. Vertex closed down during the first 2 weeks of August. We're ready to make the final payment to Vertex after they ship out everything. Hexapod will arrive in early Sept., while the supporting cone will come by end of Sept. It's not sure how long it will take to clear the custom.

### Dish:

Jeff - One of my student is ray tracing the new secondary at the moment.

Ted - The secondary for the 60-cm dishes is on schedule. We should have the first modified 60-cm dish in early Sept.

Ming-Tang - Prof. Chu told me that his near-field measurement setup can be used to test the 60-cm dish.

Jeff - We can test the 1.2-meter dishes that we have right now, and then send them to MLO. We can use the same setup to test the production 1.2-m dishes as well. The other issue is that Milliflex has a mold for 1.2-m dish which is 2% difference in focal length from our specs. I suggest that we change our specs that the focal length becomes 16 inches. Therefore the production dishes will have some response as the one we're going to test.

### Site:

Ming-Tang - Ted was in Florida in the past week to have a look at the shelter. The company has some difficulty putting the motor on the top of the shelter. They are trying to find another motor. At this point, the shelter will arrive in Hilo in early October. For electricity, the electrical company will switch on the power on Aug. 25<sup>th</sup>.

Pierre - I will arrive in Hilo next Monday. I need to discuss with electricians in MLO, and to buy some equipment, e.g. UPS, lightning protection...

### 2-Element Prototype Testing:

### Administration: