

Minutes for AMiBA Engineering Telecon

Meeting Date: 20-Nov-2003

Participants:

Australia:

USA: M.T. Chen, T.H. Chiueh, Lei, Ted Huang, C.J. Ma, Patt Ferdinand, Derek, Jeff Peterson

Taiwan: Huei Wang, C.T. Li, West Ho, Eugene Huang

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. New Action Items:

II. Previous Action Items (still open):

AI-30Oct03-1: AMiBA office and lab space in Hilo -

Ferdinand - Found another office space very close to the Casey building. It's a 660-square-foot building. The total rent would be 1330 dollars, plus 300 dollars every 6 months for property tax. The rent for CSO building is 500 to 600 dollars a month. We will buy them some equipments in exchange.

T.H. Chiueh - Called the office rental company, but couldn't find the person in charge yet. Another possibility is CSO office.

Paul Shaw - 2000 per month is the target price for renting lab space (the 1st floor of former SMA building).

III. Pending Action Items :

AI-23Oct03-2: T.H. Chiueh and Bob - Sort out what to do next, and summarize what has been done so far (for prototype testing).

T.H. Chiueh, Bob - Will get together on Friday morning to discuss it.

AI-25Sept03-2: Ming-Tang - Volunteered to review all the specs as much as we can, and collect them into one place so that we can look them up.

Ming-Tang - Don't have time to work on it right now, besides finding all the data collected in AMiBA web site. Found several areas with some testing specs, e.g. Ferdinand's calibration system has some tolerance specs.

T.H. Chiueh - Volunteer to work with Ming-Tang. Bob - Let's talk about more on Friday.

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

AI-13Nov03-1: Phillipe/Ted - Generate a report about platform end-fitting design.

Ted - Phillipe circulated a report. Bob Romeo replied some of our questions about platform modifications thru email. Will check with Phillipe about his analysis.

AI-13Nov03-2: Ted - Explore the possible material as radome.

Ted - Ferdinand, Eugene, and I have a discussion about this kind of material. Ferdinand got some sample. Will bring or send it back to Taipei for testing with receiver. Dr. Ong is quite interested in this kind of material as well.

AI-13Nov03-3: T.H. Chiueh/Ming-Tang/Ferdinand/Ted - Discuss whether we are able to take on some of the site work ourselves or proceed with the general contractor.

Minutes for AMiBA Engineering Telecon

Ferdinand - We just had a meeting about this issue. The conclusion is that we propose breaking the contract in two, doing excavation and electrical. After the excavation, ask the general contractor to write up a 2nd contract to finish the site work. Got revised quotes from Ludwig and Taisei. We also propose to go with Taisei, Taipei. In that way, we can save RCUH 5% overhead.

AI-06Nov03-4: T.H. Chiueh - Circulate a report about the burnt dish and how to avoid it in the future

T.H. Chiueh - Still working on it. Like to write something about how to prevent it.
Ted - Got a quote from Dr. Ong for dish repair. Will send the dish back to Dr. Ong.

T.H. Chiueh - Will come up with a more complete report. To estimate the angle, we will have a hot dish even 50 degrees from the sun, to focus the sun light onto the secondary support.

Ted - We're looking for some material (transparent to radio wave, but opaque to visible light) to cover the dish.

Jeff - CBI has some white plastic Gortex mounted on top of every dish. Might wanna check the system temperature change while putting a piece of material in front of feed. We could ask CSO/JCMT to see if they have a piece of spare expanded Teflon to try.

V. Miscellaneous Discussions:

MMIC:

Huei - Provided NGST the name of the person who is responsible for keeping all the MMIC while they're in Taiwan, will send an email to Paul Clenword to follow up as well.

Huei - Will complete the document for MMIC control, send it back to Paul Clenword, and follow up the testing.

Receiver:

Ming-Tang - Got a message from Todd that he is sending back our amplifiers. About the phase shifter, Warwick suggested that we take on the job ourselves because they're heavily involved in their 3mm receiver upgrade. Have asked him to provide us some information about the material, and procedure of their 1st prototype. We had the local machine shop make a noise couple. We're happy with the result. They're gold plating it right now.

Homin - Has finished two sets of receiver electronics. The testing looks good so far.

LO/IF:

Eugene - Sent the broken IF/LO module back for repair.

Eugene - Found one of the frequency doubler has some low frequency oscillation. Will return that unit back to EE dept. for repair. The other unit works well. We will use it with the 1st production receiver.

Correlator:

C.T. - Got an email from Compunetics. They have shipped the power divider boards to us. Jackie has prepared the import document for it. Johnson is testing the Triquint MMIC packaged by Wisewave. Maybe sometime next week we can start putting together the custom power divider modules.

C.T. - Sent around an updated schedule and man power list for correlator components. Based on Warwick's suggestion, we can proceed the PCB design for data acquisition first, then review the circuit within FPGA later on. That will speed up the development a little bit. Still looking at early Feb 2004 as a suitable time for correlator integration and testing.

Minutes for AMiBA Engineering Telecon

Warwick - Will send those correlator control PCBs to Taipei soon, as well as some instruction about installing the control softwares.

Platform/Mount:

See the action item above.

Calibration System:

DC Power Distribution:

Enclosures:

Homin - The design of enclosure is pinned down. Joshua has ordered another 5 sets. Asked Joshua to buy DC converter modules for 2 or 3 enclosures.

Site:

Dishes:

2-Element Prototype Testing:

T.H. Chiueh - Lei, Ferdinand, and I went up to the summit to test the noise injection. Still have room for improvement since the power is low. According to Ferdinand, it's due to the coupling problem. Will come up and test again next week.

Kyle - Took out the dishes and measured the sun fringe. Increased (emphasized) the high frequency power by inserting extra equalizers. When we connected correlators to the same power dividers, i.e. have the same IF, RF, two fringes did not coincide. We didn't see that much difference when we connected them to different IF pathes, i.e. one is connected to IF1 of 2 receivers, the other one to IF2.

Mike - We ran experiment with noise source on carriage before. That gives very predictable fringes. It seems to me that would be the best way of diagnosing these problems. Now we do have very clean, strong signal, and there is no other confusing factors, like source size or beam size. With long travel, you could get many fringes, and you now can get your bandpass and delay quite accurately.

Kyle - The fringe of sun with dishes could be regarded as a template for other sun fringes with dishes. We did try to measure the fringe envelop with dishes. We put two phase shifters into IF pathes to shift the relative phase between two receivers. We can sample the envelop at discrete position. The result looks quite consistent with no-dish fringe.

Schedule:

Homin - The 1st production receiver is ready to ship. However, we need to set up the lab and necessary equipments to test it.