

# Minutes for AMiBA Engineering Telecon

Meeting Date: 18-Dec-2003

Participants:

Australia: Michael Kesteven

USA: Paul Ho, T.H. Chiueh, Jeff Peterson

Taiwan: Huei Wang, C.T. Li, Homin, Eugene Huang, Paul Shaw, Ted Huang

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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:

Huei/Paul Shaw - Will remind Sun Kwok to check with RCUH about whether or not to re-do the administration.

Receiver:

Homin - We're preparing 1<sup>st</sup> production receiver for shipping to Hawaii and accessories, like long Helium lines, for Hilo lab. 2<sup>nd</sup> receiver is also ready. The parts for the rest of 5 receivers are in the lab now. It will take about 6 to 8 weeks to assemble another 2 receivers, and do the cold test in Taipei. The LNAs have to be installed and tested in Hawaii.

[Ming-Tang - Will take a look at the receiver next week. Have received some repaired amplifiers from Todd.](#)

LO/IF:

Homin - Mr. Tseng is coming after Chinese new year to take care of production of remaining 5 LO/IF modules. Prof. Chu and his students were fixing the 2<sup>nd</sup> unit.

Paul Shaw - Will talk to Prof. Chu about this issue.

Correlator:

C.T. - Went to EE department to test IF components. The power dividers work as we expect. But We found some problems after assembling the Triquint IF amplifier with power dividers. We're debugging it right now. Also work on correlator computer a little. We got a 2<sup>nd</sup> quote for data acquisition board. We still need to modify the circuit. Mark Chen is on leave this week. We will work on the modification after he gets back, and start the board processing. For the schedule, we probably won't receive data acquisition circuits till early January. We're still waiting for the delivery of electronic components from Digi-key. They will come sometime in January. Got Warwick's support to set up correlator control software. Johnson will go to Hilo for receiver testing. That will draw some manpower from correlator production. Hopefully we're able to train West to pick up his work during this time.

[Derek - Have Peter pack and ship 1<sup>st</sup> and 2<sup>nd</sup> sections to Taipei.](#)

[C.T. - We are looking for the 2<sup>nd</sup> quote for the data acquisition boards. Data acquisition circuit won't fit in one 3U card. We have to separate circuit into two boards. We need to use 6-layer boards. The layout and processing cost for each board is about 2000 US dollars. One of network analyzers is broken. We were not able to test the IF components so far. We have signed up the equipment in EE NTU.](#)

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### Platform/Mount:

Ted - Talked to Bob Romeo and Philippe. We have an agreement on the inside ring section - the re-enforcing part. We haven't agreed whether we should put the L brackets all along the platform. Bob Romeo was concerned about the time to fabricate such large amount of material. He also thought we don't need the L brackets. Philippe will do some analysis on it.

Paul Ho - Philippe talked about putting the metal plates between the platform and mount if the platform is not perfectly fixed to secure things. Whether Bob Romeo can fix the platform in time or not, we should think of a backup plan since we must get going in January.

Paul Ho /Ming -Tang - Bob Romeo was discussing with Philippe about the re-modeling. Bob Romeo can't get to Germany till the end of Jan. Romeo has done something to re-enforce the structure, which is not shown in Philippe's model. Bob Romeo agreed to give Philippe the information about the modifications he made. Have asked Philippe to circulate a weekly report.

### Calibration System:

T.H. Chiueh - Ferdinand is back for a week. For gain calibration, Ferdinand still needs sometime to work out the noise source.

Dish: Ted - We measured the transmission of various materials which we plan to use to cover the dishes with the network analyzer. We got Gortex with 2 different thickness and Zitex (G115 and A105). We prefer to use Gortex since Zitex doesn't have the water-proof feature.

### Site:

Some correction from Ferdinand -

Problem is that we have written site specifications, but corrections need to be made. The previous specifications are written for a bidding process, our new construction approach will be different. The new specification should reflect this. This is more legal issue than a technical specification aspect.

Paul Shaw - Waiting for another possible quotation for the site and project consulting.

### 2-Element Prototype Testing:

T.H. Chiueh - Kyle tried to design a cavity filter to remove LO spurious, aiming for 10 or 100 MHz bandwidth. In next week, alignment of two dishes has to be done. Ferdinand lent us the equipment to work on the gain calibration.

T.H. Chiueh et. al. - It is possible that part of DC offsets come from LO spurious. We could try to remove it by using some resonant cavity filters. We still have the AMing of LO during phase switching. We made a LO at 21 GHz. However it is susceptible to environment, or power line. Another 10.5 GHz LO has strong spurious. DC offsets is much larger than the original LO.