Minutes for AMiBA Engineering Telecon

Meeting Date: 29-July-2004

<u>Participants:</u> <u>Australia:</u> Michael <u>USA:</u> Ming-Tang, Kyle, Pierre, Ted, Jeff Taiwan: Huei, Paul Shaw, West, C.T., Joshua, Tashun, Homin

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>

AI-July29-1: C.T. - To come up with a schedule for design, fabrication, and packaging of doubler MMICs.

II.Previous Action Items (still open):

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

IV.Miscellaneous Discussions:

MMIC:

Huei - We will start the design and drawing of doubler housing, have them reviewed by Wisewave, and then fabricate them in Taipei.

Huei - We will call Wisewave to discuss the packaging of MMICs for LO chain. The cost should be less than 100K NT dollars per one module.C.T. - One major issue is whether we can use their standard packaging or we prefer custom housing the same as those we're currently using for 7 element.

Receiver:

Homin - Tashun and Joshua were packing Rx#3 and its control box. Both will be shipped out today.

Ming-Tang - Rx #1 and 2 are under testing in Hilo. The cold head temperature of Rx #2 somehow rose up to 22 degree. We suspect there might be some tiny leakage. We're short of Rx testing man power right now since Johnson went back to Taiwan due to some personal issue.

Ming-Tang - Rx #3 and #4 have been cryogenically checked. Within next few weeks, we will ship Rx #3 to Hilo.

LO/IF:

Homin - We have decided to purchase two variable gain amplifiers for testing.

Steven - Prof. Chu has two concerns about the variable gain amplifier - one is how to implement the control voltage, the 2^{nd} one is about the phase variations with gain. We will test the bias circuit in IF/LO to see if it can support totally 4 IF amplifiers. For the DRO, Prof. Chu will not send the module back to the vendor. He will deliver the production unit unless we can confirm the LO power is not enough. Derek - The control loop doesn't have to be closed loop. We don't want to adjust the gain by itself. We want to make cautious effort to make the change only when we want to. Using the total power detector in correlator 1^{st} section to measure the power from the receiver, we can make adjust Miteq's variable gain amplifier with a DAC, digital-to-analog converter. C.T. - Steven may want to see if we can find some computer interface card off the shelf that can output voltage to the amplifier, preferably for Linux.

Calibration System:

Kyle - We brought correlator and correlator computer down to Hilo, used to testing the variable delay in the calibration system. We're looking for a 21-26 GHz signal generator for the tunable CW calibration system. I have tried a broadband coupler and a tee to couple broadband noise to CW signals. It didn't work out so far.

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Kyle - There may be two approaches for the CW calibration source - one is by tuning the CW across the band, the other is by coupling the broadband noise thru the CW. Both approaches will require putting in some variable delay.

Correlator:

C.T. - The frame still needs some work or modification. We will receive the RAID (Redundant Array of Independent Drives) this week. Then we can install the hard drive backup system for correlator computer.

C.T. - The revised frame will come in today. One of hard drive of correlator control computer failed last week. I plan to install a mirror hard drive kit in the CCC. The delivery is about 2 weeks.

Platform/Mount:

Ming-Tang - Platform is under shipping. CMA has provided us a quote for the 3rd fix. The lead time is 12 weeks (toward end of October). According to Philippe, hexapod and the supporting cone have been dissembled and packed. Michael - I have implemented a feature in the control software, to send a sequence of positions with time stamps for tracking. I have sent a copy to both Vertex and Homin.

Ming-Tang - We need to think about the emergency shutdown of the mount during the power failure, especially when there is a rain coming. It needs lots of care to manually wind the gear boxes to bring down the mount.

Ming-Tang - Platform is on its way to CMA. We are also discussing the 3rd fix with them. Currently CMA is busy with other project. Some items of the 3rd fix require long lead-time. The schedule for the 3rd fix will come in about 12 weeks. I'll try to get CMA to start ordering parts before issuing P.O. Overall they will finish it around end of October. Between early and mid November, platform will arrive in Hilo. Mount has been shipped out in two containers. Jackie and others are working on the custom clearance. Michael has sent some software that Vertex can continue working on the control computers. I would like Vertex to ship out the computers by early August.

Dish:

Jeff - We got a quote for 1.2m dishes from Milliflex.

Site:

Pierre - We got the 2nd container up to MLO. Ludwig will anchor both containers later. Electricians are hooking up power.

Ted - About the shelter, one of component is delayed for 2~3 weeks. We discussed some safety issues, e.g. interlock between shelter and mount. I will go back to the company to see the assembling and testing on August 9th. The shipping will take about one month. It will arrive around end of Sept. Ming-Tang - We are considering having Ludwig install the shelter. Another issue is whether we can put on some crane for telescope service.

Ferdinand - Ted and I went to the enclosure company today. They will do a test assembly and test run about how to open and close all the structure. They had problem with one of the machine. Therefore they're a little bit behind. Ted will stay a bit longer till next week. Tomorrow we will show them the simulation of the mount, and then go to the factory. Ming-Tang - The electrical work with the container is done. Pierre will arrange to ship it up to ML to have the electrical hooked up.

2-Element Prototype Testing:

Administration: