

Minutes for AMiBA Engineering Telecom 20070628, UTC 2:00

Regular Meeting Time: UTC 1:00 Every Thursday

USA Dial-in = 1-877-505-6247; passcode 8339148 #; mod_code 2917771 #

Outside USA Dial-in = 1 630 693 3224

● Mount operation:

○ General:

*Johnson and Peter swapped encoder cables between jacks 2 and 3 according to vertex's instructions via emails. However, the mount can't move at all and showed backward transformation error. Cables were swapped back to the original setup. But mount can't function normally either because safety limit was reached. Will try unplugging the main power to the whole setup.

*backward transformation problem is quite severe. MT will contact vertex to discuss their visit.

*backward transformation error occurs when jack 3 is in the range of 3000. suggest set the mount to azimuth 270 degrees, elevation 35 degrees to inspect cables.

- Vertex has agreed to send someone (either Stephan) to Hilo after the most recent telecon. Earliest window would be first three weeks of July. However, they want the double-shielded cable, which they will send to Hilo soon, to be ready before they come to troubleshoot.

- We will do two tests now:

- Pablo plans to swap the cable for encoders as a first test.

- Connect encoder to the control room with a cable on the surface instead of going through the conduit.

- No update on troubleshooting guide.

○ Problem lists :Vertex issue (PK summary)

- (1) ACU response delay: can cause a 'stop' or non-smooth scan -> likely to be a Vertex problem, but we need to be sure about our network

- (2) lost program track commands in ACU stack: will loose on-source flag, stop

- (3) invalid backward transformation, kinematics error - can cause a 'stop'

○ Problem lists: Our side (PK summary)

- - correlate 1st OT -2nd OT data, especially polarization pointing: I am working on that

- - improvements on control software: change in polarization pointing to save time

- - user-friendly input for tracking with defined hexpol Not very pressing items, but we need to keep working on it.

● Testing on site:

○ Rx status

- Continue with RR box 1st row troubleshoot. Card #3 and #4 in the data box were swapped. If the "hair" comes from the card, it should appear now in 3rd row. Need data to check this.

- Johnson plans to replace one of the IF/LO bracket next week to check if it does improve accessibility.

○ Broken 2nd mirror of Ant2:

- Ted asks for quote. We will make one but will not install it immediately. The concern is its alignment.

- With the damaged mirror, we will lose efficiency and increase noise and also change the beam pattern. However, for on-axis observation, the problem is not very obvious.

○ IF power:

*Johnson debugged the tp of ant 3. after swapping the ribbon cables between ant 3 and 4, the problem went to ant 4. so the problem of ant3's tp with etd2 occurs before the tp ro board.

- When trying to characterize TP counts vs power for VGA tuning using

etd2/demod. Derek found Ant3IF2 shows zero counts and is not changing with input power. However, it seems ok in etd0/nodemod. Somehow the TP switching is not working. Swapping the TP board does not solve it. CT suggests to swap switching signal with other Rx.

- Jupiter fringe first taken after RR input power was raised from -12dBm to -8dBm. SN ratio will be analyzed.

- DC offset:

- No update.

- Observations:

- *need 3 more nights of observations on 2 clusters

- *try remote control/observation from Hilo. It works well.

- *data archiving/compression is ok. Protty will post how to access data archives later.

- Took two days absorber noise data when weather was not good. Continue integration on A1689 and A2390 for another week.

- Protty reported noise level scales as inverse square root of time up to several tens of hours. We should finish the weak SZ cluster (A1995) and then move on to CMB field.

- RPFITS

- Verified that RPFITS records the same data as mbtp ascii log. Until either of the problem below is solved, we will continue logging in ascii format. Current problem with RPFITS:

- ACU-TCS delay prevents smooth operation of correlator thru a_boss.

- 7rrll config mysteriously produces strange spikes in 4R6R traces. The problem is likely to be in the RAM of CCC?

- General site issue:

- Johnson has received the long He lines. He will need Kevin's help to deploy them in the Hilo lab.

- New compressor shows higher temperature when driving 4 cold heads at the same time but is fine with 3.

- Shelter control (joystick) was ordered but not here yet. (not urgent)

- 13 element:

- Pacing items:

- Mixers

- New IF/LO

- Rx

- *received 16 LNAs from Todd

- Haven't got LNA samples yet. MT will keep track on this item.

- Rx8 and Rx9 are in Hilo

- Ted has asked ITRI to speed up on the mixer block.

- IF/LO

- Johnson and SW will order two sets of the current IF/LO module.

- A decision should be made in the review of mini-IF/LO development in mid-July.

- DRO is ready. SW is working on thermal control.

- Electronic box

- Compressor and He line

- Compressor order is pending onsite testing result. (Pablo?)

- CH ordered a pair of hard He line. Soft He line has shorter lead time and can be ordered later.

○ RO and correlator

*Pierre will finalize the schematic this week. CT will go to ARL next week to see them test actuators for correlator brackets.

- Pierre is working on the schematics of the final 3rd version RO board. CT quoted the lead time of new FPGA is four weeks.
- Peter will start integrate DC amp and corr module from mid June.
- Actuator for correlator house has been sent to ARL for testing.

○ 3rd section

- All components for the 3rd section have been sent to Wisewave last week.

○ 1.2m dish

*1.2m dish measurements were finished. Cotech will start 2nd alignment.

*Tashun finished design of beam pattern measurement support structure

- The 1.2m dish seems to be on schedule. We should contact Cotech to see when they can give us surface measurement data.
- First two dishes will deliver in early July. The rest will be delivered at 4 dishes every two months.
- Philippe reported an idea of new carbon fiber interface ring. Its main advantage is light-weight and possibility to change design to better support outer rim of platform. We should consider what rx position will never be used.
- Total weight of 1.2m 13-element is about 4.5tons. It is 800kg over the spec of hexapod but still within safety margin.
- Beam pattern:
 - Eugene will get in contact with CSIST for their capability and interest in near field measurement.
 - MT is contacting Prof. Chu's lab for near field tests.
 - The original far field measurement is still being considered.

○ Calibration system

- No update

Traveling Schedule to Hilo:

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AMiBA Website: <http://amiba.asiaa.sinica.edu.tw/>

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Please contact MTC for managing this mailing list