



SMT IF Upgrade 2006

Engineering Minutes

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An engineering meeting was held Thursday afternoon, 17 Aug 2006 to discuss the SMT IF upgrade and the 1.3 mm side-band separating receiver. Attending the meeting were Dr. Lucy Ziurys, Tom, Folkers, David Forbes, Gene Lauria, George Reiland, and Robert Freund. Mark Metcalfe attended long enough to hear the first status report. Project status, schedules, and order tracking were discussed.

Gene started the meeting with a progress report on the mixer/LNA cartridges. He stated that one cartridge frame had been fully assembled. Mark would begin assembly of the second cartridge frame and that all parts needed to complete its assembly and to correctly set its internal dimensions (height) had been machined. (The two frames are not mechanically identical). Work had begun on assembly of the Dewar heat straps. The 3/16" thick OFHC copper sheets had not yet arrived. The 0.005" thick shim material had arrived last Thursday. Two of the remaining cartridge tasks were the wiring of the SIS mixer bias external safety switches and the machining of the LO waveguide spacers.

Tom reported that he had not received confirmation of John Fitzner's application submission. He had contacted John this past Monday, August 14, when John was to have submitted his application.

Dave reported that the modifications to the receiver's 2-Channel IF Processor chassis had been finished. Those modifications include changes to the RF selector switch control circuitry, improvements to the total power stability by improving the isolation of the display meters, and the installation of mode indicating LEDs on the front panel.

Dave stated that Mark would be writing a requisition for AEP 0.085" semi-rigid SMA connectors for use in the filter banks. He also indicated that the filter bank units were in Tucson awaiting IF modifications. The power splitters needed for these modifications had been ordered with an expected delivery of September 8.

Gene explained that the two separate Dow-Key RF switch orders had been consolidated into one by the University's purchasing department. This will delay the delivery of the transfer switches because, now, both switches will be shipped together and are determined upon the delivery of the longest lead time item.

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Dave reported that drawings of the newly designed IF Converter crate had been taken to the Steward machine shop to obtain a price and delivery quote. He hadn't received a response yet. Dave departed because of prior commitments.

Tom reported that Mark Buglewicz had not responded to his request for rate information for jobs at the Steward machine shop. Tom will re-contact Mark. George then inquired whether anyone knew how to obtain a time estimate for jobs placed at the Steward machine shop. No answer was available.

George reported that the E-band waveguide and flanges for the LO system had been received from Penn Engineering.

George stated that he was working on getting three quotes for the 4 - 8 GHz amplifiers. He indicated that Ciao had not responded and that maybe the problem was vacations. He also reported that the package sizes were different between the Cernex amplifier models and those from Ciao making mixing the different vendors' products difficult. Another issue that required attention was the need for custom mounting shims for the amplifiers.

George reported that the 8.7 - 13 GHz medium power amplifiers needed in the Gunn phase lock system have not yet been ordered. The expected delivery time was 2 weeks so there wasn't cause for panic. He also stated that the ordering of the 100 MHz phase locked oscillator was delayed by the University's purchasing department. He reported that the order was eventually placed on August 14.

George inquired whether a change could be made to our internal ordering process whereby the final order information from University Purchasing could be returned to the requisitioner. With this information, one could track order progress and expedite if necessary. A discussion followed that lead to a proposal to install a White Board listing critical item orders. Bill Hale or Marty Benson could use this information to contact vendors to track critical deliveries. Tom volunteered to organize and install a "critical deliveries" White Board. It was agreed that final order information would be returned to the requisitioner.

George described his progress on the mechanical design of the central section of the IF Converter System crate. He estimate that the task was more the 80% completed.

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Only drawings for the deck and two side panels remained unfinished. He estimate that all the drawings would be completed Tuesday, August 22.

Gene reported that he expected to receive the finished plated Dewar "spider" tomorrow. He speculated that the 3/16" thick thermal straps would most likely be machined by the Steward machine shop.

Bob distributed an working version of the IF signal path describing Phase IV. He spent some time describing it and asked for comments. Its final version will be the basis for a signal level and VSWR budget.

The 3 action items are summarized below:

1. Tom will obtain Steward machine shop job rates.
2. Tom will organize and install a "critical deliveries" white board.
3. Bob will produce an IF power level and VSWR budget.

The 1 decision taken is described below:

1. Copies of the final University Purchase Orders will be returned to the original requisitioner.

Robert

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