

Report for JRDC mtg. 10-26-00

LO system: looking at details of ~~what~~ the part that goes on the front end

Find that original concept of distributing power in range 60-120 GHz from final power amp has

- (1) too much loss - makes power amps expensive & difficult
- (2) requires mechanical waveguide switches - question of repeatability of phase, lifetime cycles

So: need to put the final power amp right on the cartridge flange (on the warm side).

Now looking at various alternative configurations, hoping to get approximate pricing & performance/cost info, make a ^{decision} recommendation in a few weeks - will generate a document.

These configurations all involve mounting an assembly, known as the Warm Multiplier Assembly, on the warm side of the cartridge (as well as final cooled multipliers within the dewar) - dimensions approx. $1 \times 2 \times 5$ inches (perhaps a little less).

JRDG telecon

1. Optics design - Lamb: writing a full memo. Expect it to be quite complete, but will take a month. Discussion of Carter's 10-25 brief report showing rudiments of design.
2. Deflection calculations - Harman wants alignment tolerances. Lamb thinks only significant problem could be vacuum windows which are also windows. Central strut would largely compensate. Need calculations.
3. Widgets - Payne: e-mailed a list of possible widgets - responses ranged from "none needed" to "a lot more needed". Lazareff likes semi-transparent vane for low-frequency receivers; would be partially absorbing rather than partially reflecting. IRAM is about to order & test some material - up to 300 GHz or so. $\lambda/4$ plates - do we need them? D'Addario claims it can all be done in the correlator. Need a report.
4. Rx production mtg - Wade: conversations have been ongoing. Feel need for a workshop - Nov 30 in Garching. No more than ~20 people, invitation has been sent. Agenda next week. Main topics are organizational. Rafael: need to consider how much of what kind of testing is done where. Payne thinks it is a daunting task to test an assembled front-end. Need more than 1 day? Wade will investigate. People need to do some work before the meeting.
5. LO progress - Webber: status report. Lazareff: power level? Where to put last power amp? Final multipliers at what T?

Discussion of Japanese.

6. Action items from optics workshop - go through list

Widgets - Payne: work in progress, send conclusions to ASAC

Polarization tolerances - D'Addario owes a document

Dawar deflections - work has started; need to model the cartridges

Alignment tolerances - Carter & ^{& Lazareff} Lamb working on it

Base line cartridge designs - due 10 Nov

Window/IR filter work package - to IRAM/Grenada -

→ Payne & Wild have proposed work plan, will circulate

Next telecon 7 Dec due to Garching meeting

Note: Lamb - scattering cone needed for suppression of WVR LO & harmonic leakage - Welch gadget does not work well, due to diffraction at edge of hole.