

VLB ARRAY MEMO No. 580

VLBA Electronics Memo No. 81

NATIONAL RADIO ASTRONOMY OBSERVATORY
Charlottesville, Virginia

(861112)

November 7, 1986

MEMORANDUM:

TO: VLBA Electronics Group

FROM: A. R. Thompson

SUBJECT: VLBA Electronics Group Meeting, November 6, 1986

Attendees: Bagri, Bradley, Lillie, Norrod, Schlecht, Simon, Srikanth,
Thompson, Walter

The 4.8 GHz front-ends for antennas 2 and 3 are under construction at Green Bank, and should be completed by the end of the year. The first 4.8 GHz front-end, now at the VLA site, contains a prototype solar calibrator card, which will later be retrofitted with an amplifier for the high-level calibration signal. For the 2.3 GHz front-ends, long-term items are being ordered, including those required for a test system. A high directivity waveguide coupler for bench measurements in the 2.3 GHz band is being fabricated, and the dewar for the front-end is being designed. Four 2-16 GHz Synthesizer modules are also under construction at Green Bank, and will be completed by the end of the year. Two printed circuit companies who can handle boards of the size required for the dichroic reflectors have been contacted. An order for a sample portion of a board is being placed with one of these companies to check the accuracy of dimensions of the reflecting elements and the quality of the finished boards.

There was some discussion of coaxial switches. In the case of the 1 x 4 and 1 x 6 coaxial switches used in selecting IF and LO signals, at least four manufacturers (Transco, RLC, Dynatech, K&L) provide models that are mechanically and electrically interchangeable. Should we plan to use units from more than one manufacturer, so that as years go by we can obtain some information on relative reliability? The alternative is to use the lowest bidder (Transco in 1985) which may remain the same throughout the construction period. The same comments apply to the transfer switches, for which RLC was the lowest bidder in the 1985 procurement. A number of SPDT coaxial switches are also used. Since these are mostly in modules where phase stability is important, latching types have been chosen. At the present time, two types which are not mechanically interchangeable are being used in different modules. The possibility of using a single mechanical and electrical design that is available from more than one manufacturer will be looked into.