

NATIONAL RADIO ASTRONOMY OBSERVATORY
Charlottesville, Virginia

February 12, 1988

To: VLBA Electronics Division
From: Dick Thompson
Subject: VLBA Electronics Construction for 1988

The main goal for electronics construction in 1988 is to complete the sets of initial outfitting electronics (Racks A, B and C and front ends for 1.5, 4.8 and 23 GHz) through serial no. 7. Last year the goal was to complete four such sets of electronics, through serial no. 5. In fact we essentially completed three sets in 1987, and the last of these, serial no. 4, was shipped out earlier this week to the VLA site. So that leaves three sets to be completed this year, and last year's experience shows that this should be a manageable load.

In the attached table, I have summarized the status of construction for the front ends, modules, and other units involved. The second column shows the goal for the end of last year, and the third one shows the actual numbers achieved. The figures in the latter column may require some interpretation in various cases. For example, I have shown four each of the 1.5 and 4.8 GHz front ends completed, but Roger was well along towards having five of each constructed. I have counted 14 of the 2-16 GHz Synthesizers as complete, but for six of these Lewis is awaiting delivery of the levellers to finish them off. The 23 GHz front end has been essentially checked out but is awaiting the final-version IF post amplifiers and LO amplifier, which should be delivered imminently. Metal parts for all ten 1.5 GHz feeds were obtained, but not all have been assembled.

Column four shows the goal for numbers completed by the end of this year, and column five the number to be completed during this year. In counting power supplies I have included those used in Rack D (the Data Acquisition Rack or D.A.R.). The first four of these racks are being built at Haystack observatory, but we are supplying the power supplies. In the first two of these, the P105 is replaced by a commercial Lambda unit. In the build for 1988 I have included power supplies for two more Rack D units that we shall start to assemble at NRAO: other parts of these two racks are not included in the table.

In addition to construction of new systems this year, we should complete retrofits for any modifications which have been made in the design so far. This month the first set of Racks A, B and C, which have been used as a test setup at the VLA during the past year, will be shipped back to Charlottesville, complete with modules, for retrofitting. They will then be returned to VLBA headquarters to become the maintenance testbed. A number of modules in systems 2 and 3 will also need retrofits, and these can be taken care of during the year. After systems 6 and 7 are completed, they will remain in Charlottesville, until shipped directly to the antennas which will use them. There will be a period during which we can exchange modules from 6 and 7 for some of those in earlier systems needing retrofits. Erich will set up a data base of modules by serial number to keep track of this retrofitting.

Finally, we should complete as much as possible of the documentation this year, particularly that part of it that is necessary for maintenance and troubleshooting.

1	2	3	4	5
Item	No. Units Planned by 12/31/87	Complete Achieved	Total No. to be Completed by 12/31/88	No. to be Completed in 1988
330/610 MHz Feed	1	1	1	0
1.5 GHz Feed	4	4	6	2
2.3 GHz Feed	1	1	1	0
4.8 GHz Feed	4	2	6	4
8.4 GHz Feed	1	1	3	2
10.7 GHz Feed	1	1	1	0
15 GHz Feed	1	1	1	0
23 GHz Feed	2	2	6	4
23/8.4 Dichroic System	1	1	1	0
330/610 MHz Front End	1	1	1	0
1.5 GHz Front End	5	4	7	3
2.3 GHz Front End	1	0	1	1
4.8 GHz Front End	5	4	7	3
8.4 GHz Front End	1	1	3	2
10.7 GHz Front End	1	1	1	0
15 GHz Front End	1	1	1	0
23 GHz Front End	4	1	6	5
330 MHz Conv. (T101)	1	1	1	0
610 MHz Filter (T102)	1	1	1	0
1.5 GHz Conv. (T103)	5	5	7	2*
2.3 GHz Conv. (T104)	1	1	1	0
4.8 GHz Conv. (T105)	5	5	7	2*
8.4/23 GHz Conv. (T106)	2	1	6	5
10.7 GHz Conv. (T107)	1	1	1	0
15 GHz Conv. (T108)	1	1	1	0
F. E. Interface (F117)	19	18	27	9*
330/610 MHz Adap. (F118)	5	4	7	3
Maser Interface (L101)	5	1	7	6
LO Transmitter (L102)	5	4	7	3
Round Trip Mon. (L103)	5	1	7	6
LO Receiver (L105)	5	4	7	3
2-16 GHz Synth. (L104)	14	14	22	8
Switch Driver (L107)	5	4	7	3
Station Timer (L108)	5	4	7	3
Rack B Interface (M102)	5	4	7	3
Power Supply P101	23	22	33	11
Power Supply P102	15	19	21	2
Power Supply P103	23	21	33	12
Power Supply P104	5	6	7	1
Power Supply P105	2	0	4	4
Model 22 Power Supply	12	20	25	6
Model 350 Power Supply	5	4	7	3
Rack A	5	4	7	3
Rack B	5	4	7	3
Rack C	5	4	7	3
Compressors	14	14	14	0

* These figures may be revised as the final adjustments are made to the budget.