

## VLBA Electronics Construction Plan for 1991-2.

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The attached table shows the construction required to complete the VLBA Electronics system (53.000 series account nos.) and the Data Acquisition Racks (account nos. 54.200-54.299 of the Data Acquisition System). Also included are two Data Acquisition Racks (14-BBC type) being built for the Green Bank/Navy contract, one DAR (8-BBC type) for the GBT project, and various units for the Orbiting VLBI project. For the VLBA and the Navy contract the numbers completed by the end of 1990 are given in columns 7 and 10. These numbers are best estimates of what was completed at that time, and are approximate because a number of units were in various stages of construction at the time. They should not be taken as an indication of numbers of components purchased in 1990, which are indicated in the 1990 build plan in VLBA Electronics Memo. No. 117. Construction and testing of most of the units yet to be built will be completed by the end of 1991, but some will continue in 1992.

Procurement of components at this time should include all those needed to complete the project. The total numbers of each unit to be built by the end of 1992 are obtained by adding the numbers in columns 6, 9, 12, and 13. These total numbers are indicated in terms of the highest serial number for each unit given in column 14. (Note that for the 8.4 GHz front ends the serial nos. include 30 units for the VLA, and serial nos. of racks begin at 101.) In ordering components for 1991-2, please take stock of all components in hand or on order, and buy the quantities required to complete through the highest serial number as shown. Components for the Navy contract, the GBT, and the OVLBI project should be charged to the VLBA project numbers.

As described in a memo by P. J. Napier dated Jan. 20, 1991, there will be one Data Acquisition rack at each site, and it will contain eight BBC's. The two DAR's for the laboratory systems will be identical except that there will be only four BBC's plugged into each one. The formatters for each of the VLBA DAR's and the GBT DAR will be expanded by the addition of a second set of boards to allow operation of two recorders simultaneously, but this expansion is not needed for the Navy contract racks or for the OVLBI formatter. Thus completion of the formatters will include expansion of the existing VLBA formatters to the two-recorder capacity.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
			VLBA					Navy Contract			GBT	OVLBI Station	Highest Ser. No.		
Unit Name	Type No.		No. for Array and Lab	No. of Spares	Total No. Reqd.	No. built by end 1990	No. to be built in 1991-2	Total Reqd.	No. built by end 1990	No. to be built in 1991-2	No. Reqd.	No. to be built in 1991			Unit Name
330/610 MHz Feed			10	1	11	10	1						11		330/610 MHz Feed
1.5 GHz Feed			10	0	10	10	0						10		1.5 GHz Feed
2.3 GHz Feed			10	0	10	5	5						10		2.3 GHz Feed
4.8 GHz Feed			10	0	10	10	0						10		4.8 GHz Feed
8.4 GHz Feed			10	0	10	10	0						10		8.4 GHz Feed
10.7 GHz Feed			1	0	1	1	0						1		10.7 GHz Feed
15 GHz Feed			10	0	10	10	0						10		15 GHz Feed
23 GHz Feed			10	0	10	10	0						10		23 GHz Feed
43 GHz Feed			10	0	10	2	8						10		43 GHz Feed
2.3/8.4 GHz Dichroic			10	2	12	1	11						12		8.4/23 Dichroic
330/610 MHz F.E.			10	1	11	5	6						11		330/610 MHz F.E.
1.5 GHz F.E.			10	1	11	11	0						11		1.5 GHz F.E.
2.3 GHz F.E.			10	1	11	4	7						11		2.3 GHz F.E.
4.8 GHz F.E.			10	1	11	11	0						11		4.8 GHz F.E.
8.4 GHz F.E.			10	1	11	10	1					1	42		8.4 GHz F.E.
10.7 GHz F.E.			1	0	1	1	0						1		10.7 GHz F.E.
15 GHz F.E.			10	1	11	0	11					1	12		15 GHz F.E.
23 GHz F.E.			10	1	11	9	2						11		23 GHz F.E.
43 GHz F.E.			10	1	11	1	10						11		43 GHz F.E.
330 MHz Conv.	T101		11	3	14	7	7						14		330 MHz Conv.
610 MHz Conv.	T102		11	3	14	1	13						14		610 MHz Conv.
1.5 GHz Conv.	T103		11	3	14	13	1						14		1.5 GHz Conv.
2.3 GHz Conv.	T104		11	3	14	5	9						14		2.3 GHz Conv.
4.8 GHz Conv.	T105		11	3	14	10	4						14		4.8 GHz Conv.
8.4/23 GHz Conv.	T106		11	3	14	10	4						14		8.4/23 GHz Conv.
10.7 GHz Conv.	T107		1	0	1	1	0						1		10.7 GHz Conv.
15 GHz Conv.	T108		11	3	14	0	14						14		15 GHz Conv.
43 GHz Conv.	T110		11	3	14	3	11						14		43 GHz Conv.
F.E. Interface	F117		89	10	99	61	38						2	101	F.E. Interface
330/610 Adapter	F118		11	3	14	11	3							14	330/610 Adapter
Maser Interface	L101		11	3	14	9	5							14	Maser Interface
L.O. Transmitter	L102		11	3	14	14	0						1	15	L.O. Transmitter
Round Trip Mon.	L103		11	3	14	12	2						1	15	Round Trip Mon.
L.O. Receiver	L105		11	3	14	13	1						1	15	L.O. Receiver
2-16 GHz Synth.	L104		33	5	38	38	0						38		2-16 GHz Synth.
Switch Driver	L107		11	3	14	9	5						14		Switch Driver
Station Timer	L108		11	3	14	9	5						14		Station Timer
Rack B Interface	H102		11	3	14	9	5						14		Rack B Interface
Power Supply	P101		72	8	80	59	21	6	3	3	3	2	91		Power Supply
Power Supply	P102		33	5	38	38	0						38		Power Supply
Power Supply	P103		59	8	67	58	9	2	1	1	2	2	73		Power Supply
Power Supply	P104		11	3	14	14	0						14		Power Supply
Power Supply	P105		13	3	16	11	5	2	1	1	1	1	20		Power Supply
Power Supply	P106							2	2	0			2		Power Supply
Model 22 Power Sup.			56	6	62	44	18						2	64	Model 22 Power S
Model 350 Power Sup.			22	3	25	15	10							25	Model 350 Power
Rack A (F.E. Interface)			11	0	11	11	0						111		Rack A (F.E. Int
Rack B (I.F.-L.O.)			11	0	11	11	0						111		Rack B (I.F.-L.O
Rack C (Master L.O.)			11	0	11	11	0						111		Rack C (Master L
Cryo. Compressors			20	10	30	24	6						30		Cryo. Compressor
I.F. Distributor	T121		26	4	30	20	10	4	2	2	2		36		I.F. Distributor
Baseband Conv.	T122		96	10	106	48	58	28	19	9	8		142		Baseband Conv.
5 MHz Distributor	L121		24	3	27	21	6	4	2	2	1	1	33		5 MHz Distributo
32 MHz Synth.	L122		13	3	16	10	6	4	2	2	1	1	22		32 MHz Synth.
Sampler	D121		26	3	29	10	19	4	2	2	2		35		Sampler
Output Rate Synth.	D122		13	3	16	9	7	2	1	1	1	1	20		Output Rate Synt
Formatter			13	3	16	10	6	2	1	1	1	1	20		Formatter
Pulse Cal. Generator			11	3	14	0	14						14		Pulse Cal. Gener
Pulse Cal. Extractor			13	3	16	0	16						16		Pulse Cal. Extra
Rack D ( 8-BBC DAR)			13	0	13	10	3				1		114		Rack D
Rack E (14-BBC DAR)								2	1	1			102		Rack E
GPS Timing Receiver			11	1	12	12	0								GPS Timing Recei