

ALMA Correlator Cost Estimate

1/13/00

Assuming;

64 antennas
 filters at the antenna
 digital mode selection
 125 MHz LVDS signal cabling
 4K, .25 u chip
 sampler cost excluded
 no spares included

ITEM	QUANTITY REQD	NRE (K\$)	UNIT PRICE (K\$)	TOTAL (M\$)	with spares
STATION CARDS	768	\$3	\$1.5[1]	\$1.15	
FILTER CARDS	512	\$3.5	\$2.5[1]	\$1.28	
CORRELATOR CARDS	512	\$5	\$1.0[2]	\$0.52	
LTA CARDS	64	\$4.5	\$2.0[1]	\$0.13	
CONTROL CARDS	96	\$2.5	\$1.5[1]	\$0.15	
✓ CORRELATOR CHIP	32,768	\$286	\$0.05	\$1.92	2300
BACKPLANES	192	\$10	\$2.5	\$0.49	490
SIGNAL CABLES[3]	9,536	-	\$0.05	\$0.48	504
CARD BINS	200	\$7.5	\$2.5	\$0.51	510
RACKS[4]	36	-	\$2.5	\$0.09	90
POWER SUPPLIES	200KW	-	\$0.002/W	\$0.4	480
METAL WORK		-	\$50	\$0.05	50
TEST EQUIPMENT		-	\$50	\$0.05	50
VME COMPUTERS	17	-	\$4.5	\$0.25	280
SOFTWARE		-	\$100	\$0.1	100
TOTAL				\$7.40	8404k

[1] including assembly

[2] including assembly but excluding correlator chips

[3] four 125 MHz digital signals per cable

[4] does not include racks at the antennas

In spreadsheets at 1-13: \$8545K

New correlator cost estimate (for PDR)

M&S including spares	\$ 8545 K	1999 dollars
Direct labor + benefits	3709 K	
	12,254 K	
Contingency (27%)	3,351 K	
	\$ 15,605 K	Required budget

cut back construction phase labor to 3/4