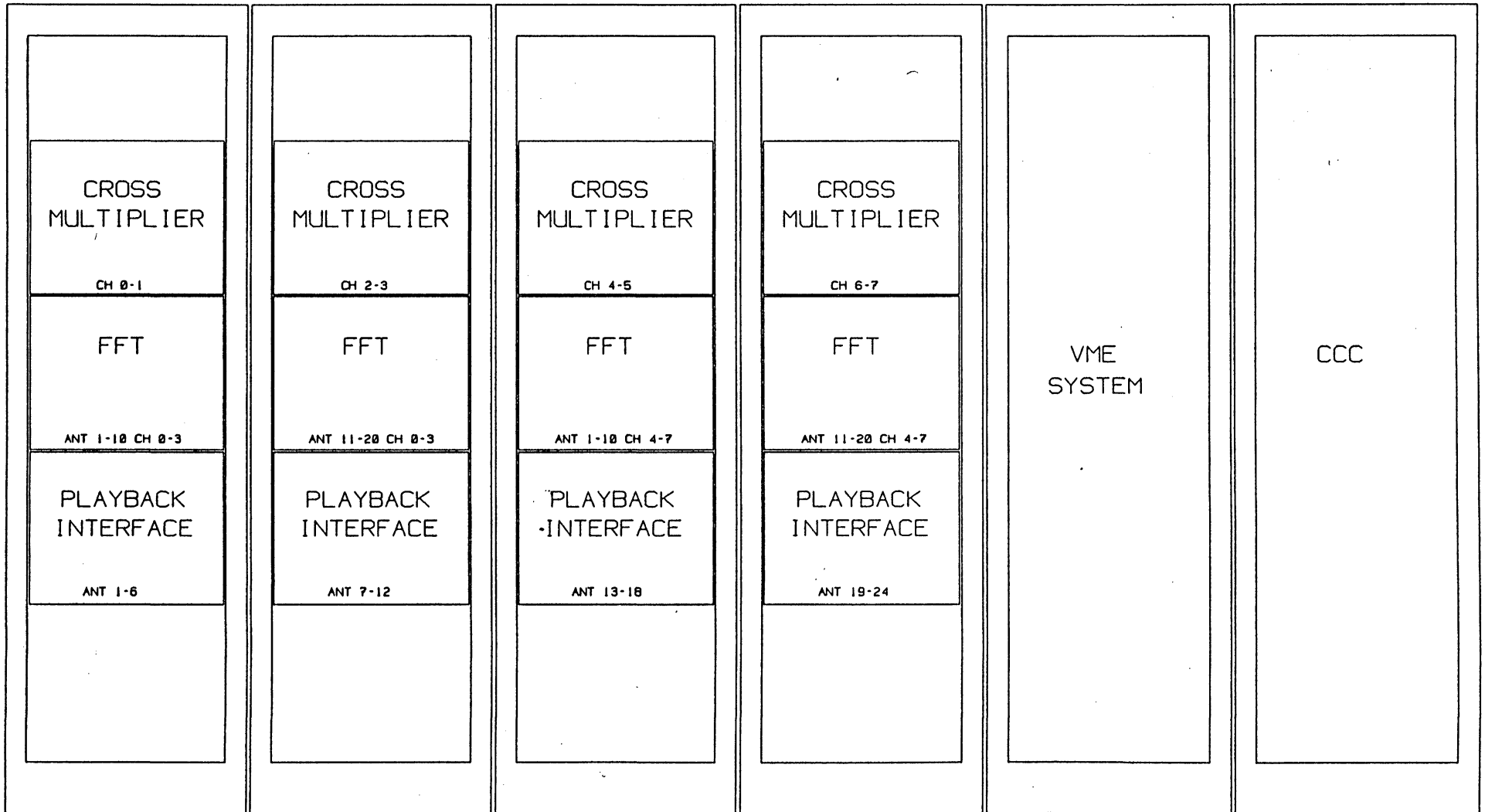
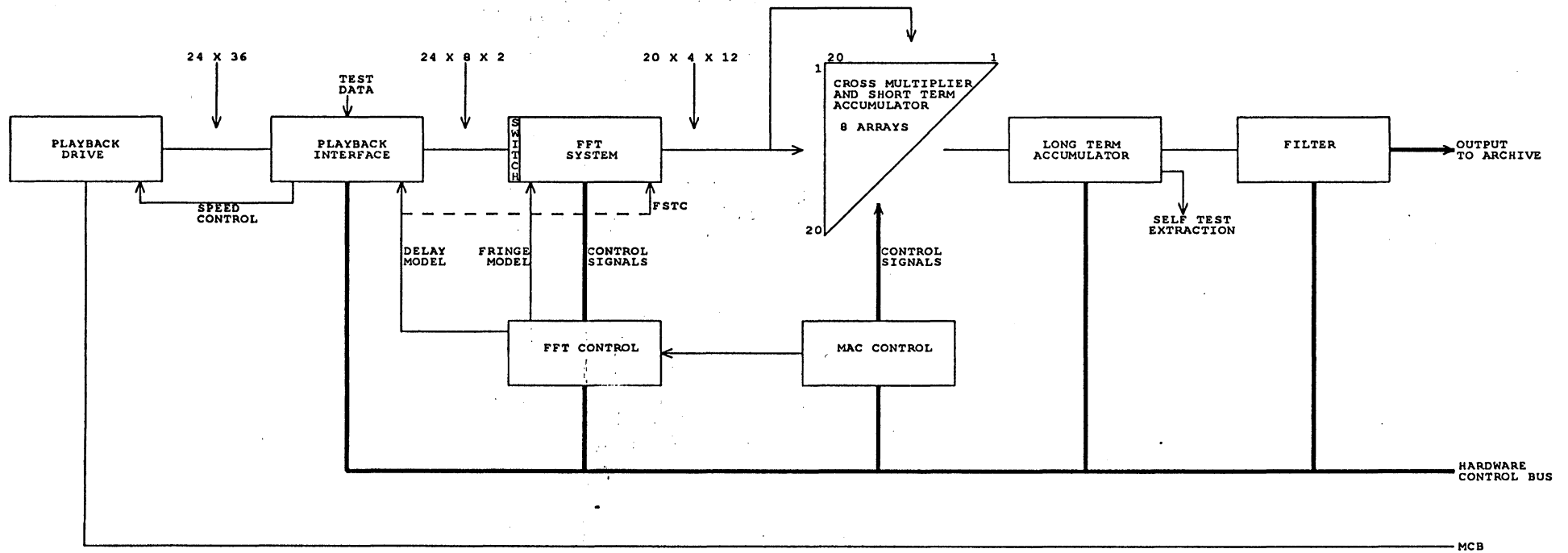


Escoffier 10/7/91

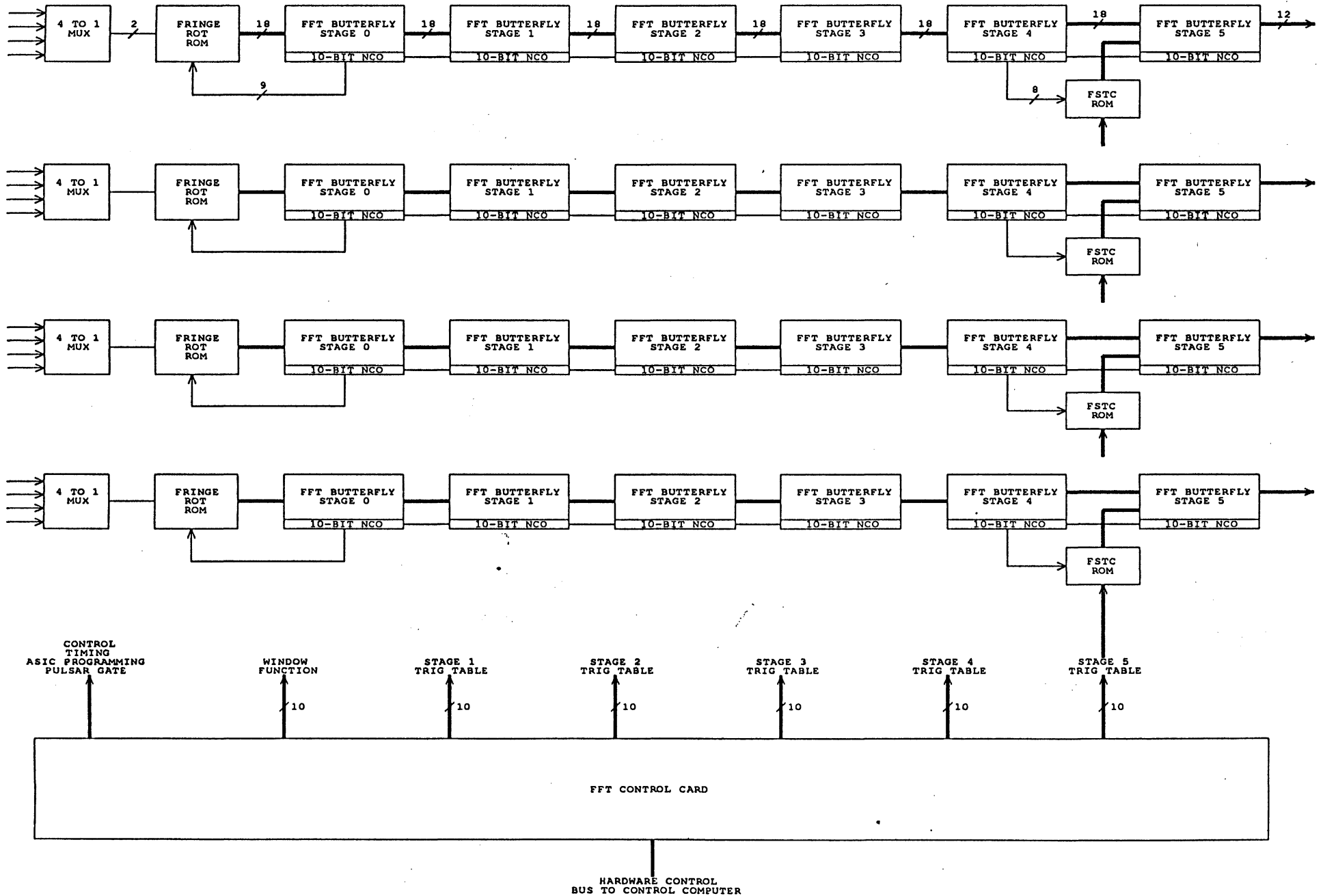
FX CORRELATOR



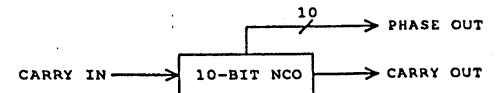
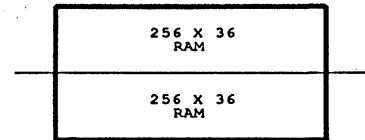
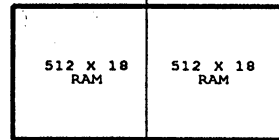
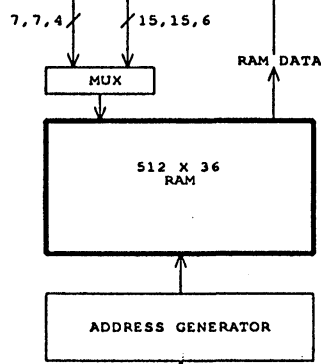
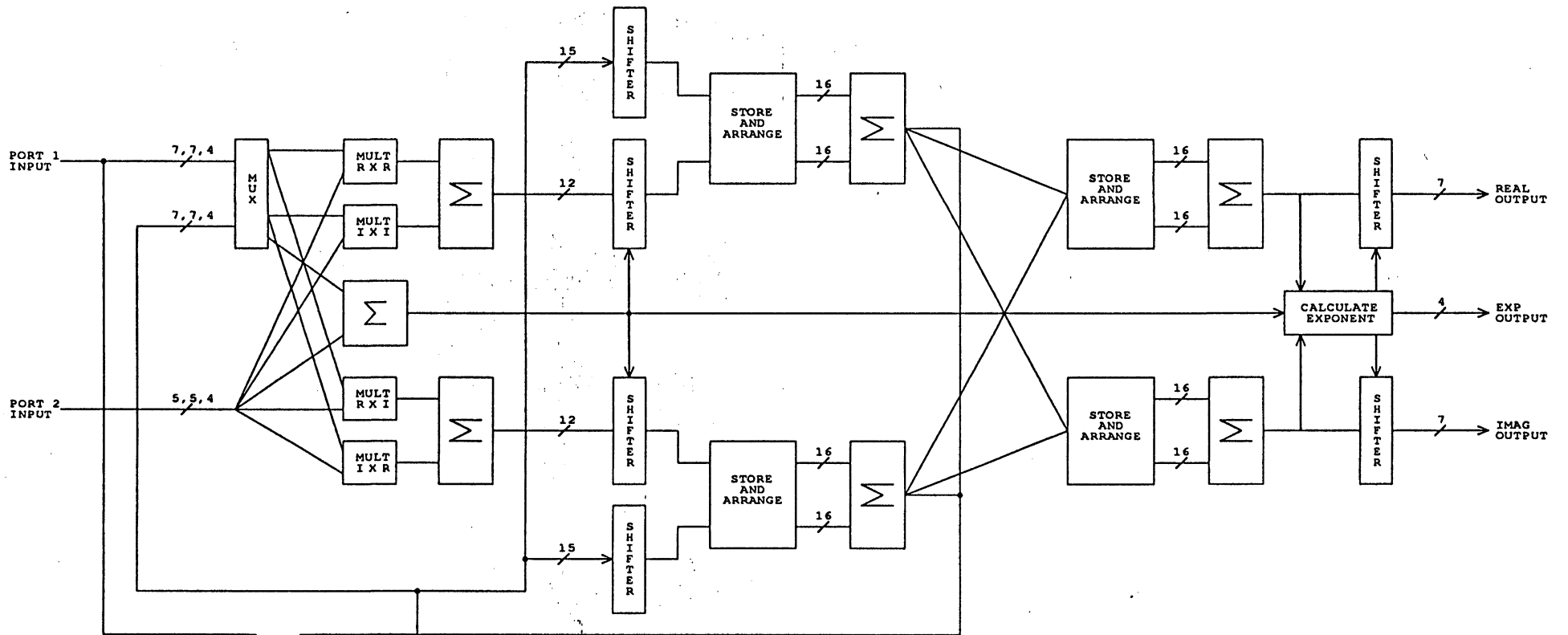
VLBA CORRELATOR BLOCK DIAGRAM



FFT CARD BLOCK DIAGRAM

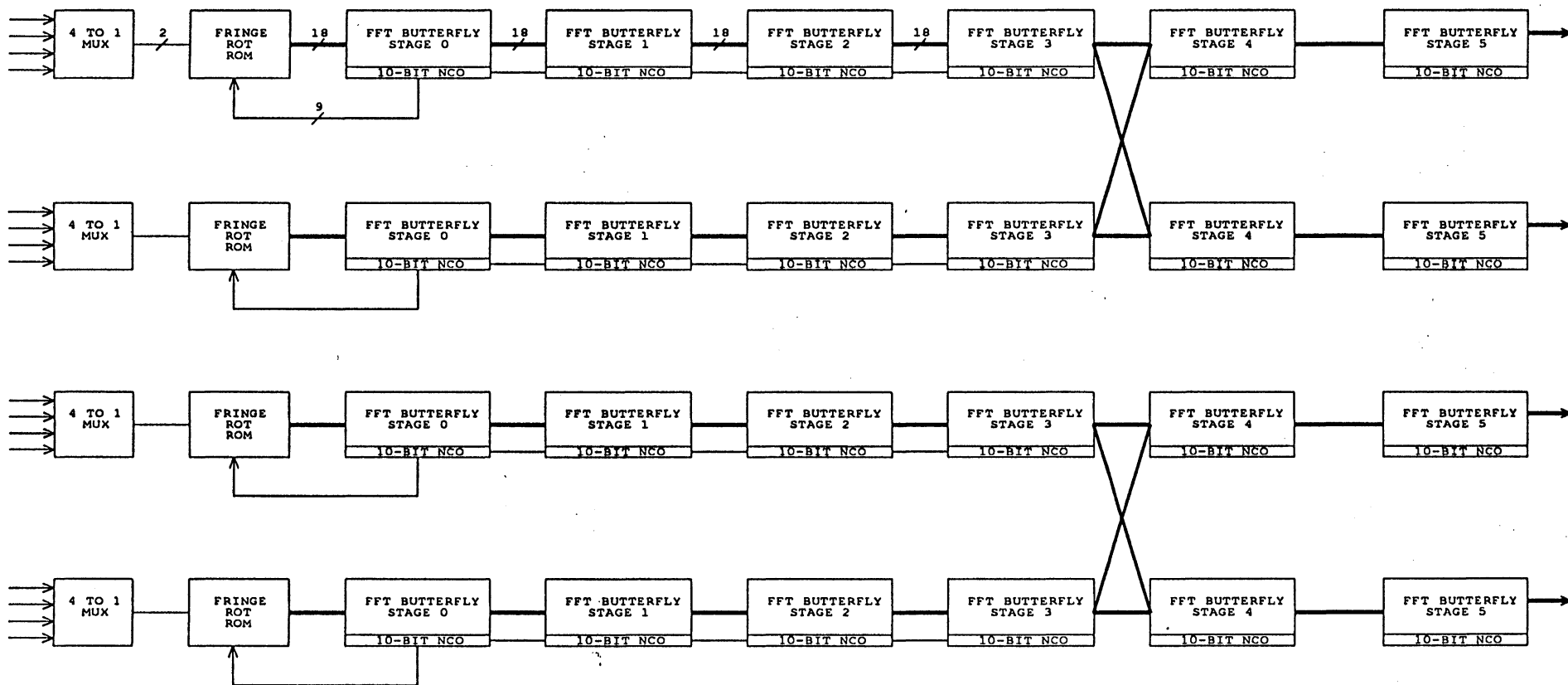


BUTTERFLY ASIC BLOCK DIAGRAM



FFT CARD BLOCK DIAGRAM

1K TRANSFORMS



CONTROL
TIMING
ASIC PROGRAMMING
PULSAR GATE

WINDOW
FUNCTION

STAGE 1
TRIG TABLE

STAGE 2
TRIG TABLE

STAGE 3
TRIG TABLE

STAGE 4
TRIG TABLE

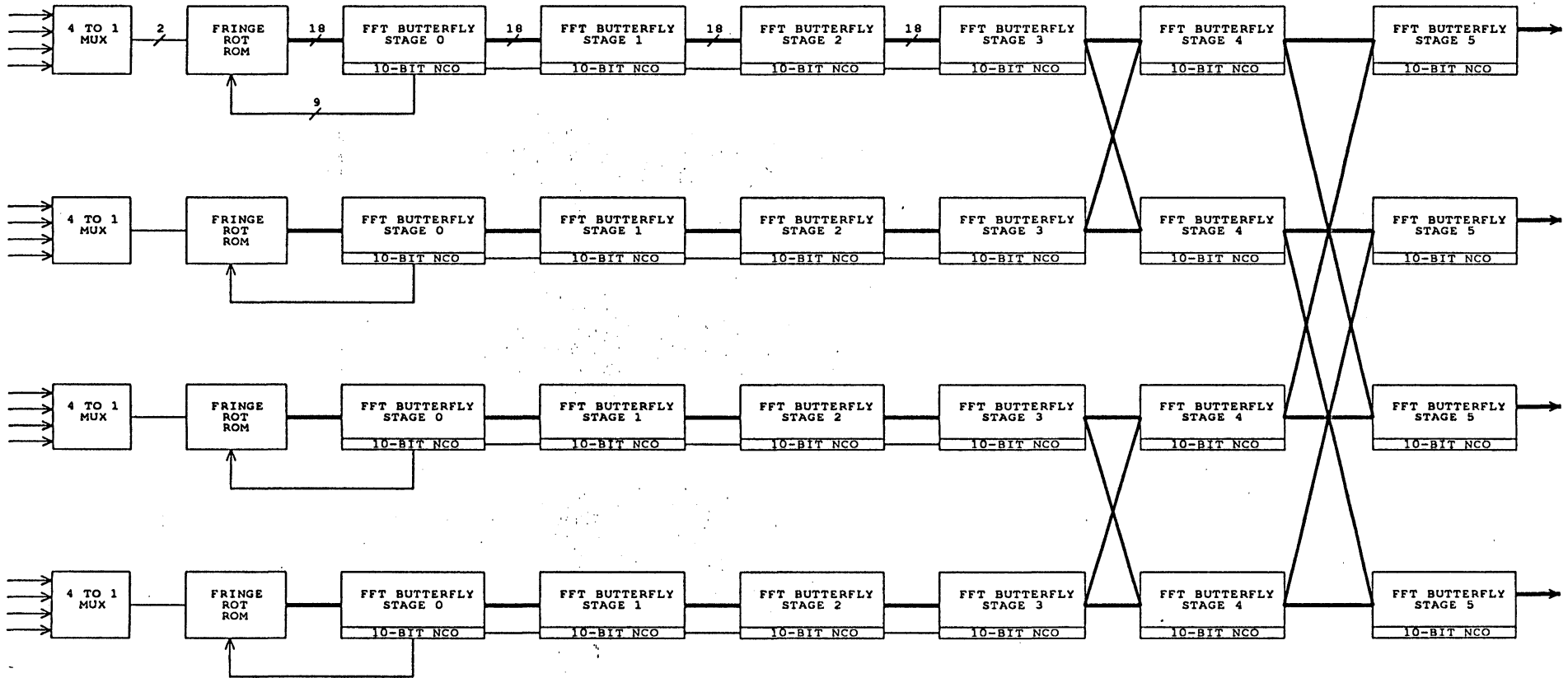
STAGE 5
TRIG TABLE

FFT CONTROL CARD

HARDWARE CONTROL
BUS TO CONTROL COMPUTER

FFT CARD BLOCK DIAGRAM

2K TRANSFORMS



CONTROL
TIMING
ASIC PROGRAMMING
PULSAR GATE

WINDOW
FUNCTION

STAGE 1
TRIG TABLE

STAGE 2
TRIG TABLE

STAGE 3
TRIG TABLE

STAGE 4
TRIG TABLE

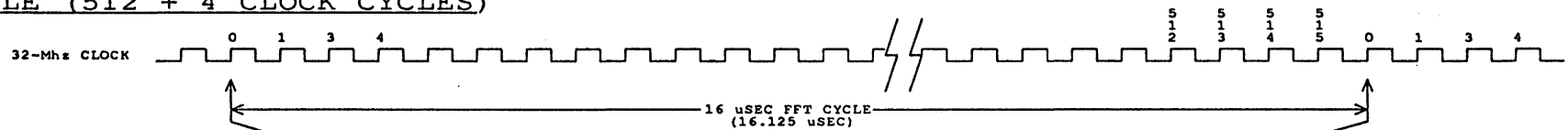
STAGE 5
TRIG TABLE

FFT CONTROL CARD

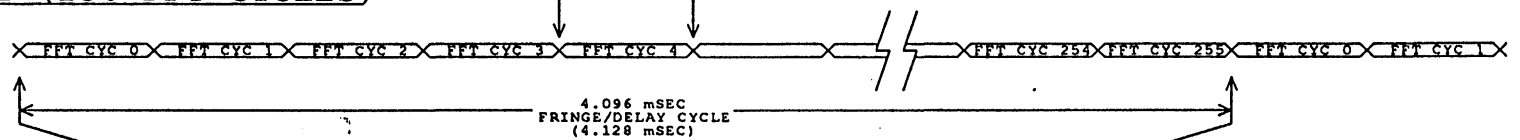
HARDWARE CONTROL
BUS TO CONTROL COMPUTER

VLBA CORRELATOR MASTER TIMING

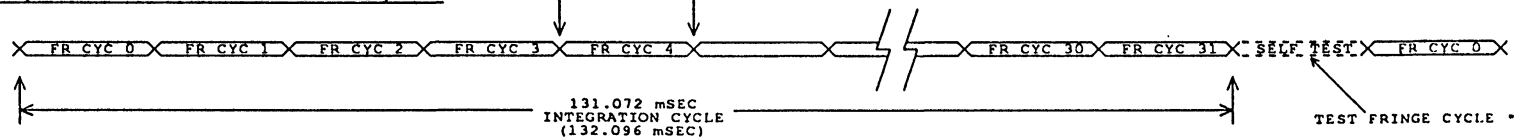
FFT CYCLE (512 + 4 CLOCK CYCLES)



FRINGE/DELAY CYCLE (256 FFT CYCLES)

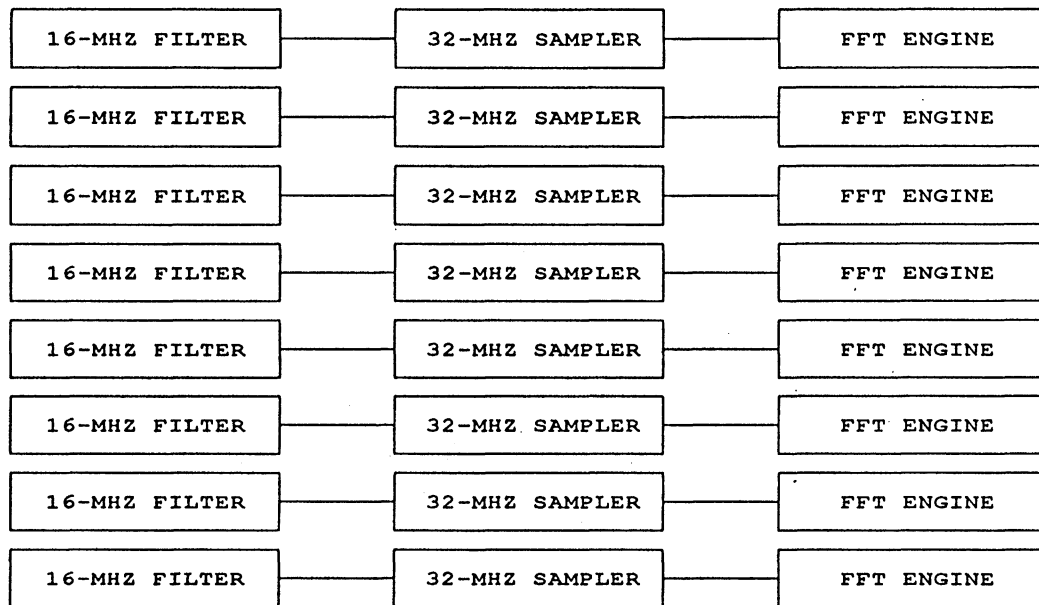


INTEGRATION CYCLE (32 FRINGE CYCLES)

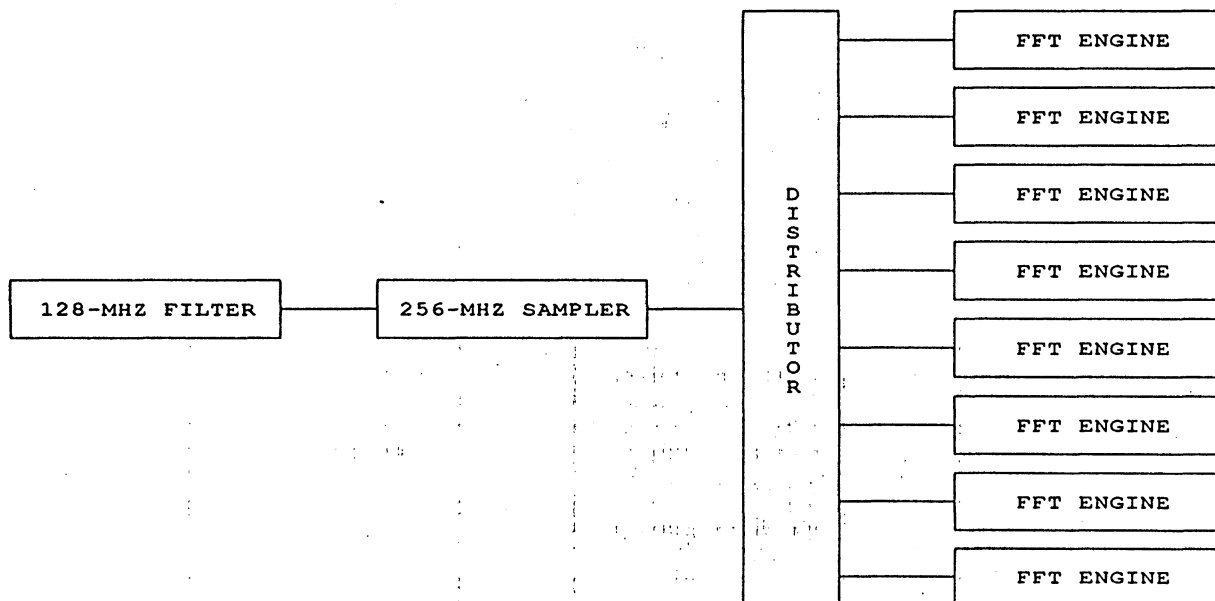


* OPTIONAL, NOMINALLY ONCE PER SECOND

NOTE: TIMES ABOVE GIVEN IN PARENTHESIS ARE WALL CLOCK TIMES FOR THE RESPECTIVE SYSTEM CYCLES. ALL OTHER TIMES ARE OBSERVATION TIMES (AFTER PLAYBACK SPEED UP).



2 FFT CARDS
 2048 POINTS
 128 HMZ
 IN 8 16-MHZ BANDS



2 FFT CARDS
 1024 POINTS
 IN 1 128-MHZ BAND

ONE VLBA FFT CARD

FFT CARD COST

PC CARD	\$201
PARTS	\$615
ASICs	\$2,024
<u>ASSEMBLY</u>	<u>\$57</u>
	\$2,900

1024 SPECTRAL POINTS
128 MSAMP/SEC
64 MHZ BANDWIDTH

32 FFT CARDS

32768 SPECTRAL POINTS
4096 MSAMP/SEC
1024 MHZ BANDWIDTH WITH ZERO PADDING
512 MHZ BANDWIDTH WITH ZERO PADDING AND OVERLAPING

16 FFT CARDS

16384 SPECTRAL POINTS
2048 MSAMP/SEC
1024 MHZ BANDWIDTH
512 MHZ BANDWIDTH WITH ZERO PADDING
256 MHZ BANDWIDTH WITH ZERO PADDING AND OVERLAPING

8 FFT CARDS

8192 SPECTRAL POINTS
1024 MSAMP/SEC
512 MHZ BANDWIDTH
256 MHZ BANDWIDTH WITH ZERO PADDING
128 MHZ BANDWIDTH WITH ZERO PADDING AND OVERLAPING