DATA AcQUISITION RACK LAYOUT
FOR PROTOTYPE TESTS
AND SYSTEM CHECKOUT

FOR EXPANSION

- 22 -

FULL VLBA CONFIGURATION
1. EACH ELECTRONICS RACK HAS 4 BB CONV. EXPANDED TO 6.
2. EACH FORMATTER HAS 20 DATA OUTPUTS MUXED TO EACH
RECODER MAX OUTPUT DATA RATE 256 MB/S PER
FORMATION (EXPANDABLE TO 512 MB/S PER FORMATTED).
3. RACKS ARE INDEPENDENT.
RECEIVER  I.F. DISTR.  SSB MIXER  LOW PASS + AMP + AGC

30K =
-97dBm/500MHz

GAIN (dB)  67
(NOMINAL
INCL CABLE)  12dB  24(82kHz)

NORMAL POWER LEVELS (30° K INPUT-0dB ATTEN SETTING)
(30,000 K–30dB ATTEN SETTING) -40dBm/500MHz -36dBm/60MHz
-33dBm

30,000 K LIN IN 62.5KHz CHANNEL
-40dBm/500MHz -25dBm -3dBm

1dB GAIN COMPRESSION LEVELS
6dBm  16dBm

INTERNAL NOISE LEVELS
-62dBm/500MHz
(100,000K
INCLUDING MIXER)

DERIVED FROM ABOVE:
BASEBAND SNR BETTER THAN 22dB
WORST CASE SENSITIVITY INTERFERENCE WITHIN I.F. - BUT
OUTSIDE BASEBAND CHANNEL -55dBm AT FRONT END INPUT.

NOTES.
VLBA RECORDER

- RECOMMENDATION BASED ON TESTS AND EXPERIENCE

- PRESENTLY AVAILABLE COMPONENTS

- REQUIRES OPERATIONAL TESTING

HEADS: 34-MICRON WIDTH

TAPE: T-160 HIGH-GRADE 24,000-FOOT LENGTH

16-INCH GLASS REELS

TRACKS: 5-MICRON GUARD BANDS

37,500 BITS PER INCH

USE: 18 PASSES OF 32+ TRACKS

40 MINUTES PER PASS

12 HOURS PER REEL AT 128 MBIT/SEC
VLBA RECORDER

GOAL FOR 1988:

24 HOURS ON ONE REEL AT 128 MBIT/SEC

- DIGITAL VIDEO TAPE
  +5 DB SNR OVER T-160
  20% THINNER THAN T-160
  COERCIVITY OK FOR FERRITE HEAD
  SMALLER PARTICLE SIZE
  50,000 TO 75,000 BPI PROJECTED
  SAMPLES NOW IN HAND

- REDUCTION OF TRACK WIDTH
  24-MICRON TRACKS
  5-MICRON GUARD BANDS

- USE:
  50,000 BPI DENSITY
  ONE HOUR PER PASS
  24 PASSES

- UNKNOWNS:
  HANDLING OF THINNER TAPE
  ABRASIVITY WILL BE GREATER
<table>
<thead>
<tr>
<th>Year</th>
<th>#DAS</th>
<th>#DPS</th>
<th>&quot;Prototypes&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>86</td>
<td>2</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>87</td>
<td>6</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>88</td>
<td>4</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>89</td>
<td>2</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>90</td>
<td>2</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>91</td>
<td>4</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>92</td>
<td>4</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>

FABRICATION PLAN (AER/PBS MAY 1986)