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To: VLBA Data Acquisition and Recorder Group
From: Alan E.E. Rogers and John C. Webber
Subject: MKIIIA - VLBA Compatibility Mode

Since VLBA Data Acquisition Racks will initially have only four baseband converters, the largest available bandwidth in a mode compatible with MKIIIA is 32 MHz. An effective "2-level" bandwidth of 45 MHz could be achieved by using 2 X 4 level correlation - but the gain seems hardly worthwhile since the number of tracks (hence fewer passes) and processing time would have to be doubled to support this mode. The parameters are given in the following table:

MKIIIA Compatibility Mode

MKIII Mode B -- 4 MHz BW, 8 MHz Sampling -- 32 MHz Total Bandwidth

| MKIII VIDEO CONV | VLBA BBC | MKIII TRK F | MKIII TRK R | VLVA TRK F | VLBA REC TRK R | VLBA FORM TRK F | VLBA FORM TRK R |
|---------------------|-------------|----------------|----------------|---------------|-------------------|--------------------|--------------------|
| U1 | U1 S | 1 | 2 | 4 | 5 | 17 | 1 |
| U3 | U2 S | 3 | 4 | 6 | 7 | 18 | 2 |
| U5 | U3 S | 5 | 6 | 8 | 9 | 19 | 3 |
| U7 | U4 S | 7 | 8 | 10 | 11 | 20 | 4 |
| L1 | L1 S | 15 | 16 | 18 | 19 | 24 | 8 |
| L3 | L2 S | 17 | 18 | 20 | 21 | 25 | 9 |
| L5 | L3 S | 19 | 20 | 22 | 23 | 26 | 10 |
| L7 | L4 S | 21 | 22 | 24 | 25 | 27 | 11 |

8 Trks/Pass each Pass lasts 400 sec
NO. PASSES 2 X 12 tapes last 2.5 hours

VLBA <----> Mark III Tracks

| V L B A | | |
|-----------|-----------|-----------|
| Formatter | Recorder | Mark III |
| Track No. | Track No. | Track No. |
| - | | |
| Sys 1 =32 | 1 | - |
| 0 | 3 | - |
| 1 | 5 | 2 |
| 2 | 7 | 4 |
| 3 | 9 | G1 6 |
| 4 | 11 | 8 |
| 5 | 13 | 10 |
| 6 | 15 | 12 |
| 7 | 17 | - 14 |
| 8 | 19 | - 16 |
| 9 | 21 | 18 |
| 10 | 23 | 20 |
| 11 | 25 | 22 |
| 12 | 27 | G3 24 |
| 13 | 29 | 26 |
| 14 | 31 | 28 |
| 15 | 33 | - |
| Sys 3 =33 | 35 | - |

| V L B A | | |
|-----------|-----------|-----------|
| Formatter | Recorder | Mark III |
| Track No. | Track No. | Track No. |
| - | | |
| Sys 0 =34 | 0 | - |
| 16 | 2 | - |
| 17 | 4 | 1 |
| 18 | 6 | 3 |
| 19 | 8 | G0 5 |
| 20 | 10 | 7 |
| 21 | 12 | 9 |
| 22 | 14 | 11 |
| 23 | 16 | - 13 |
| 24 | 18 | - 15 |
| 25 | 20 | 17 |
| 26 | 22 | 19 |
| 27 | 24 | 21 |
| 28 | 26 | G2 23 |
| 29 | 28 | 25 |
| 30 | 30 | 27 |
| 31 | 32 | - |
| Sys 2 =35 | 34 | - |