

VLBA ACQUISITION MEMO #239

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To: VLBA tape drive users

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Subject: Version 5 of RECON

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Version 5 of RECON, the recorder controller program which is resident in firmware, is complete. There were many upgrades added and bugs fixed. In order to facilitate the use of the new version, I have compiled this short list of the changes.

Bug Fixes

1. Always set bit 2 of transport control word to be compatible with newer capstan servo boards.
2. Clear inchworm driver upon startup by pulsing setmode-bar low.
3. Clear 5 MHz and 1 PPS latches (word 73) if they go away.
4. Make "Pie Town crash" fix permanent.
5. Eliminate high speed runoff of the take-up reel under certain conditions.
6. Properly handle load command that occurs over a midnight (transport internal clock) boundary.
7. Properly handle midnight boundary for head movement timeout check.
8. Correctly position tapes more than 18022 feet long.
9. Power up with formatter 1 selected, and no groups enabled.

New Features

1. Allow external setting of vacuum sensor parameters through MCB words D5 and D6.
2. Add new command (D4) to enable/disable vacuum motor, independent of the setting of the control voltage (D0).
3. Installed new interlock to prevent brake release when the capstan is in motion, to prevent problems on very short power outages.

4. Illuminate red LED on A/D board, in the event of A/D conversion time-out.
5. Stop peaking operation upon head motion abort (CB).
6. Post head-peaking status bit (9) of General Status Word (73), when appropriate.
7. Release brakes and disable vacuum after tape winds off reel.
8. For fast forward, fast reverse, and unload commands, go at 330 IPS.
9. Save last reading (with the oscillator turned on) of LVDT output voltage in location 43.
10. Separate functionality of digital write and monitor boards (by splitting the SGNL task into two tasks, RITE and MONT), so that either may be missing without affecting the other.
11. Created new task, CREM, to control all functions pertaining to the Mark 3A clock recovery module.
12. Eliminated need for 5–10 ms delay between setting head index, and downloading its value, and headblock parameter numbers, and downloading their values.
13. Implemented auto-tracking feature (CA) for playback.
14. Implement new direction status bit in the GSW, to instantaneously reflect the direction of capstan motion.
15. Created new control (A8) and status (20) words to effect selection of clock recovery frequency range in the re-designed monitor module.