

DATE: 9/16/87
VERSION: 409-5 409-5NB
409-6 409-6NB

New transports added:

- 5 Sony V05850; (requires Lynx V05850 hardware interface)
The 5850 software controls not only search and lock, but controls threading and unthreading, unthreading of the cassette is based on search time.
- 6 Sony 3323-d;
This is identical to the normal "3324" position, except applies to a more stringent lock requirement before "releasing" the machine. This is intended for digital track dubbing between 3324's. It has a longer lock time before release.
- 6 JVC 850 3/4" U-matic;
- 6 JVC 8600, 7700 VHS Editing recorder;
- 6 Studer A800-1;
Mark-I multi track with frequency servo input.

NOTE: A small number of units were shipped with L409-4 software, which by an unintentional programming change did not drop the lifters AT ALL. We would like to replace the software in units which now have L409-4.

IMPROVEMENTS (transports):

- 6 Sony (MCI) JH-114, JH-24 was not operable as a master at 7.5 ips due to slow tach rate. This feature has now been added.
- 6 Sony 3324; tendency for the lynx module to issue a play command to the machine when spooling forward in VSO mode, has been eliminated.
- 6 Tendency for certain "released" transports such as the 3324, to release prior to 0 subframes has been eliminated.
- 6 Mitsubishi X850-d; in the digital setting, the lock requirement prior to release has been made more stringent, insuring lock to less than 0 subframes prior to release. This has been done to insure absolute phase alignment between tracks when doing individual track dubbing.
- 6 On released machines such as the X850 in the digital dubbing mode, after manually slewing the machine it would not release a second time. This feature has been added.

IMPROVEMENTS (transports) cont.

- 6 Capstan lock up time on voltage controlled machines such as the JVC 8250, has been speeded up.
- 6 Studer A820; due to a programming error, at 25 and 24 FPS the machine would drop tach pulses at wind speeds in excess of 10X. These and all machines, will now count reliably to approximately 60X speed.

IMPROVEMENTS (operations)

- 5 Fixed bug whereby -59:00 offset would show as -1:00:00
- 6 Power up;
It has been brought to our attention that under some circumstances the unit will not power up properly after being turned off in the OFST ERR display position. This has been corrected in vers.-6 software.
- 6 On power up the individual LEDs are now extinguished during the sign on message.
- 6 Also, if the power is interrupted during the flashing machine-selection display, the unit will power back up in the uninitialized state. With -5 or older software it would power up to the machine that was flashing in the window when the power disappeared.
- 6 Offset error indication sometimes could freeze when connected to a machine which supplies wideband time code. This was the display only and has been fixed.
- 6 The portion of the software which "locks out" the master buttons on slave lynx modules has been improved so that it is inoperative unless a master has already been assigned. This will stop noise on the RS422 line from preventing a master being assigned. (This has been attributed to a different RS422 vendor).
- 5 SYNCPOINTS;
In prior software, the syncpoint operations would work correctly only if the procedure was accomplished in the order specified in the operations manual, including having the master machine stopped.

Syncpoints can be captured on the fly, on the master or slave, without having to stop either the master or slave machines for any reason.

Syncpoint operations can occur in any order.

Syncpoint (steady reminder light): The syncpoint light will stay on (as the offset light does) if a syncpoint has been entered. When a syncpoint is present, the

-5 SYNCPOINTS cont:

slave will recalculate its own offset if the master syncpoint is changed, or if the master is put online with its syncpoint register set.

Syncpoint recalculation (flashing reminder light): Whenever a slave offset recalculation occurs, which can occur from entering a syncpoint to the master machine or in the slave machine, the slave syncpoint light will flash, and the numeric display will show the current syncpoint for approximately two seconds. This is intended as a reminder and a warning that the offset has been recalculated based on the operators actions.

Automatic clearing of the syncpoint when offset is cleared, avoids having to clear both registers manually. It is assumed that when clearing an offset, the syncpoint will no longer be valid and must be cleared.

Automatic clearing of the syncpoint when offset is adjusted, avoids having a trimmed offset overwritten inadvertently by a new syncpoint calculation.

Syncpoint can be cleared without clearing or resetting offset. The logic on this is as follows, in a typical three machine operation. Once a syncpoint operation is used to find a matching location on a master and slave #1, the engineer will then want this particular slave to chase using that offset. He will then want to proceed to slave #2, using a different master syncpoint location. This other syncpoint has no bearing to slave #1 so he clears its syncpoint, the offset remains, and slave #1 will not inadvertently recalculate its offset when the slave #2 operations take place.

-5 GENERATOR:

Generator jam indication: When a generator jam operation occurs, either manually or automatically, the window display fills with the letter "J" for approximately 1/4 second as a warning. This will give a failsafe indication. It is most useful in "continuous automatic" jam mode where the engineer wants to know when a code discontinuity causes a jam operation, or if a jam operation occurs unintentionally due to nonsynchronous timecode.

-5 SLAVE RESOLVE:

Slave lock mode operation drops into resolve-only after initial lock, which will allow the slave to stay resolved to master speed even if master timecode jumps.

-5 SLAVE RESOLVE cont.

When a slave is in the lock mode, the slave SUBF-error display shows resolve error in subframes, and the non SUBF error display shows the actual frame error, if any develops due to discontinuities in the master code source. If this should occur, in addition, the slave "resolve" light will flash as a reminder that the slave is in resolve mode only, but not in numeric frame lock anymore.

-5 CODE ONLY MASTER:

On a one time only basis after power up, the module will initialize the master reference source to VSO when first entering code-only mode, which occurs when the module receives code without tach information. This is done automatically because in 99.9% of the cases this is the desired mode of operation, and it appears to be an error that is easy to make. This initialization can be overridden by the engineer at any time. See description of time code phasing, below, for one example of when you might actually want to override this initialization.

-5 LIFTERS:

Elimination of potential lifter flutter at certain speeds of the master.

Addition of a lifter menu feature, which will allow selection of three lifter modes. See description of USER OPTIONS, below.

-5 SUPPLEMENTRY SETUP MENUS:

A supplementary menu option has been added. At present there are two options available.

1. Lifter menu: "LiFt"
2. Chase approach speed menu "SPd"

These setup menus are different from the transport initialization, because they are accessed during actual operation, not during initial setup.

To access the supplementary menus, initialize the module normally to the correct machine, if this has not been done already. At any time during normal operation, press and hold the setup key for approximately two seconds. This will cause the timecode display and keyswitch to access the new menus, while the rest of the module operates normally.

At this time the MENU key will step through the menu options, and the FORW and BACK keys increase and decrease the displayed value. This works similarly to the method used to select a transport when first

-5 SUPPLEMENTARY SETUP MENUS cont:

initializing the module.

-5 LIFTER MODES:

Make sure the word "LiFt" is in the display. If it is not, press the menu key until it appears. then use FORW and BACK to select one of three lifter modes:

Mode 0: Lifters never drop

Mode 1: Lifters sometimes drop, according to the Lynx lifter algorithm. This is the mode all previous units have employed and the Lynx will initialize to this mode when first setting up a new transport.

Mode 2: Lifters always dropped, for reading high speed code when tape transport is so equipped.

The module will operate normally while in the lifter menu, so you can switch modes and watch the tape transport operation simultaneously.

Note: Use of mode 0 could potentially make lockup time substantially worse, because it prevents the module frating the true position from the tape as it slows down to a stop. For maximum performance, we highly recomend use of mode 1 for normal operations, or mode 2 when wideband reading is desired such as when working with discontinuous source reels, spot reels, or spliced code.

-5 CHASE SPEED:

Make sure the word SPd is in the display. If it is not press the menu key until it appears. then use FORW and BACK to increase or decrease the chase speed.

The chase speed is initialized when the transport type is first selected. Under some circumstances, such as use of full pack 14" reels on some machines, You might want to optimize this value. Adjust the SPd setting to get the fastest approach without overshoot.

The numbers will adjust from 50 to 200. The "units of measure are arbitrary. The SPd setting will re-initialize when selecting a new transport.

-5 GETTING BACK TO NORMAL OPERATIONS:

When you are through with the setup mode, hold the SETUP key again for approximately two seconds, and timecode will reappear in the display window.

GETTING BACK cont:

The settings entered in supplementary menus will be held in battery memory, if your unit is so equipped.

GENERAL NOTES

WHAT IS A SYNCPOINT?

To eliminate ongoing confusion about what a "syncpoint" is, vs. what an "offset" is, we offer the following explanation.

We recomend thinking about it in this way: The Lynx syncpoint register causes calculations of offsets, the offset register then controls the tape's position.

SYNCPOINT REGISTER CAUSES OFFSET CALCULATIONS.
OFFSET REGISTER THEN CONTROLS THE MACHINE.

The syncpoint register's job is to create a new slave offset to match up a position on the slave to a position on the master. This is done by taking two timecode numbers and subtracting them, which creates a new offset value for the offset register. The tape then moves to a new position.

To do this calculation, the slave module must have its own syncpoint set, and must get the master syncpoint from the currently assigned master. When both of these numbers are present, a calculation will be performed creating the requested offset to keep the slave in the correct relationship to the master.

Once this operation is performed and the slave is correctly positioned, it may be desirable to clear out the syncpoint so a new calculation will not occur if a new master syncpoint is set up intended for another machine.

TIMECODE PHASING:

A subtle design feature of the Lynx module is the ability to show the relative phase of incoming timecode in relation to the generator. This feature is extremely useful, for instance in determining if the timecode on a videotape is "synchronous" (i.e. was properly locked to video sync when recorded) with house sync.

Place the Lynx generator in "ext vid" reference.

Place your video machine in "external" reference.

Make the video machine's Lynx a "master", and place the master reference source selector in "ext vid".

If you put the video machine in play, and observe the offset error indication in subframes, you should see a stable number in the display. If the number is drifting, then

TIMECODE PHASING cont:

either the timecode on the videotape is not properly recorded, or you have forgotten to apply "sync" to the video machines or the Linx module.

When everything is properly locked, this will be absolutely stable.

This "trick" can also be used to check the phase of an external source of timecode, which is not associated with a transport that may be plugged into the module. Simply plug in the timecode to the rdr-in jack, and make the module master. This is actually a code only master situation.

Although, normally the reference source selector would be in "VSO" position in a code-only application, instead place the REF SRC in "ext vid" position. The subframe error display will now show you the phasing, in subframes, between the timecode and the external video reference. If it is exactly locked, it will be "0".