

Model 2600 E-LR**November 23, 1990****Field Bulletin E-LR-1A
Version 1.00 Software****To: Users of Model 2600 LR LTC Reader****SYSTEM 2600E**

SYSTEM 2600 has recently undergone substantial changes and improvements. The SYSTEM 2600 chassis has been improved, the SYSTEM 2600 Power Supply module has been completely re-designed, and—most significantly—*major* software enhancements have been added to a number of other SYSTEM 2600 modules and to both the 2600 A/V Audio Editor and the 2600 CC Compact Controller. These new features supersede previous capabilities to such a dramatic extent that they constitute a new generation of SYSTEM 2600, which will be known as SYSTEM 2600E (Enhanced).

When upgraded to the latest hardware and software revisions, the 2600 LR LTC Reader module therefore will be known as the 2600 E-LR. The initial software for the 2600 E-LR module is Version 1.00.

SOFTWARE UPDATE

This bulletin introduces Version 1.00 software for the Model 2600 E-LR LTC Reader module. As of this date, all 2600 E-LR modules will be shipped from the factory with Version 1.00 software.

NEW FEATURES OF VERSION 1.00 SOFTWARE

- 1) A 2600 E-LR module can of course be used at the same time as a 2600 E-VR VITC Reader module to recover longitudinal and vertical interval time code from the same video tape.

With Version 1.00 software, when these two modules are used together (both reader modules set to the same SYSTEM 2600E Module Data Bus address and receiving time code from the same VTR/VCR), the 2600 E-VR module (if using 2600 E-VR software of Version 1.00 or higher) will automatically arbitrate the broadcasting on the data bus of VITC or LTC. Either VITC or LTC can be given the higher priority, and, in the absence of time code, either the last-read address (whether VITC or LTC) can be updated by control track pulses or the last-read VITC address, specifically, can be updated (see Field Bulletin E-VR-1B).

- 2) Prior to Version 1.00 software, if Time-Code-Plus-1 testing was defeated (Dipswitch S3,B6 ON, S3,B7 OFF, S3,B8 ON), then Tach Learn, and Direction Sense from Time Code, could not be invoked.

Version 1.00 software supports two additional positions of Dipswitch S3, obviating any mutual exclusivity of dipswitch-invoked functions. Therefore, Tach Learn, and Direction Sense from Time Code, may be invoked whether Time-Code-Plus-1 testing is defeated or not.

- 3) Two new serial communications protocols have been added in Version 1.00 software. One of these allows the frame rate to be set more easily than was possible with the serial protocols supported by previous software. The second new protocol provides serial communications access to the new 2-position dipswitch.

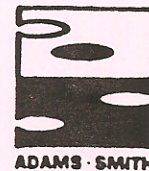
Version 1.00 software requires the installation of a 2-position dipswitch onto the 2600 E-LR module's Processor PCB.

Version 1.00 software kits (EPROM and dipswitch), with operating and installation instructions, are available from the factory at \$50/kit for the first kit and \$25/kit for each additional kit ordered at the same time, plus (in U.S.) \$10.00/order for handling, surface shipping costs, and sales taxes. Payment must accompany an order for Version 1.00 software kits.

Model 2600 E-LR

November 23, 1990

Field Bulletin E-LR-1B
Version 1.00 Software



To: Users of Model 2600 LR LTC Reader

SYSTEM 2600E

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When upgraded to the latest hardware and software revisions, the 2600 LR LTC Reader module therefore will be known as the 2600 E-LR. The initial software for the 2600 E-LR module is Version 1.00.

KEEP THIS FIELD BULLETIN WITH THE 2600 LR SECTION OF YOUR SYSTEM 2600 INSTRUCTION MANUAL FOR REFERENCE TO THE FEATURES WHICH ARE PROVIDED BY THE 2600 E-LR, SOFTWARE VERSION 1.00.

INSTRUCTIONS FOR INSTALLATION 2600 E-LR, SOFTWARE VERSION 1.00

The implementation of the 2600 E-LR Version 1.00 software requires the replacement of the 2600 LR module's EPROM and the addition of a two-position dipswitch to its Processor PCB.

- 1) Disassemble the 2600 LR module to obtain access to its Processor PCB.
- 2) Install the new two-position dipswitch as follows:
 - a) Locate the 8-position dipswitch S3 on the Processor PCB. Directly to the left of S3 are four empty pads. (See Figure E-LR-1B-1 on Page 6 of this bulletin).
 - b) Insert the new two-position dipswitch into the four empty pads, making sure that the orientation of the two-position dipswitch is the same as that of the existing eight-position dipswitch, S3.
 - c) Solder the new two-position dipswitch into place. Dipswitch S3 (which, prior to the installation of the new, 2-position dipswitch, was a single 8-position dipswitch) *will now be defined as a single 10-position dipswitch* (instead of its actual configuration of one 2-position dipswitch plus one 8 position dipswitch).

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NOTE

As of this date, Dipswitch S3 on all new 2600 E-LR modules shipped from the factory will be a single, 10-position dipswitch.

- 3) Remove the 2600 LR module's EPROM and replace it with the E-LR Version 1.00 EPROM. The notch in the end of the EPROM body must face towards the *front* of the module. **IMPROPER INSTALLATION OF THE EPROM CAN RESULT IN ITS DESTRUCTION.**
- 4) Attach an "Enhanced" label to the component side of each of the 2600 E-LR's two PCBs, to provide rapid visual indication that the module has been upgraded to E-LR status.
- 5) Re-assemble the module.
- 6) Attach an "Enhanced" label to the front side of the module's front panel, to provide rapid visual indication that the module has been upgraded to E-LR status.

DIPSWITCH SETTINGS

All dipswitch-selectable routines provided by Version 1.00 software and the new Dipswitch S3—*now defined as a 10-position dipswitch*—are listed below. Bit locations are as follows:

Bits of:												
New 2-Position Dipswitch		on/closed	1	2	1	2	3	4	5	6	7	8
plus Old 8-Position Dipswitch		off/open										

Should be Read as Bits of:												
One 10-Position Dipswitch		on/closed	1	2	3	4	5	6	7	8	9	10
(As if Shipped New from Factory)		off/open										

FIGURE E-LR-1B-2. Dipswitch S3 Bit Positions

DIPSWITCH ROUTINES

<u>SWITCH NUMBER</u>	<u>STATE OF SWITCH</u>	<u>DESCRIPTION</u>
S3,B1	OFF	Time-Code-Plus-1 testing is invoked.
S3,B1	ON	Time-Code-Plus-1 testing is disabled. This feature <i>prevents</i> the LTC Reader from checking incoming time code for continuity, thereby allowing recognition of time code with non-continuous numbers.
S3,B2	NOT USED	

S3,B3 and S3,B4 operate as a pair to control lifter operation.

S3,B3	OFF	Lifters are always defeated.
S3,B4	OFF	
S3,B3	ON	Lifters are defeated only when transport is operating slower than two times play speed.
S3,B4	OFF	
S3,B3	OFF	Lifters are never defeated.
S3,B4	ON	
S3,B3	ON	Lifters are defeated when transport is operating slower than two times play speed. Also, time code is sampled when transport is operating at high wind speeds.
S3,B4	ON	

Modification of operation of front panel FREEZE switch.

S3,B5	ON	Modifies the function of the front panel FREEZE switch as follows: <ol style="list-style-type: none"> 1) When time code is present, pressing FREEZE will cause the "Tach Learn" routines to re-learn the tach rate and direction sense IF the "Tach Learn" routine is invoked by Dipswitch S3,B8. 2) When no time code is present (Pseudo-Time-Code, updating from tach, is in use), pressing FREEZE will reset the current time code value to all zeros.
S3,B5	OFF	The front panel FREEZE switch operates as before, where pressing FREEZE will freeze the display of the LTC Reader without interrupting data bus operations.

S3,B6 and S3,B7 operate as a pair to determine the time code standard to be used by the 2600 E-LR module.

S3,B6	OFF	The 2600 E-LR module will use the time code standard set by the module located at address 0 on the Module Data Bus (which is convenient because the 2600 E-LG LTC Generator module is frequently set to address 0). If the LTC Reader module is located at address 0, then 30 frames/second becomes the system time code standard.
S3,B7	OFF	
S3,B6	ON	The time code standard used by the LTC Reader module is 24 frames/second.
S3,B7	OFF	
S3,B6	OFF	The time code standard used by the LTC Reader module is 25 frames/second.
S3,B7	ON	
S3,B6	ON	The time code standard used by the LTC Reader module is 30 frames/second.
S3,B7	ON	

Tach Rate and Direction Sense "Learn" Mode.

S3,B8	ON	Tach and Direction "Learn" Mode is invoked. The tach rate and direction sense of the transport will automatically be calculated continuously while good time code is being read. Note that the first time that time code is read, the CT/T LED will blink until the calculation is completed for the first time.
S3,B8	OFF	Tach and Direction "Learn" mode is NOT invoked. The tach rate must be entered into Dipswitch S1 on the 2600 E-LR's LR PCB (see Section 2.1, Longitudinal Reader PCB, in the 2600 LR Instruction Manual); and direction sense must be set by Jumper JP6 on the 2600 E-LR's Processor PCB (see Section 2.2, LR Processor PCB, in the 2600 LR Instruction Manual).

S3,B9 and S3,B10 operate as a pair to ascertain tape direction from bi-phase signals for Control Track/Tach updating.

S3,B9	OFF	Direction is sensed at all times from the signal applied to the direction input.
S3,B10	OFF	
S3,B9	ON	Direction is sensed only from the signal applied to the direction input, and only while the tape is slowing to a stop.
S3,B10	OFF	
S3,B9	OFF	Direction is learned only from the direction of the most recent valid time code; the signal at the direction input is ignored.
S3,B10	ON	
S3,B9	ON	Direction is both sensed from the signal applied to the direction input while the tape is slowing to a stop <i>and</i> learned from valid time code.
S3,B10	ON	

NEW SERIAL COMMUNICATIONS PROTOCOLS

NOTE

The format to be used for entering Serial Communication protocol is shown in brackets < >. The brackets represent only the format in which the information associated with the protocol should be entered; the brackets themselves should not be entered. For example, X <0-F> indicates that "X" is to be used as a prefix before any of the characters 0-9 or A-F, to allow these characters to be interpreted as hexadecimal numbers. The hexadecimal number "A" would be entered as "XA".

—Continued—

CHARACTER
(ENTRY FORMAT
SHOWN BY < >)

**ASCII
HEX
CODE**

COMMAND

System Control Commands:

< 2 digits > F 46

Sets the frame rate, overriding the frame rate set by the positions of Dipswitch S3, B6 and B7 on the 2600 E-LR's Processor PCB. The two digits which precede the "F" represent the frame rate (in hexadecimal) which the user wishes to enter into the module.

Example: 24F means 24 frames/second.

< 3 digits > Q 51

When preceded by three digits, allows the settings of Dipswitch S3 on the LR Processor PCB, to be overridden. The module will accept the setting (either entered via serial protocols or by manually setting the dipswitch bits) which was entered most recently.

The three digits preceding the "Q" represent the hexadecimal equivalent of the binary ON/OFF positions of the individual dipswitches.

Example: 018Q means that S3,B6 and B7 are ON, and all other bits of S3 are OFF, selecting 30 frames/second.

Example: 100Q means that S3,B1 is ON and S3,B2-B10 are OFF.

See Figure E-LR-1B-3, below.

Switch Position	X	X	2	1	10	9	8	7	6	5	4	3
Bit Position	3	2	1	0	3	2	1	0	3	2	1	0
MSD						LSD						

FIGURE E-LR-1B-3. DIPSWITCH S3 BIT MAP

—Continued—

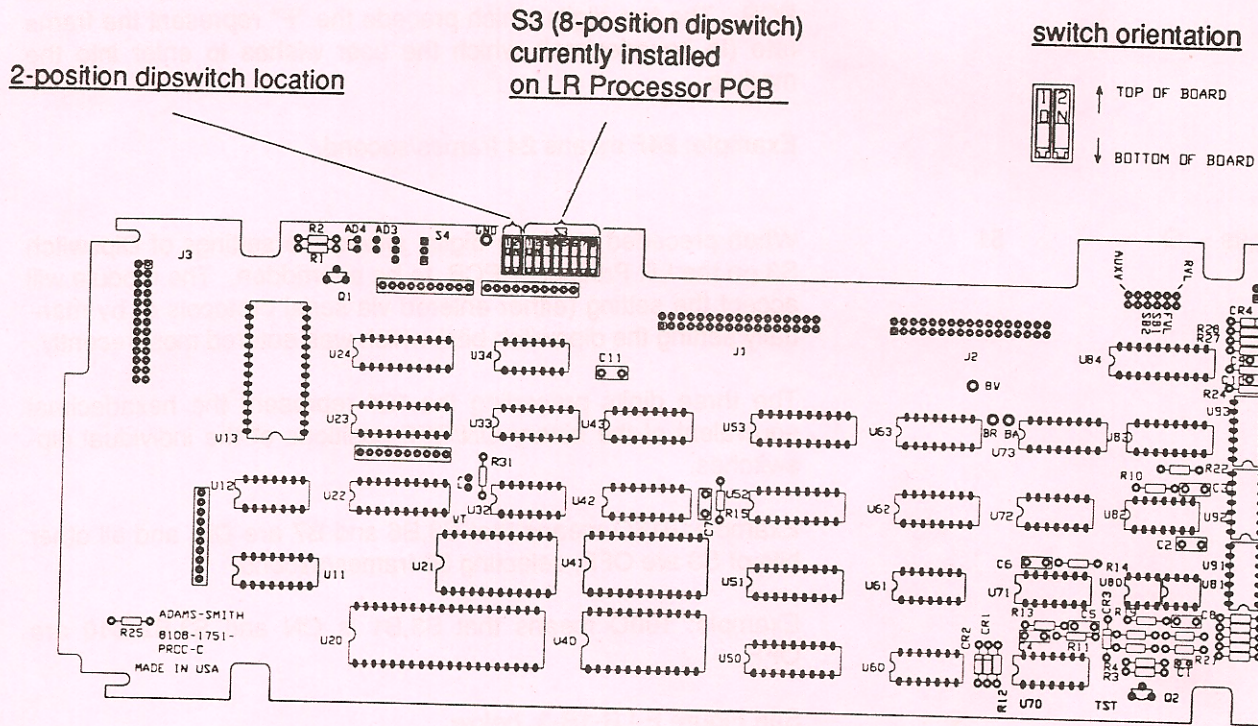


Figure E-LR-1B-1.
Installation of 2-Position Dipswitch (EECO 240002G)
LR Processor PCB, Component Side

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