Chapter 1 Introduction

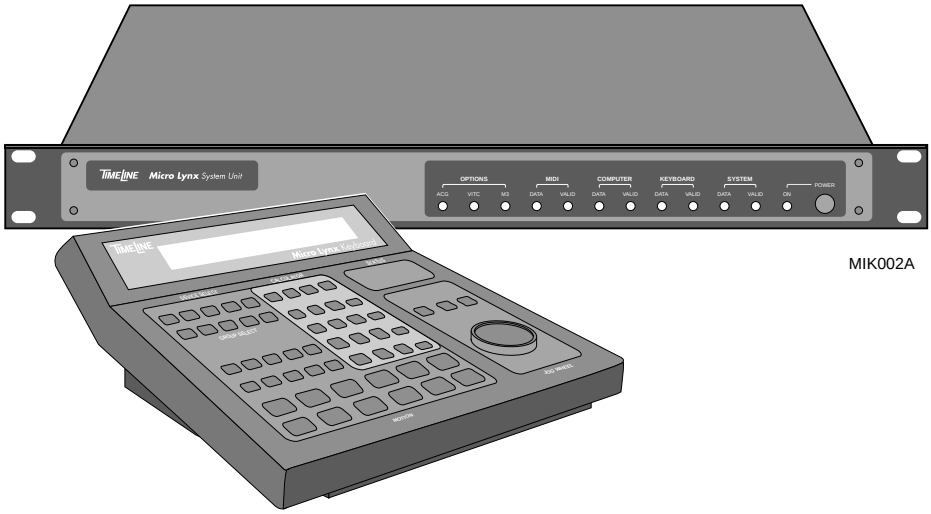

Figure Chapter 1 -1. Micro Lynx

What is the Micro Lynx?

The Micro Lynx is a high performance, integrated machine control system. The Micro Lynx system was specifically designed to handle the ever increasing machine control and synchronization requirements of the project recording studio and smaller post production facility.

The Micro Lynx is a comprehensive two machine synchronizer which may be optionally expanded to three machines. The full feature Keyboard Controller provides the interface for SMPTE and MIDI time codegeneration, transport synchronizer operations, track enable, automated edit, and events control. The Micro Lynx system has two main components and four option cards:

System Components

Micro Lynx Keyboard Controller (KBD)
Micro Lynx System Unit (SU)

Options

M3 Machine Expansion Card to add a third transport

ACG Synchronized digital audio sampling clock interface. The clock card outputs digital audio sample rate clocks that are synchronized to the system reference.

VSG Video Sync Generator for NTSC or PAL composite sync generation

VITC VITC Reader Card

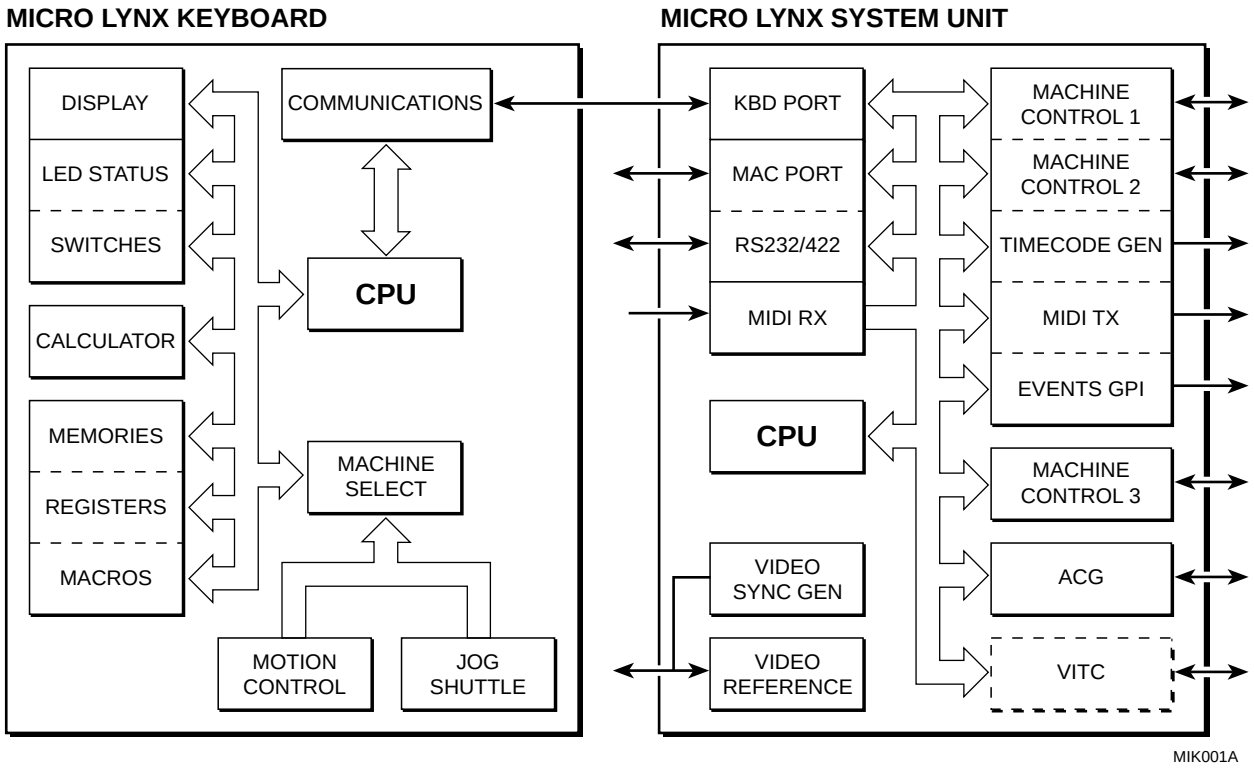

Figure Chapter 1 -2. System Block Diagram

System Configuration

The smaller recording studio requires an integrated system that works with both SMPTE and MIDI. Major studios and post-production houses require exacting performance specifications, long-term durability, and technical support. Micro Lynx not only meets these requirements, but also offers easy installation, guaranteed system compatibility, and cost-effectiveness for a complete system solution.

Keyboard Controller

The Keyboard Controller allows remote control of up to three machines plus generation of locked SMPTE and MIDI time codes. Editing and control commands are entered on the keyboard. Time code status and register contents appear on the 80-character LCD display.

The Keyboard Controller serially communicates command and system status information to the System Unit over a telephone type cable.

System Unit

The System Unit has wideband, high speed, 1/10 to 60x play speed, bi-directional time code readers and a multi-standard time code generator. There are two machine controller/synchronizers with software parameter selection for over 120 different transport types, MAC and IBM computer control ports, MIDI ports, GPI and mute relays, and system status outputs. Setup menus provide convenient user access to configure the system for specific applications.

Features

Micro Lynx Keyboard Controller (KBD)

- Independent CPU with battery backed-up RAM retains all time code and system setup data when powered down
- Menu-driven tape transport selection from the Keyboard
- Supports subframe offsets
- Full transport control of up to 3 audio and/or video transports
- Full editing capability with transport controls, keypad input and special function keys
- Solo or Group operation of transports or MIDI devices
- User selected master for group operations of audio or video transports and MIDI controlled devices
- Computer guided entry (prompts displayed for next entry)
- Direct entry and calculation of time code numbers
- Supports register store and recall operations
- 100 memory locations
- Shuttle wheel for shuttle and frame jog operations with VTRs and many ATRs
- Trim mode to trim time code register values (frames & subframes) using a wheel rather than the calculator
- Locate mode to position all selected transports to a specified time code minus preroll
- Programmable edit sequences with rehearse-in/out, record-in/out and replay
- Edit loop mode allowing a programmed edit sequence to be repeated indefinitely

Micro Lynx System Unit (SU)

Time Code Generator

- Generates all world wide standards: SMPTE drop frame and non-drop frame, EBU, and Film
- Reference sources: internal crystal, MIDI time code, external sync input, and digital audio clock
- External sync reference input accepts black burst, or composite sync
- Jam sync
- Pilot field rate output (60, 59.94, 50, 48 Hz) locked to generator

Time Code Reader

- Two wideband, high speed readers (three with option card)

- Automatically detects time code type
- Supports both -10 dB and +4 dB input signal levels
- 1/10 to 60x speed
- Bi-directional
- Reshaped time code output derived from the reader

Synchronizer

- Two transports plus full chase capability for MIDI
- Supports over 120 different audio and video transports
- Selectable master, independent of machine cabling, VTRs can be slaves
- Select and set up transport from resident menus
- No internal adjustments
- Universal machine interface supports both master and slave operation
- Supports parallel, serial, and combined machine interfaces

MIDI

- Synchronizes MIDI systems to ATR/VTRs
- Converts SMPTE to MIDI Time Code (MTC)
- Converts MTC to SMPTE, making MIDI the system master
- In, out and thru/out MIDI jacks
- DIN8 mini-circular connectors for direct Macintosh MIDI connection

Outputs

- Two programmable GPI relay closures
- GPI relay modes:
  - Either GPI relay may be pulsed or latched
  - One GPI has dialog beep mode with menu selections for 3 or 4 beeps, beep spacing, and beep duration
- Selectable Aux output- Reader 1, 2, 3 reshaped time code
- Pilot output
- ADR beep
- System lock tally

Computer Interface

- EIA standard RS-232C or RS422 serial I/O
- Computer control port allows comunication with personal computers for full remote computer control

Specifications

Keyboard

Free Standing	
Display Type	80 character, back lit LCD
Keys	33 numeric function keys
	12 transport control keys
Jog/Shuttle wheel	
Communications	RS422, 38.4 k baud asynchronous

System Unit

Rack mount or free standing	
Communications:	
Keyboard	RS422, 38.4 k baud asynchronous
MIDI	31.25 k baud asynchronous

Time Code Generator

Unbalanced Output	
Output Level	-1 dBm (1.4V pp)
Output Impedance	100 ohms
Signal Rise Time	4 microseconds
Time Code Stability	± 2 microseconds max.
Operating Code	SMPTE (30 FPS)
	SMPTE Drop Frame (30 FPS DF)
	EBU (25 FPS)
	Film Code (24 FPS)
Pilot Rate	60, 59.94, 50, 48 Hz (locked to generator)
Reference Sources	
Internal Crystal	30, 29.97, 25, 24
Timing Source	Crystal (±20 ppm)
External Video Input	30, 29.97 (NTSC), 25 (PAL)
	Black burst (.5V – 2.0V nominal)
	Composite sync (.5V – 8V p-p)

Synchronizer

Lock Stability	<± 50 microseconds
Lock Time	2 – 3 seconds, nominal
Tach Frequency Range	4 – 2000 Hz nominal, playspeed
User Adjustment Required	None
Parallel Interfaces	Use TimeLine parallel cables
	(listed under Required Cables)
	Auto-configures from transport menus.
Serial Interfaces	Requires serial interface cable.
	Auto-configures from transport menus.

Transports

Supports transports manufactured by:

AEG, Akai, Alesis, Ampex, Denon, Fostex, JVC, 3M, Mitsubishi, Otari, Panasonic, Saturn, Sony, Stellavox, Studer, Tascam

Time Code Reader

Differential Input	
Signal Input Level	-20 to +10 dBm
Input Impedance	10 k ohms
Speed Range	1/10 to 60 x play speed
Bi-directional	
Automatic Detection of Time Code Type	
Reshape Output	

Aux Inputs

Differential Input	
Input Impedance	10 k ohms

Aux Outputs

Unbalanced Output	
Output Level	-1 dBm (1.4V pp)
Output Impedance	100 ohms

Video Input

Differential Input	
Input Level	.5 V nominal to 8 V
Input Impedance	1 k ohms

Video Output

Single-ended Output	
Output Level	-600 mV nominal, unterminated
Output Impedance	75 ohms

Serial In/Out

Formats	RS422, RS232C
Connectors	Macintosh II Serial Interface (SCSI) 9-pin 'D' serial communications port

Power Supply Unit

Power Supply Mains Input	100-250 VAC at 50/60 Hz, 15 W nominal, 30 W max.
Output	+5 V, 3A max -12 V, 3A max +12 V, 1.0A max

Physical

Size	
Keyboard	3” H x 8.75” W x 7.5” D 8 cm H x 225 cm W x 190 cm D
System Unit	1.75” H x 19” W x 11.75” D 4.5 cm H x 485 cm W x 30 cm D
Weight	
Keyboard	1 lbs, 7 oz
System Unit	6 lbs, 0 oz
Mounting	
Keyboard	Free standing
System Unit	Supplied with mounting hardware for standard 19” rack

Options

M3	Machine Expansion Card
ACG	Synchronized Digital Audio Sampling Clock Interface
VSG	Video Sync Generator for NTSC and PAL
VITC	VITC Reader

TimeLine Vista, Inc reserves the right to change the design and specifications of equipment without notice.

Cable Requirements

Table Chapter 1 -1. Cable Requirements

Keyboard Controller

Between Equipment	Connector	Supplied By	From/To
KBD to SU	8-pin RJ 45	TimeLine	Keyboard to System Unit

System Unit

Between Equipment	Connector	Supplied By	From/To
SU to Power Supply	DIN-5	TimeLine	System Unit to Power Supply Unit
SU to Transports	40-pin	TimeLine	System Unit to each transport remote or synchronizer connector
SU and Transport time code inputs and outputs	1/4" stereo	**Customer**	System Unit RDR (1,2,3), OUT & Aux to Transport time code output, time code input and appropriate Aux transport inputs and outputs
SU to Ext Video	BNC	**Customer**	System Unit to Video Reference Sync source or VTR/DTR Video Sync input if TimeLine VSG option installed
SU to MIDI Equipment	DIN-5	**Customer**	System Unit MIDI In/Out or Thru/Out to Sequencer, Synthesizer, keyboard, or drum machine
SU to Macintosh Computer	MIN DIN-8	**Customer**	System Unit MAC I/F to Macintosh computer serial interface
SU to IBM Computer	9-pin, 'D'	**Customer**	System Unit Serial Computer Port to Ext control computer
SU to Studio	9-pin, 'D'	**Customer**	System Unit GPI, Mute and Lock to Console/Mon system
SU ACG to AES/EBU	9-pin, 'D'	**Customer**	System Unit ABS/EBU to Digital Audio Equipment I/O
SU ACG to Workstation	BNC	**Customer**	System Unit Word Clock & Oversample Clock outputs to Digital Audio Workstation or DTR
SU VITC to Video	BNC	**Customer**	System Unit to VTR output and Video Mon equipment input