Chapter 9 Advanced Features

Using AVID AudioVision with the Micro Lynx

AudioVision Version 2.0 includes support of TimeLine Vista, Inc.'s Micro Lynx synchronizer. Using the Micro Lynx with AudioVision will enable you to control many external decks that cannot be directly controlled using Sony 9-pin protocol. The Micro Lynx also allows you to output time code from AudioVision and slave AudioVision from an external time code source.

This section outlines the basic steps necessary to connect the Micro Lynx to AudioVision and use it to control one or multiple decks. It is assumed that you are familiar with operating the Micro Lynx, or that you have read the Getting Started section of the user's manual. If you are not already familiar with the Micro Lynx, read the appropriate sections before attempting to use it with AudioVision.

On power up, AudioVision automatically configures the Micro Lynx for correct operation. The following setup options are initialized by AudioVision:

- The Mac computer port is set for ES bus operation.
- Park Window is set to zero.
- Group park ahead is set to zero.
- Ref follow master is set to on.
- The System reference is set External Video, unless a VSG (video sync generator) board is fitted, then it will be set to Internal fixed.
- The ACG card input and output is set to 44.100 KHz and the Oversample rate to 256.

To complete the configuration, all that has to be selected is the type of transport to be controlled.

The Avid system requires that a transport be selected for an Avid node to be active. If it is intended to use AudioVision in slave mode, to a time code “feed” with no transport connected, we recommend that an ATR transport be selected.

To Control One Transport Device with the Micro Lynx

1. With all hardware powered off, connect a machine control cable and a time code cable between the Micro Lynx and the deck you want to control. The machine control cable is connected from the Micro Lynx's Transport 1 connector to the deck's remote control input, and the time code cable is connected from the deck to the RDR 1 input on the Micro Lynx.
2. Use a standard Macintosh printer cable to connect your Macintosh's modem port to the Micro Lynx's Macintosh port.

   Note: Be sure to use a standard Macintosh printer cable to connect the Mac to the Micro Lynx, not a Mac to 9-pin cable. Connecting the Mac to the Micro Lynx's 9-pin port can result in inaccuracies in time code when digitizing material into AudioVision.
3. Connect a black burst source to the Video Ref port on the Micro Lynx, and to the video machine you are controlling.
4. Use a BNC cable to connect the ACG-2 card's OS OUT (on the Micro Lynx) to the first Digidesign Audio Interface's Slave Clock input.
5. Power on the Micro Lynx.
6. On the Micro Lynx Keyboard, the group select keys will flash, press machine key A.
7. Next, you need to specify the type of machine you are using. Enter setup mode in the Micro Lynx by pressing the [SETUP] key on the keyboard. Press the [TRAN] key to select the type of machine you are synchronizing. Use the [Next/Last] and [+] and [–] keys to select the correct type from the menu.

   Note: If your deck does not appear in the menu, refer to the Appendix, Table 2, for alternate choices.
8. While in setup mode, the default option settings initialized by AudioVision can be checked by pressing the respective option key and the [Last/Next] keys to step to the desired menu. For example, press the [TCG] key and use the [Last/Next] keys to select the System Ref menu. This should normally be set to Ext Vid. For a complete list of setup options, please see the Appendix.

9. Press the [SETUP] key to leave setup mode.
10. Set up AudioVision in Master Mode just as you would if you were using Sony protocol or VLANs. You are now ready to synchronize the Micro Lynx to AudioVision.

    Note: The Micro Lynx will remember the settings you have programmed when you power down, there is no need to repeat the setup steps every time you use the system.

To Control Multiple Transport Devices with the Micro Lynx

Follow the above steps, but repeat steps 6 and 7 for each additional deck. In Step 6, select A for Deck 1, B for Deck 2, etc.

To Slave AudioVision from an External Deck Connected to the Micro Lynx

1. If you are only going to slave AudioVision from an external deck, and don't need to operate AudioVision in Master Mode, you only need to connect the time code cable from the machine to the Micro Lynx.
2. Follow the above directions, but set AudioVision to Slave Mode from the Deck Control window. AudioVision is now set to slave to the deck connected to the Micro Lynx.

Using Pro Tools with the Micro Lynx

Introduction

The Micro Lynx machine control system has special features that make it suitable for use with DigiDesign Pro Tools digital audio workstations.

- The MIDI and SMPTE time code generators can be synchronized with the tape machine group; operating as virtual tape machines, chasing the reference machine time code numbers.
- If the MTC output is connected to Pro Tools, the workstation will run as if it were a tape machine. This also holds true for MIDI synthesizers and MIDI mapping systems.
- The Micro Lynx is specifically designed to generate a digital clock speed reference for digital work stations. The Audio Clock Generator option cards (ACG-1 & 2) generate locked, digital audio clock signals to control the play speed or sample rate of digital equipment.
- Pro Tools is very similar in operation to a video tape machine, in that it uses time code for position, but when in play, “releases” to an internal or external reference, which then controls its speed and position. The ACG can be used as the Pro Tools reference.
- If the Micro Lynx is equipped with a VITC Option Card, it will update the MIDI time code position for Pro Tools in Jog, Shuttle and still modes, from VITC stripped on the video tape. This allows an accurate method of “spotting” current VITC frame numbers to Pro Tools for sound effects and post production work.
- The Micro Lynx provides two operating modes for the Pro Tools System. First, the Pro Tools System may be slaved to the Micro Lynx system reference and Master time code. Secondly, the Pro Tools System can run as the master transport, thereby slaving the machine group in the Micro Lynx. Both methods are described here in detail.

System Set Up And Configuration: Pro Tools as Slave

ACG to Pro Tools Audio Interface Connections

1. Connect the ACG (1 or 2) O.S. OUT to the SLAVE CLOCK IN on the first Pro Tools Audio Interface.
2. When the Micro Lynx is on, the ACG card will automatically generate word and over sample clock, locked to the system reference. The Pro Tools Audio Interface switches internally from Master Sync mode to Slave Sync mode. Use the ACG Setup menu, in the Micro Lynx, to set the Oversample Output to 256 (this is the default).

   Note: DigiDesign strongly recommends that the BNC cable from the O.S. OUT to the Pro Tools Audio Interface be no longer than four feet.

Procedure

1. [SETUP]
   [ACG]

   ```
      Setup:  ACG Options
   Selection:  NOM S/Rate Out  48.000 ks/s
   ```

   You are in the ACG setup menu.

2. [LAST/NEXT]

   ```
      Setup:  ACG Options
   Selection:  Oversample Out: 256
   ```

   Select Oversample menu.

3. [+] and [–]

   Use to select the correct Oversample rate.

3. Check that only the SLAVE CLOCK LED on the Pro Tools interface is on. If both Slave and Master LEDs are on, the digital input has been selected as the clock source. For correct operation, set digital input to OFF in the Pro Tools software.
4. Confirm that the Nominal S-Rate (Sample Rate) Output on the ACG matches that of the Pro Tools Session sample rate.

Procedure

1. [SETUP]
   [ACG]

   ```
      Setup:  ACG Options
   Selection:  NOM S/Rate Out  48.000 ks/s
   ```

   You are in the ACG setup menu.

2. [+] and [–]

   Use to select the correct sample rate.

Micro Lynx to Computer Connections

1. Connect a standard Macintosh printer cable to the Macintosh modem port and the Micro Lynx MAC computer port or MIDI I/F connector.
2. For Pro Tools to receive MIDI time code, several routing options are available. MTC can be sent directly to the Macintosh printer or modem ports via the MAC, or I/F connectors. This eliminates the need for a MIDI Translator. If required for other MIDI system reasons, MTC can be simultaneously generated from the 5-pin DIN, MIDI OUT or THRU/OUT connectors.

Procedure

1. [SETUP]
   [MIDI]

   ```
      Setup:  MIDI
   Selection:  MIDI OUT Jack:  MTC
   ```

   Select MIDI port setup.

2. [LAST/NEXT]

   ```
      Setup:  MIDI
   Selection:  MAC OUT Jack:  MTC
   ```

   Select the port you wish to use for MTC.

3. [+] and [–]

   Use to select chosen port for MTC.

3. Add the TCG to the Micro Lynx machine group. The time code generator (TCG) of the Micro Lynx now transmits MIDI time code, based on the time code from the Reference machine. Use the TCG options menu in setup mode, to select the time code type and generation method.
4. The generator will always jam to the incoming reader code, and should be set to Play/Wind to follow group transport operation. Refer to TCG Option Menu in the Keyboard Controller section of the Micro Lynx Manual, for option setting choices.

   Note: Anytime the TCG is put in the group, or put into play, MTC will be transmitted from the selected MAC or MIDI connectors.

5. Set the system reference for your specific application. The ACG output and each of the machines in the system will all lock to the selected system reference, thus ensuring correct synchronization.

Procedure

1. [SETUP]
   [TCG]

```
    Setup:  TCG Options
Selection:  System Ref IntFix
```

2. [+] and [–]

   Select the system reference required.

6. Set the required frame rate and code type in the Micro Lynx TCG Setup options menu.

Procedure

1. [SETUP]
   [TCG]

```
    Setup:  TCG Options
Selection:  System Ref IntFix
```

   TCG setup option menu

2. [LAST/NEXT]

```
    Setup:  TCG Options
Selection:  System Spd/Code:  29.97Hz/30
```

3. [+] and [–]

   Select frame rate and code type required. This should be the same as the Pro Tools code type and rate.

7. Power up the Micro Lynx after the Macintosh computer. If the Macintosh plays a short melody during startup and won't boot, turn the Micro Lynx off and reboot the Macintosh.
8. Make sure that Appletalk is inactive in the Chooser.
9. Verify that the time code rate and type, in the Pro Tools Option SMPTE format menu, match those selected in the TCG Setup options on the Micro Lynx.
10. In the Pro Tools Options menu, set Continuous Resync to OFF, and Online to ON.
11. Set the time code start frame to the program material's starting time code.

VITC Option Card Setup and Configuration for Pro Tools

A useful feature of Pro Tools is its capability to capture a MIDI time code number, for use in its Spotting mode for sound effects layback. The Micro Lynx VITC Option Card can provide Pro Tools with an MTC number, based on the current VITC number being decoded from the video machines video output. This allows frame accurate update of current time code position in Jog, Shuttle and Still modes.

The operation of the VITC Option Card is simple and automatic as described in the setup operations below.

Procedure

1. [SETUP]
   [F3]

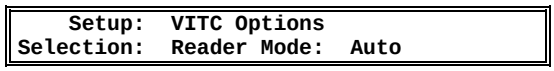
   

   VITC setup option menu

2. [+] and [–]

   Select the transport that is connected to the VITC card.

3. [LAST/NEXT]

   Set correct scan mode.

The Micro Lynx TCG needs to be set as follows for the MIDI time code generator to operate correctly.

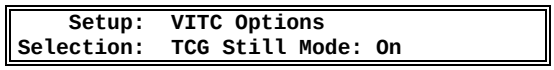
Procedure

1. [SETUP]
   [TCG]

   Set the TCG Group mode to Play, Wind.

2. [LAST/NEXT]

   Set the TCG Still mode to On.

System Setup And Configuration: Pro Tools as Master

When using Pro Tools as a Master, set up Pro Tools and the Micro Lynx for Slave operation, as previously described. In Master mode, the Micro Lynx reads MTC from Pro Tools and will control the transports so they chase and lock to the Pro Tools time code position.

- The Pro Tools System may be used as the master transport in the Micro Lynx. In this configuration, the MIDI machine selection on the Micro Lynx is put into the group, and the tape machines will chase as slaves to the incoming MIDI time code.
- With MIDI in the transport group, the Micro Lynx requires that MIDI be the master. Once GRP + MIDI is pressed, MIDI will automatically become the master machine.
- The Micro Lynx ACG 1 & 2 cards provide the speed reference for the Pro Tools System.
- With MIDI Resolve ACG Servo option selected, the ACG clock signal is servoed so that the incoming MIDI time code edge is aligned with the system reference (for example, EXT VIDEO).
- The ACG Servo option is only required when Pro Tools is used as a Master. If Pro Tools has be to locked to video, then the MTC generated by Pro Tools in MIDI Master mode must have a fixed relationship with video sync. The ACG Servo option is used to accurately advance or retard the position of the Pro Tools digital Audio, so it has a precise and repeatable relationship with the video, thus ensuring perfect MIDI time code synchronization.

For the Micro Lynx to receive MTC from Pro Tools, you must select the MIDI input you wish to use.

Procedure

Set MTC Source

1. [SETUP]
   [MIDI]

   ```
      Setup:  MIDI Options
   Selection:  MIDI Out Jack: MTC
   ```

   Enter MIDI options setup menu.

2. [LAST/NEXT]
   or [4]

   ```
      Setup:  MIDI Options
   Selection:  MTC Source:  MIDI In Jack
   ```

   Press [4] or [Last/Next] until the MTC source menu is displayed.

3. [+] and [–]

```
    Setup:  MIDI Options
Selection:  MTC Source:  I/F Jack
```

Use [+] and [–] to select the input connector you wish to use.

or

```
    Setup:  MIDI Options
Selection:  MTC Source:  MAC Jack
```

Set MIDI Resolve

Procedure

1. [SETUP]
   [MIDI]

```
    Setup:  MIDI Options
Selection:  MIDI Out Jack: MTC
```

Enter MIDI options setup menu.

2. [LAST/NEXT]
   or [6]

```
    Setup:  MIDI Options
Selection:  MIDI Resolve:  Off
```

Press [6] or [Last/Next] until the MIDI Resolve menu is displayed.

3. [+] and [–]

```
     Setup: MIDI Options
Selection:  MIDI Resolve:  ACG Servo
```

Select ACG Servo.

Advanced MIDI Features

With Micro Lynx software version 1.30 and later, the MIDI capabilities were enhanced for more versatile operation. These features and the MIDI Setup Menu are described in this section.

General Features

- User selectable MIDI MTC input source.
- MTC to LTC conversion.
- MIDI translator - 5-pin to 8-pin MAC feature.
- Comprehensive MIDI data and MTC routing matrix.
- MTC to digital audio word clock workstation resolve function.
- MIDI time code as master is now implemented. This allows Micro Lynx group slaves to case lock to incoming MTC.

MIDI Setup Menu

Table 9-1 is a complete list of the Micro Lynx setup options for MIDI. Figure 9-1 is a block diagram of the MIDI routing. Explanation for each menu item is also included.

Press the [SETUP] key to enter setup mode. The SETUP LED will flash. Next press the [MIDI] key. After modifying the selected options, exit setup mode by pressing [SETUP] a second time. Each menu can be accessed directly by selecting it numerically, or sequentially by pressing the [LAST] and [NEXT] keys. The individual options are stepped through by pressing the [+] and [–] keys.

Table Chapter 9 -1. Micro Lynx MIDI Setup Selections

KEY	MENU	SUB-MENU	RANGE
MIDI	MIDI Options	0 MIDI Out Jack	Off, *MTC*, MIDI Data, MTC + Data, I/F Thru
		1 I/F Out Jack	*Off*, MTC, MIDI Data, MTC + Data, MIDI Thru
		2 MAC Out Jack	Off, *MTC*, MIDI Data, MTC + Data
		3 MIDI Thru Jack	*MIDI In*, MIDI Out
		4 MTC Source	*MIDI In Jack*, I/F Jack, MAC Jack
		5 MIDI Data Src	*MIDI In Jack*, I/F Jack, I/F Jack
		6 MIDI Resolve	*Off*, ACG Servo

Description Of Settings

Please note that MIDI time code output from the Micro Lynx is a function of the time code generator. You must group the TCG with the other machines in the group for MTC output.

Midi Out Jack

Off. Connector will not output any signal.

MTC. Connector will output MIDI time code.

MIDI Data. Connector will output Micro Lynx MIDI data. (Not available at this time.)

MTC + Data. Connector will output MIDI time code and MIDI data simultaneously. (Not available at this time.)

IF/Thru. Connector will thru put MIDI information that has been input to the 8-pin I/F connector.

I/F Out Jack

Off. Connector will not output any signal.

MTC. Connector will output MIDI time code.

MIDI Data. Connector will output Micro Lynx MIDI data. (Not available at this time.)

MTC + Data. Connector will output MIDI time code and MIDI data simultaneously. (Not available at this time.)

MIDI Thru. Connector will thru put data that has been input to the 5-pin MIDI input connector.

MAC Out Jack

Off. Connector will not output any signal.

MTC. Connector will output MIDI time code.

MIDI Data. Connector will output Micro Lynx MIDI data. (Not available at this time.)

MTC + Data. Connector will output MIDI time code and MIDI data simultaneously. (Not available at this time.)

MIDI Thru Jack

MIDI In. MIDI thru jack outputs data from MIDI In jack.

MIDI Out. MIDI thru jack outputs MIDI out data.

MTC Source

MIDI In Jack. MIDI time code source is the MIDI In jack.

I/F Jack. MIDI time code source is the I/F jack.

MAC Jack. MIDI time code source is the MAC jack.

MIDI Data Source

MIDI In Jack. MIDI data source is the Midi In jack.

I/F Jack. MIDI data source is the I/F jack.

MAC Jack. MIDI data source is the MAC jack.

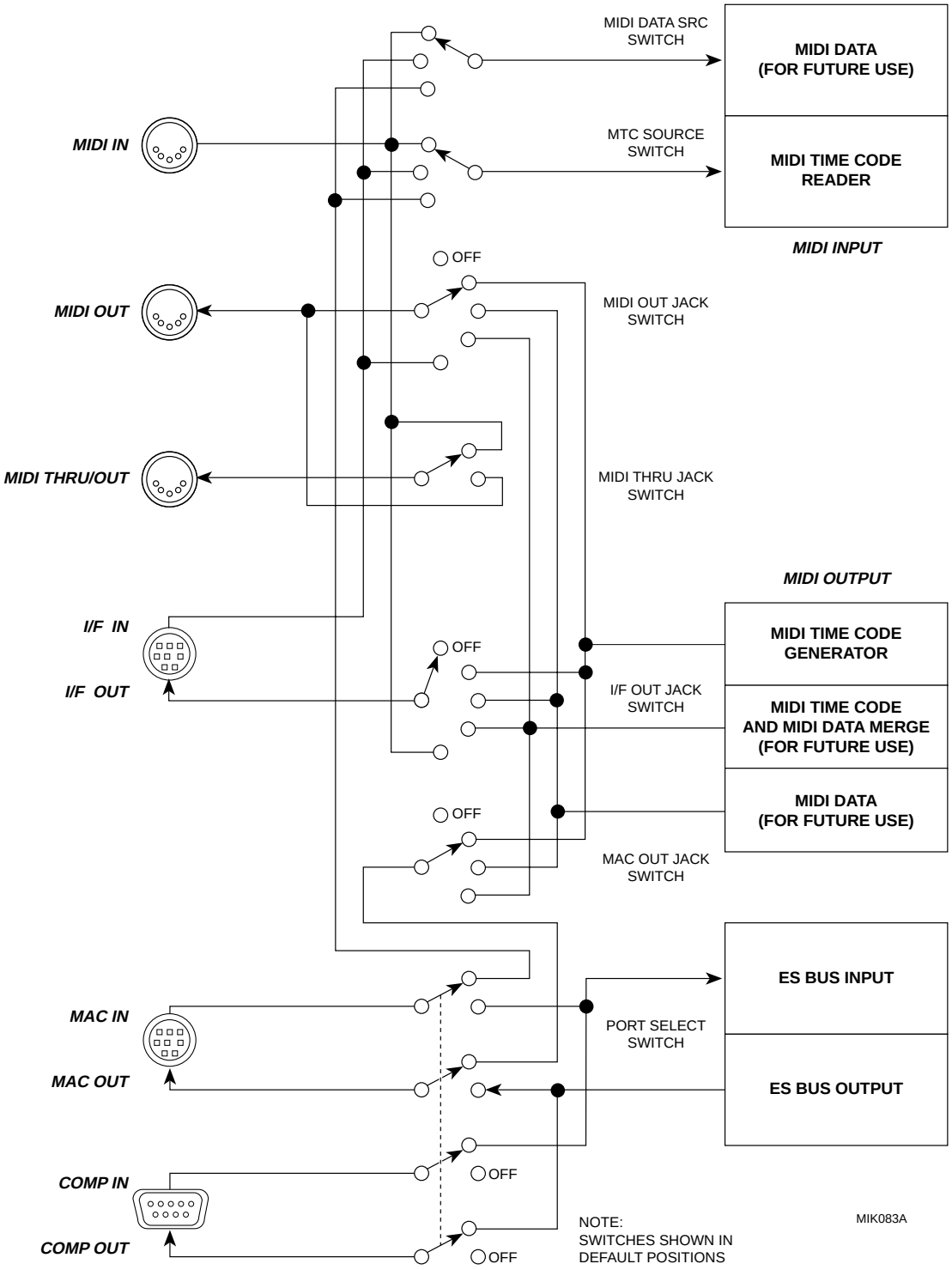


Figure Chapter 9 -1. MIDI Routing

Other Setting Descriptions

The following settings are relevant to the System Setup covered in the Keyboard Controller section.

Port Select MAC

MIDI. MAC port will accept MIDI or MTC input.

ES. MAC port will accept ES Bus communications.

Port Select RS422

ES. RS422 connector will accept RS422 serial communications.

Off. RS422 connector is turned off.

Using Mediasound with the Micro Lynx

Introduction

The Micro Lynx is a synchronizer that allows you to control up to three machines. It also generates locked SMPTE, EBU, and MIDI time codes. The Micro Lynx is composed of a system unit and a keyboard controller.

The Micro Lynx reads SMPTE or EBU time code from the VTR or ATR (drop frame or non-drop frame), converts it to MIDI Time Code (MTC), and sends it to the SGI workstation serial port 2. The Micro Lynx also generates sample clock information that is locked to the tape machine speed references, and sends it to the digital I/O port on the SGI workstation.

The Micro Lynx Keyboard Controller is the system controller for the external machine and the Mediasound Transport on the SGI workstation. When Mediasound is in Chase mode, the Micro Lynx Play or Stop buttons operate the external machine and the SGI workstation at the same time:

- When the Micro Lynx is playing forward at normal play speed, Mediasound synchronizes to it and begins to play.
- When the Micro Lynx stops, Mediasound locates to the time displayed in the MIDI Time Code Display (MTC in the Group Control Area).

As a slave, the SGI workstation chases the VTR/ATR master and always locates to the point that the Micro Lynx MIDI time code stream stops. If you rewind the VTR/ATR to cue to a particular frame, the Mediasound Transport jumps to the point where the VTR/ATR stops.

Micro Lynx Options Necessary for Video Sync

To properly lock to video, two Micro Lynx options are required:

- **ACG (Audio Clock Generator).** The ACG card is a synchronized digital audio sampling clock interface. It outputs digital audio sample rate clocks that are synchronized to the system reference. The clock card takes video frame information (black burst or composite sync) and converts it to audio clock signals. The AES/EBU output of this card is plugged into the digital I/O port on the SGI workstation.
- **VSG (Video Sync Generator).** The VSG card is a sync pulse generator that outputs NTSC or PAL composite sync. This signal is typically routed to the External Sync inputs of video decks in the system.

For information on installing a Micro Lynx and an external VTR or ATR to the SGI workstation, see *Using Mediasound with the Micro Lynx* later in this chapter. Detailed instructions for using the Micro Lynx are in the Micro Lynx manual.

Using Mediasound with the Micro Lynx

The Micro Lynx synchronizer includes special support for Mediasound. Using the Micro Lynx with Mediasound will enable you to control Mediasound with external video or tape decks. The Micro Lynx also allows you to output the Mediasound time code position (LTC) when Mediasound is in Chase mode, and slave Mediasound to an external time code source.

This section outlines the basic steps necessary to connect the Micro Lynx to Mediasound, and use it to control the workstation with one or multiple decks. It is assumed that you are familiar with operating the Micro Lynx or that you have read the Getting Started section of the Micro Lynx User's Manual. If you are not already familiar with the Micro Lynx, read the manual before you attempt to use the Micro Lynx with Mediasound.

The Micro Lynx machine control system has a number of special features that make it ideal for use with Mediasound digital audio software running on SGI workstations.

- The MIDI and SMPTE time code generators can be synchronized with the tape machine group, operating as a virtual tape machine that chases the reference machine time code numbers.
- If the MTC output is connected to the serial port on the SGI workstation running Mediasound, the workstation will run as if it were a slave tape machine.
- Mediasound is similar to a video tape machine in that it uses time code (in this case MIDI time code) for positional synchronization. However, when Mediasound is in play, it releases to an external AES/EBU digital audio reference, which then controls its speed and position.
- The Micro Lynx is specifically designed to generate a digital audio clock reference for digital workstations. The Audio Clock Generator Card (ACG-2) generates locked, digital audio clock signals to control the play speed or sample rate of digital equipment.

- If the Micro Lynx is equipped with a VITC Option Card, it will update the MIDI time code position for Mediasound in jog, shuttle and still modes, from VITC striped on the video tape. This allows an accurate method of spotting current VITC frame numbers to Mediasound for sound effects and post production work.

Unless the feature is specifically disabled, Mediasound is automatically configured for correct operation by the Micro Lynx when Mediasound is put into Chase mode. The following options are initialized by the Micro Lynx:

- The time code type: 24 (film), 25 (EBU), 30 Drop, or Non Drop (SMPTE) codes.
- The system frame rate: 24, 25, 29.97, or 30 frames per second.
- The sample rate: 32.000, 44.100, or 48.000 kHz. If an NTSC 0.1%
  pull down is selected, the sample rates will be 31,968, 44,056, and 47,952 kHz. Non-standard and variable rates can also be set.

To complete the system configuration, you need to select the type of video or tape transport to be controlled by the Micro Lynx.

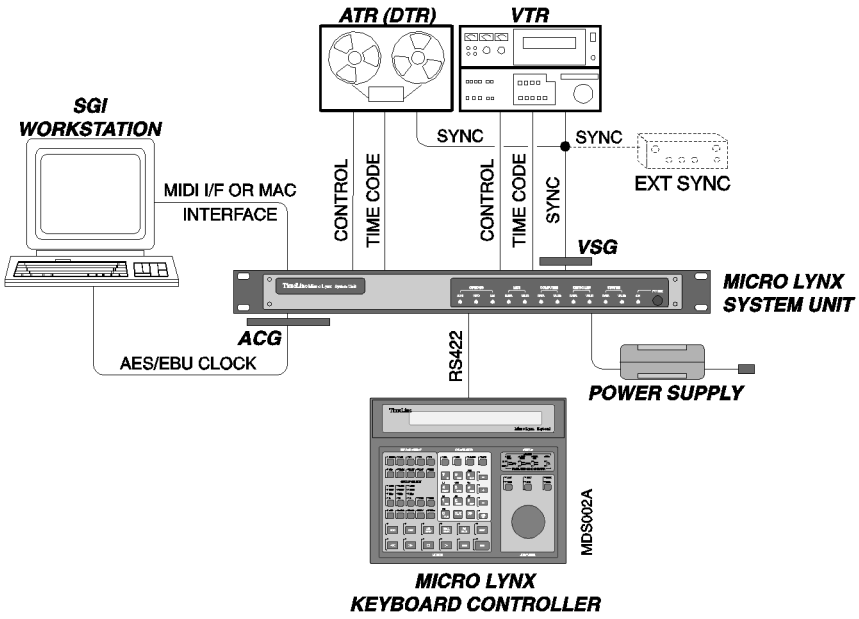


Figure Chapter 9 -2. Micro Lynx with an SGI Workstation

Micro Lynx to Computer Connections

- Connect the ACG AES/EBU output to the SGI workstation Digital I/O jack, using the supplied cables.

  Note: The workstation's digital audio output is available at the unattached plug of the supplied "Y" cable.

- Connect a standard Macintosh printer cable (supplied) between the SGI workstation Serial Port 2 and the Micro Lynx MIDI I/F connector.

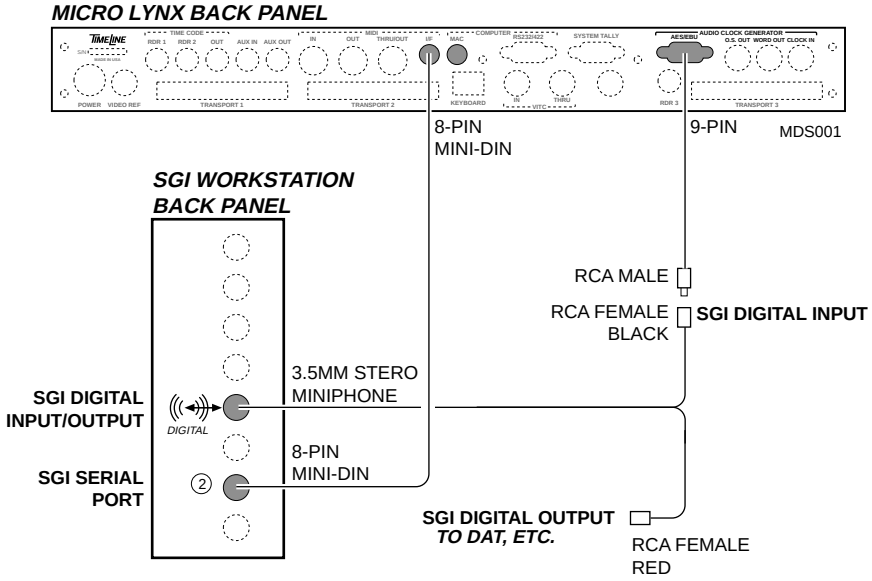


Figure Chapter 9 -3. Micro Lynx to SGI Workstation Connections

Micro Lynx to VTR Connections (Typical)

The Micro Lynx is compatible with many video transports that support external synchronization, including standard 3/4-inch U-matic, Beta, S-VHS, VHS, open reel, and digital VTRs. With a Micro Lynx, the video machines are always resolved, so they can be run as either Master or Slave. If the VTR uses Sony Serial Protocol, serial time code can be used as the time code source.

Use an external video sync source as a speed reference source for the Micro Lynx and VTR. Install the Micro Lynx Video Sync Generator Card (VSG), if an external sync source is not available.

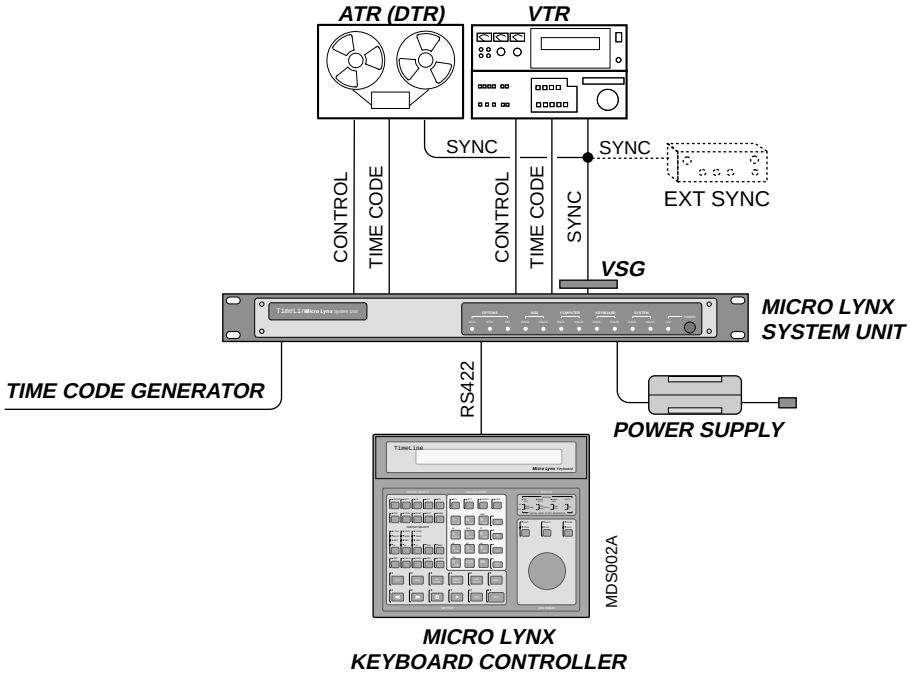


Figure Chapter 9 -4. Micro Lynx to VTR Connections

Micro Lynx Setup

Audio Clock Generator Setup

The AES/EBU Audio Clock Generator produces a digital audio bit stream locked to the Micro Lynx system reference. This information is used by the SGI workstation to control the play speed of the digital audio.

Set the desired sample rate using the Nominal S/Rate Out section of the SETUP ACG Menu. When Mediasound is in Chase mode, it automatically detects and adjusts to this setting.

On the Micro Lynx Keyboard press the [SETUP] key followed by the [ACG] key. These two keys are next to each other in the top left corner of the keyboard. Pressing [SETUP] puts the Micro Lynx into setup mode, which is used to configure the system. The [Last/Next] keys are used to step through setup options and the [+/-] keys are used to select the required parameters.

Note: In the following instructions, it is not necessary to exit setup mode after each step.

Procedure

Set the system sample rate.

1. [SETUP], [ACG]

   You are in the ACG Setup Menu.

2. [+/-]

   Use to select the correct sample rate.

3. [SETUP]

   Exit Setup mode.

Set the ACG variable rate output option to Off.

Procedure

1. [SETUP], [ACG]

   Select ACG setup.

2. [Last]/[Next]

```
    Setup: ACG Options
Selection: Var Ratio Out: Off
```

3. [+/-]

   Use to turn Variable Ratio Output off.

4. [SETUP]

   Exit Setup mode.

MIDI Time Code Setup

The Micro Lynx generates MIDI time code (MTC), which is used by Mediasound for positional synchronization. MTC can be transmitted from either the Micro Lynx MAC or MIDI I/F ports.

Set the appropriate MIDI port to Output MTC.

Procedure

1. [SETUP], [MIDI]

```
    Setup: MIDI
Selection: MIDI OUT Jack: MTC
```

   Select MIDI port setup.

2. [Last]/[Next]

```
    Setup: MIDI
Selection: I/F Out Jack: MTC
```

3. [Last]/[Next]

```
    Setup: MIDI
Selection: MAC OUT Jack: MTC
```

   Select the port you wish to use for MTC.

4. [+/-]

   Use to select MTC as the MIDI output.

5. [SETUP]

   Exit Setup mode.

MIDI Data Source Setup

The Micro Lynx is switched by Mediasound to transmit the time code type, frame rate and sample rate with the MTC over the MIDI port. The correct port must be selected.

Set the MIDI Data Source to the same MIDI port that was selected in the previous step.

Procedure

1. [SETUP], [MIDI]

   ```
       Setup: MIDI
   Selection: MIDI OUT Jack: MTC
   ```

   Select MIDI port setup.

2. [Last]/[Next]

   ```
       Setup: MIDI
   Selection: MIDI Data Src: MAC Jack
   ```

   Select the MIDI Data Source option.

3. [+/-]

   ```
       Setup: MIDI
   Selection: MIDI Data Src: I/F Jack
   ```

   Use to select chosen port for MIDI Data Source.

4. [SETUP]

   Exit Setup mode.

System Reference Setup

The Micro Lynx system reference is used to set the reference time base for all of the equipment in the system. If you are using a video tape transport that is connected to an external video sync generator, connect the sync source to the Micro Lynx and select ExtVid as the system reference. Otherwise, select IntFix. The Micro Lynx has an internal video sync generator (VSG) that it uses when no external video sync is available.

Set the system reference for your specific application. The ACG output and each of the tape machines in the system will lock to the selected system reference, which ensures correct synchronization.

Procedure

1. [SETUP], [TCG]

```
    Setup: TCG Options
Selection: System Ref:     IntFix
```

2. [+/-]

```
    Setup: TCG Options
Selection: System Ref:     ExtVid
```

   Select the system reference required.

3. [SETUP]

   Exit Setup mode.

Time Code Generator Setup

The Micro Lynx time code generator is used to set the system code type and frame rate. The options are set according to the type of work you are doing. If you are working with NTSC video, set the system code to 29.97 Hz/30. Consult the Micro Lynx Manual for more detailed description of the code types and rate options.

Setting Time Code Generator System Speed/Code Type

Set the required frame rate and code type in the Micro Lynx TCG Setup options menu. When Mediasound is in Chase mode, it automatically detects and adjusts to this setting.

Procedure

1. [SETUP], [TCG]

```
    Setup: TCG Options
Selection: System Ref:     IntFix
```

   Select time code generator setup.

2. [LAST/NEXT]

```
    Setup: TCG Options
Selection: System Spd/Code: 29.97 Hz/30
```

   Select system Speed/Code option.

3. [+/-]

   Select the frame rate and code type. These options should be the same as the code type and rate you want to use in Mediasound.

4. [SETUP]

   Exit Setup mode.

Setting Time Code Generator Mode

You also need to set the generator mode in Micro Lynx TCG Setup options menu. This setting ensures that time code will be transmitted to Mediasound when the attached video transport is jogging or shuttling.

Procedure

1. [SETUP], [TCG]

```
    Setup: TCG Options
Selection: System Ref:     IntFix
```

   Select time code generator setup.

2. [LAST/NEXT]

```
    Setup: TCG Options
Selection: TCG Group Mode: Play, Mute
```

   Select the Group Mode option.

3. [+/-]

```
    Setup: TCG Options
Selection: TCG Group Mode: Play, Wind
```

   Select the Play/Wind mode.

4. [SETUP]

   Exit Setup mode.

Note: The Micro Lynx remembers the settings you programmed. After powering down, you do not need to repeat the setup steps every time you use the system.

Micro Lynx Operation

Controlling Mediasound with the Micro Lynx

1. Put Mediasound into Chase mode by clicking the Chase button in the Group Display Area.
2. On the Micro Lynx press [SOLO], then the [TCG] group select key.
3. Use the Micro Lynx calculator keypad to enter the program start time and press [STORE] [TIME] to enter a TCG start time.
4. Pressing the [PLAY] key starts the Micro Lynx time code generator (TCG) and transmits MIDI time code for Mediasound to chase.

Controlling One Transport Device with the Micro Lynx

1. With all of the hardware powered down, connect a machine control cable and a time code cable between the Micro Lynx and the deck you want to control. The machine control cable goes from the Micro Lynx's Transport 1 connector to the deck's remote control input. The time code cable goes from the deck to the RDR 1 input on the Micro Lynx.
2. Connect a video sync source to the Video Ref port on the Micro Lynx and to the video machine you are controlling. If you do not have an external video sync source, connect the Micro Lynx Video Ref port to the VTR ref input and see step 6 below. Analog audio tape transports do not require the video sync connection.
3. Turn on the Micro Lynx.
4. On the Micro Lynx Keyboard, the group select keys will flash. Press machine key [A].
5. Next, you need to specify the type of machine you are using. Enter setup mode by pressing the [SETUP] key on the Micro Lynx keyboard. Press the [TRAN] key to select the type of machine you are going to synchronize. Use the [Next/Last] and [+/-] keys to select the correct type of machine from the menu.

   Note: If your deck does not appear in the menu, refer to the Micro Lynx Manual Appendix, Table 2, for alternate choices.
6. The Micro Lynx has an internal video sync source. If you did not connect an external video sync source in step 2, press the [TCG] key and use the [Next/Last] and [+/-] keys to set the System Ref option to IntFix and the Video Sync Gen option to On.
7. Press the [SETUP] key to leave setup mode.
8. You are now ready to synchronize the Transport to Mediasound.
9. Put Mediasound into Chase mode by clicking the Chase button in the Group Display Area.
10. On the Micro Lynx, press and hold the [Group] key and press the [A] and [TCG] group select keys. This forms a group of the Transport and Mediasound.
11. Press [PLAY]. The Transport and Mediasound will play and synchronize.

12. The Micro Lynx generator will always jam to the incoming reader code. The time code generator operation mode should be set to Play/Wind to follow group transport operation. Refer to TCG Option Menu in the Keyboard Controller section of the Micro Lynx Manual for option setting choices.

Note: When the TCG is put in the group or put into play, MTC will be transmitted from the selected, MIDI I/F or MAC connectors.