
PRV-9000 –Time Code Support

OVERVIEW:

SMPTE (acronym for Society of Motion Picture and Television Engineers) adopted two time code standards, Longitudinal Time Code (LTC) and Vertical Internal Time Code (VITC). Both time code formats were created for accurately locating exact positioning points of video and audio.

In many professional videotape formats, LTC is recorded in a separate longitudinal audio track. The disadvantage of LTC is when the playback device is in *stop*, *search* or *scan* mode there is no LTC signal present. The time code data contains the hours, minutes, seconds and frame numbers.

Because LTC can also be generated and recorded as an audio signal, the Pioneer PRV-9000 can record LTC as a discrete and separate audio signal on one of the two unbalanced audio inputs.

To include a time code, verify that the source material includes either LTC or VITC signal. If none is present, record LTC directly from a LTC generator.

If the source material contains only a VITC signal, a VITC to LTC translator must be used.

For best results, record a sequence in DVD Video mode rather than in VR mode. If the time-coded DVD recording is in Video mode, the disc can be played back in most DVD Video players.

Recording LTC

As mentioned above, the PRV-9000 uses an audio channel to record the LTC signal, just as an analog audio signal is recorded. Connect the LTC signal to either audio input channel. The remaining audio channel is available for recording a monaural analog audio signal.

VTR with Time Code Track

When recording from a VTR that contains a time code (LTC) track, impedance matching transformers are required. Connect the VTR's time code output to one of the PRV-9000's audio inputs using an impedance matching transformer. If audio is required, connect one of the VTR's audio channels using an impedance matching transformer to the remaining audio channel on the PRV-9000.

VITC

When recording from source that contains a VITC, first connect the source video output to the input on the VITC to LTC translator. Two impedance matching transformers may be required with one transformer to convert the source balanced audio signal to an unbalanced input signal for the PRV-9000. The other transformer connects the VITC and the LTC translator output to the audio input channel of the PRV-9000. The video signal from the source connects to the PRV-9000's video input, associated with audio input.

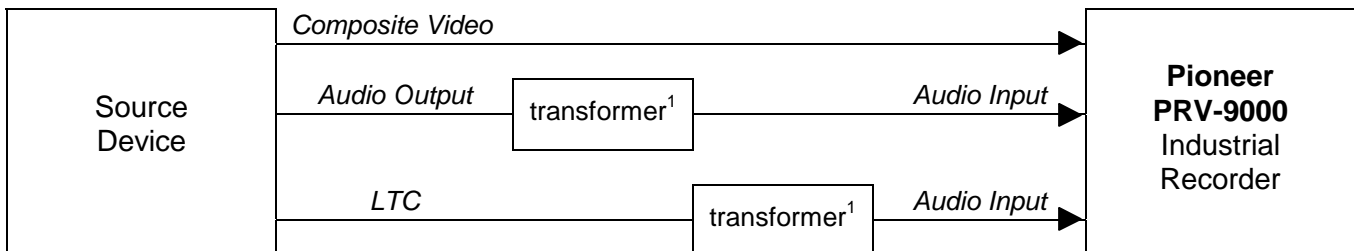
LTC Generator

When recording from a VTR or other video source and using an LTC generator, connect an impedance matching transformer between the LTC generator's output and the PRV-9000's audio input. Connect one of the source audio signals to the remaining audio input. Source material with balanced audio output requires an impedance matching transformer. Connect the source video signal to the associated video input.

Level Check

Before recording begins, check that the LTC level is approximately **-10dBu** from 0dBu. If the PRV-9000's audio output is connected to an audio amplifier, the LTC signal is heard as a clicking sound during recording sessions.

With the correct LTC and audio levels, start the source device and commence recording.



¹ signal may require an impedance matching transformer

Reading LTC

Like other set top DVD players, the PRV-9000 supports LTC playback through its audio output. To play back a time-coded disc recorded with the PRV-9000, connect an LTC decoder to the appropriate audio channel on the DVD player. The LTC decoder displays the decoded LTC signal from the recorded DVD. An impedance matching transformer may be required, check with the manufacturer of the LTC decoder.

If the LTC signal cannot be read, check that the LTC signal level from the player being used meets the minimum amplitude required by the decoder.

ADDITIONAL INFORMATION:

Information on audio input connection and recording can be found in the Operating Instructions shipped with the PRV-9000 recorder.

For more information on SMPTE time codes, refer to the following websites:

<http://www.philrees.co.uk/articles/timecode.htm>

http://www.etcconnect.com/html/service_smpte.html

For assistance please contact your Pioneer representative (sales/technical: [CA] 310-952-2000 and [NJ] 201-327-6400) or refer to the Pioneer website:

www.pioneerelectronics.com