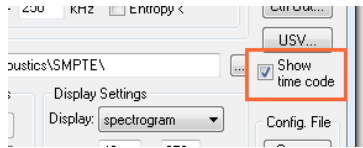
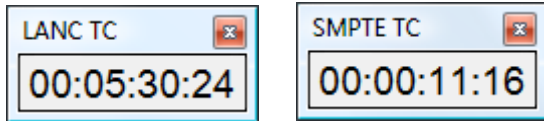


LANC / SMPTE time code interface

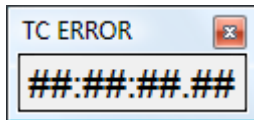
The RECORDER USGH software can decode LANC and SMPTE time code information that is fed into the UltraSoundGate digital inputs (DIN). To enable the time code signal detection / decoding mechanism, the option Show time code on the Configuration dialog box must be checked:



Once a valid LANC or SMPTE signal is detected on one of the DIN inputs, a time code display will be launched:



In case the software cannot extract a meaningful time stamp stream, a TC ERROR message is displayed:



Interfacing to LANC Time Code

LANC (RS232, 9600 baud) time code information was available on a number of MiniDV (tape-based) SONY and Canon camcorders that is no longer available on the new file-based products. The LANC signal is usually a 2.5mm stereo TRS jack (or in newer models a 10-pin A/V terminal jack, which requires an appropriate adapter cable) that can be connected to a USG DIN socket by using a custom-made interface cable that has a 3-pole 2.5 mm TRS plug at one end (with the ring pin left unconnected) and a 2-pole 2.5 mm TS plug at the other end. Such a cable is available from Avisoft Bioacoustics (part# 40122).

Interfacing to SMPTE Time Code

SMPTE time code signals are provided by a number of SMPTE time code generators, such as the model HORITA PG-2100 or TG-50/TG-50P. The output signal of these devices is an AC-coupled signal that is originally intended for recording onto an analog audio input channel. It is therefore required to convert this AC-coupled signal to the open-collector DIN input of the UltraSoundGate. A suited adapter cable with integrated amplifier is available from Avisoft Bioacoustics (part# 40123.)

The recorded time code can also be played from within the Avisoft-SASLab Pro software through a common soundcard or audio interface, which can be set up by activating the option File/Advanced playback options/Route UltraSoundGate DIO track (LTC) to the right playback channel.

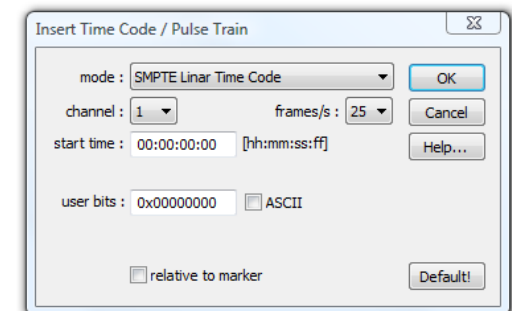
If activated, an UltraSoundGate DIO track containing linear time code (LTC) will be routed to the right channel of the playback device, which will enable synchronization with suited video playback equipment.

On multichannel .wav files, the **channel** containing the time code must be selected from the command Analyze/Time axis format... (activate the option "absolute clock time" and select "SMPTE time code on USG DI (LSB)"). In addition to that, one of the following "multichannel mode" (mono output) options must be selected from the command File/Playback settings...: "1 of N", "SUM" or "SUM mix".

For applications that require distributing the SMPTE time code signal to several UltraSoundGate units, a special Active SMPTE/SYNC distribution unit is available (part#40124) :



SMPTE and LANC time code can also be synthesized by the Avisoft-SASLab Pro software and stored into the LSB of 16 bit .wav files (*File > Specials > UltraSoundGate DIO > Insert time code / pulse train...* or *Edit > Synthesizer > Insert time code / pulse train...*). The wav files containing such a time code track can then be played through the UltraSoundgate Payer 116 and 216H, where the time code signal will be available on the DOUT socket.



Using the acquired time code

The serial time code that is acquired by the DIN input of the UltraSoundGate hardware is stored into the least significant bit of the waveform data samples.

This information can be accessed by the Avisoft-SASLab Pro analysis software by selecting the options **LANC timecode on USG DI (LSB)** or **SMPTE timecode on USG DI(LSB)** from the main window command **Analyze/Time axis format...** The time axis on both the main and spectrogram window will then represent the recorded time code. Red-coloured ticks along the time axis indicate the individual video frames.

Note that the time code track located on the least significant bits of the .wav file will be destroyed by applying any filter command, unless the option „keep DIO state“ is activated.