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Precise Audio Analysis

Software Release Notes

Audio Toolbox Color – ATB3C

Version 1.48

LCD Firmware Version 1.2.9

Note: If your firmware is 1.37 or earlier, you must send your Toolbox in for a hardware upgrade before loading any later version. You may, however, load the LCD firmware 1.2.9 to stop lock-ups from occurring in any toolbox.

Toolbar selector for Digital Generator / USB Preamp mode. The Toolbox can now be used as a fully-functional digital signal generator, in addition to the previous ability to be used as a USB preamp. A new icon has been added, just to the right of the generator level control, that changes the digital output of the Toolbox between two modes. In Digital Generator mode, the digital outputs (SP/DIF connector, Toslink port, and USB audio output) will always transmit the currently selected generator signal. The level of this signal will follow the level of the main generator output. The exact digital level, in units of dB FS (dB below full scale, as defined in AES17), is shown on the Signal Generator screen. Digital Generator mode is selected by choosing “G” on the Toolbar, to indicate that the Toolbox digital output is being fed from the output section of the Toolbox. When you choose “I” on the Toolbox, this indicates that the digital output section is being fed from the input of the Toolbox. In this mode, the Toolbox left and right inputs will be routed to the digital outputs. The only exception to this rule is when one of the impedance functions is selected. In this case, the right channel of the digital outputs will carry the generator signal.

Digital Recording: There are two functions that can be used for recording digital audio files, the Stereo Recorder, and the Impulse Recorder. The Stereo recorder records two-channel files, at 44.1kHz or 48kHz, at 16-bit depth. The files are recorded to RAM in real time, and may be saved to the SD card. The Impulse recorder records mono digital audio at 44.1, 48, 88.2, or 96kHz, 16-bit, or stereo audio at 44.1kHz or 48kHz. The Impulse recorder sweeps the sine wave generator, either linear or log, while the recording is running. Note that you do not have to use the sweep generator, but it is provided to record impulse sweeps. Files are saved as standard wave files. The Stereo recording files are named “SFILExx.WAV”, and the Impulse Recorder files are named “IFILExx.WAVE”, where xx is a number from 01 to 99.

To record using either function, change the Play/Record field to record, setup the inputs, and click the play/pause icon. The recording begins, and while the recording is happening, no activity is seen on the screen. For example, if an overload occurs the gain icon will not flash until the recording is stopped. To end the recording, click the Play/Pause icon. The recording will stop automatically when the end of the RAM buffer is reached. The length of recording time is dependent on the size of the RAM buffer. The buffer is currently approximately 12mb. This provides 69 seconds of recording, at 44.1kHz, stereo. Mono provides twice this time. We are working to make more RAM available to increase this time.

Once recorded, you can listen to the recorded audio by changing the Play/Record field to play, and clicking the Play/Pause icon. To hear the output in the headphones, turn on the headphone monitor (left-most icon on the bottom toolbar), and select ‘O’ for output. You can pause and re-start playing using the play/pause icon. To rewind back to the beginning of the audio clip, click the rewind icon. If you play to the end of the clip, the clip rewinds automatically to start.

To save the clip, select a file name by changing the two-digit number field to make any desired file name. Choose a file name that does not already exist on the SD card. If the file already exists the save command will be ignored. Now insert an SD card, and click the Save field. The status of the file writing is shown next to the “Card” field. While writing is going on, the status will be “Busy”. When writing is complete, the status will be “idle”.

Note that the main output carries the signal that was recorded on the right channel, if the stereo recording is used, but carries the left channel if the Impulse recorder is used. This arrangement keeps the headphones L&R correct.

Please note that when changing sample rates, clicks may occur on any of the outputs. Also, an interesting side effect is that you can record at one sample rate, and play back at another. The wave file is always saved at whatever sample rate was selected when the clip was recorded.

Memories: 100 memories are now available. TerraLink 2.x is required to interface to this version.

Output pad: A 20dB hardware pad has been implemented to reduce the out-of-band noise on the output of the Toolbox. (This requires a factory mod). The pad is selected automatically as the signal generator output level is changed.