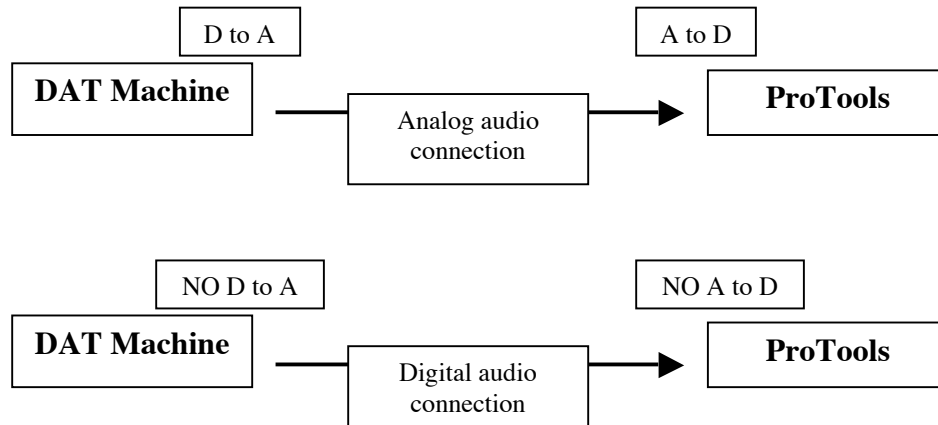


## DIGITAL AUDIO SIGNALS

If you connect digital audio devices, like a digital mixer and digital outboard compressor, or a DAT machine and ProTools, and if those devices have digital I/O, you can avoid unnecessary AD and DA conversions that increase quantization error and aliasing. You retain a pure digital audio signal.



There are a few different kinds of digital audio signal.

**S/PDIF** - stands for Sony/Philips Digital Interface.

Usually, S/PDIF is carried on an RCA cable, just like most consumer audio gear. RCA is a small physical size, so it's good for smaller pieces of equipment. Because the S/PDIF connection is unbalanced, it's a good idea to keep the cables short.

**AES/EBU** - stands for Audio Engineering Society/European Broadcasting Union.

Usually, AES/EBU uses an XLR cable. Because the AES/EBU connection is balanced, longer cable runs are possible than with S/PDIF. AES/EBU is sometimes considered to be a more 'professional' format. But both AES/EBU and S/PDIF are effective and accepted formats for quality transfers of digital data.

SPDIF and AES-EBU share the same basic traits:

- Two channels max (stereo)
- Multiple Sample rate and Bit depth options
- One cable actually carries both channels, unlike with analog audio.

**Optical** – Digital audio data can be carried on optic fiber cables using laser light pulses. SPDIF sometimes shows up in optical format.

**Multichannel options** – You can carry more than two channels at once. For example, there's ADAT *Lightpipe*, made by Alesis, and *TDIF*, made by Tascam. Both carry up to eight channels at once. Lightpipe is an optical format, while TDIF is electrical.