MIXING AND MATCHING

PROFESSIONAL, PROSUMER AND CONSUMER AUDIO
...Also known as where's the audio (level), Sparky?

As the quality of smaller digital video formats has improved, these formats have been increasingly used for higher end or even professional projects. Much attention has been focused and/or lavished on the video aspect of these formats, but just as "video" is Latin meaning "to see", there is another often negelected Latin word, "audio", meaning "to hear".

DV (or what has become known as MiniDV) was developed by a consortium of manufacturers and engineering commitees with the end objective of coming up with a consumer digital format. Of course, several manufacturers immediatly sought to improve on this digital format for the Prosumer market resulting in such formats as DVCam and DVC Pro. These video formats have (when properly staged and lighted) such good results that they are being used for projects that would formerly only have been considered for professional video or film. (No, it's not film and it's not as good as film. Let's save that subject for another time.)

The thing to remember is that DV/Mini DV/DVCam/DVC Pro, et al were developed for the consumer/prosumer market and while the video part of the format is almost automatic, there is that other Latin word...audio. The formats provide for 16Bit or "CD quality" audio, however there are the ins and outs of it. Professional audio has always had mostly standard (though occasionally non standard) standards of level, impedance and balanced/unbalanced issues. Consumer audio has ususally had non standard standards that are otherwise. At this point, we will be concerned only with "level" or signal strength.

Any good audio Dude (or Dudette) will know that you want to get from microphone level to line level as soon as possible in the audio chain. A microphone level signal is extreamely small and weak, susceptible to outside interferences. But a line level signal has been "boosted" through pre-amp circuits so that it can withstand not only outside interference, but also any processing. It is strong enough to come out "whole". The problem occurs when the audio operator uses good professionally designed mics, runs them into a professionally designed mixer, comes out professional "line level" into what is essentially a consumer line level input. Professional "line level" is traditionally +4dBu. Of course consumer/prosumer "line level" inputs are usually around -11dBu. So the line output of the professsional mixer is too "HOT" for the input of the consumer/prosumer device (EG: camcorder) resulting in distortion or "blown-out" audio. Often the audio operator trys to compensate by lowering the output levels of the mixer as well as the input levels of the camcorder. While this can reduce somewhat the "blown out/distortion" effect, it also reduces the effective level of the signal usually resulting in a rise of the "noise floor". One hears underlying noise such as hiss and rumble. The real solution should be to "pad down" the output of the professional (+4dBu) device (the professional mixer) about 15dB to accomodate the input (-11dBu) of the consumer device (the camcorder). This can be easily done with an in-line "pad" or attenuator if this problem is recognized at the onset. However too often we are so impressed with the quality of the video (oh, there's that Latin thing again),that

we forget that we may well be dealing with consumer audio.

Pre-production planning should include a look at the specs of the input/output audio levels of the involved devices and consultation with the equipment provider to determine whether or not your equipment decisions are “sound”. TAMBERELLI VIDEO carries a full line of products for all of your audio solutions.

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