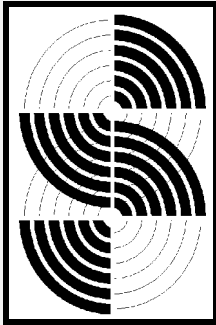


Service Tips Newsletter

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Three Hour Tapes

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DIGITAL AUDIO METERING

Now that many video users have some sort of digital format such as DVCPRO, D5, Digital BETACAM, etc., one of the problems that seems to be common to nearly all users is the new metering for digital audio. In the "old days" of analog audio, meters had a zero VU set point. Machine inputs and outputs could be switched to -20dbm, 0dbm, +4dbm, or even +8dbm to equal zero VU. Audio levels were normally adjusted so that the average level would be around zero VU. Most of these meters would read average levels. The meter movement simply can not move fast enough to show audio peaks.

We now have a new type of meter in digital VTRs and DAT machines. This meter has -20 units as the reference point and zero units as a maximum level. The meters also read peak level rather than average level. When older mixers or analog VTRs are connected to the new digital VTRs, the operator can be easily confused. Here is a typical situation. A news operation installs two DVCPRO studio VTRs to replace older BETACAM SP. The existing VTR input and output levels are set levels in the mixer. When the reference tone in the source VTR indicates the new reference adjusted to show a level of zero VU on its internal meters. The record VTR should then show the -20 standard units in the EE mode. So far so good! The problem occurs when we load a field tape and attempt to run audio levels during an edit. Most operators will run audio too "hot" because they want to see lots of movement on the old analog meters on their mixer. If you watch the levels on the new record VTR, you will notice that the levels are quite a bit higher with normal music or speech. Remember that the new VTRs use a peak reading meter. They can read and display audio information much faster than the older analog VTRs. If you adjust the mixer level so that your record machine displays audio around -20 units and then look at your old mixer, you can get a "feel" for the way that you will need to run audio on your mixer.

Most operators will
run audio too "hot"

analog audio mixer remains. The to +4dbm to match the required audio operator plays a test tape with a machine, the audio meter on that level of -20 units. The mixer is then

Normally, you will see good audio levels between -20 and -12 on the new scale. You no longer have to worry about running higher levels to keep your signal to noise ratio. Digital VTRs do not have problems with added noise. Do not allow audio levels to reach zero units on the new digital scale. Audio levels that are too "hot" are not recorded with distortion, they simply are not recorded at all. If you know of problems where audio seems to drop out on voice peaks, chances are that your editors or tape operators are running their audio too high.

Specialized Communications is a Factory Authorized Service Center for Panasonic, Sony, JVC and others, providing the highest quality maintenance and repair for Television Stations and Networks, as well as Video Production and Dub Facilities of all types. With an expansive knowledge base and over 100 years of combined experience, our engineers and technicians will provide individual attention and care for each unit sent in, even if it's under warranty. Technical Support, quick turn-around, and competitive rates are among our specialty and have earned us a nationwide base of satisfied customers.

DVCPRO BOARD SWAPPING - BEWARE!

It is not uncommon when troubleshooting problems to use an identical unit and substitute a board from the good unit to confirm problems in the defective one. In a news operation where a camcorder going down may mean that a crew cannot go into the field, you may be tempted to leave the swapped board in the unit while a new one is ordered. Be aware that in modern digital camcorders such as the DVCPRO AJ-D700 or AJ-D810, actual alignments to the camera and VTR are done with a computer and stored on the system control boards. If you change these boards or replace them, you may need to realign the camera. We have seen several units that arrived with the symptom of no recorded audio or highly distorted audio. Audio playback from the camcorder was also non-existent. After realigning the audio VCO, the problem was solved. It is very unusual for this alignment to be done, and additional checks revealed that the camera syscon and vtr syscon had been swapped with another camera to troubleshoot a problem and left in the wrong camera. We could have checked and totally realigned this camera but found it easier to get the second camera, return the system control boards to their original place and to repair the problem on the other unit. Swapping syscon boards in this case led to two cameras with problems rather than one.

No recorded audio or highly distorted audio

On DVCPRO studio machines this is a bit less common, but the L2 system control board contains reel torque and electrical settings, as well as hour meter data. Swapping this board to another machine for a quick test will nearly always be successful because the studio VTRs are manufactured to such a tight tolerance that you may not notice problems. Don't forget to return the board to the original machine to keep both VTRs from needing re-alignment. Should you ever replace a system control board in a studio machine with a new one from the parts department, expect some strange operation until the unit is re-aligned. A quick solution in this case, is to remove the non-volatile memory block IC17 from the old board and transfer it to the new board. This will move the alignments to the new board and the VTR should function properly, unless the original

problem was IC17 or the settings stored in it. Remember that hour meter data is not stored in IC17.

DVCPRO 3 HOUR TAPE

The new AJ-D850 has the capability of playing and recording on a three hour tape. This new tape will be in a standard cassette box that currently holds the two hour tape. It may fit in your current DVCPRO VCR but do not be tempted to use it. The new VTR is designed to use this new tape as well as the original tapes. Your AJ-D750, D650, and D640 are not. This new tape must be thinner to be held in the same tape box as the old 2 hour tape. It may require mechanical changes to the transport and certainly requires some firmware changes to modify the way that this new tape is handled. We are gathering information about this tape and if any modifications will be available to upgrade current model VTRs. If something becomes available, you can read about it in the next Service Tips or on our web site: www.spec-comm.com.

Do not be tempted to use it

Information in this issue provided by:

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Specialized Communications, Inc.

Reminder: When shipping equipment to us, please remember to secure the unit extremely well with packing material on all sides and use double-boxing. Use the yellow overweight shipping sticker and ship 2nd Day Air for the least amount of handling.