



ERIC SIEGEL'S VIDEO REPORT: A Half-Inch World Video Standard; The European Scene; Electronic Correction; Videotape Publishing

Since the very first issue of *Radical Software* I have been writing about video standards. In issue number 3 I advised everyone to adopt the American 525-line standard. This seemed rational for Americans, but Europeans may have thought that I had some ulterior motive for pushing American equipment in Europe. The only motive I had was compatibility.

Now, however, I have devised a way to modify Sony type-one standard equipment so that it can also be used in Europe. In all half-inch battery operated portable VTR's there is a servo-locked head motor drum motor. American machines (in the head-drum servo) are tuned to free run at a 60-cycle alternate current driving frequency. The motor hovers at a harmonic multiple of the vertical scan rate which is the same as 60-cycle house main current.

In order to make an American standard recorder work on the European standard you readjust the driving oscillator free-running frequency to 50-cycles which is the European house main current. With this simple adjustment you can have a "world standard" half-inch videotape recorder with an American VTR and further more, all 625-line (European) tapes will be compatible with 525-line standard AV machines, which change the driving oscillator from 50 to 60 cycles. If you have a Sony AV3400 VTR the addition of two 4.7 k ohm resistors (one a series R526, the other series R527) with shorting switches across both resistors will make your machine switchable from 525-line American to 625-line European standard.

I spent last summer in Europe and demonstrated the convertible standard to video pioneer Jack Moore who subsequently has purchased an American standard (AV3400) videotape recorder. I also met another group in Paris who will also be using American standard equipment. So a true world standard may be on its way.

You have all made videotapes which contain very valuable information but which, unfortunately, have very poor quality. One of the major problems is shifting black level, which is caused by the automatic target control in the Sony AVC3400 camera. In a previous article I described how to modify your camera to eliminate this problem in the future, but this doesn't rectify tapes which are already ruined.

As you know, I have developed a special device known as the *processing Chrominance Synthesizer*. Among the various things that it does is black level correction, i.e., it enables you to manually correct black level inaccuracies. It also allows you to increase the contrast, and it fills in sync. pulses where drop-out is present on a tape. It also makes new blanking signals, new synch. signals, and it allows you to color synthesize black-and-white tapes into color. In the future it will incorporate gamma correction which gives a better tonal range to the gray scale, and image enhancement circuitry to make the picture sharper and crisper than it was originally. Thus, with one device most of the technical problems of half-inch video will be solved.

Many people wish to put their videotapes on the air. This has been done in America already. The technical process by which this is accomplished is called "scan conversion." Although American half-inch VTR's have the same scanning rate as those used on broadcast TV, they don't have the same stability. Therefore half-inch tape must be re-scanned by an accurate broadcast TV camera or an electronic scan converter. The heart of the scan converter is a special tube that looks like two oscilloscopes cathode ray tubes face-to-face. One tube scans the image from the half-inch tape. The other tube picks up the image for broadcasting.

If you can't locate a scan converter and wish to put your tapes on the air, a simple scan converter can be made by feeding your tapes into a keyed-clamp, high quality, high-resolution monitor and then focusing a high quality broadcast camera on it. If both scanning rates are the same (525 lines or 625 lines) then you can use a plumicon camera. If one scan rate is different from the other, then a vidicon camera must be used so that a retention of the image is produced thus eliminating the inter-scan beat frequency which is a 10 cycle flicker in the picture.

Sooner or later you may be contacted by a cassette company for rights to publish your half-inch video work. If you have already signed a contract you can consider it a blunder. However, if you haven't yet, I advise you not to.

Here in New York City at the present time there is a group of people including myself who are in the process of arranging a suitable organization to establish a world standard for videocassettes. If you are interested write me: Eric Siegel, c/o Howard Wise, 2 West 13th Street, New York, New York 10011; or call me at (212) 253-0082.