

ENGINEERING NEWS

Component Analog Test

Tests of a new time-division-multiplexed component analog video (CAV) signal were conducted by the SMPTE Working Group on Component Analog Video Standards, it was announced by the working group's chairman, Merrill Weiss. The tests were held in a studio of the Canadian Broadcasting Corp. in Montreal, during the week preceding the 18th SMPTE Television Conference, which took place February 10-11, 1984.

The working group is developing a series of interface standards for both parallel and serial interconnections at the studio level and for parallel interconnections of cameras and recorders in the field. The tests were designed to validate choices the working group has recommended with regard to the form of the signal to be used for single-cable, serial interconnections in the studio and the waveform to be used to carry that signal.

A special, parallel-component system was assembled to support the tests of the serial CAV signal and waveform. Incorporated were several picture sources, including two cameras, a slide scanner, a character generator, and two small-format videotape machines for playback of prerecorded tapes with live action. Also available were a number of test-signal generators, including zone plate, a component production switcher, and a color matting device.

A specially built multiplexer and demultiplexer were used to convert the parallel component signals to a serial Y, C_B, C_R signal having an 11-MHz bandwidth. The resulting CAV signal was then passed through an environment which included reduced bandwidths (using filters with various corner frequencies and shapes), severe amplitude and phase non-linearities, and a variety of interferences such as hum, noise, line, and field-rate tilt.

In characterizing the results of the tests, Chairman Weiss said, "A majority of observers was startled by the robustness of the signal, even under severe distortions in the CAV environment. Distortions which would have destroyed NTSC signals had very little effect upon the CAV signal, aside from the expected reduction in resolution when the bandwidth was reduced."

The working group will next proceed to tests of the stability of the synchronizing waveform proposed to carry the CAV signal. The tests will include compatibility with existing television facilities.

The next meeting of the Working Group on Component Analog Video Standards is scheduled for March 13, in Orlando, Florida. For more information, contact Barry Detwiler at Society Headquarters, or Merrill Weiss at 415-430-2841.