

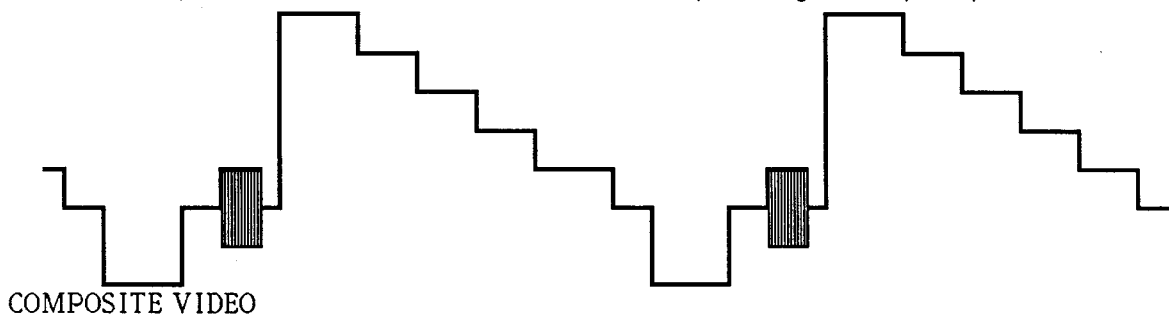


APPLICATION

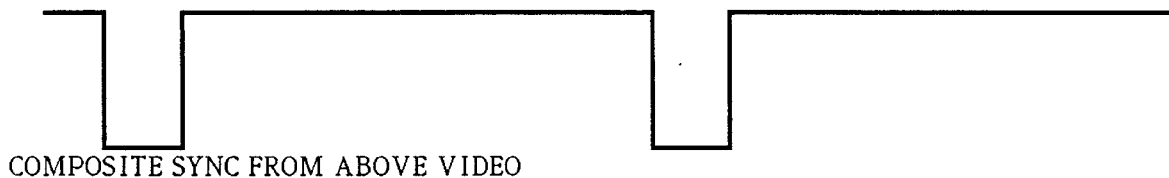
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Sync Timing – Horizontal rate

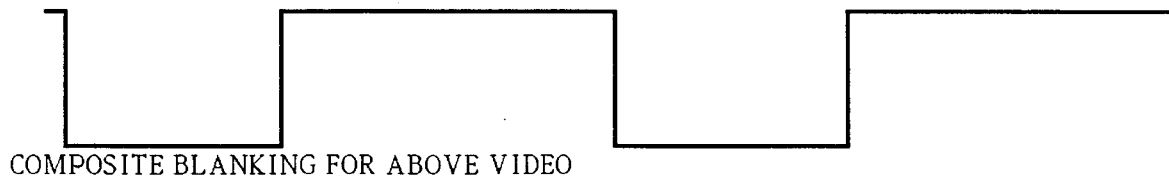
Issue 10 dealt with sync timing at the vertical rate. This issue will look at those same signals at the horizontal rate. If you look at composite video with ten steps of luminance values on a waveform monitor, you will see something like the drawing shown below. Horizontal is usually displayed at either a 1H or 2H rate. I have chosen to show a representation of the 2H rate to help indicate the periodic rate of the sync signals. The entire signal is 140 IRE units in amplitude and in baseband video, that's 1 volt peak negative to peak positive.



The next picture shows the composite sync from that video signal. On the waveform monitor, it is the lower portion of the picture. If all is well, it goes from the 0 IRE line down to the -40 IRE line. If the composite sync is viewed directly from a sync generator, it is 4 volts in amplitude, and has the exact same proportional size.



Now we get into signals which are used to define the video, but are not directly removable from the video. Composite blanking is used by picture generators to designate any place where video is **not** present. This signal is present in most sync generators and is also 4 volts in amplitude.

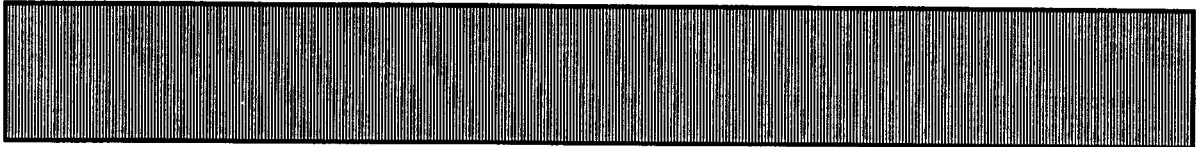


Burst flag, much like blanking, is used to guide circuits to the point where they remove a portion of the video. The "hole" left in the video is later filled with color subcarrier by other circuits. Burst flag is also 4 volts in amplitude out of a sync generator.



BURST FLAG FOR ABOVE VIDEO

Finally, we have color subcarrier. This appears as a total blur at this slow rate. This signal, out of a sync generator, is only 2 volts in amplitude.



COLOR SUBCARRIER FOR ABOVE VIDEO

Now, with these relationships set, we can move on to look at how waveform monitors and vector scopes can be used. The next issue will begin to address these devices and the rest of the terms that are used in their operation. Keep those letters and phone calls coming, or stop by and say "Hi" at NAB. Contact Mark Everett with your comments, questions and suggestions.