

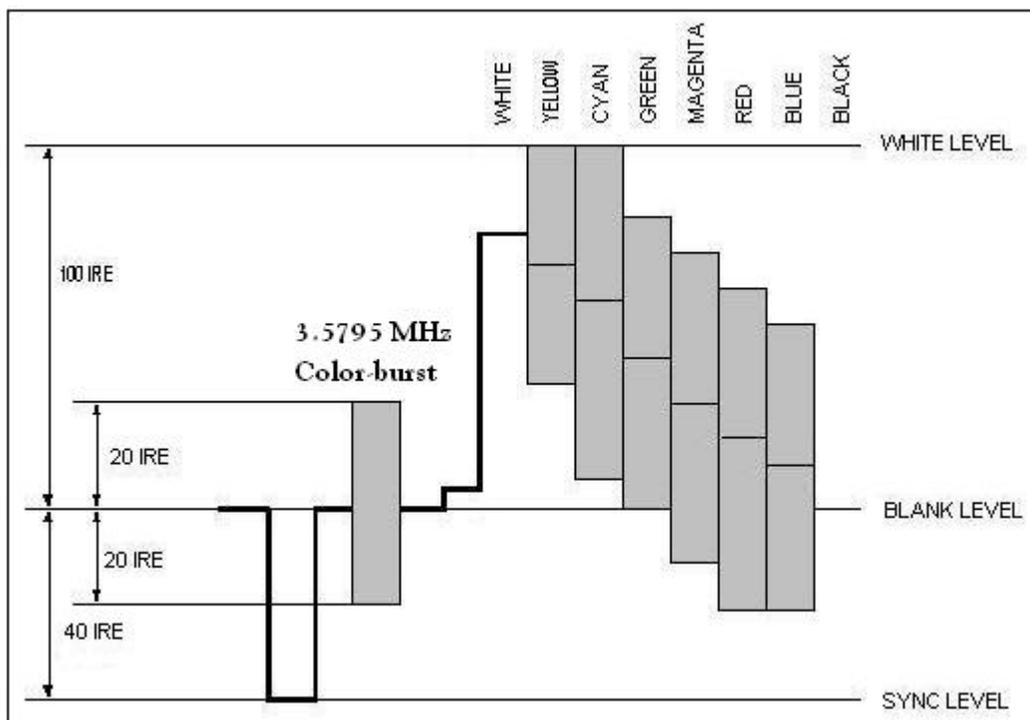
## EXPLANATION TO THE LOW COLOR-BURST COMPOSITE OUTPUT

### Scope

It has been observed that the amplitude of the color-burst of the composite video output from Chrontel TV encoders is slightly lower than the NTSC/PAL standard. This document explains this low color-burst deficiency.

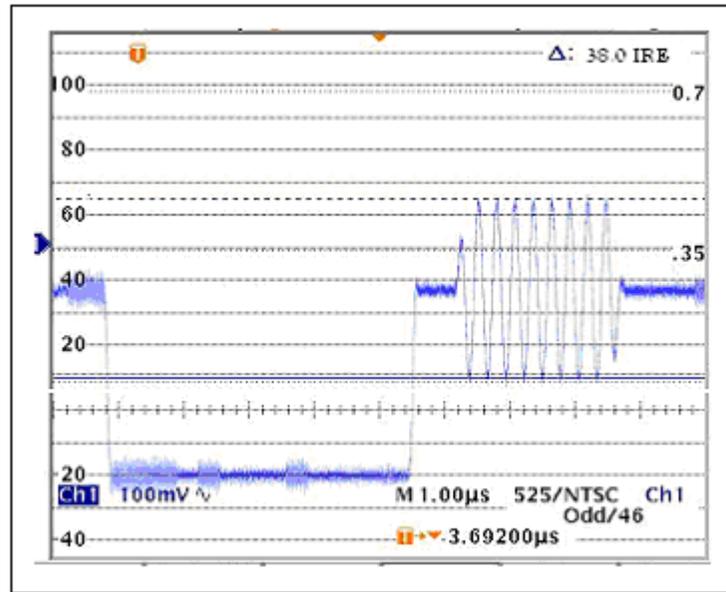
### Explanation to the Deficiency

In a composite video signal after normalization (the H-sync is normalized to 40 IRE in NTSC and 42.8 IRE in PAL), its color-burst should be equal to H-sync in amplitude, which is 40 IRE in NTSC and 42.8 IRE in PAL, according to the standard (see Figure 1).



**Figure 1: Composite Video Signal for 75% Color Bars**

The amplitude of the color-burst of the composite video output from Chrontel TV encoder is about 37 to 38 IRE in NTSC and 39.5 to 40.5 IRE in PAL, which is slightly lower than the standard (see Figure 2).



**Figure 2: Color-burst of the Composite Video Output From Chrontel TV Encoder**

The function of the color-burst is described as follows:

The color-burst is a reference for the composite video color information demodulation. The hue and saturation information is transmitted using the color-burst subcarrier, encoded so that the receiver can separate the hue, saturation, and luminance information and convert them back to RGB signals for display.

Hue information is conveyed by the chrominance phase relative to the color-burst subcarrier and the saturation information is conveyed by the chrominance amplitude.

**The color information can be transmitted without loss of fidelity as long as proper color-burst phase relationship is maintained at the modulation and demodulation process.**

Therefore, the color-burst amplitude is not involved in the modulation-demodulation scheme. According to Macrovision Rev. 7.1.D1 specification, the required amplitude of the color-burst is set to NTSC/PAL standard +/- 5 IRE.

**Conclusion**

The deficiency of low color-burst amplitude in the composite video from Chrontel TV encoder is legal and will not generate any color demodulation distortion, neither will cause any failure from Macrovision DVD certifying.