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SMPTE RECOMMENDED PRACTICE

RP 85-1999

Revision of RP 85-1991

Tracking-Control Record for 1-in Type C Helical-Scan Television Tape Recording



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1 Scope

This practice specifies the characteristics of the tracking-control record and the relationship between the recorded video and tracking-control signal for 1-in type C helical-scan television tape recorders operating on 525/60 monochrome or NTSC color systems.

2 Tracking-control record

2.1 The tracking-control record consists of a series of constant flux levels alternating in polarity at a field rate as shown in figure 1. An extra pair of transitions is added to alternate frames.

2.2 The polarity of the tracking-control record flux shall be such that the south poles of magnetic domains point in the direction of tape travel during the vertical interval identifying fields I and III, and the north poles of the magnetic domains point in the direction of tape travel during the

vertical interval identifying fields II and IV. Therefore, the north-to-south transition which occurs during fields II and IV will be adjacent south magnetic poles, that is, the transition area will attract the south-seeking pole of a bar magnetic.

2.3 The amplitude of the tracking control recorded flux shall be at least 30 dB above the residual flux of any previous recording.

2.4 The 10%-to-90% rise time of record current required to produce the specified flux level changes shall be $0.015 \text{ ms} \pm 0.010 \text{ ms}$.

2.5 The width of the record-current pulses for the extra pair of transitions on alternate frames shall be $0.20 \text{ ms} \pm 0.03 \text{ ms}$ or $0.40 \text{ ms} \pm 0.06 \text{ ms}$ for the N-S-N transitions. Signal timing shall be measured at the zero-crossing points of record head current.

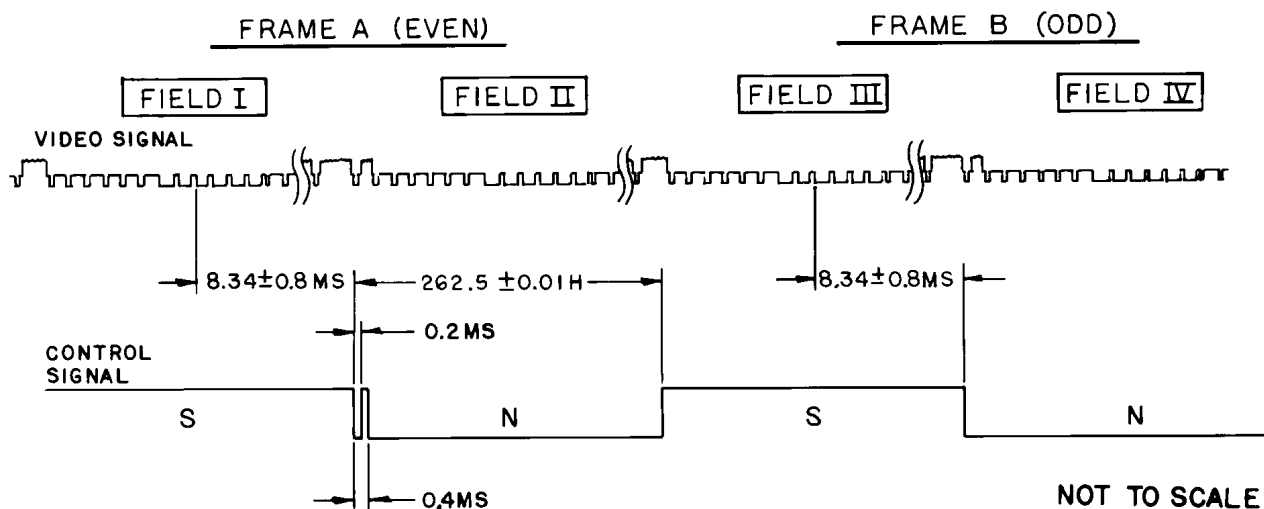


Figure 1 – Tracking control waveform and timing