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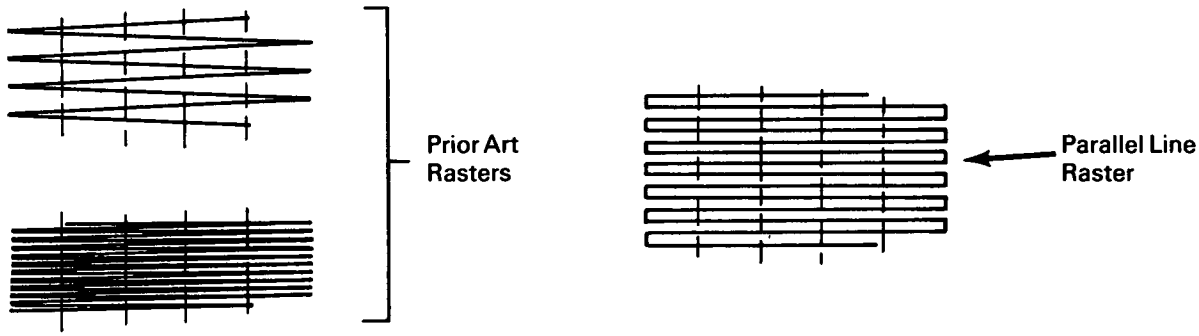
NASA TECH BRIEF

Parallel Line Raster Eliminates Ambiguities in Reading Timing of Pulses Less Than 500 μsec Apart



The problem:

The precision timing of events occurring less than 500 μsec apart for observation of hypervelocity phenomena. In prior art, sawtooth, marker, and triangle voltages were combined to provide ramp-type rasters where vertical responses tended to go together and were indistinguishable as to time separation.

The solution:

Generate a raster consisting of parallel horizontal lines instead of a triangular sweep.

How it's done:

A staircase waveform is generated by a blocking oscillator that is driven by a signal derived from the same crystal oscillator that drives the marker generator. Since the rise time of the staircase voltage is less than 50 nanoseconds, no appreciable "turn around time" error is introduced (provided the oscilloscope has a bandwidth of 10 megacycles or more). The parallel line raster uses a staircase vertical deflection instead of a ramp and eliminates the ambiguities in reading timing of pulses close to the end of each line.

Note:

Inquiries concerning this innovation may be directed to:

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Reference: B66-10386

Patent status:

No patent action is contemplated by NASA.

Source: Arthur P. Horne
(JPL-805)

Category 01