

Title (en)

Test apparatus for signal timing measurement.

Title (de)

Testgerät zur Signalzeitmessung.

Title (fr)

Appareil de test pour mesure de la temporisation des signaux.

Publication

EP 0053487 A1 19820609 (EN)

Application

EP 81305596 A 19811126

Priority

- US 21095080 A 19801128
- US 21116280 A 19801128

Abstract (en)

Test apparatus enables the relative timing of two signals picked up by probes 16, 18 to be determined. The two signals are fed, via switchable polarity and level changing circuitry 10, 11, 13, 14 to a simple flip-flop 12, which comprises two cross-coupled transistors plus two input transistors. With both inputs at 0, the flip-flop is in an abnormal state with both cross-coupled flip-flops in the same state. The first input signal to go to 1 causes the flip-flop to enter a corresponding one of its two normal states (the cross-coupled flip-flops in opposite states). Detection circuitry 24 and display means 15 signal this state. A low frequency bias oscillator 20 shifts the sloping transitions of one signal up and down relative to the other, changing their relative timing. For a part of each slow cycle dependent on the relative timings of the two signals, their effective timings at the flip-flop will be reversed. Hence the mean output from 24 will be dependent on the time difference between the two signals.

IPC 1-7

G04F 10/00; H03K 3/288

IPC 8 full level

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CPC (source: EP)

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Citation (search report)

- US 3641443 A 19720208 - ZERBY JOHN C
- US 3534271 A 19701013 - LOEWER HERBERT C
- US 2962609 A 19601129 - MACDONALD DUNCAN N
- GB 1242855 A 19710818 - HOURIE JOSEPH KIRKLEY [GB]
- US 3509381 A 19700428 - MARSHALL DONALD E JR, et al
- Instruments and Experimental Techniques, No. 1, January/February 1970, Plenum Publishing Corp. New York (US) S.S. KUZNETSKII et al.: "Phase-Metering Attachment for a Digital Frequency Meter" pages 156-159 * figures 1,3 *

Cited by

CN112947024A; US11537082B2; TWI381142B

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