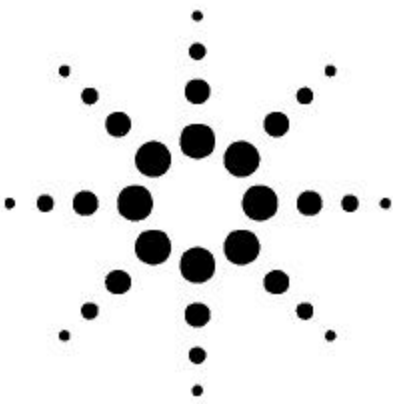


Agilent 5359A Time Synthesizer

Data Sheet



External trigger mode: Selects the delays from the sync out to the beginning of the output pulse, and the width of the output pulse.

Internal trigger mode: Selects the "period" or "frequency" and the width of the output pulse.

Events mode: Substitutes external input (to 100 MHz) for the internally counted clock (delay and width must both be specified in terms of events instead of time).

Triggering frequency mode: The same as internal frequency mode except the output is a burst beginning in synchronism with an external trigger signal, and continuing for the duration of this signal.

Calibration mode: Performs an internal calibration to remove the effects of internal delay differences.

Range

Delay Td: 0 ns to 160 ms

Width Tw: 5 ns to 160 ms (width and delay \leq 160 ms)

Period: 100 ns (or width +85 ns) min; 160 ms max

Frequency: Same as corresponding "period"

Measurement Characteristics

Repetition Rate: 10 MHz max

Accuracy: ± 1 ns \pm time base error (± 100 ps \pm time base error after external calibration)

Insertion Delay: Fixed at <150 ns; selectable as <50 ns for delays >100 ns

Jitter: Typical 100 ps rms; maximum 200 ps rms (delays to 10 ms)

Input/Output Characteristics

External Trigger Input: -2 V to +2 V, slope selectable

Sync Output: 1 V at 50 ohm; 5 V at 1 Mohm. Width 35 ns nominal

Output Pulse

Amplitude: 0.5 V to 5 V, into 50 ohm

Polarity: Positive or negative

Offset: -1 V to 1 V, or OFF

Transition time: < 5 ns

Note: External voltage must not be applied. Offset and Amplitude voltage into 50 ohm may be displayed.

Edge 1 and 2 Outputs (rear panel): Occur in Sync with leading edge of output pulse (same specification as Sync out)

HP-IB: All controls except trigger levels are programmable.

Time Base

High Stability Oven Oscillator

Frequency: 10 MHz

Aging rate: $< 5 \times 10^{-10}/\text{day}$

Temperature: $< 4.5 \times 10^{-9}$, 0° to 50°C

Line voltage: $< 1 \times 10^{-10}$, $\pm 10\%$ from nominal

Physical and Power Specifications

Size: 426 mm W \times 133 mm H \times 521 mm D (16.75 in \times 5.25 in \times 20.50 in)

Weight: 13.5 kg (30 lb)

Power Requirements: 100, 120, 220, or 240 Vac $+ 5\% - 10\%$, 48 to 66 Hz, less than 250 VA

Front Handles: Supplied with instrument