

7B10 and 7B15

7B15 Features:

Δ Time Measurements
with CRT Readout

Delayed Time Measurements
with CRT Readout

Vertical Trace Separation
between Two Delayed Sweeps

Both Feature:

0.2 ns/div to 0.2s/div Calibrated
Time Bases

Triggering to 1 GHz

Variable Trigger Holdoff

Peak-to-Peak Auto Triggering

The 7B10 and 7B15 are horizontal time bases designed for use with the 7104 Mainframe to provide optimum bandwidth/sweep-speed/compatibility, but may also be used with the 7700, 7800, and 7900 Series Mainframes. (Each may be used in any slower 7000 Series Mainframe with some reduction in sweep accuracy at the fastest sweep speed.)

The 7B10 and 7B15 or the 7B80 and 7B85 provide the Δ time measurement capability in addition to the standard delay time capability. Either time interval is digitally displayed on the CRT. A single intensified zone which you can position anywhere on the trace identifies the delay time interval (the time from the "A" or main sweep to the start of the intensified zone). Two intensified zones which you can position anywhere on a trace identify the Δ time interval (time between intensified zones). Alternate sweep switching makes it possible to display the information between the intensified zones full screen at the "B" sweep speed. By overlapping the two expanded waveforms, you are confident of the exact positioning of the intensified zones on the "A" sweep. This results in easy-to-make, precise and repeatable timing measurements.

By rotating the TRACE SEPARATION control out of the OFF position, the Δ time mode is activated. Two intensified zones can be independently positioned. As in the conventional delay mode, the DELAY TIME knob adjusts the time to the first intensified zone; the Δ TIME knob adjusts the time between the two intensified zones. Now, the CRT digital readout shows the Δ time between the two delays.

7B10



Delayed Time Base

Either plug-in can be used separately as an independent single time base, or they can be combined in any mainframe with two horizontal compartments for delaying and delayed operation.

CHARACTERISTICS

Sweep Rates — 0.2 s/div to 2 ns/div in 25 steps. X10 MAGNIFIER extends fastest calibrated sweep rate to 0.2 ns/div. The uncalibrated VARIABLE is continuous to at least 2.5 times the calibrated sweep.

Sweep Accuracy — Measured over the center 8 div, +15°C to +35°C, in the 7104, 7800 or 7900 Series Mainframe. Derate accuracies by an additional 1% for 0°C to +50°C.

Time/Div ^a	Unmagnified	Magnified
0.2 s/div to 10 ns/div	2%	3%
5 ns/div and 2 ns/div	3%	4%

^aFastest calibrated sweep rate is limited by 7800, 7800, 7700, 7600 and 7300 Series Mainframes.

Trigger Holdoff Time —

	Minimum	Maximum with VARIABLE
0.2 s/div to 50 ms/div	40 ms	400 ms
20 ms/div to 2 μs/div	X2 the TIME/Div Setting	X20 the TIME/Div Setting
1 μs/div to 0.5 μs/div	2 μs	20 μs
0.2 μs/div to 2 ns/div	2 μs	6 μs

Δ Time Range — 0 to at least 9 times TIME/DIV setting.

Δ Time Accuracy — Within 0.5% measurement plus 3 least significant digits) 20 ns/div to 100 ns/div.

7B15



Δ Delaying Time Base

Trace Separation Range — Functional only in Δ Delay Time mode when alternating or chopping between time-base units. The second delayed sweep display can be vertically positioned at least 3 div below the first delayed sweep display.

Delay Time Range — 0.2 or less to at least 9.0 times TIME/DIV setting.

Jitter — 0.02% of TIME/DIV setting up through 50 μs/div, 0.03% of TIME/DIV setting plus 0.1 ns for sweep speeds of 20 μs/div through 100 ns/div.

TRIGGERING

Triggering Sensitivity

Coupling	Triggering Frequency Range ^a	Minimum Triggering Signal Required	
		Internal	External
Ac	30 Hz to 250 MHz 250 MHz to 1 GHz	0.5 div 1.5 div	50 mV 150 mV
Ac Lf REJ ^b	50 kHz to 250 MHz 250 MHz to 1 GHz	0.5 div 1.5 div	50 mV 150 mV
Ac Hf REJ	30 Hz to 40 kHz	0.5 div	50 mV
Dc ^c	Dc to 250 MHz 250 MHz to 1 GHz	0.5 div 1.5 div	50 mV 150 mV

^aThe triggering frequency ranges given here are limited to the -3 dB frequency of the oscilloscope vertical system when operating in the internal mode.

^bWill not trigger on sinewaves at or below 60 Hz when amplitudes are < 8 divisions internal or 3 volts External.

^cThe Triggering Frequency Range for DC COUPLING applies to frequencies above 30 Hz when operating in the AUTO TRIGGERING MODE.

Single Sweep — Requirements are the same as for repetitive inputs.

Internal Trigger Jitter — 30 ps or less at 1 GHz.

Hf Sync Mode — 250 MHz to 1 GHz, 3 div internal and .75 mV external.

External Trigger Input — Max input voltage is 250 V (dc + peak ac) for 1 MΩ input, 1 W average for 50 Ω input. Input R and C to 1 MΩ input is 1 MΩ within 5%, 20 pF within 10%; for 50 Ω input, 50 Ω within 2%. Level range is at least ±3.5 V in EXT + 1.

ORDERING INFORMATION

7B10 Time Base

7B15 Delaying Time Base