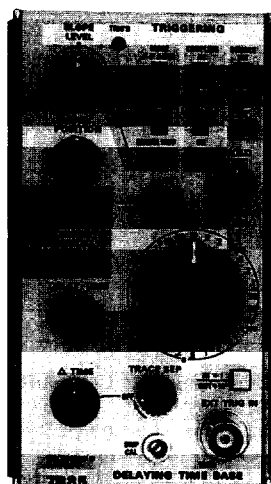




7B80 Delayed Time Base



7B85 Δ Delaying Time Base

7B80/7B85

- 1-ns to 5-s/Div Calibrated Time Bases
- Triggering to 400 MHz
- Variable Trigger Holdoff
- Peak-to-Peak Auto Triggering

7B85 Features:

- Δ Time Measurements With CRT Readout
- Delayed-Time Measurements With CRT Readout
- Vertical Trace Separation Between Two Delayed Sweeps

The 7B80 and 7B85 are horizontal time bases recommended for use with the 7800- or 7900-Series mainframes to provide optimum bandwidth/sweep-speed compatibility. (Each may be used in any slower 7000-Series mainframe with some reduction in sweep accuracy at the fastest sweep speed.)

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

Option 02 is appropriate where the user is making Y-T and X-Y measurements, and changing the amplifier frequently from the vertical to the horizontal compartment is not acceptable.

7000-SERIES TIME-BASE SELECTION GUIDE

Performance Feature	7B50A	7B53A	7B80	7B85	7B92A	7B10	7B15
Single time base	✓		✓	✓		✓	✓
Dual time base		✓			✓		
With mixed sweep		✓					
TV Sync Triggering		Opt 05					
Used also as delayed time base			✓			✓	
Delaying sweep				✓			✓
Δ Delay sweep				✓			✓
Display switching					✓		
Prices begin at	\$1,320	\$2,290	\$1,885	\$2,140	\$3,870	\$2,800	\$3,000

7000-SERIES TIME-BASE/MAINFRAME RECOMMENDATION

Mainframe	7B50A	7B53A	7B80	7B85	7B92A	7B10	7B15
7104/R7103					✓	✓	✓
7904A/R7903			✓	✓	✓	✓	✓
7844/R7844			✓	✓	✓	✓	✓
7934			✓	✓	✓	✓	✓
7854			✓	✓ ^{*1}	✓ ^{*1}	✓	✓ ^{*1}
7603/R7603	✓	✓					
7633/R7633							
7623A/R7623A	✓	✓					

^{*1} Single-sweep mode operable for real time only.

CHARACTERISTICS

Characteristics are common to both units unless otherwise noted.

MAIN SWEEP

Sweep Rates—Calibrated: 5 s to 10 ns/div in 27 steps (1-2-5 sequence). X10 Magnifier extends fastest calibrated sweep rate to 1 ns/div. Uncalibrated: Variable is continuous to at least 2.5 times the calibrated sweep rate.

Sweep Accuracy—Measured over the center eight divisions, +15 to +35 °C, in the 7800- or 7900-Series mainframe. Derate accuracies by an additional 1% for 0 to +50 °C.

Time/Div* ¹	Unmagnified	Magnified
5 to 1 s/div	4.0%	Unspecified
0.5 s to 50 ns/div	1.5%	2.5%
20 to 10 ns/div	2.5%	4.0%

*¹ Fastest calibrated sweep rate is limited by 7600-Series Mainframes.

Trigger Holdoff Time—Minimum holdoff setting: 2 times Time/Div setting or less for sweep rates 5 s to 1 μs/div; 2 μs or less for sweep rates 0.5 μs to 10 ns/div. Variable extends holdoff through at least 2 sweep lengths for 20-ms/div or faster sweep rates.

ΔTime Range—(7B85 only) 0 to at least 9.0 times Time/Div setting.

ΔTime Accuracy (+15 to +35 °C)—(7B85 only) 0.5 s to 50 ms/div: Within (0.5% of reading +0.1% full scale +1 count)*¹. 20 ms to 100 ns/div: Within (0.5% of reading +0.03% full scale +1 count)*¹.

*¹ Full scale equals ten times the Time/Div switch setting.

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

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

Delay Time Jitter—0.02% or less of Time/Div setting plus 0.1 ns.

TRIGGERING

External Trigger Input—Maximum Input Voltage: 250 V (dc + peak ac). Input R and C: 1 MΩ within 5% and 20 pF within 10%. Level Range (Excluding P-P Auto): At least ±1.5 V in Ext÷1, at least ±15 V in Ext÷10.

7B80 Option 02, X-Y Display Capability—A front-panel switch selects either normal-sweep displays or X-Y displays. In the X-Y mode, the X and Y signals are applied to the inputs of a dual-trace vertical amplifier or two single-trace vertical amplifiers. The X signal is routed via the amplifier/mainframe trigger path to the 7B80 Option 02, and then to the mainframe horizontal amplifier for display.

Single Sweep—Requirements are same as for repetitive signals.

Internal Trigger Jitter—0.1 ns or less at 400 MHz.

Triggering Sensitivity From Repetitive Signals (Auto and Norm Modes)

Coupling	Triggering Frequency Range* ¹	Min Signal Required	
		Int	Ext
AC	30 Hz to 50 MHz	0.3 div	50 mV
	50 to 400 MHz	1.5 div	250 mV
AC LF Rej* ²	30 kHz to 50 MHz	0.3 div	50 mV
	50 to 400 MHz	1.5 div	250 mV
AC HF Rej	30 Hz to 50 kHz	0.3 div	50 mV
DC* ³	DC to 50 MHz	0.3 div	50 mV
	50 to 400 MHz	1.5 div	250 mV

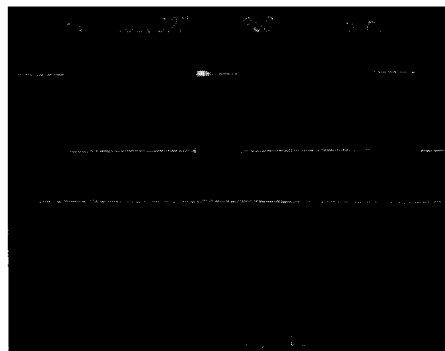
*¹ Triggering frequency ranges are limited to the frequency of the vertical system when operating in the Internal mode.

*² Will not trigger on sine waves of less than eight divisions Internal, or 3 V External, at or below 60 Hz.

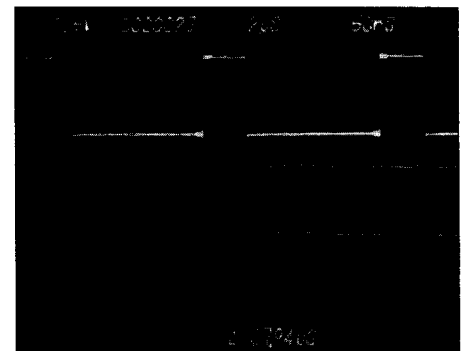
*³ Triggering Frequency Range for dc coupling applies to frequencies above 30 Hz when operating in the Auto Triggering mode.

Triggering Sensitivity in P-P Auto Mode

Coupling	Triggering Frequency Range	Min Signal Required	
		Int	Ext
AC or DC	Low Frequency Response: At least 50 Hz	2.0 div	500 mV
	200 Hz to 50 MHz	0.5 div	125 mV
AC or DC	50 to 400 MHz	1.5 div	375 mV



Delaying and delayed sweeps are shown with the mainframe selecting Alt sweep modes. The delay time to the start of the delayed sweep is digitally presented on the lower edge of the CRT.



With the mainframe still selecting Alt sweeps, delaying and both delayed sweeps are shown. The digital readout on the lower CRT edge shows the time between the two sweep delays. The Trace Separation knob is used to position the second delayed sweep below the first delayed sweep with up to three divisions of separation.

ORDERING INFORMATION

7B80 Time Base **\$1,885**
Includes: Instruction manual (070-1959-00).
Option 02—X-Y Display Capability. **+\$105**
7B85 Delaying Time Base **\$2,140**
Includes: Instruction manual (070-1961-01).