7T11

10 ps/div to 5 ms/div Calibrated Time Base

Random or Sequential Sampling

Equivalent or Real Time Sampling

No Pretrigger Required

The 7T11 Sampling Time Base provides equivalent-time and real-time horizontal deflection for single- or dual-trace sampling. Timing accuracy is within 3% and nonlinearity is well below 1%. Triggering range is from approximately 10 Hz (sequential mode) to above 12.4 GHz. The 7T11 is a companion unit to the 7S11.

CHARACTERISTICS

Time/Div Range — 10 ps/div to 5 ms/div (1-2-5 sequence) directly related to time position ranges. Uncalibrated Variable is continuous between steps to at least 4 ps/div.

Time Position Range — Equivalent time is 50 ns to 50 μs in four steps, real time is 0.5 ms to 50 ms in three steps.

Time/Div Accuracy — Within 3% for all time/div settings over center 8 cm.

TRIGGERING

Ext 50 Ω Input — Frequency range is dc to 1 GHz in 1X Trig Amp mode. Sensitivity range is 12.5 mV to 2 V p-p (dc to 1 GHz) in X1 Trig Amp, 1.25 mV to 2 V p-p (1 kHz to 50 MHz) in X10 Trig Amp. Input R is 50 Ω within 10%. Maximum input voltage is 2 V (dc + peak ac).

Ext 1 MΩ Input — Frequency range is dc to 100 MHz in X1 Trig Amp mode. Sensitivity range is 12.5 mV to 2 V p-p (dc to 100 MHz) in X1 Trig Amp, 1.25 mV to 2 V p-p (1 kHz to 50 MHz) in X10 Trig Amp. Input R is 1 MΩ within 5%. Maximum input voltage is 100 V p-p to 1 kHz (derating 6 dB per octave to a minimum 5 V p-p).

Ext HF Sync — Frequency range is 1 GHz to 12.4 GHz. Sensitivity range is 10 mV to 500 mV p-p. Input R is 1 MΩ. Maximum input voltage is 2 V p-p.

Int Trigger Source (Sinewave Triggering)*[1] — Frequency range is 5 kHz to 500 MHz in X1 Trig Amp; 5 kHz to 50 MHz in X10 Trig Amp. Sensitivity range is 125 mV to 1 V p-p (referred to the vertical input) in X1 Trig Amp; 12.5 mV to 1 V p-p (referred to the vertical input) in the X10 Trig Amp.

*[1] *Trigger circuits will operate to dc with pulse triggering, except for HF Sync.*

Random Mode Trigger Rate — 100 Hz minimum.

Display Jitter*[1]

Time Pos Range	Sequential Mode	Random Mode
50 μs to 500 ns	0.4 div or less	1 div or less
50 ns	10 ps	30 ps

*[1] *Measured under optimum trigger conditions with Time/Div switch clockwise.*

Pulse Out — Positive pulse amplitude at least 400 mV (into 50 Ω) with 2.5 ns risetime or less.

Trigger Kickout — 2 mV or less into 50 Ω (except HF SYNC).

Display Scan Rate — Continuously selectable from at least 40 sweeps/s to <2 sweeps/s.

External Scan — Deflection factor is continuously variable from 1 V/div to 10 V/div. Input R is 100 kΩ within 10%. Maximum input voltage is 100 V (dc + peak ac).

Sweep Out — 1 V/div within 2%. Source R is 10 kΩ within 1%.

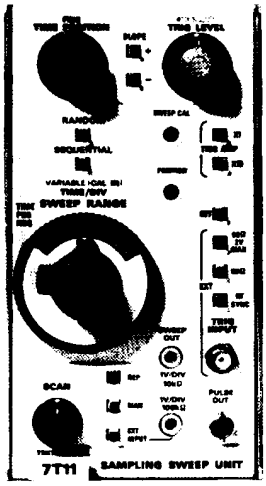
Ambient Temperature — Performance characteristics are valid over an ambient temperature range of 0°C to +50°C.

INCLUDED ACCESSORIES

42 in BNC 50 Ω cable (012-0057-01); 3 mm SMA male to BNC adaptor (015-1018-00); 10X 50 Ω attenuator (011-0059-02); 3 mm SMA male to GR874 adaptor (015-1007-00); instruction

Order 7T11 Sampling Sweep Unit

7T11

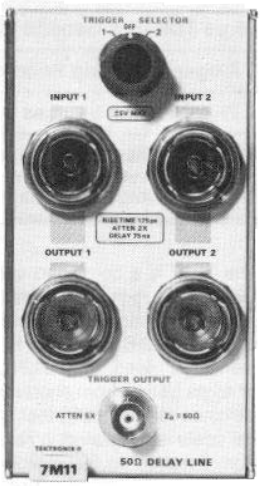


Sampling Sweep Unit

7S11

Sampling Unit

7M11



Delay Line

7S11

2 mV/div to 200 mV/div Calibrated Deflection Factors

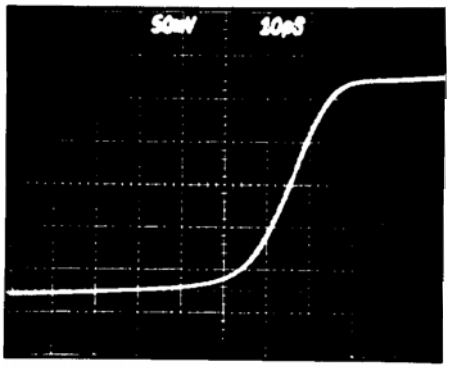
Plug-in Sampling Heads

The 7S11 is a single-channel sampling unit. The input configuration employs the sampling plug-in head concept. The heads, which mount in the 7S11, range in bandwidth from 350 MHz to 14 GHz.

The 7S11 can be used in a variety of combinations. Single-channel sampling uses one 7S11 with a 7T11 Time Base. Two 7S11s and one 7T11 provide dual-trace sampling. One 7S11 and one 7S12 provide dual-trace sampling. Two 7S11s can be used for X-Y operations.

CHARACTERISTICS

Deflection Factor — 2 mV/div to 200 mV/div in 7 steps (1-2-5 sequence), accurate within 3%. Uncalibrated Variable is continuous (extends deflection factor from 1 mV/div or less to at least 400 mV/div). Deflection factor is determined by the plug-in sampling head.
Bandwidth — Determined by the sampling head.
Input Impedance — Determined by the sampling head.
Dc Offset — Range, +1 V to −1 V or more. Offset out is 10X the offset voltage within 2%. Source R is 10 kΩ within 1%.
Delay Range — At least 10 ns for comparing two signals in a dual-trace application.
Memory Slash — 0.1 division or less at 20 Hz.
Vertical Signal Out — 200 mV per displayed div within 3%.
Ambient Temperature — Performance characteristics are valid over an ambient temperature range of 0°C to +50°C.
Included Accessory — Instruction manual.



7S11 and 7T11 Plug-ins together provide accurate measurements on repetitive signals. Pulse risetime of 21 ps shown.

Order 7S11 Sampling Unit
without Sampling Head

7M11

75 ns Time Delay

Selectable Trigger Out

175 ps Risetime

The 7M11 is a passive dual delay line for use with the 7000 Series Sampling System. In low-repetition-rate applications requiring the sequential mode of operation, the 7M11 provides the trigger source and signal delay necessary to view the triggering event at fast time-per-division settings.

Vertical delay for two 7S11 vertical sampling units is available with the dual 50 Ω, 75 ns delay lines. The closely matched (30 ps) lines have GR874 input-output connectors, 175 ps risetime, and 2X signal attenuation. Trigger selection is from either input, 5X attenuated, with a risetime of 600 ps or less.

CHARACTERISTICS

DELAY LINE

Time Delay — 75 ns within 1 ns.

Delay Difference — 30 ps or less between channels.

Risetime — 175 ps or less.

Attenuation — 2X within 2% into 50 Ω.

Input Impedance — 50 Ω within 2%.

Maximum Input — ±5 V (dc + peak ac).

TRIGGER OUTPUT

Risetime — 600 ps or less.

Attenuation — 5X within 10% into 50 Ω (referred to Input).

Output Impedance — 50 Ω within 10%.

Ambient Temperature — Performance characteristics are valid over an ambient temperature range of 0°C to +50°C.

INCLUDED ACCESSORIES

Ten inch BNC cable (012-0208-00); two 2 ns GR cables (017-0505-00); instruction manual.

Order 7M11 Delay Line