

The 485 Portable Oscilloscope.

SPECIFICATION

Introduction

The 485/R485 is a general-purpose, environmentalized, high-performance, portable, wide-band oscilloscope which has a dual-channel vertical amplifier with selectable input impedance (DC to 350 MHz bandwidth with 50 Ω input impedance; DC to 250 MHz bandwidth with 1 M Ω input impedance). The 485 has a 1 ns sweep rate, stable triggering to bandwidth limits and calibrated X-Y capabilities. Delayed sweep has calibrated delay time, can be triggered after delay and can be displayed with the intensified main sweep in an alternate sweep switching display. Additional features are X10, X100 probe scale factor readout, 8 div X10 div graticule area, small spot size and high writing rate. A 20 MHz bandwidth limiter, 1 MHz and 1 kHz fast-rise calibrator and autofocus are also included. The 50 Ω input is automatically disconnected from excessive voltages. An external trigger view feature is also provided. The 485-1 and 485-2 have no external trigger view. The 485-2 has only 50 Ω vertical input impedance.

ELECTRICAL CHARACTERISTICS

VERTICAL DEFLECTION SYSTEM (2 identical channels)

Selectable Input Impedance

50 Ω within 0.5%. VSWR \leq 1.25:1 on 5 mV/div and 10 mV/div, 1.15:1 from 20 mV to 5 V/div to 350 MHz.

1 M Ω within 1% paralleled by approximately 20 pF.

Bandwidth¹ and Risetime² (VARIABLE gain CALIBRATED³) From 50 Ω Terminated Source -15°C to $+35^{\circ}\text{C}$

From 50 Ω terminated source -15°C to $+35^{\circ}\text{C}$.

50 Ω DC to at least 350 MHz, 1 ns

1 M Ω DC to at least 250 MHz, 1.4 ns

¹ Bandwidth (BW) measured at -3 dB down.

² Risetime calculated from $0.35/\text{BW}$. From $+35^{\circ}\text{C}$ to $+55^{\circ}\text{C}$, BW is 300 MHz for 50 Ω and 200 MHz for 1 M Ω .

³ See Fig. 1-1 for effect of VARIABLE gain control.

Input Coupling Selection

AC; DC; GND (provides zero reference, precharges coupling capacitor, disconnects 50 Ω load in 50 Ω mode).

Lower -3 dB Point (AC coupling from 50 Ω source)

50 Ω input, 1 kHz or less.

1 M Ω input 1X, 10 Hz or less.

Deflection Factor

5 mV/div to 5 V/div in 10 calibrated steps (1-2-5 sequence), accurate within 2%. Uncalibrated, continuously variable between steps to at least 12.5 V/div. Lights at edge of knob skirts indicate correct deflection factor for 1X, 10X and 100X probes.

Gain can be recalibrated at front panel. 1 M Ω BAL is available at bottom panel to eliminate step attenuator shift above 10 mV/div, in the 1 M Ω mode.

Display Modes

Channel 1; Alternate; Chopped (approximately 1 MHz rate); Added; X-Y (CH 1 $-$ Y and CH 2 $-$ X); Channel 2 (+Up or Inverted).

Internal Trigger Source

Normal (displayed signal), Channel 1 or Channel 2 signal.

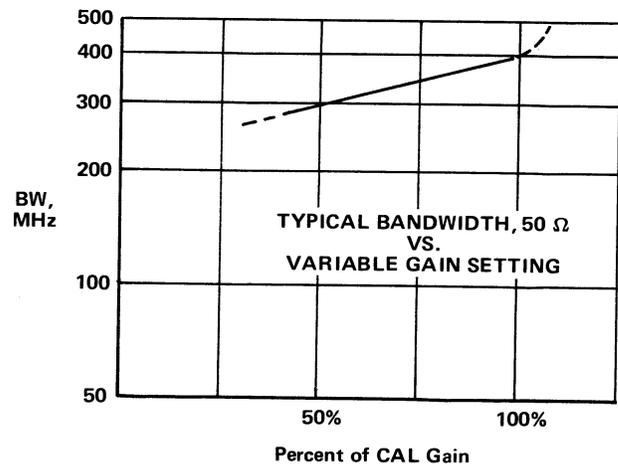


Fig. 1-1. Typical Bandwidth, 50 Ω vs. Variable Gain Setting