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Fig. 1-1. 475 Portable Oscilloscope.

475 Service (SN B250000 & up)

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SPECIFICATION

Introduction

The 475 Oscilloscope is a 200 megahertz bandwidth portable instrument designed to operate in a wide range of environmental conditions. The lightweight, compact design combines accurate high-frequency measurement capability and ease of transportation.

The dual-channel, DC-to-200 megahertz vertical deflection system provides calibrated deflection factors from 2 millivolts to 5 volts/division. A BW/TRIG VIEW switch permits limiting the bandwidth of the vertical system to reduce interference from high-frequency signals when viewing lower-frequency, low-level signals. The switch also permits displaying of the signal applied to the 'A' Trigger Generator on the CRT.

The trigger circuits provide stable sweep triggering to beyond the 200 megahertz bandwidth of the vertical deflection system. Separate controls are provided to select the desired mode of triggering for the A and B sweeps. The A sweep can be operated in one of three modes; automatic triggering, normal triggering, or single sweep. A variable trigger holdoff control permits the A

sweep to trigger in a stable manner on aperiodic signals or complex digital words. The horizontal deflection system has calibrated sweep rates from 0.5 second to 0.01 microsecond/division. A X10 magnifier increases each sweep rate by a factor of 10 to provide a maximum sweep rate of one nanosecond per division in the .01 μ s position. The delayed and mixed sweep features allow the start of B sweep to be delayed a selected amount from the start of A sweep to provide accurate relative-time measurements. Calibrated X-Y measurements can be made with Channel 2 providing the vertical deflection and Channel 1 providing the horizontal deflection (TIME/DIV switch fully counterclockwise and VERT MODE switch to CH 2). Regulated DC power supplies provide stable instrument performance over a wide range of line voltages and frequencies. Maximum power consumption of the instrument is approximately 100 watts.

Characteristics

The following instrument specifications apply over an ambient temperature range of -15°C to $+55^{\circ}\text{C}$ unless otherwise specified. Warmup time for specified accuracies is 20 minutes. The calibration procedure given in Section 6, if performed completely, will ensure the instrument meets the electrical characteristics listed in this section.