

SCANNED BY K6AET

LAMPKIN 205D



FEATURES

Peak-reading indication of modulation (permits optimum transmitter deviation adjustment within FCC legal limitations)

Three deviation scales:

- 0 - 2.0 kHz (for tone squelch, etc.)
- 0 - 6.0 kHz (for upper readings at 5 kHz)
- 0 - 20.0 kHz (for wideband modulation)

No zero shift when changing scales

Adjustable audio level (approx. 1 watt at 5 kHz)

All controls on the front panel

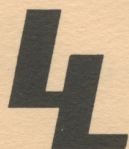
FM DEVIATION METER

The Lampkin 205D FM Deviation Meter measures the maximum deviation of FM signals over a transmitted carrier frequency range of 25 to 1000 MHz. It is a precise but rugged instrument which can be used in either the shop or the field to determine whether transmitter modulation conforms to FCC requirements. The unit can even be calibrated and adjusted in the field, if necessary. The RF sensitivity at the instrument terminals averages 15 mV or better up to the 450-MHz mobile band.

The Lampkin 205D is extremely easy to operate and requires no charts, tables, or calibration curves. With just a few minor adjustments the maximum deviation can be read directly on the front-panel meter to an accuracy of 5% or better.

APPLICATIONS

The Lampkin 205D is primarily designed for measuring the deviation due to modulation on mobile transmitters. Because of its low-cost, simple operation, and high reliability, it has been found to be equally effective in checking out two-way radios in police cars, taxi cabs, fire trucks, mobile service trucks and other land-based vehicles, as well as ship-to-shore radios. Since it measures the sum of the modulating audio signal, and the PL (Private Line identification) signal, both can be measured simultaneously without danger of exceeding the 5-kHz FCC limitation.



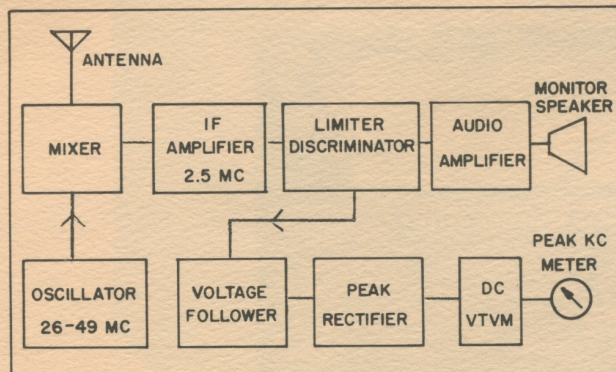
LAMPKIN LABORATORIES, INC.

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FM DEVIATION METER

OPERATION



Block Diagram of Type 205D FM Modulation Meter.

As shown in the block diagram, the Lampkin 205D contains a mixer, conversion oscillator, IF amplifier, limiter, discriminator, monitor-speaker amplifier, and a peak-reading VTVM. The mixer incorporates a special Lampkin ratio-coupled oscillator (a variable-frequency oscillator with crystal stability). As the conversion oscillator is tuned between 26 and 49 MHz,

its output combines with the transmitted signal entering the mixer and forms "beat" signals which are amplified by the IF amplifier when the oscillator's fundamental frequency, or one of its harmonics, comes within 2.5 MHz of the transmitted signal. After the signal is limited to a constant voltage by the limiter, it is fed to a precision discriminator which is linear within 2% over a 100 kHz band. The discriminated signal corresponding to the original FM modulation signal is read by the peak voltmeter directly in PEAK kHz. The zero setting and the sensitivity of the peak voltmeter are constant within 2% for line voltages of $\pm 10\%$, and the audio frequency response is flat within 2 db from 50 to 10,000 Hz. The RF sensitivity at the instrument terminals averages 15 mV or better in the 30, 150, and 450 MHz mobile bands; the FM limiting holds within 5% or less over a 100-to-1 range of input voltage. A 3½" loudspeaker and a jack for headphones permits checking the quality of modulation. An oscilloscope output jack is provided for VISUAL monitoring with your own shop scope.

SPECIFICATIONS

TRANSMITTER CARRIER FREQUENCY RANGE: 25 to 1000 MHz, continuous tuning.

ACCURACY: 5% or better.

RF INPUT SENSITIVITY: Average 15 mV up to the 450 MHz band.

MODULATION INDICATION: 1. Visual peak reading on three scales — 0 — 2.0 kHz; 0 — 6.0 kHz; 0 — 20.0 kHz. 2. Audio on internal speaker monitor. 3. Scope with scope-monitor jack.

DISCRIMINATOR LINEARITY: $\pm 2\%$ over pass band of 100 kHz.

PEAK VOLTMETER DRIFT: Zero setting and sensitivity constant within 2% for line-voltage fluctuations of $\pm 10\%$.

AUDIO FREQUENCY RESPONSE: Flat within 2 db from 50 to 10,000 Hz.

POWER: 115 volts, 50 to 400 Hz or 12 vdc @ 150 ma.

SIZE: 5½ x 12" x 9" deep.

WEIGHT: Net wt. less than 5 lbs.; shipping wt. less than 10 lbs.

FRONT-PANEL CONTROLS: Coarse/fine tuning knobs; 3-position function switch; modulation-polarity switch; 0-100 tuning dial scale; loudspeaker; 2.0 kHz, 6.0 kHz, 20 kHz scale switch; PEAK kHz meter; volume control and power on-off switch. BNC coaxial input connector and oscilloscope jack at back of case.

GUARANTEE: One year from date of sale for all materials and workmanship.

MANUFACTURERS OF PRECISION COMMUNICATIONS TEST EQUIPMENT SINCE 1932



LAMPKIN LABORATORIES, INC. • 8400 Ninth Ave. N.W. • Bradenton, Florida 33505