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DEPARTMENT OF THE ARMY TECHNICAL BULLETIN

CALIBRATION PROCEDURE FOR POWER METER, HEWLETT-PACKARD MODELS 431B AND 431C (AN/USM-260)

Headquarters, Department of the Army, Washington, DC
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*This bulletin supersedes TB 9-6625-086--35, 31 December 1974.

SECTION I
IDENTIFICATION AND DESCRIPTION

1. Test Instrument Identification. This bulletin provides instructions for the calibration of Power Meter, Hewlett-Packard Models 431B and 431C (AN/USM-260). The manufacturer's instruction manual was used as the prime data source in compiling these instructions. The equipment being calibrated will be referred to as the "TI" (test instrument) throughout this bulletin.

a. Model Variations. Variations among models are described in text.

b. Time and Technique. The time required for this calibration is approximately 1 hour, using the microwave or dc low technique.

2. Calibration Data Card, DA Form 2416. Forms, records, and reports required for calibration personnel at all levels are prescribed by TB 750-25. DA Form 2416 must be annotated in accordance with T750-25 for each calibration performed.

3. Calibration Description. TI parameters and performance specifications which pertain to this calibration are listed in table 1.

Table 1. Calibration Description

Test instrument parameters	Performance specifications
Zero carryover	Less than 0.5% of FS when zeroed on most sensitive scale
Range	0.01 to 10 mw in 7 ranges: -20 to +10 dBm in 5 -dBm steps
Accuracy	Model 431C From +20°C to +35°C - .01 mw range, ±2% of FS, .03 mw range, ±1.5% of FS; all other ranges, ±1% of FS. From 0°C to +55°C, ±3% of FS on all ranges. Model 431B From +20°C to +35°C, ±3% of FS on all ranges. From 0°C to +55°C, ±5% of FS on all ranges.

SECTION II
EQUIPMENT REQUIREMENTS

4. Equipment Required. Table 2 identifies the specific equipment used in this calibration procedure. This equipment is issued with the secondary transfer calibration standards sets 6695-00-621-7877 and 4931-00-525-8175 and maintenance calibration shelter AN/TSM-55. Alternate items may be used by the calibrating activity when the equipment listed in table 2 is not available. The items selected must be verified to perform satisfactorily prior to use and must bear evidence of current calibration. The equipment must meet or exceed the minimum use specifications listed in table 2. The accuracies listed in table 2 provide a four-to-one accuracy ratio between the standard and TI. Where the four-to-one ratio cannot be met, the actual accuracy of the equipment selected is shown in parenthesis.