

TB 9-6625-1200-35

CHANGE 1

DEPARTMENT OF THE ARMY TECHNICAL BULLETIN

CALIBRATION PROCEDURE FOR OSCILLOSCOPE TEKTRONIX, TYPES 422 AND 422MOD125B

Headquarters, Department of the Army, Washington, DC
23 February 2005

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REPORTING OF ERRORS AND RECOMMENDING IMPROVEMENTS

You can improve this manual. If you find any mistakes or if you know of a way to improve these procedures, please let us know. Mail your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028, directly to Commander, U.S. Army Aviation and Missile Command, ATTN: AMSAM-MMC-MA-NP, Redstone Arsenal, AL 35898-5000. A reply will be furnished to you. You may also provide DA Form 2028 information to AMCOM via e-mail, fax, or the World Wide Web. Our FAX number is: DSN 788-6546 or Commercial 256-842-6546. Our e-mail address is: 2028@redstone.army.mil. Instructions for sending an electronic 2028 may be found at the back of this manual. For the World Wide Web, use: <https://amcom2028.redstone.army.mil>.

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*This bulletin supersedes TB 9-6625-1200-35, 22 September 1983 including all changes.

SECTION I IDENTIFICATION AND DESCRIPTION

1. Test Instrument Identification. This provides bulletin instructions for the calibration of Oscilloscope, Tektronix, Types 422 and 422MOD125B. The manufacturer's manuals were used as the prime data sources in compiling these instructions. The equipment being calibrated will be referred to as the TI (test instrument) throughout this bulletin.

a. Model Variations. None that effects calibration.

b. Time and Technique. The time required for this calibration is approximately 3 hours, using the dc and low frequency technique.

2. Forms, Records, and Reports

a. Forms, records, and reports required for calibration personnel at all levels are prescribed by TB 750-25.

b. Adjustments to be reported are designated (R) at the end of the sentence in which they appear. When adjustments are in tables, the (R) follows the designated adjustment. Report only those adjustments made and designated with (R).

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
Power input requirement	115 V ac $\pm$ 10% at 50 to 400 Hz
Vertical sensitivity	Range: 0 to 20 V/div Accuracy: $\pm$ 3%, X1 $\pm$ 4% for channel 2 in X10 GAIN position ($\pm$ 7.5% for S/N below 20,000)
Calibrator: Internal	Range: 0.2 V square wave Accuracy: $\pm$ 1.6% for S/N below 20,000 $\pm$ 2.5% for S/N above 20,000
Calibrator jack	Range: 2 V square wave Accuracy: $\pm$ 3.6% for S/N below 20,000 $\pm$ 1.5% for S/N above 20,000
Risetime	24 ns or less with aberrations of $\pm$ 0.15 div or less
Sweep timing	Range: 0.5 μ s to 0.5 s/div Accuracy: $\pm$ 3% $\pm$ 5% in X10 MAG

SECTION II EQUIPMENT REQUIREMENTS

4. Equipment Required. Table 2 identifies the specific equipment to be used in this calibration procedure. This equipment is issued with Secondary Transfer Calibration Standards Set AN/GSM-286, AN/GSM-287, or AN/GSM-705. Alternate items may be used by the calibrating activity. 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 ratio between the standard and TI.

5. Accessories Required. The accessories required for this calibration are common usage accessories, issued as indicated in paragraph 4 above, and are not listed in this calibration procedure.

Table 2. Minimum Specifications of Equipment Required

Common name	Minimum use specifications	Manufacturer and model (part number)
OSCILLOSCOPE CALIBRATOR	Voltage output: Range: 10 mV to 5 V Accuracy: $\pm 0.25\%$ Time markers: 0.5 ns to .5 s Leveled sine wave: Range: 10 mV to 3 V p-p Frequency: 10 Hz to 150 MHz Accuracy: $\pm 0.25\%$	(MIS38938) John Fluke, Model 5820A (5820A-5C-GHz)
MULTIMETER	Range: 0V to -12V Accuracy: $\pm 0.25\%$	John Fluke, Model 8840A/AF-05/09 (AN/GSM-64D)

SECTION III CALIBRATION PROCESS

6. Preliminary Instructions

a. The instructions outlined in paragraphs 6 and 7 are preparatory to the calibration process. Personnel should become familiar with the entire bulletin before beginning the calibration.

b. Items of equipment used in this procedure are referenced within the text by common name as listed in table 2

c. Unless otherwise specified, verify the result of each test and, whenever the test requirement is not met, take corrective action before continuing with the calibration. Adjustments required to calibrate the TI are included in this procedure.

d. Unless otherwise specified, all control and control settings refer to the TI.