

Texas Instruments TI86GRAPHICS

Texas Instruments TI-86 Graphing Calculator User Manual

Model: TI86GRAPHICS

1. INTRODUCTION

This manual provides comprehensive instructions for the operation, maintenance, and troubleshooting of your Texas Instruments TI-86 Graphing Calculator. Designed for advanced mathematics, engineering, and science students, the TI-86 offers powerful graphing capabilities, extensive memory, and a user-friendly interface for complex calculations.

2. SETUP AND INITIAL USE

2.1. Unpacking and Inspection

Carefully remove the calculator from its packaging. Inspect the device for any signs of damage. Ensure all components, including the calculator unit and slide cover, are present.

2.2. Battery Installation

The TI-86 requires four AAA batteries for operation. To install or replace batteries:

1. Locate the battery compartment on the back of the calculator.
2. Slide the battery cover off.
3. Insert four fresh AAA batteries, ensuring correct polarity (+/-).
4. Replace the battery cover securely.



Figure 2.2.1: Rear view of the TI-86 Graphing Calculator, showing the battery compartment. This is where the four AAA batteries are inserted for power.

Note: Always use fresh, high-quality alkaline batteries for optimal performance. If the screen appears dim or unreadable, replace the batteries.

2.3. Initial Power On

Press the **ON** button located at the bottom left of the keypad to power on the calculator. The home screen should appear.

3. OPERATING INSTRUCTIONS

This section covers the basic and advanced functions of the TI-86 Graphing Calculator.

3.1. Keypad Layout

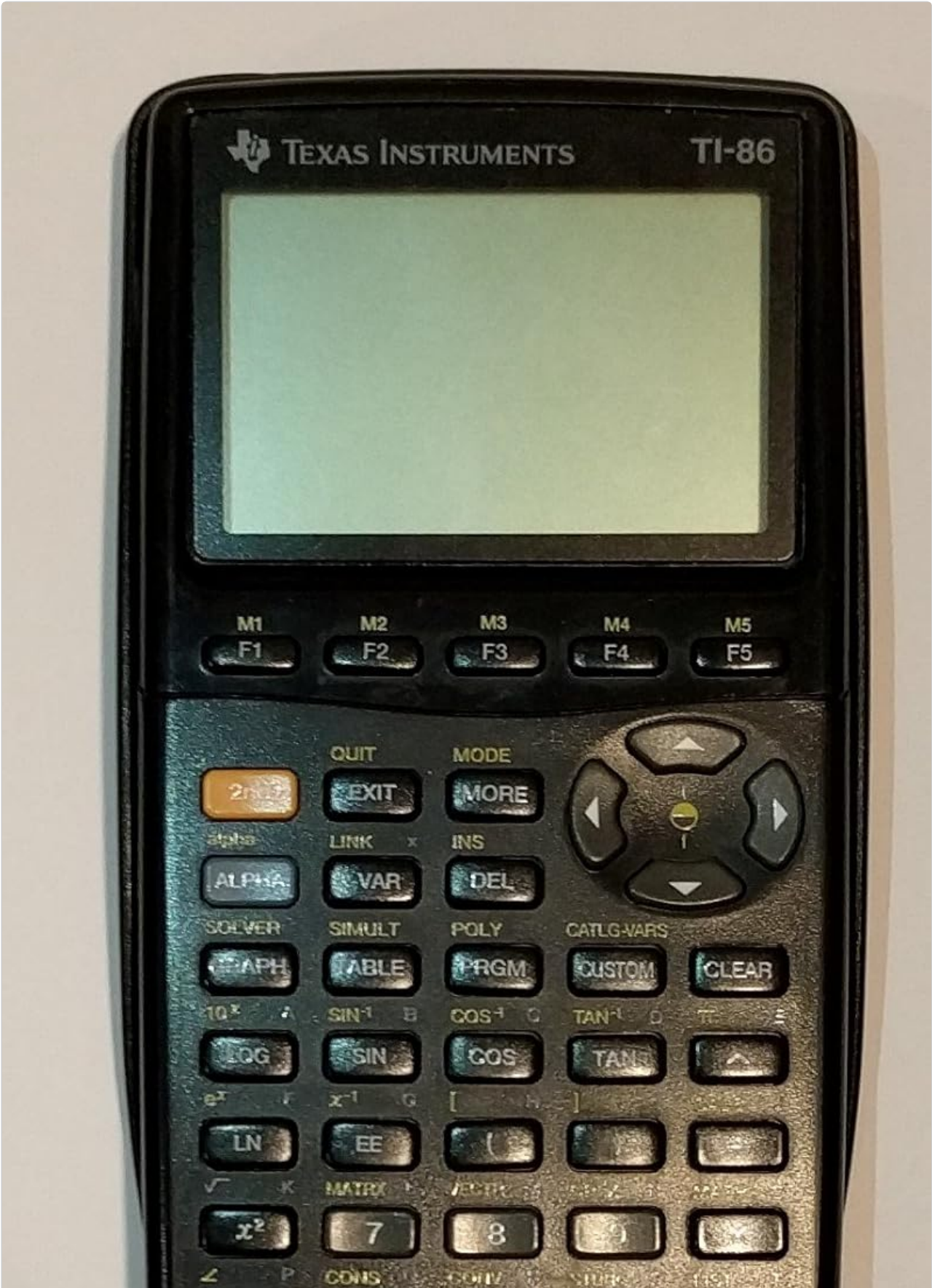




Figure 3.1.1: Front view of the TI-86 Graphing Calculator, displaying the screen and keypad layout. Key functions are organized for efficient input.

The TI-86 keypad is organized into several functional areas:

- **Graphing Keys:** Located at the top, these keys (F1-F5) correspond to on-screen menu options.
- **Navigation Pad:** Arrow keys for cursor movement and menu selection.
- **Function Keys:** Keys like **2nd** and **ALPHA** activate secondary and alphabetic functions printed above other keys.
- **Mathematical Operations:** Standard arithmetic, trigonometric, logarithmic, and calculus functions.
- **Number Pad:** Numeric input keys.

3.2. Basic Calculations

To perform basic arithmetic:

1. Enter the first number.
2. Press the desired operation key (+, -, *, /).
3. Enter the second number.
4. Press **ENTER** to display the result.

3.3. Graphing Functions

The TI-86 supports various graphing modes. To graph a function:

1. Press **GRAPH**.
2. Select **y(x)=** to enter function definitions.
3. Input your function(s) using the variable **x** (accessed via **ALPHA** then **STO>**).
4. Press **GRAPH** again to display the graph.

Adjust the viewing window by pressing **WINDOW** and setting appropriate Xmin, Xmax, Ymin, and Ymax values.

3.4. Advanced Features

- **Matrix Operations:** Access matrix functions via the **MATRIX** key. The TI-86 features a matrix editor for two-dimensional viewing and editing.
- **List Editor:** Manage multiple lists and attach formulas for automatic computations.
- **Calculus Features:** Perform integration, derivatives, find minimums, maximums, roots, and arcs.

- **Programming:** Supports Z80 assembly language programming and custom machine language programs.

4. MAINTENANCE

4.1. Cleaning

To clean the calculator, use a soft, dry cloth. For stubborn marks, slightly dampen the cloth with water. Avoid using harsh chemicals or abrasive cleaners, as these can damage the screen or casing.

4.2. Storage

When not in use, store the calculator in its slide cover to protect the screen and keys from dust and scratches. Avoid exposing the calculator to extreme temperatures, humidity, or direct sunlight for extended periods.

4.3. Battery Replacement

Replace batteries when the screen display becomes dim or the calculator fails to power on. Refer to section 2.2 for battery installation instructions. Remove batteries if the calculator will not be used for an extended period to prevent leakage.

5. TROUBLESHOOTING

Problem	Possible Cause	Solution
Calculator does not turn on.	Dead or incorrectly installed batteries.	Replace batteries, ensuring correct polarity.
Screen is dim or unreadable.	Low battery power.	Replace batteries. Adjust display contrast (refer to the full user guide for specific key combinations).
Calculator freezes or behaves erratically.	Software glitch or memory issue.	Press the RESET button (usually a small hole on the back, requiring a paperclip). This will clear memory.
Graph does not appear correctly.	Incorrect window settings or function entry.	Check WINDOW settings. Verify function syntax in y(x)= .

6. SPECIFICATIONS

- **Model:** TI-86 (TI86GRAPHICS)
- **Brand:** Texas Instruments
- **Display:** 64 x 128 high-contrast pixel screen, 8 lines x 21 characters
- **Memory:** 128KB RAM (96KB user-available)
- **Power Source:** 4 AAA batteries (included)
- **Dimensions:** 7.3 x 3.5 x 1 inches (approx.)
- **Weight:** 8.7 ounces (approx.)
- **Connectivity:** Input/output port for linking to other TI-86/TI-85 calculators, CBLs, CBRs, and computers.
- **Key Features:** Graphing functions, powerful calculus features, function evaluation table, matrix editor, list editor, Z80 assembly language support.


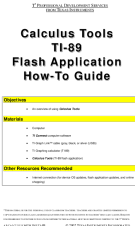
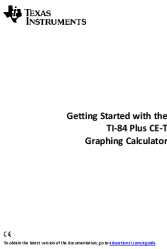
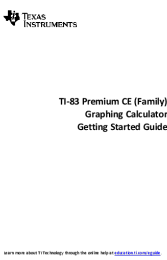
7. WARRANTY AND SUPPORT



For warranty information and technical support, please refer to the official Texas Instruments website or contact their customer service department. The full user manual in PDF format is available for download from the manufacturer's support page.

Official User Manual (PDF): [Download Here](#)



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