

DollaTek T86 Link

DollaTek T86 Link ARM OB Debugger Emulator Programmer User Manual

1. INTRODUCTION

The DollaTek T86 Link is an ARM OB Debugger Emulator Programmer designed for debugging and downloading firmware to ARM core microcontrollers. It facilitates communication between a PC via USB and a target device using JTAG or SWD interfaces. This device is a cost-effective and comprehensive solution for development and evaluation, offering full compatibility with conventional debugging functionalities.

Traditionally, OB (On-Board) debuggers are integrated directly onto evaluation boards, limiting their use to specific hardware. The DollaTek T86 Link provides a standalone solution, allowing for flexible debugging and programming across various ARM-based projects.

2. KEY FEATURES

- **Communication Support:** Supports JTAG, SWD, and SWO (Serial Wire Output) communication protocols.
- **Interference Prevention:** Designed to prevent interference from other external debugging circuits.
- **Broad Compatibility:** Compatible with most ARM core development environments, including Keil and IAR.
- **Integrated Protection:** Equipped with a self-recovering fuse for enhanced safety.
- **Interface:** Features a microUSB interface for PC connection.
- **Reliable Design:** The integrated circuit is simple, stable, reliable, and practical.

3. SETUP GUIDE

3.1 Package Contents

Verify that your package contains the DollaTek T86 Link ARM OB Debugger Emulator Programmer unit and any accompanying connection cables.

3.2 Physical Connection

1. **Connect to PC:** Use a microUSB cable to connect the T86 Link to your computer.
2. **Connect to Target Device:** Identify the JTAG or SWD pins on your target ARM microcontroller board.

Connect the corresponding pins from the T86 Link to your target device. Common connections include:

- **SWDIO:** Serial Wire Data Input/Output
- **SWCLK:** Serial Wire Clock
- **GND:** Ground
- **VCC (Optional):** If the T86 Link is used to power the target, connect VCC. Note that the module can supply 3.3V.



Figure 3.2.1: Top view of the DolaTek T86 Link with connected wires, showing the microUSB port and pin headers.



Figure 3.2.2: Bottom view of the DollaTek T86 Link, clearly labeling the SWDIO, SWCLK, and GND pins for connection.

3.3 Driver Installation

Upon connecting the T86 Link to your PC, the operating system may automatically install necessary drivers. If not, you may need to manually install drivers compatible with generic J-Link OB devices. Refer to the documentation of your chosen development environment (e.g., Keil, IAR) for specific driver requirements and installation procedures.



Figure 3.3.1: The DollaTek T86 Link connected to a blue USB cable, illustrating a typical setup for PC connection.

4. OPERATING INSTRUCTIONS

4.1 Debugging ARM Cores

1. Ensure the T86 Link is correctly connected to both your PC and the target ARM board.
2. Open your preferred Integrated Development Environment (IDE) such as Keil uVision or IAR Embedded Workbench.
3. Configure the debugger settings within your IDE to use a J-Link compatible debugger. The T86 Link functions as an OB-Link debugger.
4. Load your project's firmware onto the target device using the IDE's download or flash programming function.
5. Initiate the debugging session. You can set breakpoints, step through code, inspect variables, and monitor registers.

4.2 Firmware Downloading

For simply flashing firmware without debugging, follow steps 1-4 from the debugging instructions. The T86 Link will facilitate the transfer of your compiled code to the ARM microcontroller's flash memory.



Figure 4.2.1: The DollaTek T86 Link with various colored jumper wires, indicating its readiness for connection to a target device.

5. MAINTENANCE

- **Storage:** Store the device in a dry, dust-free environment when not in use.
- **Cleaning:** Use a soft, dry cloth to clean the device. Avoid using liquids or abrasive cleaners.
- **Handling:** Handle the T86 Link with care to prevent damage to the circuit board or connectors. Avoid excessive force when connecting or disconnecting cables.
- **Cable Integrity:** Regularly inspect USB and jumper cables for signs of wear or damage. Replace damaged cables immediately to ensure reliable operation.

6. TROUBLESHOOTING

- **Device Not Recognized by PC:**
 - Ensure the microUSB cable is securely connected to both the T86 Link and the PC.
 - Try a different USB port on your PC.
 - Verify that the necessary drivers are installed. If not, attempt manual installation or update.
- **Cannot Connect to Target Device:**
 - Double-check all JTAG/SWD connections (SWDIO, SWCLK, GND, VCC if applicable) for correct pinout and secure contact.
 - Ensure the target device is powered correctly.
 - Verify that the target microcontroller is compatible with J-Link OB debugging and the selected communication protocol (JTAG/SWD).
 - Check your IDE's debugger configuration to ensure it matches the target's settings (e.g., clock speed, interface type).
- **"The connected JLink does not support SWD Multidrop" Error:**

- This specific error indicates a limitation with certain target microcontrollers, such as some Raspberry Pi RP2040 chips, regarding SWD Multidrop functionality. The T86 Link, as an OB-Link type debugger, may not support this advanced feature.
- There is typically no firmware update available for these types of OB-Link devices to add such functionality. Consider alternative debugging methods or hardware if SWD Multidrop is required for your specific target.

• **Firmware Download Fails:**

- Confirm that the firmware image is valid and correctly compiled for your target architecture.
- Ensure sufficient power supply to the target device during the flashing process.
- Check for any write protection or security settings on the target microcontroller that might prevent flashing.

7. SPECIFICATIONS

Feature	Specification
Brand	DollaTek
Model	T86 Link
Communication Protocols	JTAG, SWD, SWO (Serial Wire Output)
PC Interface	MicroUSB
Protection	Self-recovering fuse
Compatibility	Most ARM core development environments (e.g., Keil, IAR)
Manufacturer	DollaTek
ASIN	B07PQPF22L
Date First Available	April 17, 2022

8. WARRANTY AND SUPPORT

Specific warranty information for the DollaTek T86 Link is not provided in the product details. For support or warranty inquiries, please contact your retailer or the manufacturer, DollaTek, directly. Keep your proof of purchase for any potential claims.

ASK A QUESTION ABOUT THIS MANUAL

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page’s manual context to help answer it.

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Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question