Low Cost, Real Time Emulator Series for ST7

DATA BRIEF

The ST7-DVP3 series emulator is the third generation of low cost emulators, providing powerful, affordable development solutions that included everything you need for real-time emulation, In-Circuit Debugging (ICD) and In-Circuit Programming (ICP) of your ST7 microcontroller.

In combination with ST7 Visual Develop (STVD7) and ST7 Visual Programmer (STVP7), the DVP3 series emulators allow you to build and debug your application, then program it to the ST7 on your application board. STVD7 and STVP7 are free software tools developed by ST Microelectronics.

The ST7-DVP3 series emulators offer start-to-finish control of application development by providing both emulation and In-Circuit Communication (ICC) configurations from a single platform.

In the emulation configuration, the DVP3 emulator and STVD7 software allow you to debug your program while connected to your application board in place of your target ST7.

The ICC configuration allows you to In-Circuit Debug (ICD) your application while it runs on the ST7 on your application board, and to In-Circuit Program (ICP) your ST7 microcontrollers.

Emulator Architecture

For affordability and flexibility, the DVP3 series emulators have a modular design based on a common Main Emulation Board and ST7 family-specific Target Emulation Boards.

Main Emulation Board – Provides the communication interface with the host PC via parallel or USB connection when working in both the Emulation and ICC configurations. Any Main Emulation Board for the DVP3 series can be adapted to emulate a supported ST7 with the appropriate Target Emulation Board and Connection kit. This board also includes the system's ICC connection, which allows you to connect to the ST7 on your application board via a 10-pin ICC cable and an ICC connector that you install on your application board.
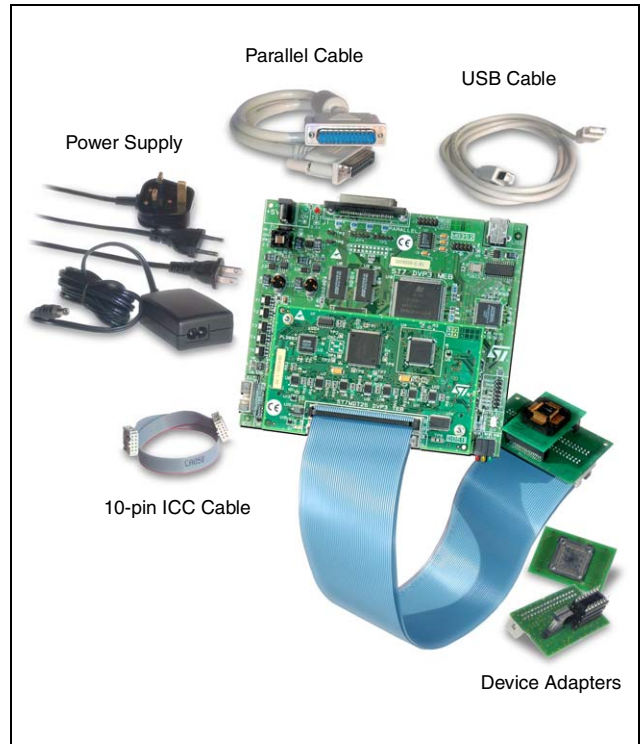

Figure 1: ST7-DVP3 Emulator

Target Emulation Board – Allows the system to emulate a specific family of ST7 devices. It connects to your application board via the adapters and sockets furnished in Connection kits, which are specific to the package of the target device.

Connection Kits – Provide the package-specific adapters and sockets/connectors that allow connection to your application board in place of the target ST7.

ST7 Visual Develop – Integrated development environment (IDE) that runs on the host PC connected to the emulator and allows you to build and debug your application software and then program it to your target ST7.

ST7 Visual Programmer – Software programming interface that runs on the host PC connected to the emulator and allows you to program the application to your ST7.

Emulation Features

In the emulation configuration the ST7-DVP3 emulator provides a complete range of debugging features, including:

- Real-time debugging
- Up to 64 Kbytes of breakpoints with counter and condition
- Output trigger
- External input trigger

- 512 record trace with filtering capability
- Emulation at 3.3 or 5 V
- Programmable Clock frequency up to 16 MHz
- Hardware Test feature for emulator troubleshooting

Ordering a DVP series emulator

Because of the modularity of the DVP3 series emulators it is possible to order just the components that you need to emulate your target ST7, including:

- **DVP3 emulator** – *ST7MDTxx-DVP3* part numbers are for ordering an emulator and target emulation board. DVP3 emulators do not include connection kits for all supported packages.
- **Target Emulation Board (TEB)** – when adapting a DVP3 to emulate another ST7 family, the *ST7MDTxx-TEB/DVP* part numbers are for ordering the appropriate TEB. The TEB does not include connection kits for all supported packages.
- **Adapter kit** – *ST7MDTxx-xxx/DVP* part numbers are for ordering the package-specific *Adapter kits* for a DVP3.

Note: *Sockets are provided in the connection kits. However, socket part numbers (AS-xxxx) can be used to order additional or replacement sockets as required.*

Main Emulation Board
Target Emulation Board

☐ + ▥ **ST7MDTxx-DVP3**
▥ **ST7MDTxx-TEB/DVP**
▦ **ST7MDTxx-xxx/DVP**
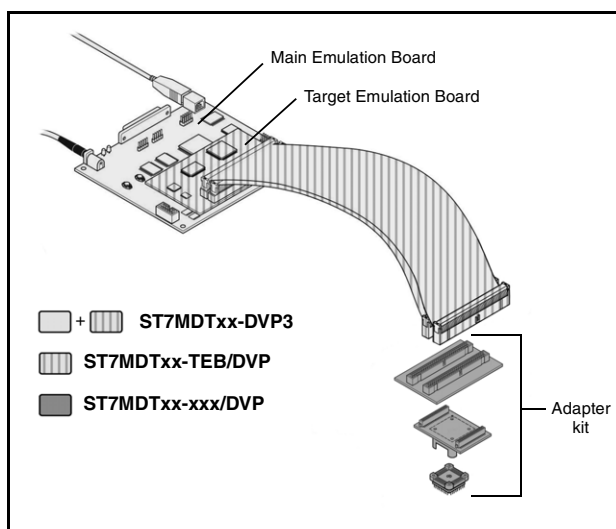
Adapter kit

Product selectors to help you select the appropriate DVP3 series emulator and Adapter kit for your target ST7 are available at *www.st.com/mcu*.

For more information...

The following documents are available for free download from our internet site:

ST7 Visual Develop User Manual - Information and tutorials to help you build and debug your application software and program it to your ST7 using the STVD7 Integrated Development Environment and an ST7-DVP3 series emulator.

ST7 Visual Programmer online help - Information to help you program your application to your ST7 using this Windows-based programming software and an ST7-DVP3 series emulator.

ST7-DVP3 Emulator User Manual - Information about setting up an ST7-DVP3 series emulator in the emulation or ICC configuration. This manual provides information that is common to all emulators in the DVP3 series.

ST7xxxx-DVP3 Probe User Guide - Information about connecting the DVP3 emulator to your application board in the emulation configuration. These documents provide information that is specific to each type of DVP3 emulator (ST7MDTxx-DVP3 emulator).

ST7xxxx Datasheet - Complete information about the features of your target ST7 microcontroller.

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