

Embest Emulator for ARM

- **A standard parallel-JTAG Emulator for ARM Processors**
- **Capable of supporting Embest IDE, ARM/ADS, ARM/SDT and GDB**
- **Easy to use with Low cost and good stability**



Embest Emulator for ARM is an easy to use and low cost in-circuit emulator for ARM processors. You will find it accessible & affordable for all your development work. Cost saving, easy and effective development work will further bring you “Time to market benefit”.

Completely non-intrusive, Embest Emulator communicates with the ARM CPU core via JTAG using the boundary scan pins. It uses no target memory and requires no porting to the target system. You can control target processor completely with Embest Emulator. It means you can start, stop and single-step execution; read from and write to registers, memory, and system I/O; and download code to target RAM, program on-chip or on board FLASH. Embest Emulator greatly speeds up the download of code to facilitate your test and debug efforts.

- Supports in-circuit debugging, working at up to 25KB Per Second.
- Supports ARM7TDMI, ARM720T, ARM9TDMI, ARM920T, ARM922T, ARM940T now (other target CPU's planned).
- A parallel port connecting to the Computer's parallel port, and a JTAG interface connecting to the target system (20 or 14 pin JTAG port).
- Supports the real time watch point by setting the proper program breakpoint condition into Embedded ICE macrocell of ARM CPU directly.
- Supports downloading codes to the target system via Jtag port.
- Supports Embest IDE, ARM / ADS, ARM / SDT and GDB.
- Capable of updating firmware.

The target interface voltage levels of Embest Emulator depends on the input voltage levels. It is 3V/5V compatible. The Emulator provides three LEDs that show the operational status, labeled PWR/RUN/CON. LED PWR is power indicator. LED RUN indicates the data transmission between host pc and target CPU. LED CON

is connection indicator.

Hardware Specification and Interfaces

✓ Interface Specification

- A standard male-to-female 25-way parallel cable connects the parallel port of the Emulator to the PC's parallel port.
- The connection to the target board is made by a 20pin (or 14pin) female IDC header cable with all pins connected straight through (1-1, 2-2, ... 20-20). There are two types of IDC interface cable: 14-pin and 20-pin, user can choose one to connect emulator to your target board by making the switch pointing to the right pin number. JTAG pins connections are described as figure A-1 and A-2.

Vsupply	1	2	RES
RES	3	4	GND
TDI	5	6	GND
TMS	7	8	GND
TCK	9	10	GND
RES	11	12	GND
TDO	13	14	GND
nSRST	15	16	GND
RES	17	18	GND
RES	19	20	GND

(Figure A-1) 20 Pin JTAG Connections

Vsupply	1	2	RES
nSRST	3	4	GND
TDI	5	6	GND
TMS	7	8	GND
TCK	9	10	GND
TDO	11	12	GND
RES	13	14	GND

(Figure A-2) 14 Pin JTAG Connections

Note: All GND pins should be connected to 0V on the target board.

The following table shows the JTAG pinouts.

Signal	I/O	Description
Vsupply	Input	This is the supply voltage to Embest Emulator for ARM. It draws its supply current from this pin via a step-up voltage convertor. This is normally fed by the target Vdd. Valid power supply voltage is form 2.7V to 5.5V.

GND	-	Ground.
TDI	Output	Test Data In signal from Embest Emulator for ARM to the target JTAG port. It is recommended that this pin be pulled to a defined state.
TMS	Output	Test Mode signal from Embest Emulator for ARM to the target JTAG port. This pin should be pulled up on the target so that the effect of any spurious TCKs when there is no connection is benign.
TCK	Output	Test Clock signal from Embest Emulator for ARM to the target JTAG port. It is recommended that this pin be pulled to a defined state.
TDO	Input	Test Data Out from the target JTAG port to Embest Emulator for ARM.
nSRST	Output	Open collector output from Embest Emulator for ARM to the target system reset. This pin should be pulled up on the target to avoid unintentional resets when there is no connection.
RES	-	Reserved.

✓ **Power Supply**

Power is supplied to the Embest Emulator for ARM via pin 1 of the 20-way (or 14-way) IDC connector. This is normally fed by the target Vdd. Valid power supply voltage is form 2.7V to 5.5V.

Note: Emulator cannot work if power voltage out of range, even were badly damaged.

The target interface voltage levels of Embest Emulator for ARM depend on the input voltage levels. It is 3V/5V compatible.

✓ **LED Indicator**

LED PWR: power indicator

LED RUN: data indicator, indicate the data transmission between host pc and target CPU.

LED CON: connection indicator

Order Information

Order No.	C2
Item	Embest Emulator for ARM
Description	<ul style="list-style-type: none"> - Embest Emulator for ARM Jtag Emulator - Software and Manual in CD - A DB-25 parallel cable - A 20-pin JTAG interface cable - A 14-pin JTAG interface cable

Option Tools	Embest IDE for ARM Development Tools Suite II includes: <ul style="list-style-type: none"> • IDE, editor, GNU ARM Compiler and Linker, debugger, full registered version • Embest Emulator for ARM Jtag Emulator • Embest Flash Programmer
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