

Embest UNetICE for ARM

- **Ethernet and USB port based in-circuit emulator for ARM processors**
- **Capable of supporting Embest IDE, ARM/ADS, ARM/SDT and GDB**
- **Fast downloading and debugging speed up to 200~800Kbyte/s**



Embest UNetICE for ARM is the new-generation high-speed real time in-circuit emulator that Embest introduced in August 2004. The UNetICE connects the PC USB port or Ethernet port to the JTAG interface of target board and allows Flash programming and debugging. It greatly speeds up the download of code up to 800Kbyte/s. Internet sharing among development team and remote debugging is available when using Embest UNetICE for ARM. The emulator allows you to download codes to target, examine memory and registers, single-step through programs, insert multiple breakpoints, and run programs in real-time and program on-chip Flash. It has powerful emulator management software UNetICE Manager to support the settings of online IP address, subnet address, Mac address with an information window to provide auxiliary debugging information. The device supports both USB power supply and external power supply. User can choose 5V power supply through USB port by operating power switch or alternatively choose 6~9V external power supply. It's a powerful tool with good universality and performance.

- Supports microcontrollers based on ARM7 and ARM9;
- Supports Windows98 / NT / 2000 / ME /XP host;
- Supports standard 20-pin JTAG port connecting to target;
- Supports two hardware breakpoints/two data breakpoints/unlimited software breakpoints (in fact this is determined by arm core);
- Supports 10/100M Ethernet port or USB port connecting to host PC;
- Supports Embest IDE, ARM / ADS and ARM / SDT and GDB;
- Fast downloading and debugging speed up to 200 ~ 800KBytes/s;
- Supports network sharing among development team and remote debugging
- Capability of updating firmware

Hardware Specification and Interfaces

✓ Interface Specification

➤ UNetICE is a JTAG emulator, connected to JTAG port of target board via a 20-pin IDC straight-through cable (1-1, 2-2, ... 20-20).

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

Figure Definition of 20-pin JTAG port cable

Description of pin signal

Signal	I/O	Description
GND	—	Power Ground.
TDI	Output	The testing data input signal from Embest Emulator to JTAG port of target board, It is recommended to add a pull-up or pull-down resistance.
TMS	Output	The testing mode signal from Embest Emulator to JTAG port of target board, the signal should be pulled up in target board, to avoid possible negative impact caused by change in TCK pin before connecting.
TCK	Output	The testing clock signal from Embest Emulator to JTAG port of target board, It is recommended to add a pull-up or pull-down resistance.
TDO	Input	The testing data output signal from JTAG port of target board to Embest Emulator.

nSRST Output The system reset signal from open collector of Embest Emulator to target board. the signal should be pulled up in target board, to avoid possible unexpected reset before connecting.

RES — Reserved.

- The host can be connected to UNetICE emulator through a special USB cable. If you need to use USB as power supply device, you can adjust the power switch.

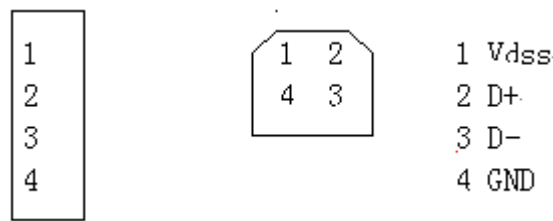


Figure definition of USB port

Description of pin signal:

Signal	Specification
VDss	USB port can be used to supply power to peripheral equipment, voltage range of USB port: 4.4-5.25V
D+	Communication channel
D-	Communication channel
GND	Grounding

- There are two ways of Ethernet connection; one is standard Ethernet connection using two network cables to connect host, target board and HUB to constitute a LAN. The other way is using one cross cable to connect the host and target device directly.

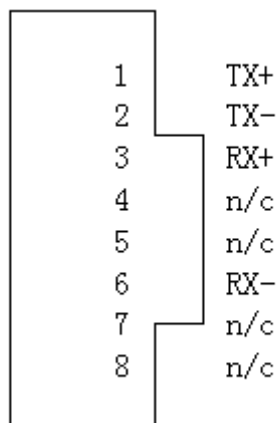


Figure 2-8 Definition of Ethernet port

Description of pin signal:

Signal	Specification
TX+	Tranceive Data+
TX-	Tranceive Data-
RX+	Receive Data+
RX-	Receive Data-
n/c	Not connected

✓ **Power supply**

Capable of choosing 5V power supply through USB port by operating power switch or alternatively choosing 6~9V external power supply. When using external power supply socket, the inside is positive, the outside is negative. See the figure below:

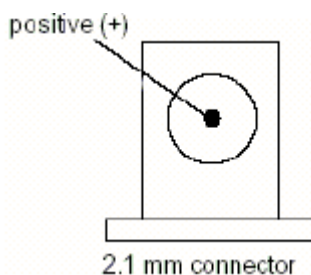


Figure 2-5 power supply socket

✓ **LED Indicators and Function Buttons**

- JTAG port for connecting target board
- USB and Ethernet ports for connecting host
- RESET and UPDATER buttons
- External power supply socket and power switch

- Red, green, yellow emulator state indicator
- LED PWR (red): power indicator
- LED RUN (green): data indicator, indicate the data transmission between host pc and target CPU.
- LED CON (yellow): connection indicator

See details in diagram below:

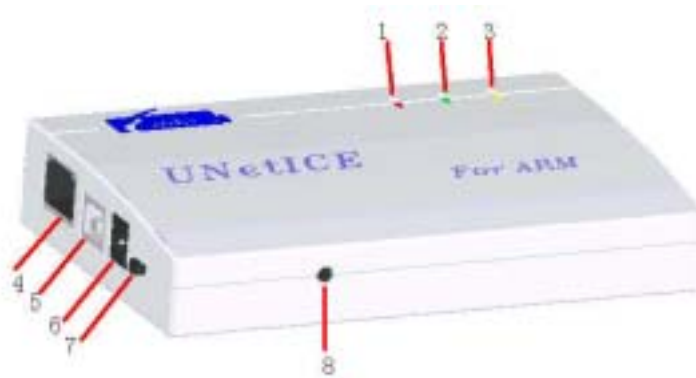


Figure Frontal view of UNetICE



Figure Rear view of UNetICE

No.	Item	Functions
1	Power indicator (PWR)	Indicate the state of power supply
2	State indicator (RUN)	Indicate running state of emulator
3	Alarm indicator (ALARM)	Indicate error alarm
4	Ethernet port	The communication port connected to host in Ethernet way.
5	USB port	The communication port connected to host in USB way.

6	External power supply socket	Use external power supply
7	Power switch	Switch power supply modes (USB power supply / external power supply)
8	RESET	Reset emulator
9	JTAG port	20-pin IDC plug port
10	UPDATER (FUNC)	Press the button when resetting the emulator to enter updater mode

Order Information

Order No.	C2
Item	Embest UNetICE for ARM
Description	<ul style="list-style-type: none"> - Embest UNetICE for ARM Jtag Emulator - Software and Manual in CD - A USB cable - A network cable - A 20-pin JTAG interface cable - 6V Power Adapter
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 UNetICE for ARM Jtag Emulator • Embest Flash Programmer

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