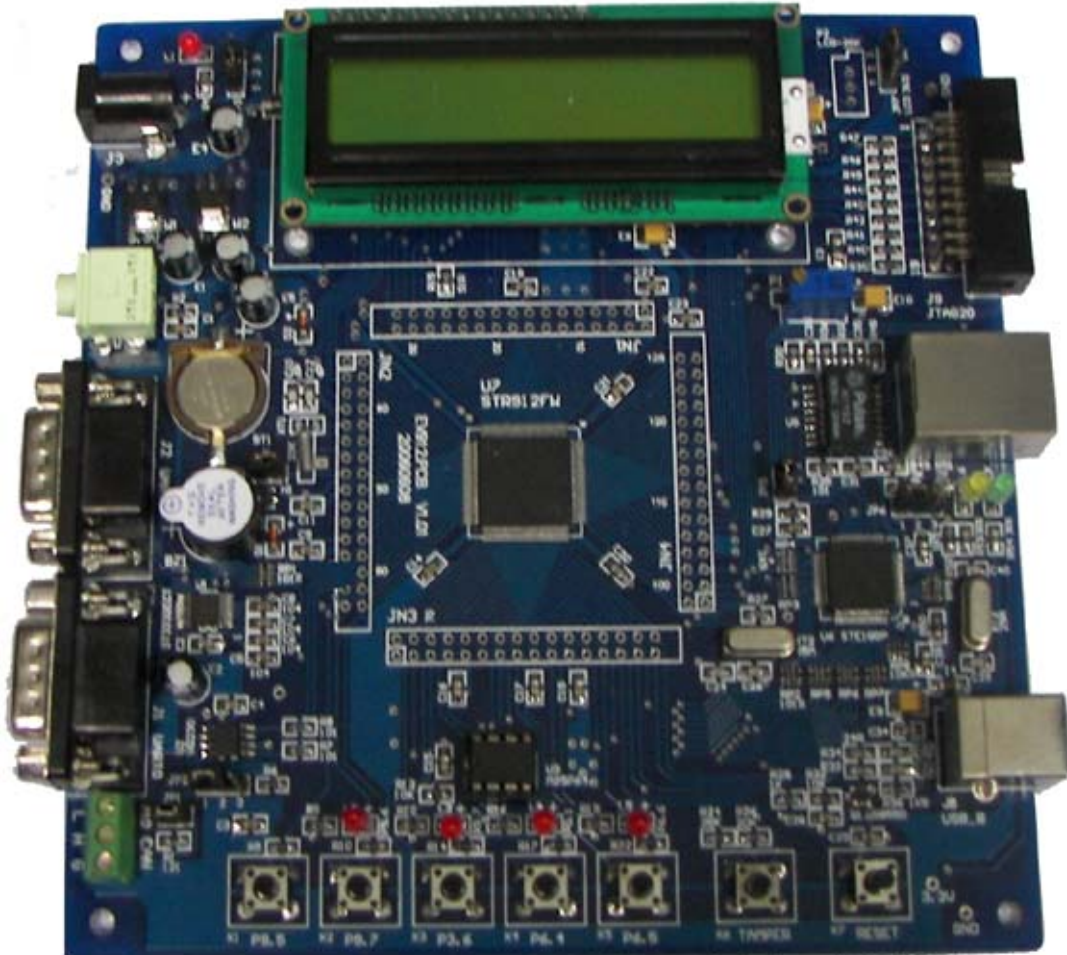


## Embest STDV912F Evaluation Board

- Low cost, High-performance ARM9 Evaluation Board for STMicroelectronics STR912FW42 (966E-S) Microcontroller (STR91x series)
- RS232, USB device, Ethernet, CAN2.0, LCD, RTC, DMA, Jtag, ...
- Plenty of software examples, all in source code



Embest STDV912F Evaluation Board

### Description

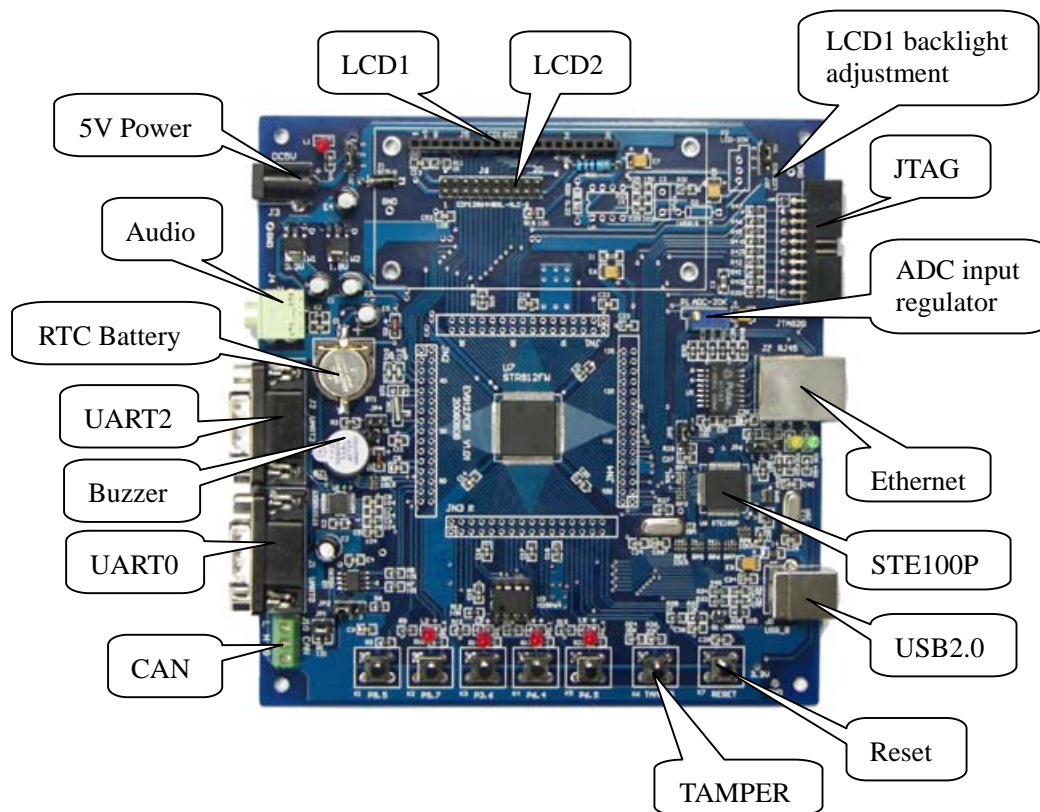
The STR912FW42 is among the STMicroelectronics STR91xF series ARM-powered microcontrollers, which combines a 16/32-bit ARM966E-S RISC processor core with up to 96Kbytes SRAM, 256Kbytes Main Flash and 32Kbytes 2<sup>nd</sup> Flash. The ARM966E-S core can perform single-cycle DSP instructions, good for speech processing, audio algorithms, and low-end imaging. The microcontroller is also equipped with USB, CAN, Ethernet, AC motor control, 4 timers, ADC, RTC, DMA and up to 80 GPIO. The rich peripherals set to form an ideal embedded controller for a wide variety of applications such as point-of-sale terminals, industrial automation, security and surveillance, vending machines, communication gateways, serial protocol conversion, and medical equipment.

Embest STDV912F<sup>TM</sup> Evaluation Board is an effective ARM9 platform for STMicroelectronics STR912 microcontroller (MCU) family. The board takes all advantages of STR912FW42 microcontroller and integrates RS232, LEDs, audio, buzzer, test buttons, LCD, Ethernet, CAN2.0, USB device, JTAG interface to create a versatile stand-alone test platform. All 128 pins of the CPU can be extended to meet your development requirements and applications. A plenty of sample programs are provided for this embedded development. Embest also provides development tools for your options including IDE, flash programmer and emulators you may need to help you get your product to market fast.

## Hardware Specification

- Dimensions: 149x142mm
- Working temperature: -40~+85 Celsius
- Processor: STR912FW42 (966E-S) with (256+32) KBytes internal flash and 96KBytes internal SRAM
- Power input: +5.0V/1A
- 10/100M Ethernet interface (CS8900A)
- USB2.0 interface (Device)
- CAN2.0 communication interface with CAN driver-chip
- 2 RS232 ports (UART0 and UART2 can be interconnected to each other for RS232 communication experiment)
- SSP Interfaces (Flash chip can be plugged in or out or replaced)
- 2 I<sup>2</sup>C interfaces
- LCD interface (16x2 Character LCD)
- 7 LED indicator lights: one for power, two for network communication indicating, others are general used
- 8 channel 10-bit ADC and 1 on-board regulators (ADC experiment)
- 1 buzzer (Jumper JP5 for enabling or disabling the function)
- 1 Reset button
- 1 RTC modification test button (TAMPER)
- 5 general used keys (3 are used for external interrupts)
- ICP & IAP functions
- 16-bit data bus interface (LCD or any 16-bit data bus interface peripherals can be extended through the interface)
- A standard 20-pin Debug-JTAG connector
- EMI (can be extended)

## Interfaces and Jumpers Introduction



### Interfaces: List below the introduction of the main interfaces

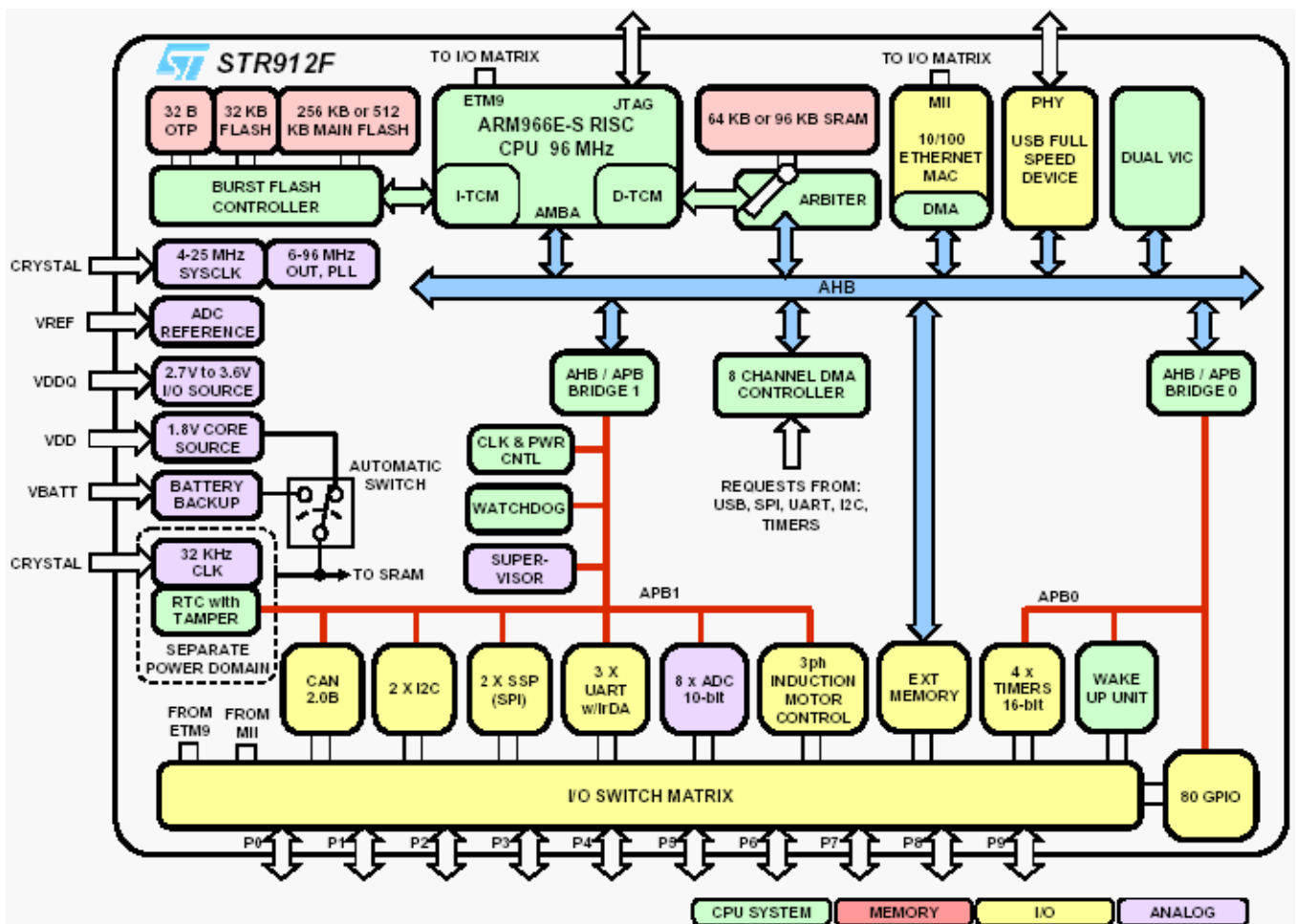
Interface	Name	Description
J1	UART0	Serial port 0
J2	UART2	Serial port 2
J3	DC5V	Power DC5V
J4	ETM9	ETM9 interface
J5	LCD1	LCD1 interface
J6	LCD2	LCD2 interface
J7	RJ45	10M Ethernet interface
J8	USB	USB (Device) interface
J9	JTAG	JTAG interface

### Jumpers: List below the functions and settings of the main interfaces

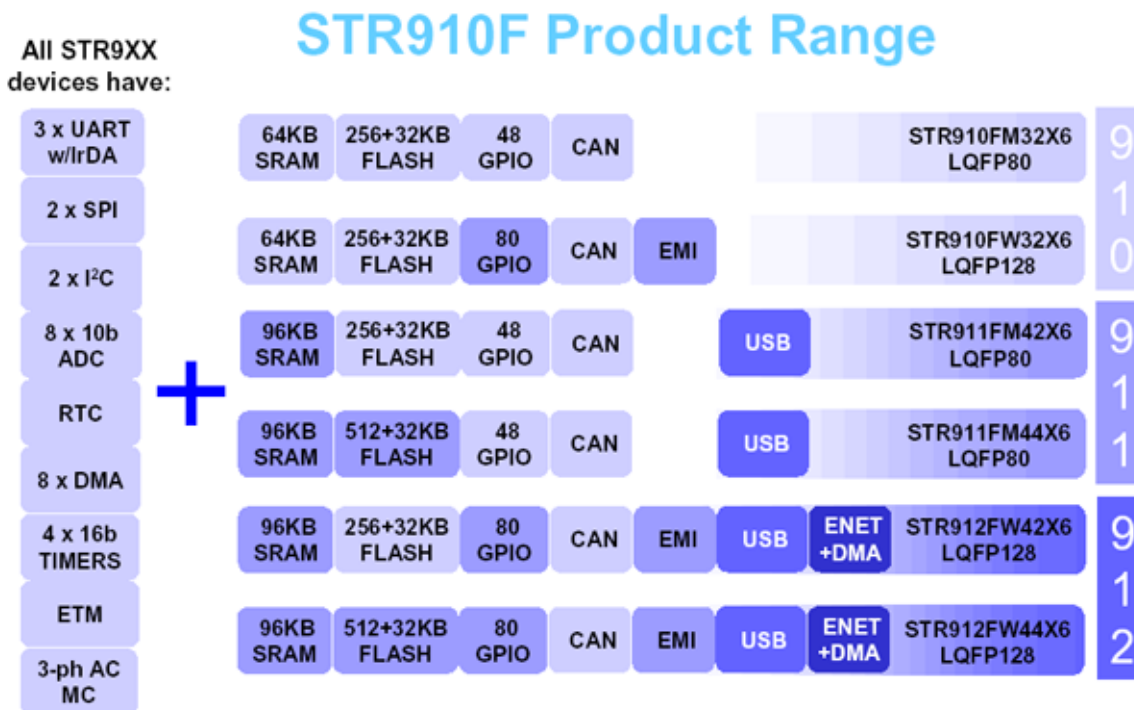
Jumper	Description	Setting	Setting explanation
JP1	CAN MATCHED RESISTANCE	Short-circuit	Enable 120 Ω CAN matched resistance
		Disconnection	Disable CAN matched resistance
JP2	CAN speed selection	Connect to GND directly	Low speed mode (BAUD<250K)

		Resistor connect to GND	High speed mode (BAUD<1M)
JP3	Power supply mode selection	Connect 1, 2	External power supply
		Connect 2, 3	USB power supply
JP4	Buzzer Enable	Short-circuit	Connected to enable buzzer to work
		Disconnection	Disable buzzer
JP5	STE100P Power mode	Short-circuit	STE100P is in normal mode
		Disconnection	STE100P is in power off mode
JP6	STE100P External Frequency selection	Connect 1, 2	Select pin PHYCLK of 912FW44 as external frequency to output
		Connect 2, 3	Select external oscillator XT3 to output
JP7	LCD1 voltage selection	Connect 1, 2	5V Power supply
		Connect 2, 3	3.3V Power supply

### STR912F Series Microcontroller Function Block Diagram



## STR910F Series Device Summary



## Software Examples

Embest Provides plenty of software examples for this STDV912F evaluation board, all in source code. Each program has two versions to correspond respectively with ADS and Embest environments. Separately saved under the “ADS” and “Embest” sub-directories. The structure of the directories is as below:

Directory	Content
ADS	All source codes under ADS environment
— ADC	ADC test program
— Audio	Audio test program
— CAN	
— CAN LOOP	
— CAN_TX	
— COMMON	Common file including driver modules of main peripheral equipments
— library	Driver modules of STR91x on-chip peripherals
— startup	
— LCD .c/.h	
— DMA	DMA test program
— Ethernet	Ethernet controller test program
— FMI	Flash burning test program
— GPIO	GPIO test program
— RTC	RTC test program

— TIM	Timer test program
— UART	UART test program
— uCOS-II	uCOS-II test program
— USB	USB mouse test program
_ WDG	Watchdog timer test program
EmbestIDE	Program source code under Embest IDE environment (structure of sub-directories similar to that under ADS environment)

## Order Information

Order No.	EBD6
Item	Embest STDV912F Evaluation Board
CD-ROM	<ul style="list-style-type: none"> <li>● software examples</li> <li>● user manual</li> <li>● circuit schematic drawing</li> <li>● Datasheet</li> <li>● STR91x Documents for development</li> <li>● Flash programming tool</li> </ul>
Others	<ul style="list-style-type: none"> <li>● Serial cable</li> <li>● DC5V/1000mA Power Adapter</li> <li>● USB cable</li> <li>● Ethernet cable</li> <li>● 16 x 2 character LCD</li> </ul>
Option Tools	<a href="#">Embest IDE for ARM</a> Development Tools Suite I, include: <ul style="list-style-type: none"> <li>● IDE, editor, GNU ARM Compiler and Linker, debugger, full registered version</li> <li>● <a href="#">Embest PowerICE</a></li> </ul>



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