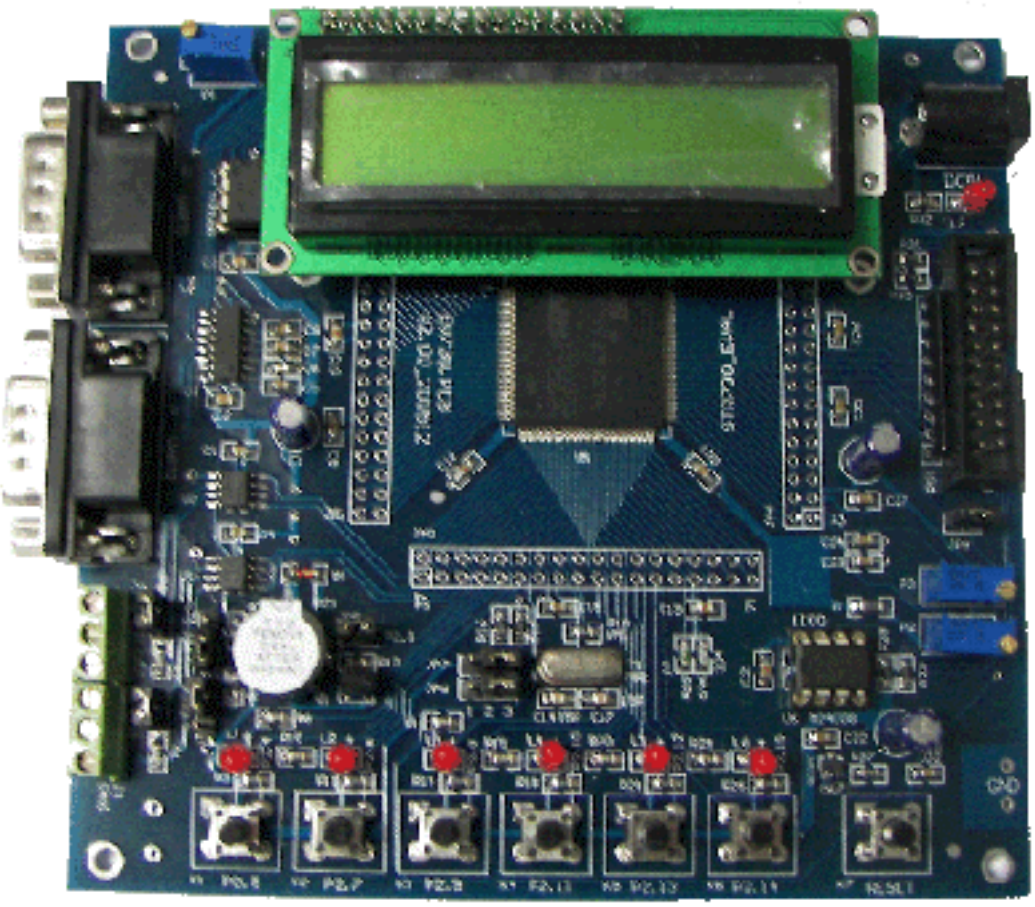
Embest STDV730F Evaluation Board

- A Super-integrated Evaluation board for ST Microelectronic STR730FZ2T6 Microcontroller (STR730 series)
- RS232, CAN2.0, LCD, SPI, I2C, ADC, Jtag ...
- Plenty of software examples, all in source code



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Description

The STR730F-Z2T6 is an ARM7TDMI Flash microcontrollers from STMicroelectronics with 256 Kbytes of flash, 16 Kbytes of RAM and powerful peripheral functions, including up 16-channel 10-bit ADC, 20 timers, 4xUARTs, 3xCANs, SPI, I2C, DMA, RTC, PWM, and 112 GPIO. It is of the STR730F family which are ideal for embedded applications requiring a compact yet powerful MCU, as well as versatile, scalable solutions such as user interfaces, factory automation systems and appliances and features a single 5V power supply particularly suited to industrial applications.

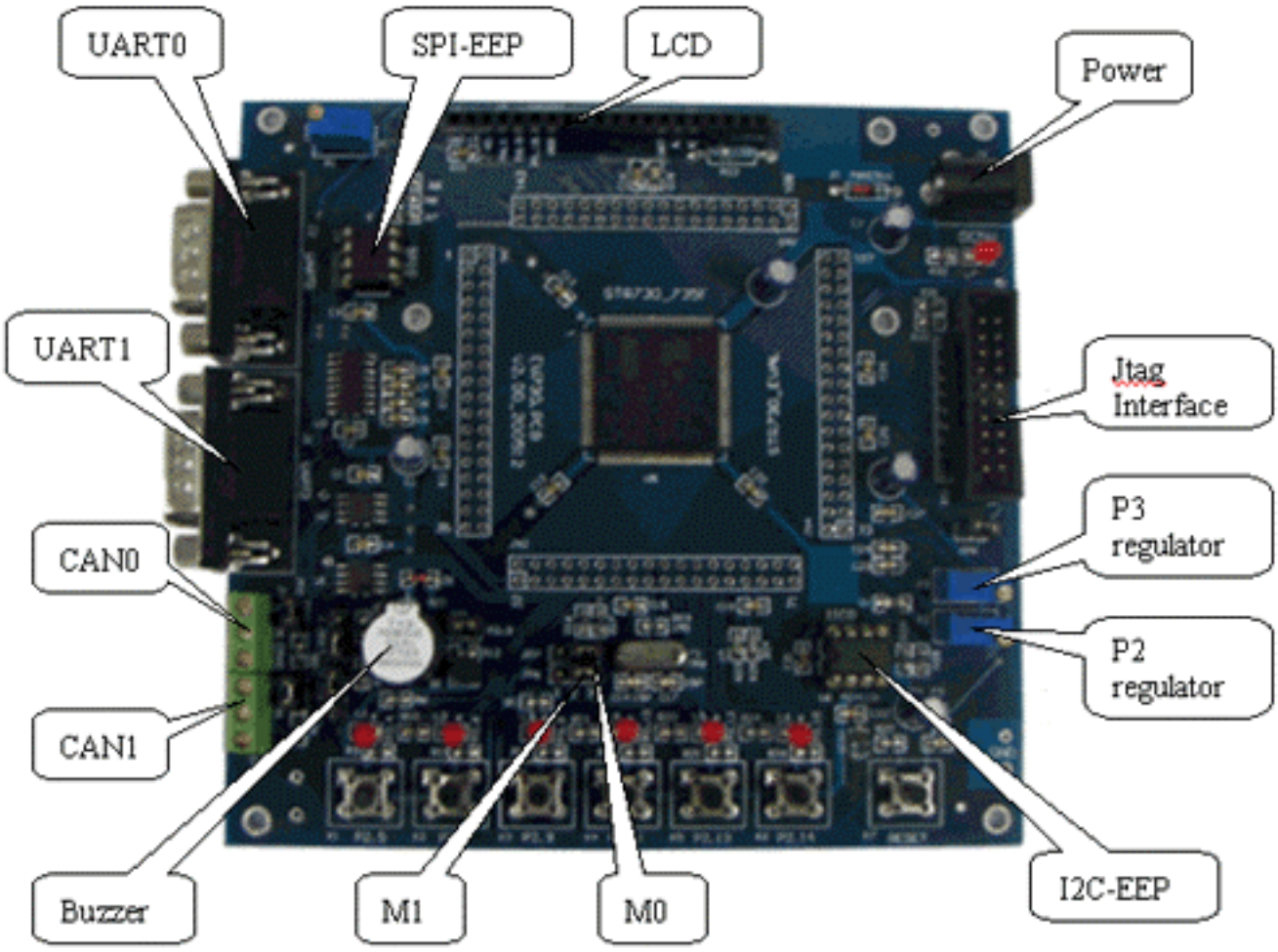
The STDV730F Board is a complete development platform based on high-performance STR730F-Z2T6 microcontroller. The board integrates a 2x16 LCD, LEDs, UART, CAN interface, buzzer, test buttons and Jtag interface to create a versatile stand-alone test platform. The board kit

is provided with plenty of example programs and a suite of software tools to help you quickly startup your development and speed up your market time.

Hardware Specification

- Dimensions: 126x118mm
- Working temperature: -40~+85 Celsius
- Processor: STR730F-Z2T6 with embedded 256KBytes of flash and 16KBytes of RAM
- Power input: +5.0V/1A
- CAN2.0 communication interface with CAN driver-chip
- 4 RS232 ports (UART0 and UART2 can be interconnected to each other for RS232 communication experiment)
- 3 Serial Peripheral Interfaces (SPI)
- 2 II-C interfaces
- LCD interface (Supports 16x2 Character LCD or 128x64 Dot-matrix LCD)
- 7 LED indicator lights: one for power, others are general used
- 16 channel 10-bit ADC and 2 on-board regulators (ADC experiment)
- 1 buzzer (Jumper JP5 for enabling or disenabling the function)
- 1 Reset button
- 1 WAKE-UP button
- 5 general used buttons
- A standard 20-pin Debug-JTAG connector

Interfaces and Jumpers Introduction



Interfaces: List below the introduction of the main interfaces

Interface	Name	Description
J1 & J2	UART1 & UART0	Serial port 1 & 0
J3 & J4	CAN1 & CAN0	CAN interface
J5	LCD	LCD interface
J6	DC5V	DC5V Power supply
J7	JTAG	Jtag interface

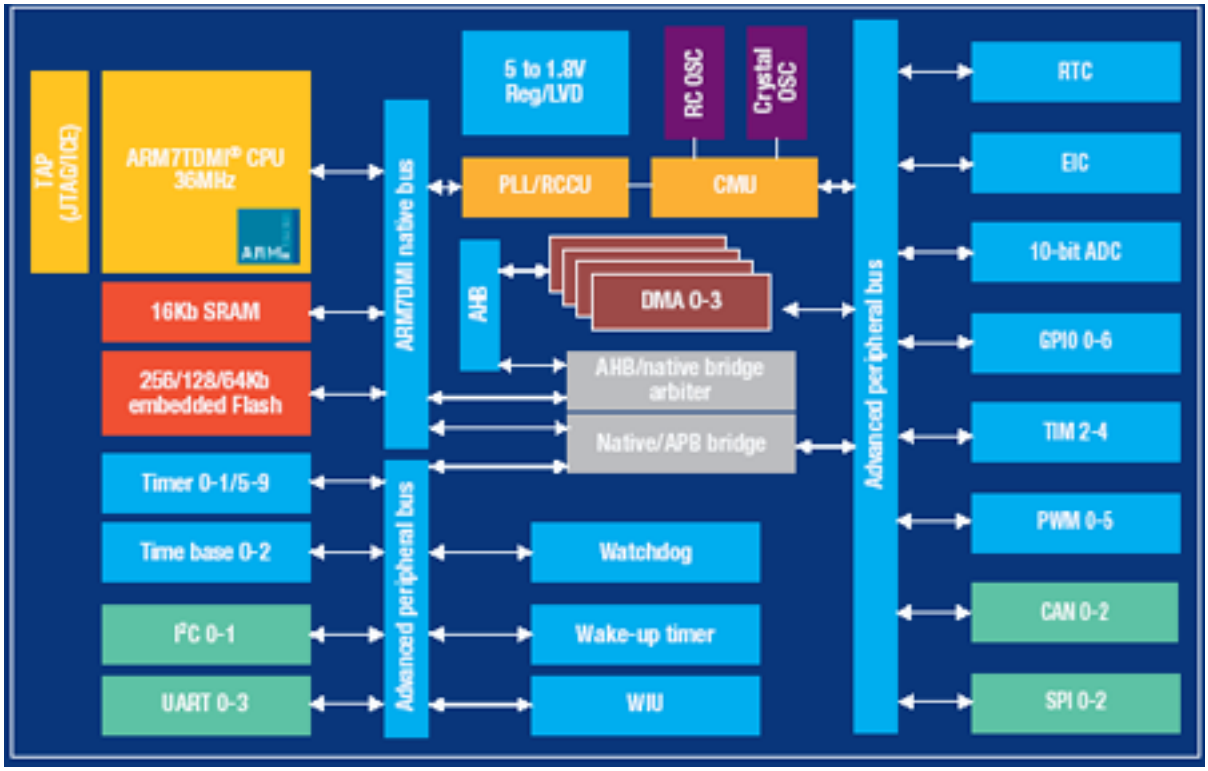
Jumpers: List below the functions and settings of the main interfaces

Jumper	Description	Setting	Setting explanation
JP5	Buzzer Enable	Short-circuit	Connected to enable buzzer to work
		Disconnection	Disable buzzer
JP1	CAN matched	Short-circuit	Enable 120Ω CAN matched resistance
JP2	Resistance	Disconnection	Disable CAN matched resistance
JP3	CAN Speed	1,2 connected	Select low speed (Baud <= 250K)

JP4	adjustment	2,3 connected	Select high speed (Baud <= 1M)
JP6	M1	Refer to Boot mode configuration	
JP7	M0		
JP8	JTRST Enable	Short-circuit	JTRST connects with RESET
		Disconnection	JTRST and RESET are independent

Note: Generally, user use M0 and M1 to connect 2 and 3 when debugging, viz. M0M1=00.

STR730F Series Microcontroller Function Block Diagram



STR730F Series Device Summary

Feature	Flash Kbytes	RAM Kbytes	Serial Interface	Package	Supply Voltage	Special Features
STR731FV0	64	16	3xSPIs/ 2xI^2Cs/ 4xUARTs	TQFP100	4.5V to 5.5V	3xCANs,16xDMAs,on-chip RC oscillator
STR736FV0	64	16		TQFP100		16xDMAs,on-chip RC oscillator
STR730FZ1	128	16		TQFP144/LFBGA144		3xCANs,16xDMAs,on-chip RC oscillator
STR731FV1	128	16		TQFP100		3xCANs,16xDMAs,on-chip RC oscillator

STR735FZ1	128	16		TQFP144/LFBGA144		16xDMAs,on-chip RC oscillator
STR736FV1	128	16		TQFP100		16xDMAs,on-chip RC oscillator
STR730FZ2	256	16		TQFP144/LFBGA144		3xCANs,16xDMAs,on-chip RC oscillator
STR731FV2	256	16		TQFP100		3xCANs,16xDMAs,on-chip RC oscillator
STR735FZ2	256	16		TQFP144/LFBGA144		16xDMAs,on-chip RC oscillator
STR736FV2	256	16		TQFP100		16xDMAs,on-chip RC oscillator

Software Examples

Embest Provides plenty of software examples for this STDV730F evaluation board, all in source code. The structure of the directory is as below:

Directory	Content
ADS	All source codes under ADS environment
|— ADC	ADC test program
|— COMMON	Common file including driver modules of main peripheral equipments
	|—str73x	Driver modules of STR73x on-chip peripherals
|— Flash	Flash burning test program
|— I2C	I2C test program
|— Key	Key test program
|— LCD	LCD test program
|— LED	LED test program
|— PRCCU	LPWFI and HALT modes and wake-up test program
|— PWM	PWM test program
|— BSPI	BSPI test program
|— Timer	Timer test program
|— UART	UART test program
|— WIU	USB test program
|— WUT	WUT test program
|— EIC	EIC test program
|— TB	TB test program
|— CMU	CMU test program

|— DMA	DMA test program
|— RTC	RTC test program
|— uCOS-II	uCOS-II 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.	EBD5
Item	Embest STDV730F Evaluation Board
CD-ROM	● software examples ● user manual ● circuit schematic drawing ● Datasheet
Development Tools	● Embest IDE for ARM (IDE, editor, GNU ARM Compiler and Linker, debugger), demo version. With a Jtag cable connecting evaluation board to host PC via parallel port.
Others	● 16 x 2 LCD ● Serial cable ● DC5V/1000mA Power Adapter
Option Tools	Embest IDE for ARM Development Tools Suite I or II, III, include: ● IDE, editor, GNU ARM Compiler and Linker, debugger, full registered version ● Embest PowerICE or Embest Emulator, Embest UnetICE ● Embest Flash Programmer

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