

Features

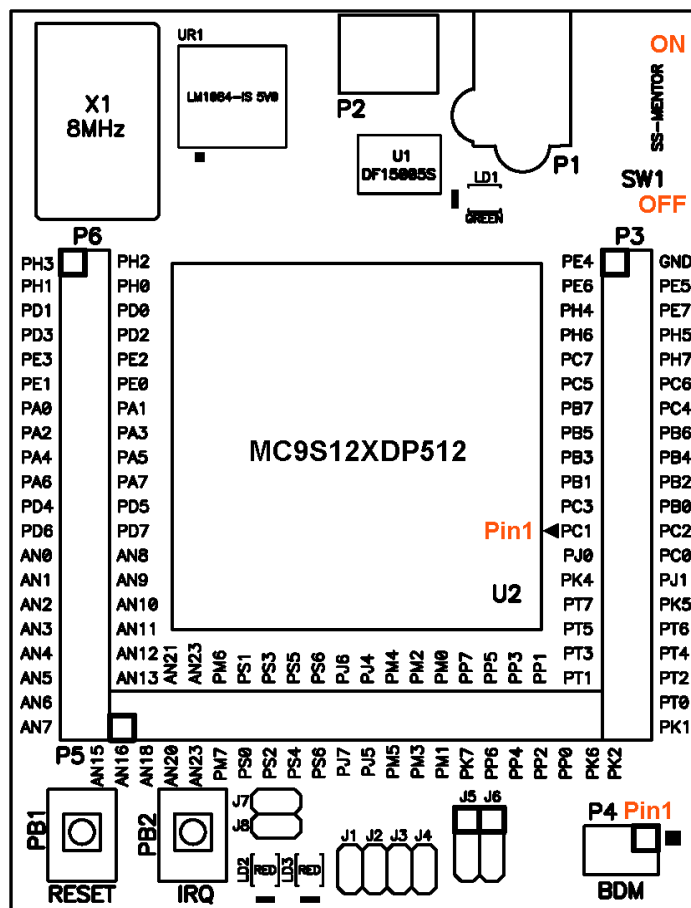
The ITMC9S12XDP512 is an evaluation and development board for Motorola MC9S12XDP512 microcontroller. iSYSTEM iC3000 emulator with the MC9S12X iCARD can be used for BDM debugging.

Features

- Motorola MC9S12XDP512 CPU (QFP144)
- BDM debug connector
- 8 MHz clock oscillator (16 MHz max.)
- 3 expansion connectors
- Regulated 5 V power supply
- ON/OFF switch
- 2 push-buttons
- 2 + 1 LED indicators

Specifications

- Board size: 93.1 x 70.9 mm
- Power input 6 - 12 V DC, 9 V DC typical



Getting started

Setting up the board

Please, verify the EVB before applying the power supply:

- All jumpers (J1-J8) are set
- CPU is inserted firmly in the socket
- Oscillator is inserted

Use with ic3000 BDM debugger

- Insert the MC9S12X iCARD to iC3000 Active Emulator
- Connect standard 6-pin BDM cable to debug connector P4. Pay attention to pin 1.
- First turn the emulator on and then power the target. When switching off the system, first switch off the target and then the emulator.
- Start winIDEA, open a project and carry out the debug reset. The system should be ready for debugging. Refer to other documents for more details on the debugging.

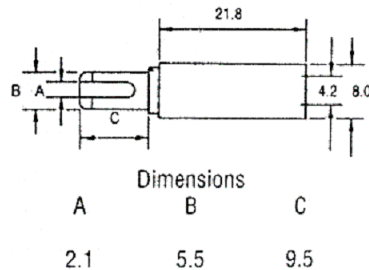
There are two push buttons on the board designated as RESET and IRQ. RESET is connected to CPU reset via jumper J3. Make sure that 'Reset from target' option is checked in winIDEA when using RESET button and the development system is connected to the board. IRQ push button is connected to CPU external interrupt pin PE1 via jumper J4. Both jumpers must be set to allow 'Reset from target' and external interrupt.

ITMC9S12XDP512 Operation

Power Supply

The external power supply must provide the voltage between 6 and 12 V DC (typical 9 V DC). Maximum current consumption shouldn't exceed 100 mA when 9 V DC is used. The polarity is not important. Low voltage DC plug must conform to the DIN 45323 standards:

- The hole diameter is 1.95 – 2.5 mm (standard: 2.1 mm)
- The external diameter is 6.2 - 5.5 mm (standard: 5.5 mm)



Note: The emulator must be powered on first, then the target board and vice versa when switching off the system. First, switch off the target and then the emulator.

Jumpers

All CPU peripheral signals used on the board can be disconnected from the CPU via jumpers. By removing the jumper, the belonging signal is freed for the user. Note that all CPU signals are available on the expansion connectors and can be used by the user.

Jumper	DESCRIPTION
J1	Enable LD2
J2	Enable LD3
J3	Enable RESET
J4	Enable IRQ
J5	MODA selection (default 2-3)
J6	MOdB selection (default 2-3)
J7	Use internal VRH
J8	Use internal VRL

Connectors

BDM debug connector P4

BKGD	1	2	GND
N.C.	3	4	RESET
N.C.	5	6	VDD

Expansion connectors P3, P5 and P6

PE4	1	2	GND	AN16	1	2	AN17	PH3	1	2	PH2
PE6	3	4	PE5	AN18	3	4	AN19	PH1	3	4	PH0
PH4	5	6	PE7	AN20	5	6	AN21	PD1	5	6	PD0
PH6	7	8	PH5	AN22	7	8	AN23	PD3	7	8	PD2
PC7	9	10	PH7	PM7	9	10	PM6	PE3	9	10	PE2
PC5	11	12	PC6	PS0	11	12	PS1	PE1	11	12	PE0
PB7	13	14	PC4	PS2	13	14	PS3	PA0	13	14	PA1
PB5	15	16	PB6	PS4	15	16	PS5	PA2	15	16	PA3
PB3	17	18	PB4	PS6	17	18	PS7	PA4	17	18	PA5
PB1	19	20	PB2	PJ7	19	20	PJ6	PA6	19	20	PA7
PC3	21	22	PB0	PJ5	21	22	PJ4	PD4	21	22	PD5
PC1	23	24	PC2	PM5	23	24	PM4	PD6	23	24	PD7
PJ0	25	26	PC0	PM3	25	26	PM2	AN0	25	26	AN8
PK4	27	28	PJ1	PM1	27	28	PM0	AN1	27	28	AN9
PT7	29	30	PK5	PK7	29	30	PP7	AN2	29	30	AN10
PT5	31	32	PT6	PP6	31	32	PP5	AN3	31	32	AN11
PT3	33	34	PT4	PP4	33	34	PP3	AN4	33	34	AN12
PT1	35	36	PT2	PP2	35	36	PP1	AN5	35	36	AN13
PK0	37	38	PT0	PP0	37	38	PJ2	AN6	37	38	AN14
PK2	39	40	PK1	PK6	39	40	PK3	AN7	39	40	AN15
	P3				P5				P6		

Notes:

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