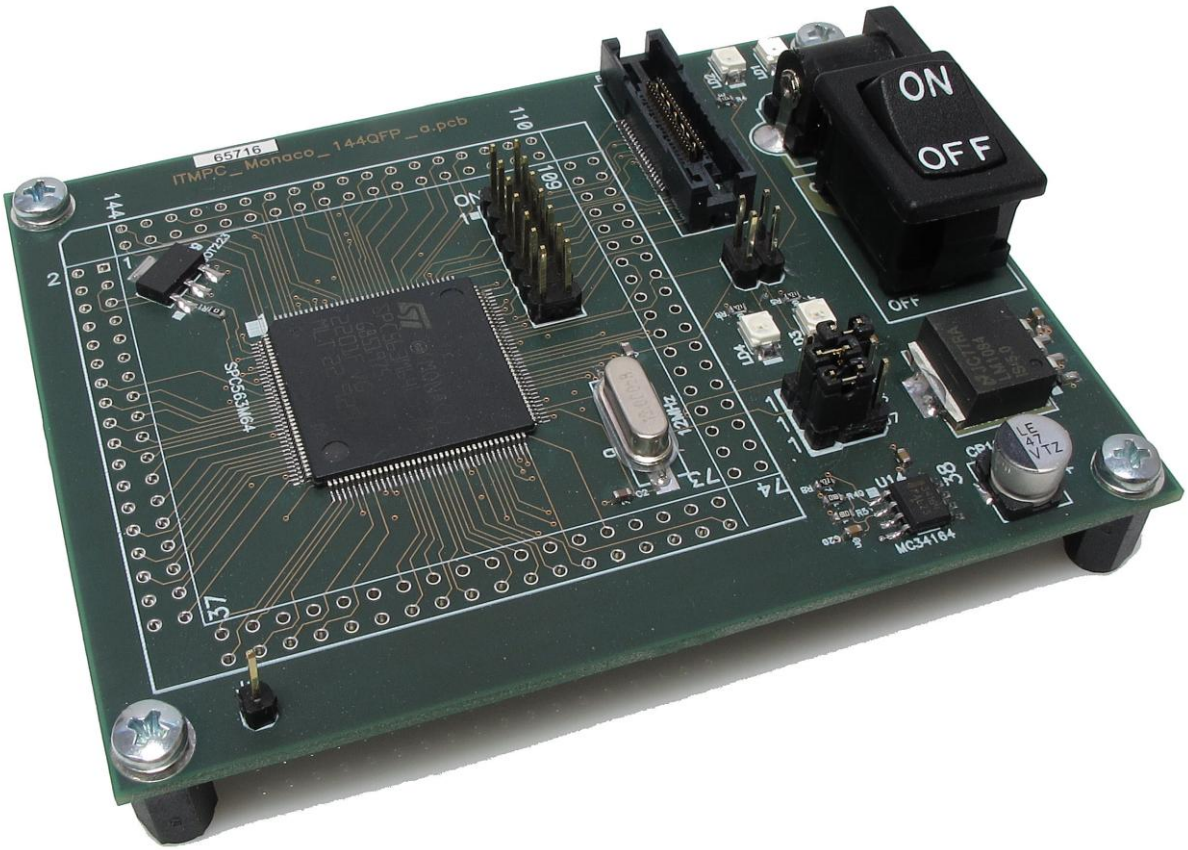
User's Manual

Freescale MPC5634M Target Board

	Ordering code
MPC5634M Target Board	**ITMPC5634M -144**



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This target board is an evaluation and a development system for Freescale MPC5634M microcontroller. The IT MPC5634M package features a target board populated with Freescale MPC5634M CPU in the QFP144 package, ONCE debug and Nexus debug connector. A power supply also comes along with the board. The application under the development or test can run from the internal CPU flash or from the internal SRAM.

Specifications

Clock Speed – up to 120 MHz
Power requirement: 6 - 12V DC, + in the center @ 500 mA
Board Size: 106 mm x 86 mm

ITMPC5634M Features

- MPC5634M, QFP144
- 12MHz clock (ext. crystal)
- Power Indicator – Supply voltage indication for 5V
- User Indicators – two LEDs connecting to the microcontroller
- Debug connections: ONCE (14-pin 2.54mm connector) and Nexus (Mictor 38-pin connector)

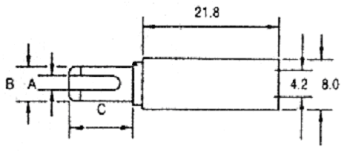
Software Development

The board has been tested with the microcontroller running at maximum frequency (80MHz). Software development can be performed by connecting the development tool to the ONCE (JTAG) or P4 (Nexus) connector. iSYSTEM provides various tools based on the iC5000 or the iC3000 unit. Contact iSYSTEM sales representative for more details on available tool options.

Power Supply

Permissible input voltage: 6-12 V DC, **+ in the center.** The required current load capacity of the power supply depends on the specific configuration of the target board. A power supply with a minimum of 500mA is recommended and delivered in the package. 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)



Dimensions

A	B	C
2.1	5.5	9.5

Switch-on the target board after the AC power supply is plugged into the wall and connected to the target board. Check that power indicator (LD1) lit, indicating that 3.3V voltage is present.

Note: When connecting an external debugger, make sure that the debugger is powered on first, then the target board and vice versa when switching off the system. First, switch off the target and then the emulator.

Settings and Options

Jumpers

Jumper J2 connects user LD4 LED to the MPC5634M pin PCS0 and jumper J3 connects user LD3 LED to the pin PCS1.

Status Indicators

LD1 LED indicates a presence of the 5V supply voltage. It lits when the power is applied to the evaluation board and the power switch is switched on.

LD2 LED indicates reset line status.

LD3 and LD4 are available for the user.

Component List

Name	Description
U1	Motorola MPC5634M CPU
P2	Nexus debug connector
P3	Power supply connector
ONCE	JTAG debug connector
J2	Connects LD4 to CPU PCS0
J3	Connects LD3 to CPU PCS0
J1	Connected to GND
LD1	Power LED 5V
LD2	Reset indication LED
LD3	User LED
LD4	User LED
SW1	Power switch

Connectors

14-pin 2.54mm ONCE debug connector

CPU_TDI	**1**	**2**	GND
CPU_TDO	**3**	**4**	GND
CPU_TCK	**5**	**6**	GND
N.C.	**7**	**8**	N.C.
CPU_RESET	**9**	**10**	CPU_TMS
3V3	**11**	**12**	N.C.
N.C.	**13**	**14**	CPU_TRST

Mictor 38-pin Nexus debug connector

Signal	Pin	Pin	Signal
NC	1	2	NC
NC	3	4	NC
NC	5	6	NC
NC	7	8	NC
RSTIN	9	10	EVTIN
TDO	11	12	VTREF
NC	13	14	RDY
TCK	15	16	NC
TMS	17	18	NC
TDI	19	20	NC
NTRST	21	22	NC
NC	23	24	MDO3
NC	25	26	MDO2
NC	27	28	MDO1
NC	29	30	MDO0
NC	31	32	EVTO
NC	33	34	MCKO
NC	35	36	MSEO1
NC	37	38	MSEO0

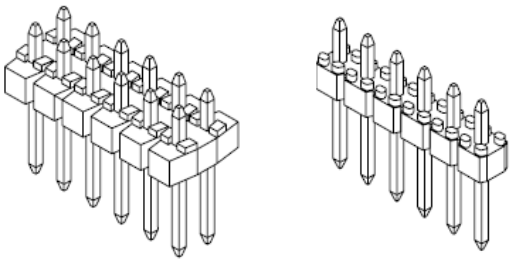
Note: External debug tool must connect to one debug connector only! Only Mictor 38-pin connector exposes Nexus debug interface.

CPU expansion connection

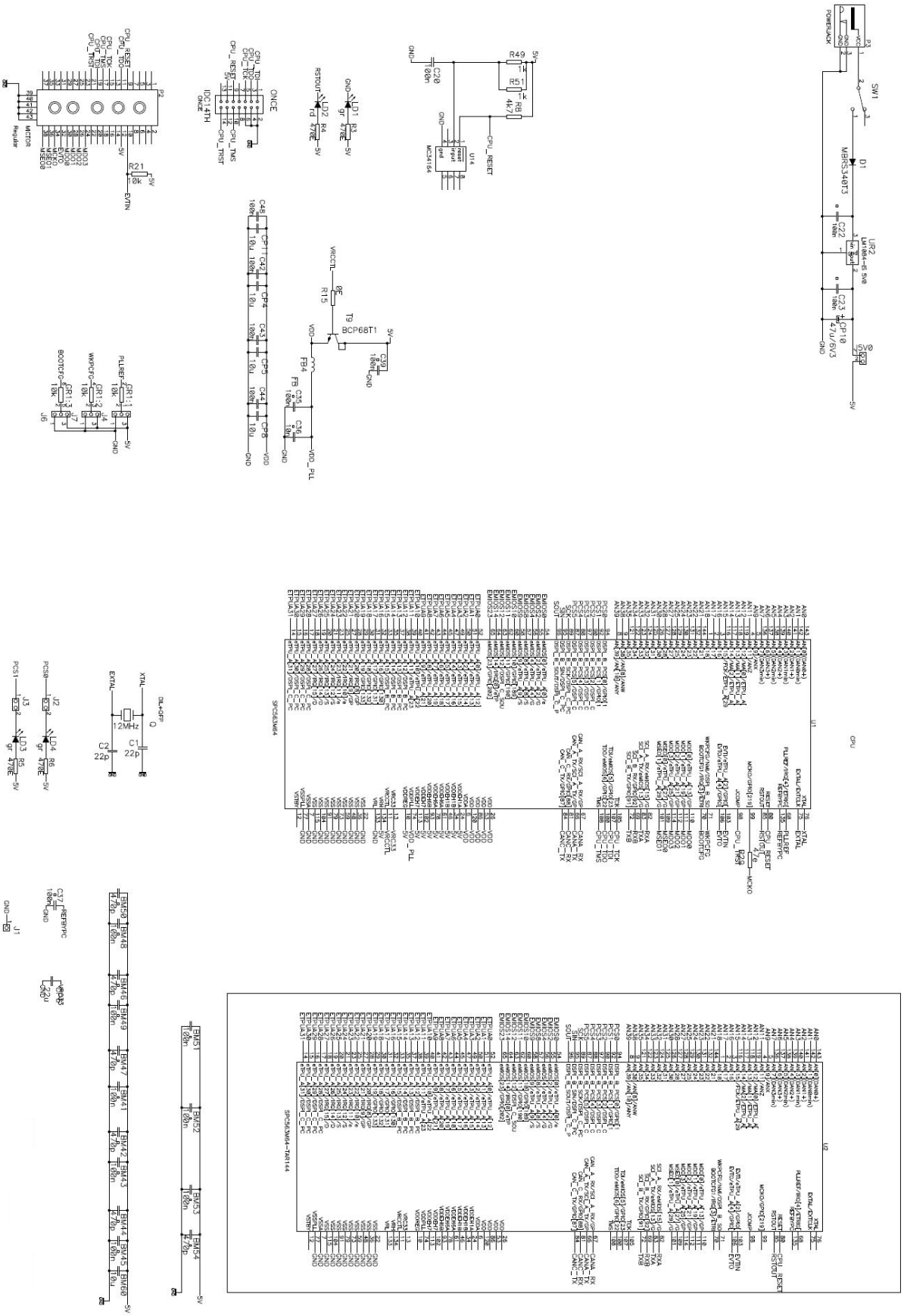
The target board exposes all MPC5634M pins/signals, which allow easy expansion of the development system.

By populating the expansion array with 2.54mm pitch headers, the board can be easily connected to another custom tailored board.

An example of breakaway dual and single row 2.54mm pitch headers, which can be easily stacked side-to-side:



Schematic



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