User's Guide

AT91SAM9260 Evaluation Board

Ordering code	ITAT91SAM9260
Dimensions	123 x 94 mm

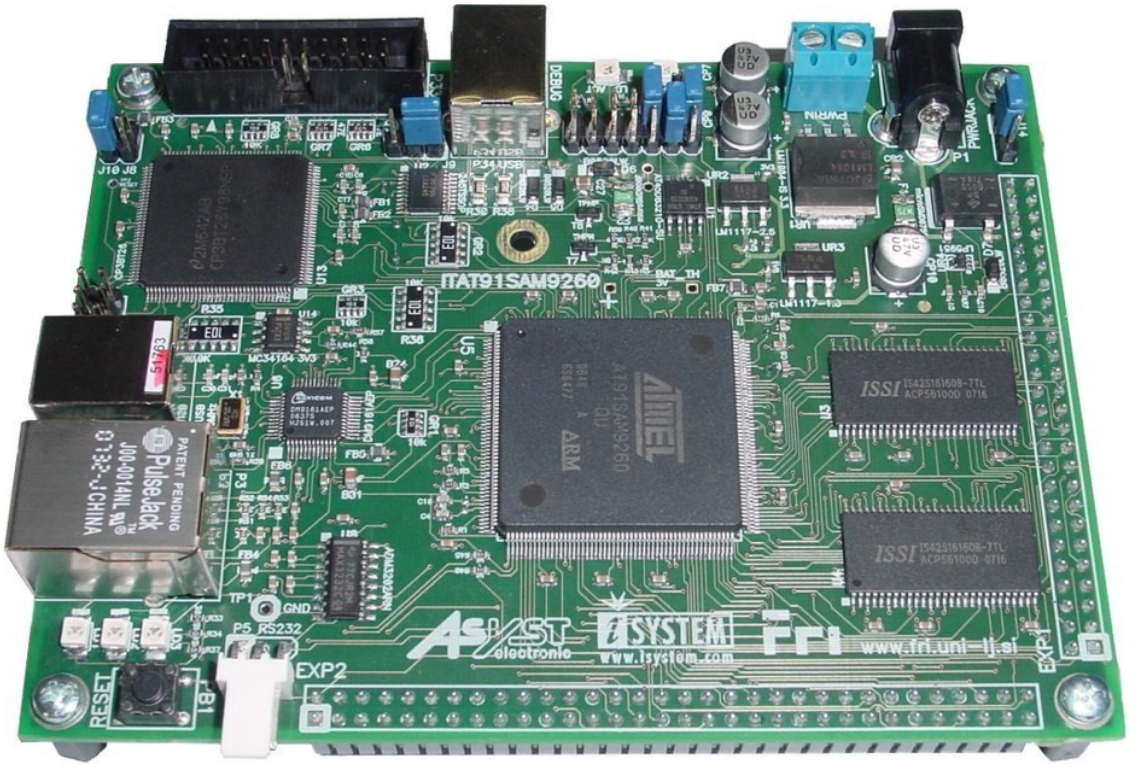


Figure 1: ITAT91SAM9260 Evaluation Board

Contents

Contents 2
Introduction 3
Description 3
Features *3*
Power supply *3*
Functional Description *3*
View of the ITAT91SAM9260 ..... *4*
LED indicators *5*
Jumpers *5*
Serial port connector (P5) *5*
External Debug connector (P33) *6*
Expansion connectors *6*
Schematic 7

Introduction

ITAT91SAM9260 is a medium size (123 x 94 mm) evaluation board based on Atmel AT91SAM9260 32-bit ARM9 microcontroller. ITAT91SAM9260 board is well suited for a wide range of application development and prototyping purposes.

Description

Features

The ITAT91SAM9260 board provides the following features:

- AT91SAM9260-QU microcontroller with 32-bit ARM926EJ-S RISC core capable running at 190 MHz and up to 210 MIPS. It features 8 kB of internal SRAM and 32 kB internal ROM
- MT48LC16M16A2P-75 32 MB SDRAM (2x)
- AT45DB321D-SU 8 MB SPI FLASH
- DM9161AEP Ethernet PHY with RJ45 connector
- SD (SecureDigital) memory card connector
- USB device connector
- 3-pin general purpose RS-232 serial port
- integrated iONE JTAG USB debugger
- expansion connectors
- LED indicators (5x)
- reset push-button
- 8-24 $V_{DC/AC}$ power supply

Power supply

The board is powered by connecting the debug USB connector (P34) to a PC. Alternatively, the board can be powered using any regulated or unregulated power supply, which is capable of delivering 8-24 $V_{DC/AC}$ on a standard 5mm power jack connector P1 (or P2). The polarity of the power supply is irrelevant. LD_PWR lits when the power is available. The board has low-drop voltage regulators providing 3V3, 2V5 and 1V8 voltages.

Functional Description

Using this board, the user can evaluate AT91SAM9260 CPU with belonging peripherals. It can also be used as a development platform. The user can exploit available debug capabilities by using integrated iONE JTAG debugger or by connecting the development tool to a standard 20-pin ARM debug connector.

View of the ITAT91SAM9260

Figure 2: Top view of the ITAT91SAM9260

LED indicators

The ITAT91SAM9260 board is equipped with 5 LED indicators:

LED	Description	Controlled by
LD1	ETH_DUPLEX	U6
LD2	ETH_SPEED	U6
LD3	ETH_LINK	U6
LD_ACT	Custom LED	CPU pin PC1
LD_PWR	Power present	/

Jumpers

J3	WKUP
ON	Enabled
OFF	Disabled (default)

J4	VDDBU
1-2	1V8 (default)
2-3	V_{BAT}

J5	JTAGSEL
ON	Enabled
OFF	Disabled (default)

J6	OSCSEL
1-2	Ext. crystal (default)
2-3	Internal RC oscillator

J7	BMS
ON	Boot internal ROM
OFF	Boot CS0 (default)

J8	RTCK
ON	Enabled
OFF	Disabled (default)

J9	EXT. DEBUG
ON	Disabled (default)
OFF	Enabled

J10	JTAG TRST
ON	Enabled (default)
OFF	Disabled

J11	PWRSEL
1-2	Use external power
2-3	Use USB (default)

J13	3V BAT
ON	Enabled
OFF	Disabled (default)

J14	ALTPWR
ON	Use expansion board
OFF	Use board (default)

Serial port connector (P5)

The ITAT91SAM9260 board provides RS232 serial port connector (2.54 mm single row, type Molex KK), connected to CPU PB14 and PB15.

Pin	Description
1	TXD
2	GND
3	RXD

External Debug connector (P33)

The ITAT91SAM9260 board provides standard 20-pin JTAG debug connector for using an external debugger.
.

3V3	1	2	3V3
TRST	3	4	GND
TDI	5	6	GND
TMS	7	8	GND
TCK	9	10	GND
RTCK	11	12	GND
TDO	13	14	GND
RESET	15	16	GND
/	17	18	GND
/	19	20	GND

Expansion connectors

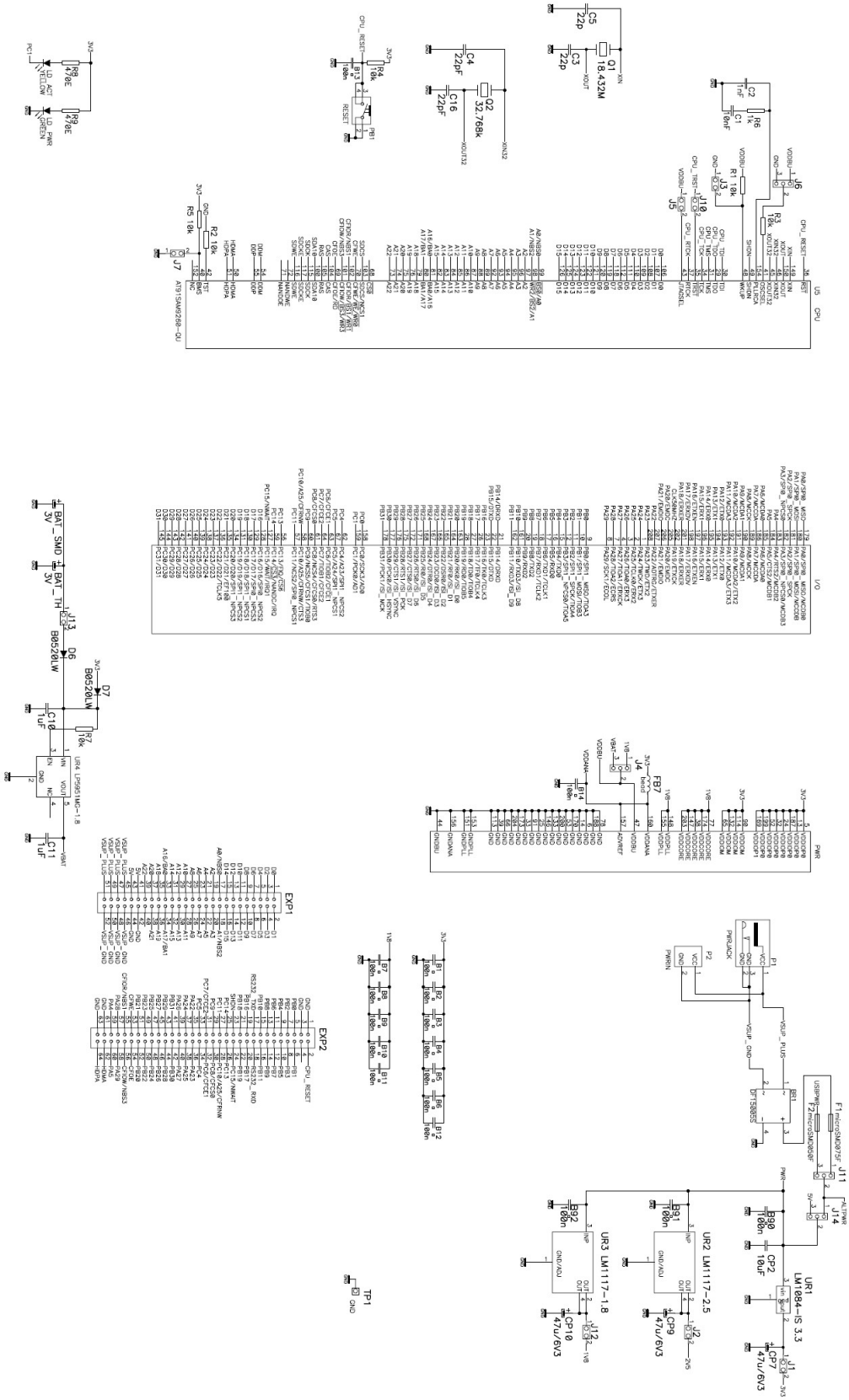
EXP1

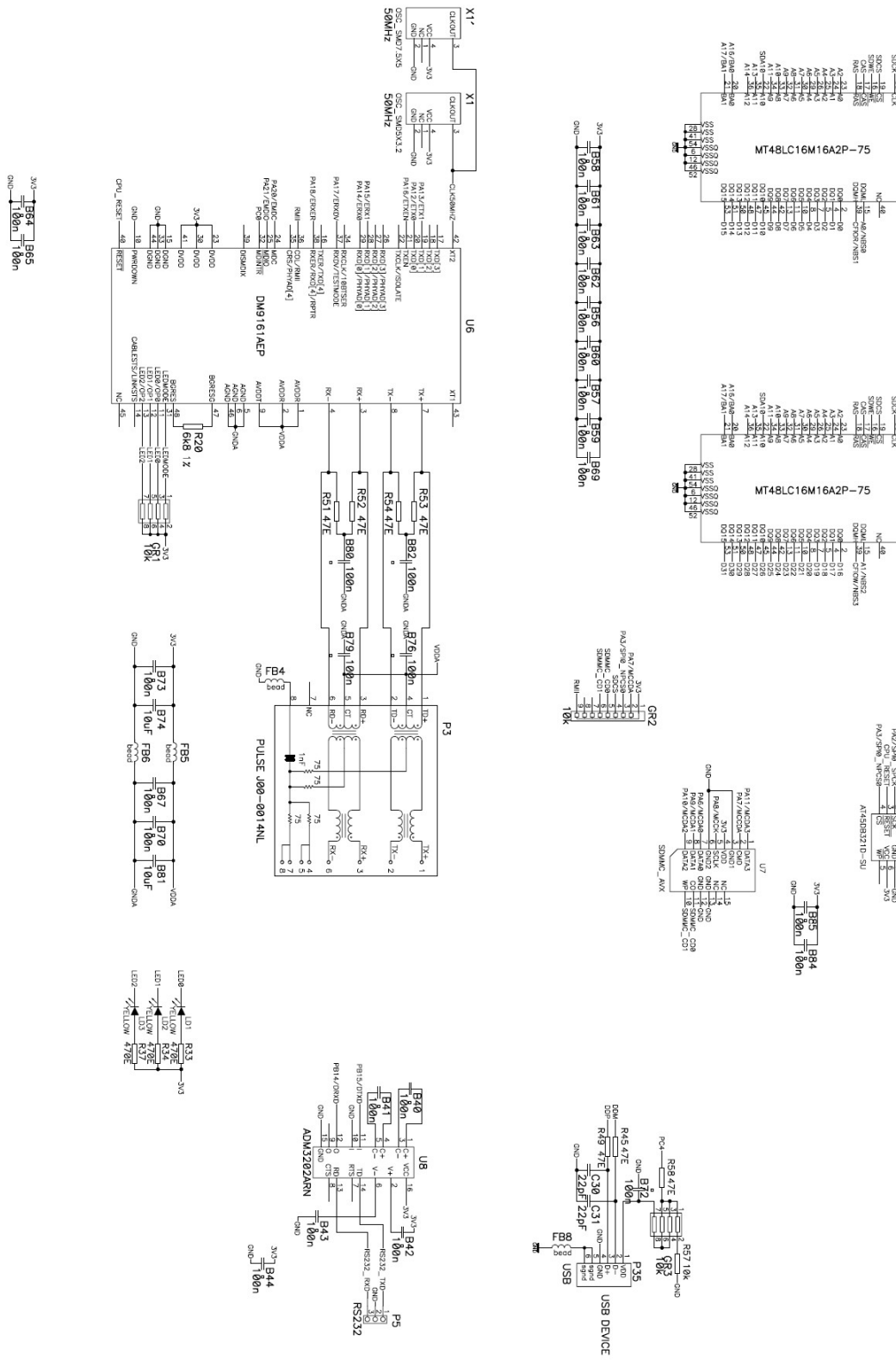
D0	1	2	D1
D2	3	4	D3
D4	5	6	D5
D6	7	8	D7
D8	9	10	D9
D10	11	12	D11
D12	13	14	D13
D14	15	16	D15
A0/NBS0	17	18	A1/NBS2
A2	19	20	A3
A4	21	22	A5
A6	23	24	A7
A8	25	26	A9
A10	27	28	A11
A12	29	30	A13
A14	31	32	A15
A16/BA0	33	34	A17/BA1
A18	35	36	A19
A20	37	38	A21
A22	39	40	/
5V	41	42	GND
5V	43	44	GND
VSUP_PLUS	45	46	VSUP_MINUS
VSUP_PLUS	47	48	VSUP_MINUS
VSUP_PLUS	49	50	VSUP_MINUS
VSUP_PLUS	51	52	VSUP_MINUS

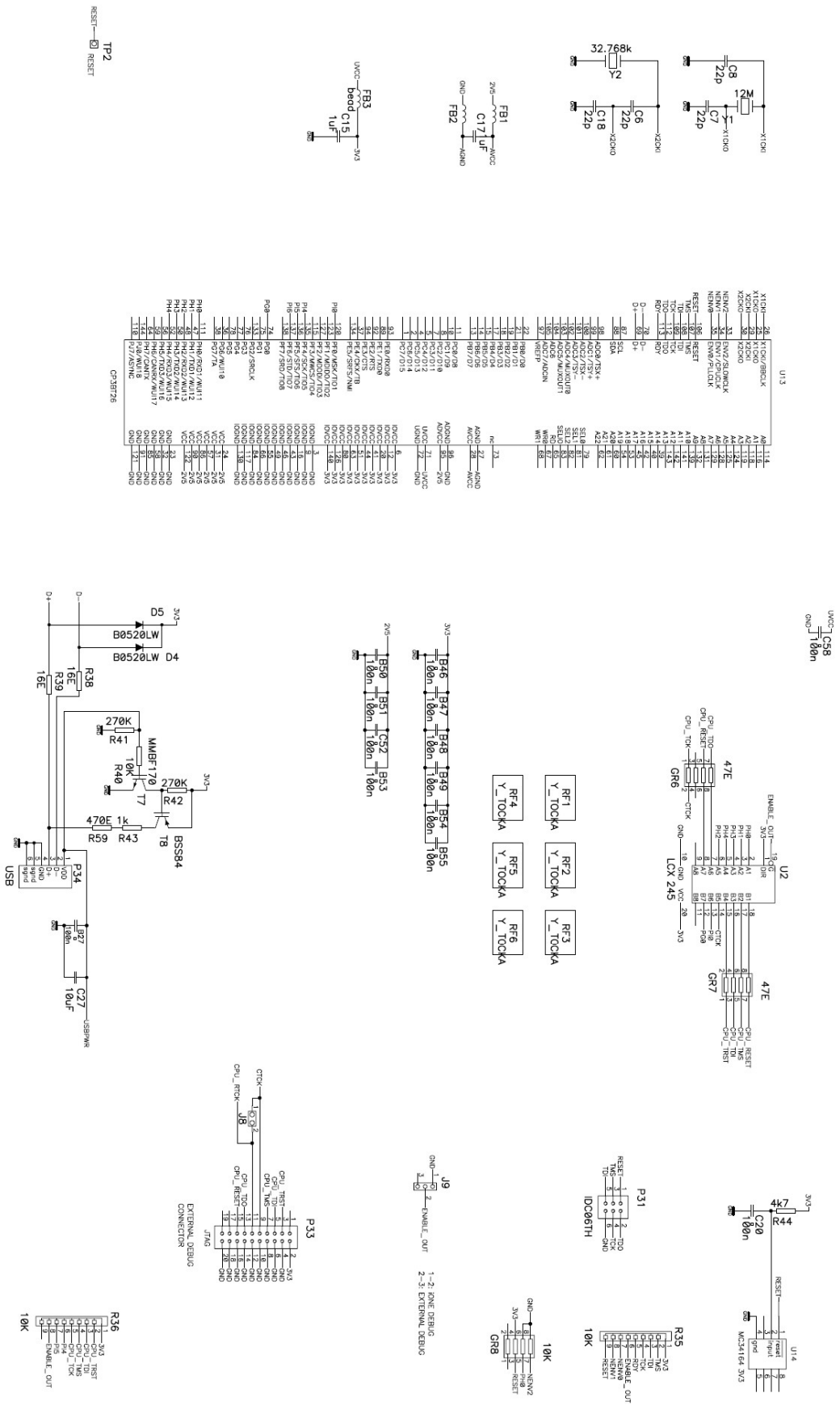
EXP2

GND	1	2	CPU_RESET
GND	3	4	/
PB0	5	6	PB1
PB2	7	8	PB3
PB4	9	10	PB5
PB6	11	12	PB7
PB8	13	14	PB9
PB10	15	16	PB11
RS232_TXD	17	18	RS232_RXD
PB16	19	20	PB17
PB18	21	22	PB19
SHDN	23	24	PC15/NWAIT
PC14	25	26	PC13
PC11	27	28	PC10/A25/CFRNW
PC9	29	30	PC8/CFCSE0
PC7/CFCE2	31	32	PC6/CFCE1
PC5	33	34	PC4
PA22	35	36	PA23
PA24	37	38	PA25
PA26	39	40	PA27
PB31	41	42	PB30
PB29	43	44	PB28
PB27	45	46	PB26
PB25	47	48	PB24
PB23	49	50	PB22
PB21	51	52	PB20
CFWE	53	54	CFOE
CFIOR/NBS1	55	56	CFIOW/NBS3
PA28	57	58	PA29
PA4	59	60	PA5
GND	61	62	HDMA
GND	63	64	HDPA

Schematic


U5 CPU
AT91SAM9260-QU
I/O
PWR
EXP1
EXP2
UR1 LM1084-IS 3.3
UR2 LM1117-2.5
UR3 LM1117-1.8
Q1 18.432M
Q2 32.768k
J11
J14
J12
J2
J1
J7
J13
TP1


U3
MT48LC16M16A2P-75
U4
MT48LC16M16A2P-75
U6
DM9161AEP
X1'
50MHz
X1
50MHz
P3
PULSE J00-0014NL
U8
ADM3202ARN
P5
RS232
P35
USB
USB DEVICE
U1
AT45DB321D-SU
U7
GR2
10k
GR1
10k
GR3
10k
R20
6k8 1%
R51 47E
R52 47E
R53 47E
R54 47E
R45 47E
R46 47E
R58 47E
R57 10k
R33
470E
FB4
FB5
FB6
FB8
C30
22pF
C31
22pF


U13
C73S726
TP2
RESET
FB1
FB2
FB3
C17
C15
C8
C7
C6
C18
12M
32.768k
Y2
X1CKI
X1CKO
X2CKI
X2CKO
U2
LCX 245
47E
GR6
GR7
RF1
RF2
RF3
RF4
RF5
RF6
Y_TOCKA
B46
B47
B48
B49
B54
B55
B50
B51
B52
B53
D5
B0520LW
D4
R38
R39
16E
R41
R40
270K
MMBF170
T7
R42
T8
BSS84
R59
R43
470E
1k
P34
USB
B27
C27
10uF
USBPWR
J8
P33
JTAG
EXTERNAL DEBUG CONNECTOR
J9
ENABLE_OUT
1-2: ICONE DEBUG
2-3: EXTERNAL DEBUG
P31
IDC06TH
R35
10K
GR8
U14
MC34164 3V3
R44
4k7
C20
C58
R36

Notes:

Disclaimer: iSYSTEM assumes no responsibility for any errors which may appear in this document, reserves the right to change devices or specifications detailed herein at any time without notice, and does not make any commitment to update the information herein.

© iSYSTEM. All rights reserved.