

**AT91SAM7S-EK Evaluation Board**  
.....  
**User Guide**







## Table of Contents

---

### Section 1

Overview .....	1-1
1.1 Scope .....	1-1
1.2 Deliverables .....	1-1
1.3 AT91SAM7S-EK Evaluation Board .....	1-1

---

### Section 2

Setting Up the AT91SAM7S-EK Board .....	2-1
2.1 Electrostatic Warning .....	2-1
2.2 Requirements .....	2-1
2.3 Powering Up the Board .....	2-1
2.4 Getting Started .....	2-1
2.5 AT91SAM7S-EK Block Diagram .....	2-2

---

### Section 3

Board Description .....	3-1
3.1 AT91SAM7S256 Microcontroller .....	3-1
3.2 AT91SAM7S256 Block Diagram .....	3-3
3.3 Memory .....	3-3
3.4 Clock Circuitry .....	3-3
3.5 Reset Circuitry .....	3-4
3.6 Power Supply Circuitry .....	3-4
3.7 Remote Communication .....	3-4
3.8 Analog Interface .....	3-4
3.9 User Interface .....	3-4
3.10 Debug Interface .....	3-4
3.11 Expansion Connector .....	3-4
3.12 Wrapping User Area .....	3-4

---

### Section 4

Configuration Straps .....	4-1
4.1 Configuration Strap .....	4-1

---

### Section 5

Schematics .....	5-1
5.1 Schematics .....	5-1

---

### Section 6

Revision History .....	6-1
6.1 Revision History .....	6-1





# Section 1

---

## Overview

- 
- 1.1 Scope** The AT91SAM7S-EK evaluation board enables the evaluation of and code development for applications running on an AT91SAM7Sxx device.
- This document describes the evaluation board fitted with an AT91SAM7S256.
- This guide focuses on the AT91SAM7S-EK board as an evaluation platform for the AT91SAM7S family.
- 
- 1.2 Deliverables**
- 1.2.1 Standard Version AT91SAM7S-EK VAR** The AT91SAM7S-EK package contains the following items:
- An AT91SAM7S-EK board
  - One A/B-type USB cable
  - One DVD-ROM containing summary and full datasheets, datasheets with electrical and mechanical characteristics, application notes and getting started documents for all development boards and AT91 microcontrollers. An AT91 software package with C and assembly listings is also provided. This allows the user to begin evaluating the AT91 ARM® Thumb® 32-bit microcontroller quickly.
- 
- 1.3 AT91SAM7S-EK Evaluation Board** The board is generally equipped with an AT91SAM7S256 (64-pin PQFP package) together with the following:
- USB device port interface
  - Two serial communication ports
  - JTAG/ICE debug interface
  - Four buffered analog inputs
  - Four general-purpose LEDs and pushbuttons
  - Expansion connector
  - Prototyping area

**Note:** The user can also evaluate the AT91SAM7S32 with this board. A 48-pin TQFP footprint has been provided for this purpose. To do so, the user must unsolder the AT91SAM7S256 microcontroller (IC4) and fit the AT91SAM7S32 on the 48-pin TQFP footprint (IC5).



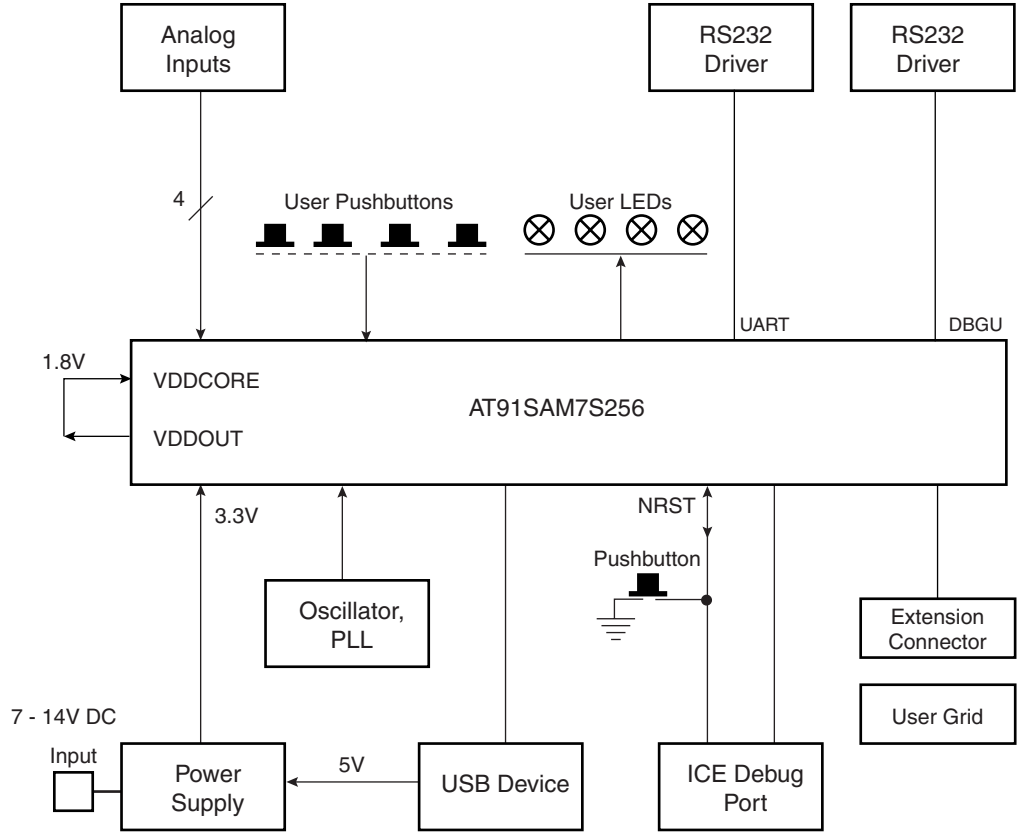
## Section 2

---

# Setting Up the AT91SAM7S-EK Board

- 
- 2.1 Electrostatic Warning** The AT91SAM7S-EK evaluation board is shipped in protective anti-static packaging. The board must not be subjected to high electrostatic potentials. A grounding strap or similar protective device should be worn when handling the board. Avoid touching the component pins or any other metallic element.
- 
- 2.2 Requirements** In order to set up the AT91SAM7S-EK evaluation board, the following items are needed:
- The AT91SAM7S-EK evaluation board itself.
  - Optional DC power supply capable of supplying 7V to 12V at 0.5 A.
- Note:** The AT91SAM7S-EK is not delivered with the JTAG/ICE interface required to start evaluating the device.
- 
- 2.3 Powering Up the Board** AT91SAM7S-EK is self-powered by the USB port. If the USB port is not used, the card can be supplied by an external DC power supply via the 2.1 mm socket (J1). The polarity of the power supply is not critical.
- The regulator allows the input voltage range to be from 7V to 12V.
- 
- 2.4 Getting Started** The AT91SAM7S-EK evaluation board is delivered with a DVD-ROM containing all necessary information and step-by-step procedures for working with the most common development toolchains. Please refer to this DVD-ROM, or to the AT91 web site, <http://www.atmel.com/products/AT91/>, for the most up-to-date information on getting started with the AT91SAM7S-EK.

2.5 AT91SAM7S-EK Block Diagram *Figure 2-1. Block Diagram for AT91SAM7S-EK Board*







## Section 3

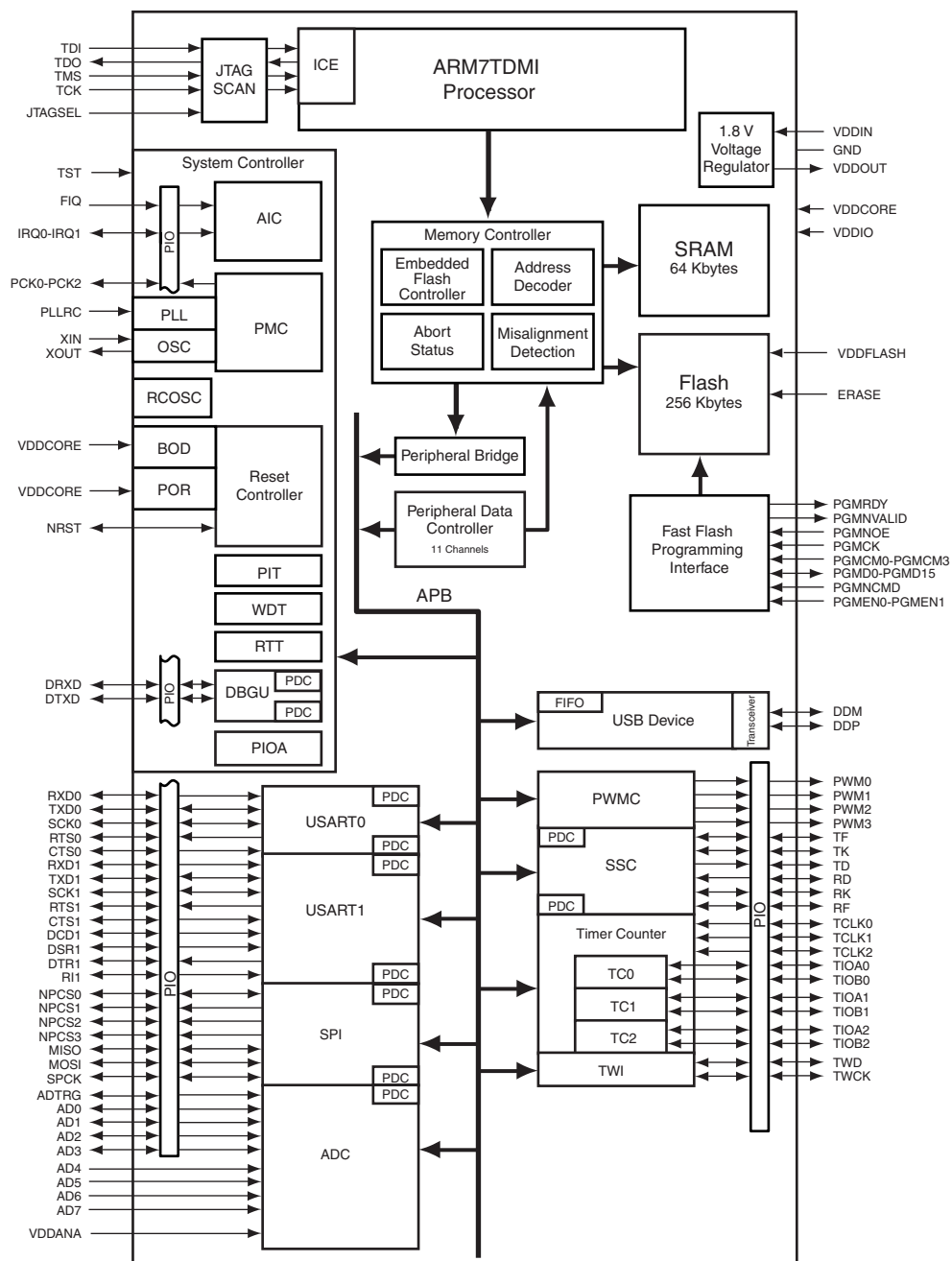
# Board Description

- 3.1 AT91SAM7S256 Microcontroller**
- Incorporates the ARM7TDMI<sup>®</sup> ARM<sup>®</sup> Thumb<sup>®</sup> Processor
    - High-performance 32-bit RISC Architecture
    - High-density 16-bit Instruction Set
    - Leader in MIPS/Watt
    - EmbeddedICE<sup>™</sup> In-circuit Emulation, Debug Communication Channel Support
  - 256 Kbytes of Internal High-speed Flash, Organized in 1024 Pages of 256 Bytes
    - Single Cycle Access at Up to 30 MHz in Worst Case Conditions, Prefetch Buffer Optimizing Thumb Instruction Execution at Maximum Speed
    - Page Programming Time: 4 ms, Including Page Auto-erase, Full Erase Time: 10 ms
    - 10,000 Write Cycles, 10-year Data Retention Capability, Sector Lock Capabilities, Flash Security Bit
    - Fast Flash Programming Interface for High Volume Production
  - 64 Kbytes of Internal High-speed SRAM, Single-cycle Access at Maximum Speed
  - Memory Controller (MC)
    - Embedded Flash Controller, Abort Status and Misalignment Detection
  - Reset Controller (RSTC)
    - Based on Power-on Reset and Low-power Factory-calibrated Brown-out Detector
    - Provides External Reset Signal Shaping and Reset Source Status
  - Clock Generator (CKGR)
    - Low-power RC Oscillator, 3 to 20 MHz On-chip Oscillator and one PLL
  - Power Management Controller (PMC)
    - Software Power Optimization Capabilities, Including Slow Clock Mode (Down to 500 Hz) and Idle Mode
    - Three Programmable External Clock Signals
  - Advanced Interrupt Controller (AIC)
    - Individually Maskable, Eight-level Priority, Vectored Interrupt Sources
    - Two External Interrupt Sources and One Fast Interrupt Source, Spurious Interrupt Protected
  - Debug Unit (DBGU)
    - 2-wire UART and Support for Debug Communication Channel interrupt, Programmable ICE Access Prevention
  - Periodic Interval Timer (PIT)
    - 20-bit Programmable Counter plus 12-bit Interval Counter
  - Windowed Watchdog (WDT)

- 12-bit key-protected Programmable Counter
- Provides Reset or Interrupt Signals to the System
- Counter May Be Stopped While the Processor is in Debug State or in Idle Mode
- Real-time Timer (RTT)
  - 32-bit Free-running Counter with Alarm
  - Runs Off the Internal RC Oscillator
- One Parallel Input/Output Controller (PIOA)
  - Thirty-Two Programmable I/O Lines Multiplexed with up to Two Peripheral I/Os
  - Input Change Interrupt Capability on Each I/O Line
  - Individually Programmable Open-drain, Pull-up resistor and Synchronous Output
- Eleven Peripheral Data Controller (PDC) Channels
- One USB 2.0 Full Speed (12 Mbits per second) Device Port
  - On-chip Transceiver, 328-byte Configurable Integrated FIFOs
- One Synchronous Serial Controller (SSC)
  - Independent Clock and Frame Sync Signals for Each Receiver and Transmitter
  - I<sup>2</sup>S Analog Interface Support, Time Division Multiplex Support
  - High-speed Continuous Data Stream Capabilities with 32-bit Data Transfer
- Two Universal Synchronous/Asynchronous Receiver Transmitters (USART)
  - Individual Baud Rate Generator, IrDA<sup>®</sup> Infrared Modulation/Demodulation
  - Support for ISO7816 T0/T1 Smart Card, Hardware Handshaking, RS485 Support
  - Manchester Encoder/Decoder
  - Full Modem Line Support on USART1
- One Master/Slave Serial Peripheral Interface (SPI)
  - 8- to 16-bit Programmable Data Length, Four External Peripheral Chip Selects
- One Three-channel 16-bit Timer/Counter (TC)
  - Three External Clock Inputs, Two Multi-purpose I/O Pins per Channel
  - Double PWM Generation, Capture/Waveform Mode, Up/Down Capability
- One Four-channel 16-bit PWM Controller (PWMC)
- One Two-wire Interface (TWI)
  - Master Mode Support Only, All Two-wire Atmel EEPROMs Supported
- One 8-channel 10-bit Analog-to-Digital Converter, Four Channels Multiplexed with Digital I/Os
- IEEE<sup>®</sup> 1149.1 JTAG Boundary Scan on All Digital Pins
- 5V-tolerant I/Os, including Four High-current Drive I/O lines, Up to 16 mA Each
- Power Supplies
  - Embedded 1.8V Regulator, Drawing up to 100 mA for the Core and External Components
  - 1.8V or 3.3V VDDIO I/O Lines Power Supply, Independent 3.3V VDDFLASH Flash Power Supply
  - 1.8V VDDCORE Core Power Supply with Brown-out Detector
  - 3.3V VDDANA Analog Voltage Supply
- Fully Static Operation: Up to 55 MHz at 1.65V and 85° C Worst Case Conditions
- Available in a 64-lead TQFP Package

### 3.2 AT91SAM7S256 Block Diagram

Figure 3-1. AT91SAM7S256 Block Diagram



- 3.3 Memory**
- 256 Kbytes of internal high-speed Flash
  - 64 Kbytes of internal high-speed SRAM

- 3.4 Clock Circuitry**
- 18.432 MHz standard crystal for the embedded oscillator

- 
- 3.5 Reset Circuitry**
- Internal bi-directional reset controller with brown out detector
  - External reset pushbutton
- 
- 3.6 Power Supply Circuitry**
- USB powered. The dynamic power consumption on VDDCORE is less than 50 mA at full speed when running out of the Flash. The total current drawn by all the I/O lines cannot exceed 200 mA.
  - External power can be applied via the 2.1 mm connector to the regulator in either polarity because of the diode-rectifying circuit (CR3 to CR6). The minimum voltage required is 7V. The board has a voltage regulator providing +3.3V. The regulator allows the input voltage to be from 7V to 14V (REG1).
  - The two power supplies are separated from each other by the diodes CR1 and CR2.
  - On-chip embedded VDDCORE 1.8V regulator
- 
- 3.7 Remote Communication**
- Two serial interface via RS-232 DB9 male sockets
    - DBGU COM Port
    - UART COM Port with RTS/CTS handshake control possibility (USART 0)
  - USB V2.0 full-speed compliant, 12 Mbits per second (UDP)
- 
- 3.8 Analog Interface**
- Four analog inputs (0V to 3.3V) via J7, J8, J9, J10 footprints
- 
- 3.9 User Interface**
- Four pushbuttons via general PIO lines
  - Four LEDs via high current PIO lines
- 
- 3.10 Debug Interface**
- 20-pin JTAG/ICE interface connector
  - DBGU COM port
- 
- 3.11 Expansion Connector**
- One expansion connector (J5) gives access to all the microcontroller's signals. All I/Os of the AT91SAM7S256 are routed to this connector. This allows the developer to check the integrity of the components and to extend the features of the board by adding external hardware components or boards.
- 
- 3.12 Wrapping User Area**
- This allows the developer to fit additional components for prototyping use.



## Section 4

# Configuration Straps

### 4.1 Configuration Strap

Table 4-1 gives details on configuration straps on the AT91SAM7S-EK evaluation board and their default settings.

**Table 4-1.** Configuration Straps

Designation	Default Setting	Feature
JP1	Closed	Enables the use of the remote DP pull-up (USB)
JP2	Closed	Enables the use of the VBUS detect (USB)
JP3	Opened	Disable external VCC on the expansion connector J5 (pin 1, 2)
JP4	Closed	The System Reset signal (NRST) is connected to the ICE/JTAG socket (J4, pin 15).
JP5	Opened	Do not use: Factory test mode
JP6	Closed	Enables the use of the CTS signal (UART)
JP7	Closed	Enables the use of the TXD signal (UART)
JP8	Closed	Enables the use of the RTS signal (UART)
JP9	Closed	Enables the use of the RXD signal (UART)
JP10	Closed	
JP11	Closed	Enables the use of the RXD signal (DBGU)
JP12	Closed	Enables the use of the TXD signal (DBGU)
JP13 <sup>(1)</sup>	Closed	VDDFLASH Jumper
JP14 <sup>(1)</sup>	Closed	VDDIO Jumper
JP15	Closed	Enables the use of the User LED (DS1)
JP16	Closed	Enables the use of the User LED (DS2)
JP17	Closed	Enables the use of the User LED (DS3)
JP18	Closed	Enables the use of the User LED (DS4)
JP19	Opened	Select ICE mode or JTAG mode (Closed)
JP20 <sup>(1)</sup>	Closed	ADVREFP Jumper
JP21 <sup>(1)</sup>	Closed	VDDPLL Jumper

**Table 4-1.** Configuration Straps

Designation	Default Setting	Feature
JP22 <sup>(1)</sup>	Closed	VDDIN Jumper
JP23 <sup>(1)</sup>	Closed	VDDCORE Jumper
JP24	Closed	Enables the use of the EXT_AD0 (Analog Input 0)
JP25	Closed	Enables the use of the EXT_AD1 (Analog Input 1)
JP26	Closed	Enables the use of the EXT_AD4 (Analog Input 4)
JP27	Closed	Enables the use of the EXT_AD5 (Analog Input 5)
JP28	Opened	Erases all internal Flash memory when the board is powered. To do so, the user must close J28 for at least 10 ms.
TP1	N.A	GND Test point
TP3	N.A	GND Test point
TP5	N.A	GND Test point
TP6	N.A	GND Test point

Note: 1. These jumpers are dedicated to power consumption measurement use. The user has to open the jumper and insert an anmeter. If these jumpers are not populated (previous revisions of the kit), the related straps are wired on board. In this case and in order to use the power consumption measurement feature, the user has to open the strap by cutting it before soldering a jumper and inserting an anmeter.



## Section 5

---

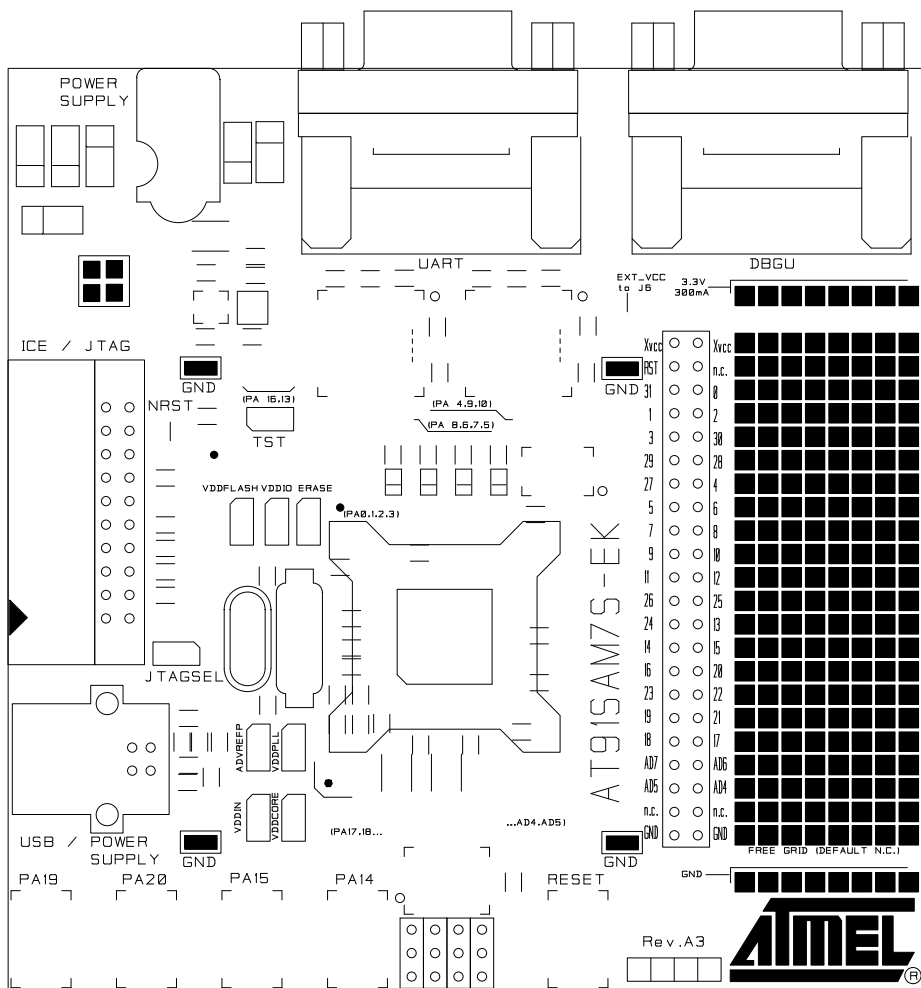
# Schematics

---

### 5.1 Schematics

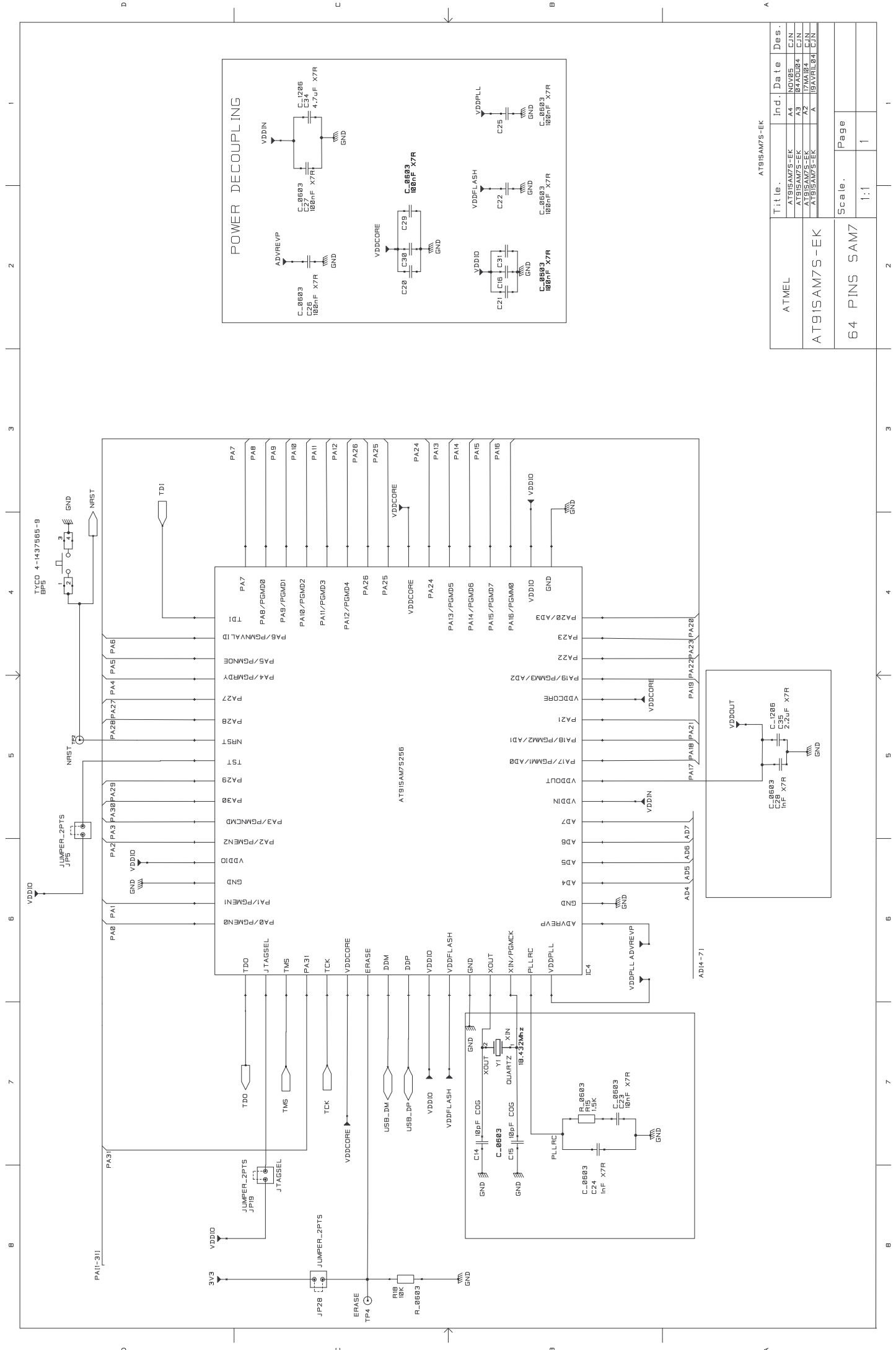
This section contains the following schematics:

- Board Layout And Silkscreen Printing - Top View
- 64-pin SAM7 Microcontroller (dual footprint)
- 48-pin SAM7 Microcontroller
- Power Supply
- ICE/EXT Connectors
- Device Interface
- PIO
- User PAD Grid



A3	4 AUG 04	
A2	9 JUNE 04	
A	15 APR 04	Initial version





AT91SAM7S-EK

Title	Ind.	Date	Des.
AT91SAM7S-EK	A4	NDV05	CJN
AT91SAM7S-EK	A3	04A0084	CJN
AT91SAM7S-EK	A2	17MA164	CJN
AT91SAM7S-EK	A	15AVRL04	CJN

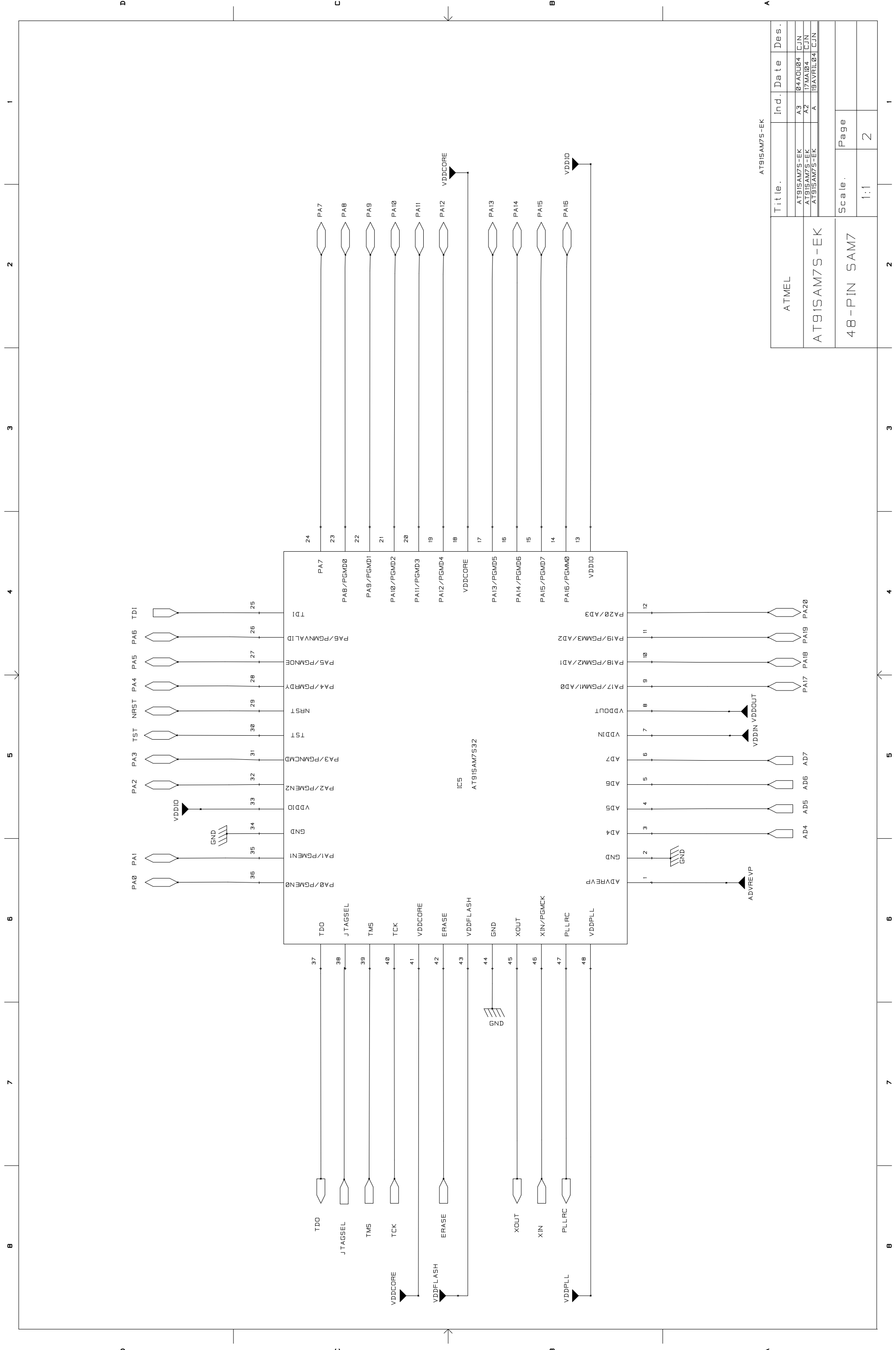
ATMEL

AT91SAM7S-EK

Scale: 1:1

Page 1

64 PINS SAM7



AT91SAM7S-EK

Title.		Ind.	Date	Des.
ATMEL		A3	04A0U04	CJN
AT91SAM7S-EK		A2	17MAB-4	CJN
AT91SAM7S-EK		A	19AVRIL04	CJN

Scale.	Page
1:1	2

AT91SAM7S-EK

48-PIN SAM7

1 2 3 4 5 6 7

1 2 3 4 5 6 7

D

C

B

A

D

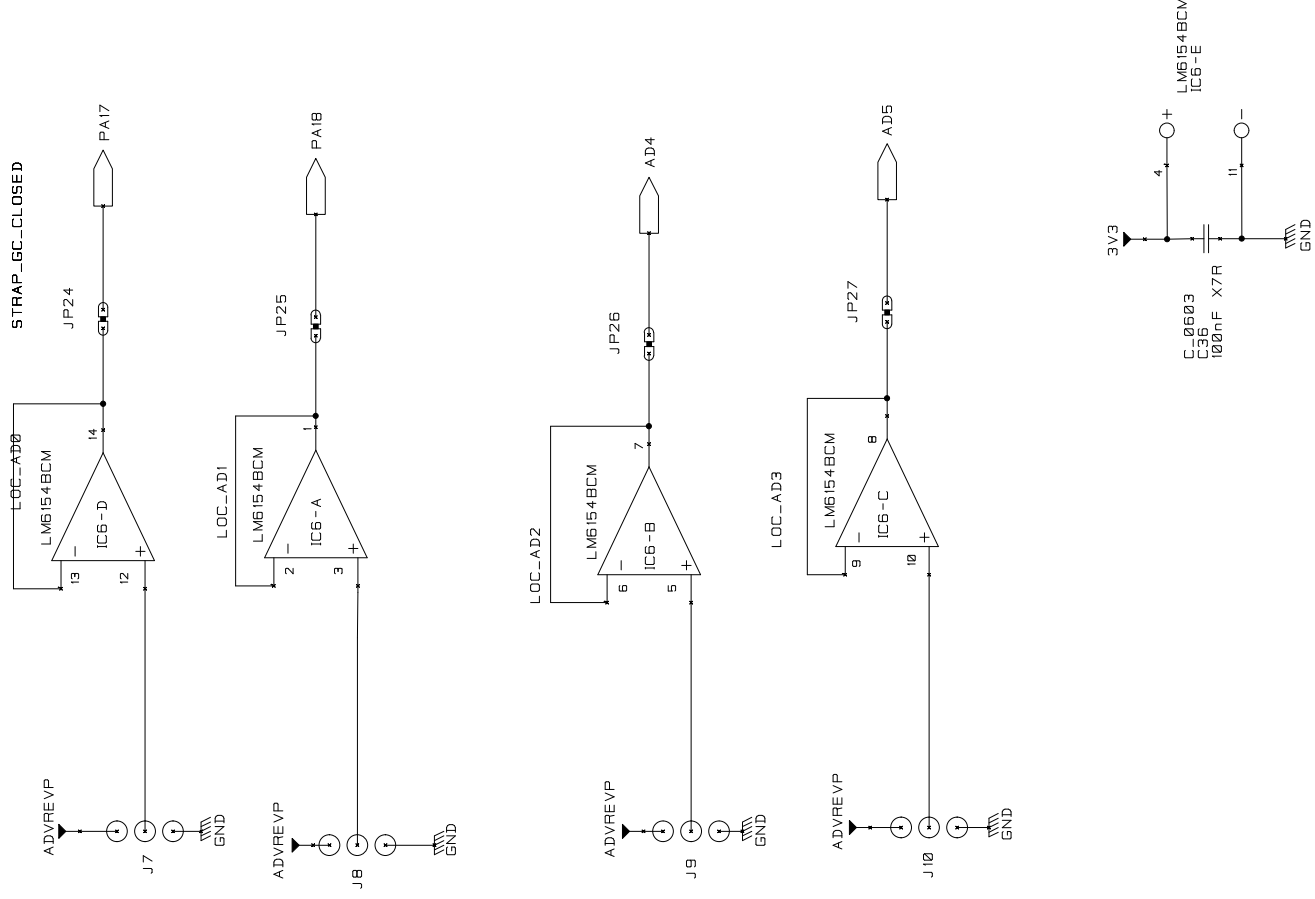
C

B

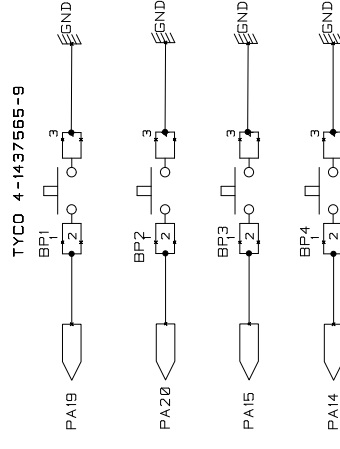
A

### ANALOG INPUTS

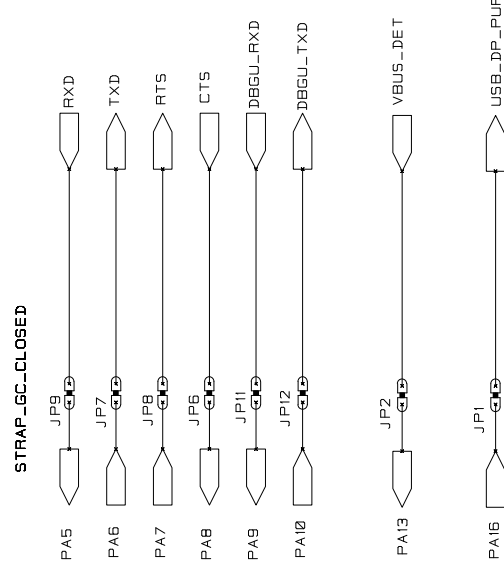
BARRETTE 3PTS 2.54MM



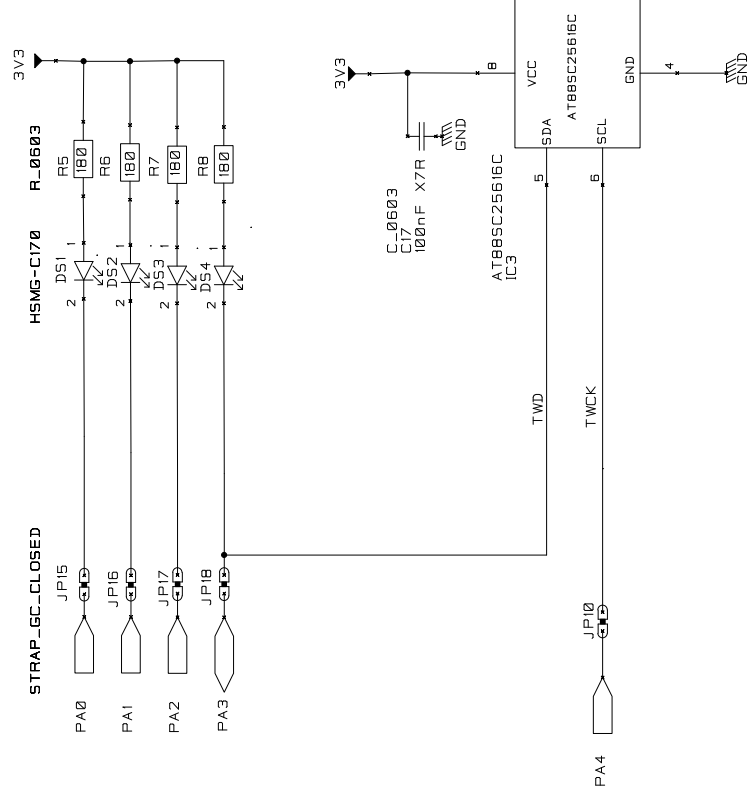
### USER PUSH-BUTTONS



### PIO STRAPS



### USER LEDS & CRYPTO MEMORY



A

AT91SAM7S-EK

ATMEL		Title.	Ind.	Date	Des.
AT91SAM7S-EK		AT91SAM7S-EK	A3	04A0U04	CJN
AT91SAM7S-EK		AT91SAM7S-EK	A2	17MAR04	CJN
AT91SAM7S-EK		AT91SAM7S-EK	A	19AVRIL04	CJN
PIO		Scale.	Page		
		1:1	6		

B

7

6

5

4

3

2

1

D

C

B

B

7

6

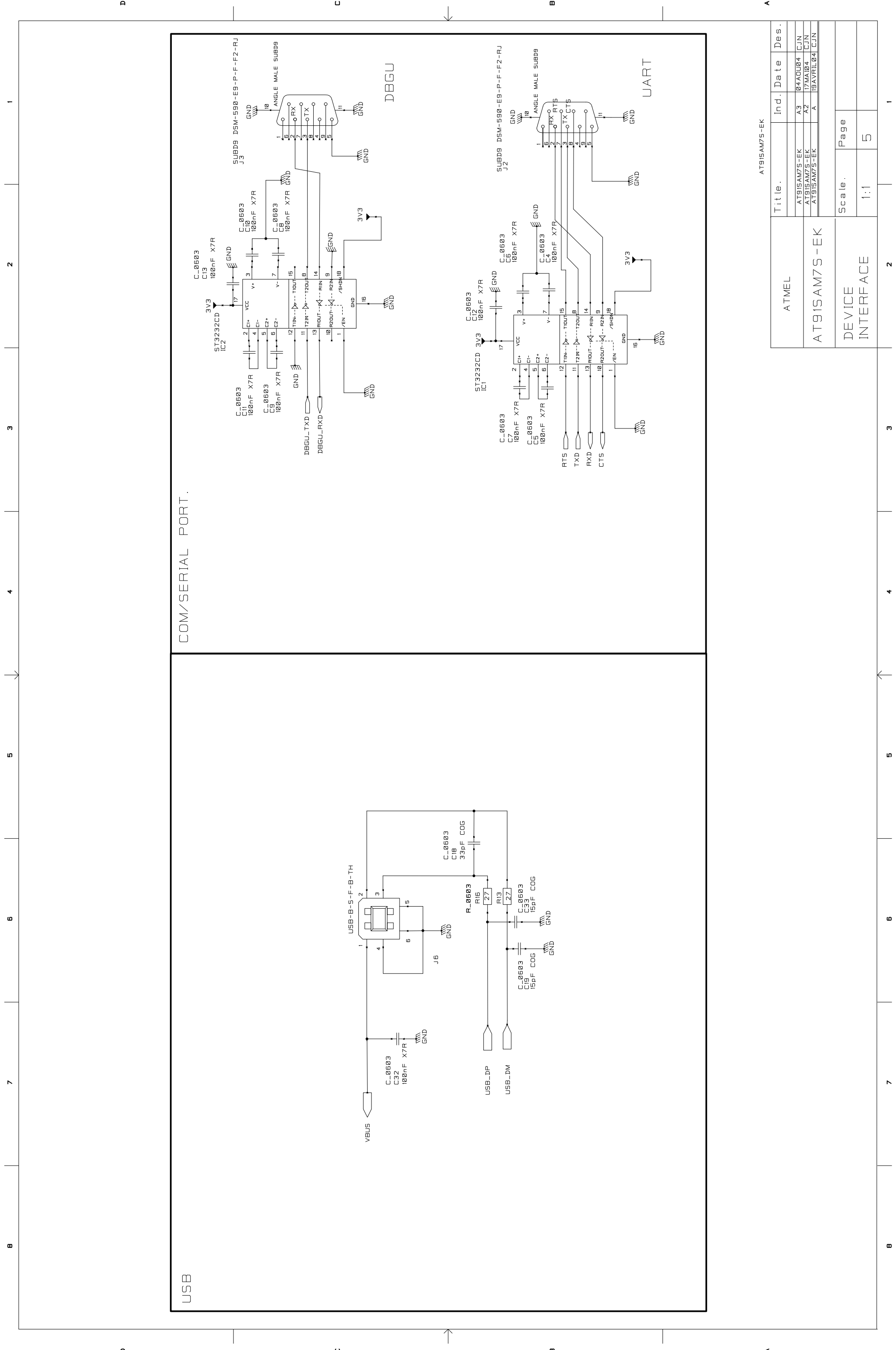
5

4

3

2

1



COM/SERIAL PORT.

USB

DBGU

UART

Title.		Ind.	Date	Des.
ATMEL				
AT91SAM7S-EK		A3	04A0U04	CJN
AT91SAM7S-EK		A2	17MAB4	CJN
AT91SAM7S-EK		A	19AVRIL04	CJN
Scale.		Page		
1:1		5		

AT91SAM7S-EK

1 2 3 4 5 6 7 8

1 2 3 4 5 6 7 8

D

D

C

C

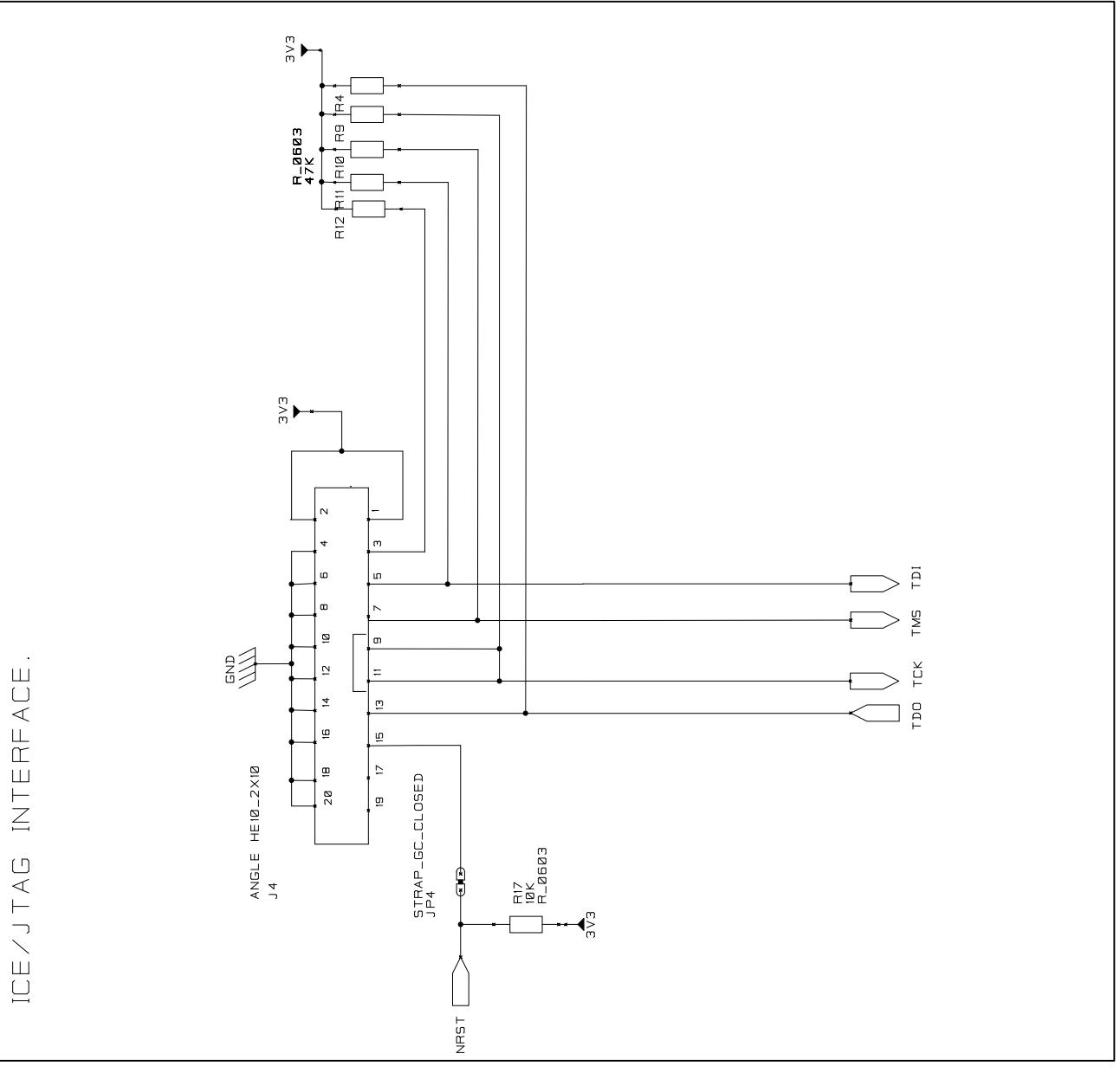
B

B

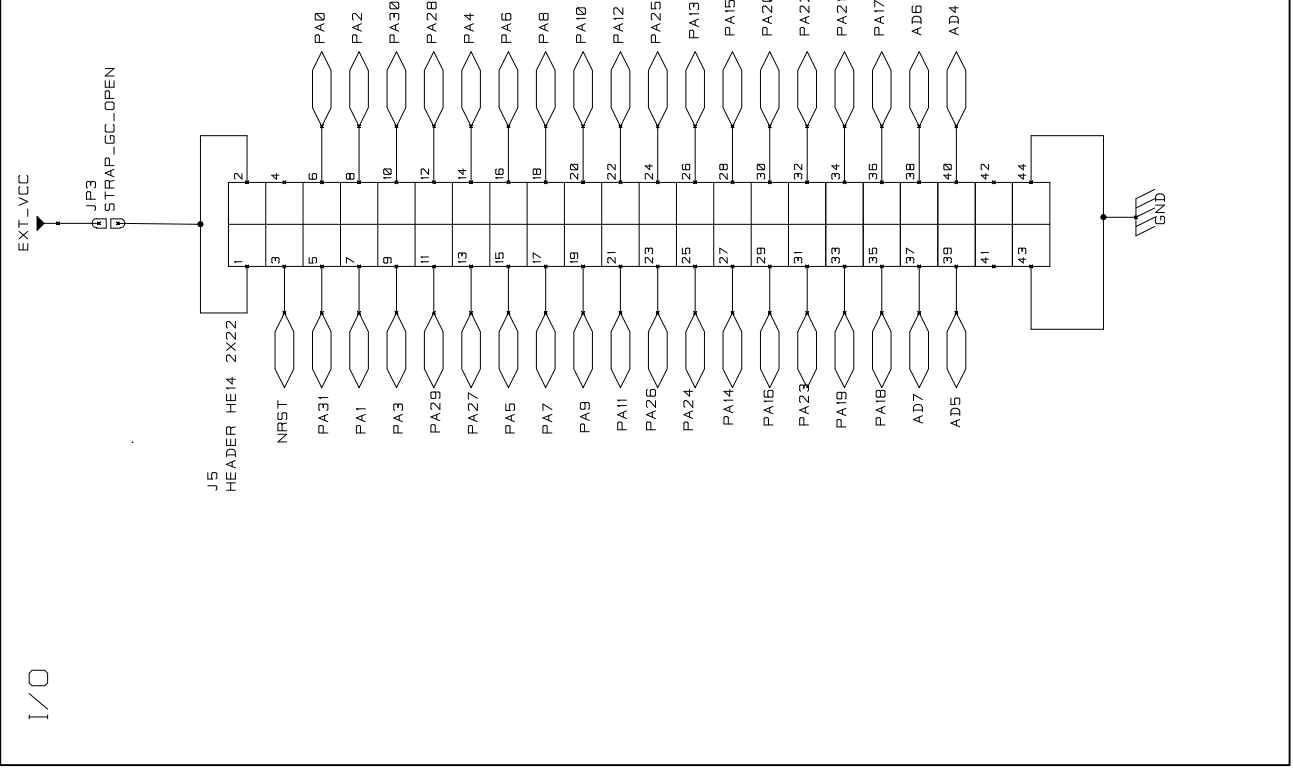
A

A

ICE/JTAG INTERFACE.



I/O

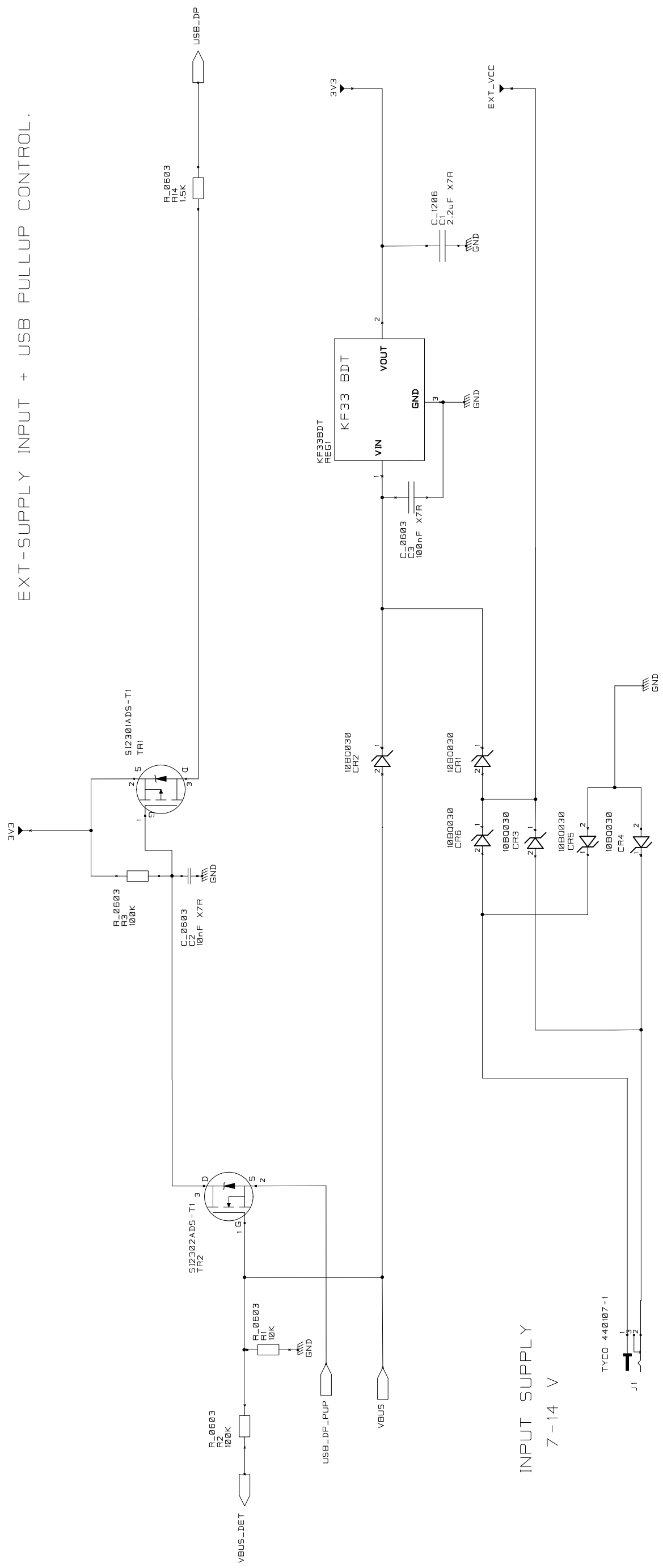


Title.	Ind.	Date	Des.
ATMEL			
AT91SAM7S-EK	A3	04A0U04	CJN
AT91SAM7S-EK	A2	17MA104	CJN
AT91SAM7S-EK	A	19AVR104	CJN

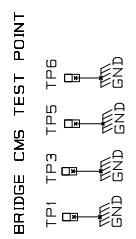
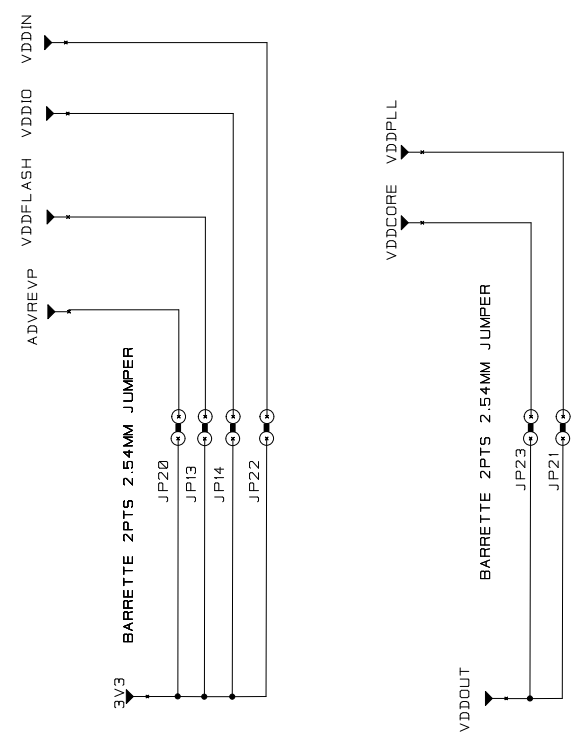
Scale.	Page
1:1	4

EXT-SUPPLY INPUT + USB PULLUP CONTROL.



SUPPLY DISTRIBUTION

GROUND TEST POINTS



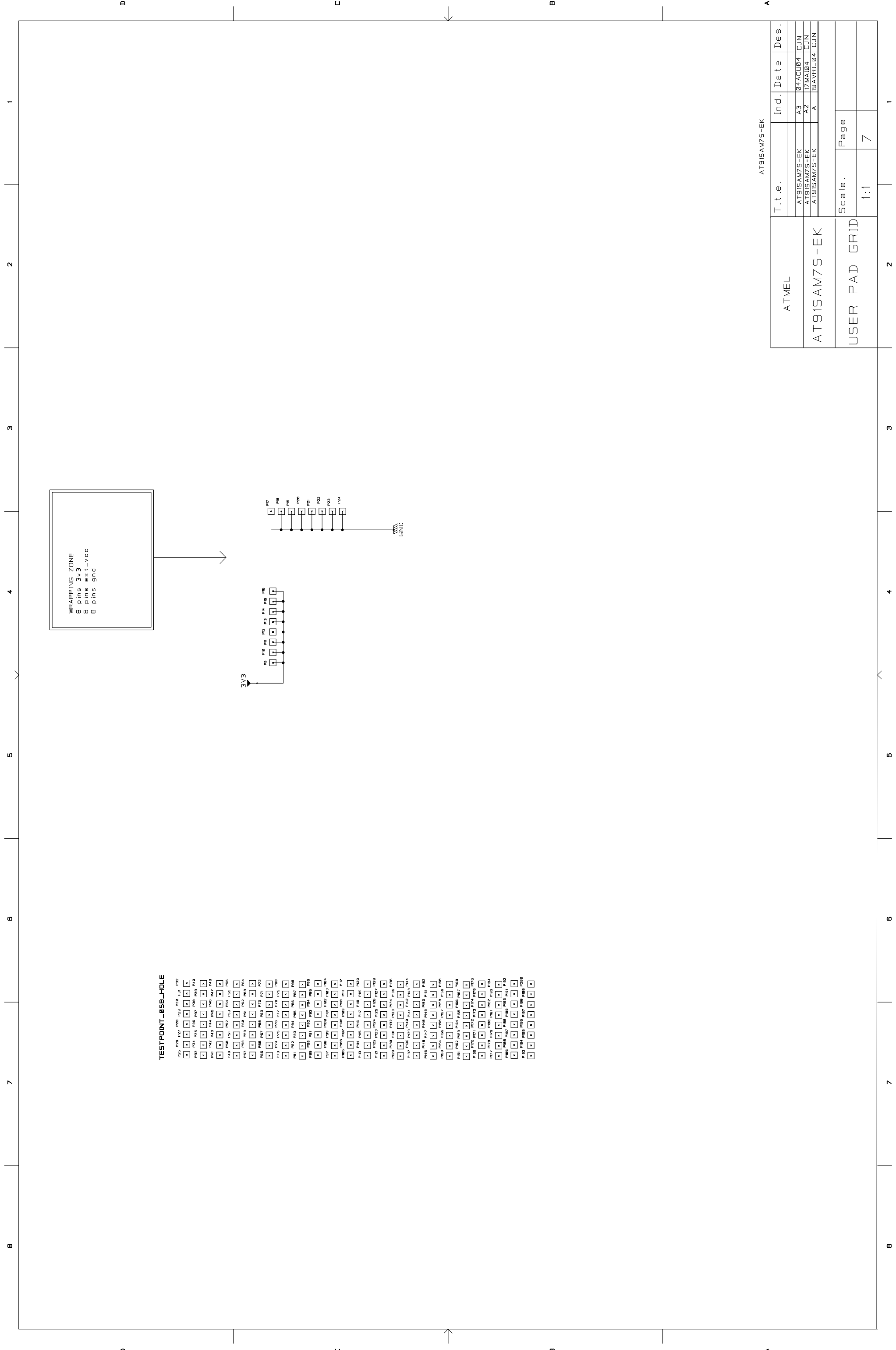
AT91SAM7S-EK

Title.	Ind.	Date	Des.
ATMEL	A3	04A0U04	CJN
AT91SAM7S-EK	A2	17MAR04	CJN
AT91SAM7S-EK	A	19AVRIL04	CJN

Scale.	Page
1:1	3

B 1 2 3 4 5 6 7 D C B A



WRAPPING\_ZONE  
 8 pins 3v3  
 8 pins ex1\_vcc  
 8 pins gnd

TESTPOINT\_B5B\_HOLE

- P26 P27 P28 P29 P30 P31 P32
- P33 P34 P35 P36 P37 P38 P39
- P40 P41 P42 P43 P44 P45 P46
- P47 P48 P49 P50 P51 P52 P53
- P54 P55 P56 P57 P58 P59 P60
- P61 P62 P63 P64 P65 P66 P67
- P68 P69 P70 P71 P72 P73 P74
- P75 P76 P77 P78 P79 P80 P81
- P82 P83 P84 P85 P86 P87 P88
- P89 P90 P91 P92 P93 P94 P95
- P96 P97 P98 P99 P100 P101 P102
- P103 P104 P105 P106 P107 P108 P109
- P110 P111 P112 P113 P114 P115 P116
- P117 P118 P119 P120 P121 P122 P123
- P124 P125 P126 P127 P128 P129 P130
- P131 P132 P133 P134 P135 P136 P137
- P138 P139 P140 P141 P142 P143 P144
- P145 P146 P147 P148 P149 P150 P151
- P152 P153 P154 P155 P156 P157 P158
- P159 P160 P161 P162 P163 P164 P165
- P166 P167 P168 P169 P170 P171 P172
- P173 P174 P175 P176 P177 P178 P179
- P180 P181 P182 P183 P184 P185 P186
- P187 P188 P189 P190 P191 P192 P193
- P194 P195 P196 P197 P198 P199 P200
- P201 P202 P203 P204 P205 P206 P207
- P208 P209 P210 P211 P212 P213 P214
- P215 P216 P217 P218 P219 P220 P221
- P222 P223 P224 P225 P226 P227 P228
- P229 P230 P231 P232 P233 P234 P235
- P236 P237 P238 P239 P240 P241 P242
- P243 P244 P245 P246 P247 P248 P249
- P250 P251 P252 P253 P254 P255 P256
- P257 P258 P259 P260 P261 P262 P263
- P264 P265 P266 P267 P268 P269 P270
- P271 P272 P273 P274 P275 P276 P277
- P278 P279 P280 P281 P282 P283 P284
- P285 P286 P287 P288 P289 P290 P291
- P292 P293 P294 P295 P296 P297 P298
- P299 P300 P301 P302 P303 P304 P305
- P306 P307 P308 P309 P310 P311 P312
- P313 P314 P315 P316 P317 P318 P319
- P320 P321 P322 P323 P324 P325 P326
- P327 P328 P329 P330 P331 P332 P333
- P334 P335 P336 P337 P338 P339 P340
- P341 P342 P343 P344 P345 P346 P347
- P348 P349 P350 P351 P352 P353 P354
- P355 P356 P357 P358 P359 P360 P361
- P362 P363 P364 P365 P366 P367 P368
- P369 P370 P371 P372 P373 P374 P375
- P376 P377 P378 P379 P380 P381 P382
- P383 P384 P385 P386 P387 P388 P389
- P390 P391 P392 P393 P394 P395 P396
- P397 P398 P399 P400 P401 P402 P403
- P404 P405 P406 P407 P408 P409 P410
- P411 P412 P413 P414 P415 P416 P417
- P418 P419 P420 P421 P422 P423 P424
- P425 P426 P427 P428 P429 P430 P431
- P432 P433 P434 P435 P436 P437 P438
- P439 P440 P441 P442 P443 P444 P445
- P446 P447 P448 P449 P450 P451 P452
- P453 P454 P455 P456 P457 P458 P459
- P460 P461 P462 P463 P464 P465 P466
- P467 P468 P469 P470 P471 P472 P473
- P474 P475 P476 P477 P478 P479 P480
- P481 P482 P483 P484 P485 P486 P487
- P488 P489 P490 P491 P492 P493 P494
- P495 P496 P497 P498 P499 P500 P501
- P502 P503 P504 P505 P506 P507 P508
- P509 P510 P511 P512 P513 P514 P515
- P516 P517 P518 P519 P520 P521 P522
- P523 P524 P525 P526 P527 P528 P529
- P530 P531 P532 P533 P534 P535 P536
- P537 P538 P539 P540 P541 P542 P543
- P544 P545 P546 P547 P548 P549 P550
- P551 P552 P553 P554 P555 P556 P557
- P558 P559 P560 P561 P562 P563 P564
- P565 P566 P567 P568 P569 P570 P571
- P572 P573 P574 P575 P576 P577 P578
- P579 P580 P581 P582 P583 P584 P585
- P586 P587 P588 P589 P590 P591 P592
- P593 P594 P595 P596 P597 P598 P599
- P600 P601 P602 P603 P604 P605 P606
- P607 P608 P609 P610 P611 P612 P613
- P614 P615 P616 P617 P618 P619 P620
- P621 P622 P623 P624 P625 P626 P627
- P628 P629 P630 P631 P632 P633 P634
- P635 P636 P637 P638 P639 P640 P641
- P642 P643 P644 P645 P646 P647 P648
- P649 P650 P651 P652 P653 P654 P655
- P656 P657 P658 P659 P660 P661 P662
- P663 P664 P665 P666 P667 P668 P669
- P670 P671 P672 P673 P674 P675 P676
- P677 P678 P679 P680 P681 P682 P683
- P684 P685 P686 P687 P688 P689 P690
- P691 P692 P693 P694 P695 P696 P697
- P698 P699 P700 P701 P702 P703 P704
- P705 P706 P707 P708 P709 P710 P711
- P712 P713 P714 P715 P716 P717 P718
- P719 P720 P721 P722 P723 P724 P725
- P726 P727 P728 P729 P730 P731 P732
- P733 P734 P735 P736 P737 P738 P739
- P740 P741 P742 P743 P744 P745 P746
- P747 P748 P749 P750 P751 P752 P753
- P754 P755 P756 P757 P758 P759 P760
- P761 P762 P763 P764 P765 P766 P767
- P768 P769 P770 P771 P772 P773 P774
- P775 P776 P777 P778 P779 P780 P781
- P782 P783 P784 P785 P786 P787 P788
- P789 P790 P791 P792 P793 P794 P795
- P796 P797 P798 P799 P800 P801 P802
- P803 P804 P805 P806 P807 P808 P809
- P810 P811 P812 P813 P814 P815 P816
- P817 P818 P819 P820 P821 P822 P823
- P824 P825 P826 P827 P828 P829 P830
- P831 P832 P833 P834 P835 P836 P837
- P838 P839 P840 P841 P842 P843 P844
- P845 P846 P847 P848 P849 P850 P851
- P852 P853 P854 P855 P856 P857 P858
- P859 P860 P861 P862 P863 P864 P865
- P866 P867 P868 P869 P870 P871 P872
- P873 P874 P875 P876 P877 P878 P879
- P880 P881 P882 P883 P884 P885 P886
- P887 P888 P889 P890 P891 P892 P893
- P894 P895 P896 P897 P898 P899 P900
- P901 P902 P903 P904 P905 P906 P907
- P908 P909 P910 P911 P912 P913 P914
- P915 P916 P917 P918 P919 P920 P921
- P922 P923 P924 P925 P926 P927 P928
- P929 P930 P931 P932 P933 P934 P935
- P936 P937 P938 P939 P940 P941 P942
- P943 P944 P945 P946 P947 P948 P949
- P950 P951 P952 P953 P954 P955 P956
- P957 P958 P959 P960 P961 P962 P963
- P964 P965 P966 P967 P968 P969 P970
- P971 P972 P973 P974 P975 P976 P977
- P978 P979 P980 P981 P982 P983 P984
- P985 P986 P987 P988 P989 P990 P991
- P992 P993 P994 P995 P996 P997 P998
- P999 P1000

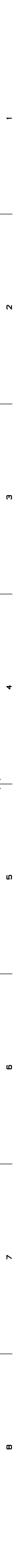
AT91SAM7S-EK

Title.	Ind.	Date	Des.
ATMEL			
AT91SAM7S-EK	A3	04A0U04	CJN
AT91SAM7S-EK	A2	17MAR04	CJN
AT91SAM7S-EK	A	19AVRIL04	CJN

Scale.	Page
1:1	7

A









## Section 6

# Revision History

### 6.1 Revision History

*Table 6-1.*

Document	Comments	Change Request Ref.
6112A	First issue.	
6112B	New schematics.	1457
6112C	Corrected features for JP26 and JP27 in <a href="#">Table 4-1</a> , "Configuration Straps". Corrected device label in 64-pin SAM7 schematic.	3849 2734





## Atmel Corporation

2325 Orchard Parkway  
San Jose, CA 95131, USA  
Tel: 1(408) 441-0311  
Fax: 1(408) 487-2600

## Regional Headquarters

### Europe

Atmel Sarl  
Route des Arsenalux 41  
Case Postale 80  
CH-1705 Fribourg  
Switzerland  
Tel: (41) 26-426-5555  
Fax: (41) 26-426-5500

### Asia

Room 1219  
Chinachem Golden Plaza  
77 Mody Road Tsimshatsui  
East Kowloon  
Hong Kong  
Tel: (852) 2721-9778  
Fax: (852) 2722-1369

### Japan

9F, Tonetsu Shinkawa Bldg.  
1-24-8 Shinkawa  
Chuo-ku, Tokyo 104-0033  
Japan  
Tel: (81) 3-3523-3551  
Fax: (81) 3-3523-7581

## Atmel Operations

### Memory

2325 Orchard Parkway  
San Jose, CA 95131, USA  
Tel: 1(408) 441-0311  
Fax: 1(408) 436-4314

### Microcontrollers

2325 Orchard Parkway  
San Jose, CA 95131, USA  
Tel: 1(408) 441-0311  
Fax: 1(408) 436-4314

### La Chantrerie

BP 70602  
44306 Nantes Cedex 3, France  
Tel: (33) 2-40-18-18-18  
Fax: (33) 2-40-18-19-60

### ASIC/ASSP/Smart Cards

Zone Industrielle  
13106 Rousset Cedex, France  
Tel: (33) 4-42-53-60-00  
Fax: (33) 4-42-53-60-01

1150 East Cheyenne Mtn. Blvd.  
Colorado Springs, CO 80906, USA  
Tel: 1(719) 576-3300  
Fax: 1(719) 540-1759

Scottish Enterprise Technology Park  
Maxwell Building  
East Kilbride G75 0QR, Scotland  
Tel: (44) 1355-803-000  
Fax: (44) 1355-242-743

### RF/Automotive

Theresienstrasse 2  
Postfach 3535  
74025 Heilbronn, Germany  
Tel: (49) 71-31-67-0  
Fax: (49) 71-31-67-2340

1150 East Cheyenne Mtn. Blvd.  
Colorado Springs, CO 80906, USA  
Tel: 1(719) 576-3300  
Fax: 1(719) 540-1759

### Biometrics

Avenue de Rochepleine  
BP 123  
38521 Saint-Egreve Cedex, France  
Tel: (33) 4-76-58-47-50  
Fax: (33) 4-76-58-47-60



**Disclaimer:** The information in this document is provided in connection with Atmel products. No license, express or implied, by estoppel or otherwise, to any intellectual property right is granted by this document or in connection with the sale of Atmel products. **EXCEPT AS SET FORTH IN ATMEL'S TERMS AND CONDITIONS OF SALE LOCATED ON ATMEL'S WEB SITE, ATMEL ASSUMES NO LIABILITY WHATSOEVER AND DISCLAIMS ANY EXPRESS, IMPLIED OR STATUTORY WARRANTY RELATING TO ITS PRODUCTS INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR NON-INFRINGEMENT. IN NO EVENT SHALL ATMEL BE LIABLE FOR ANY DIRECT, INDIRECT, CONSEQUENTIAL, PUNITIVE, SPECIAL OR INCIDENTAL DAMAGES (INCLUDING, WITHOUT LIMITATION, DAMAGES FOR LOSS OF PROFITS, BUSINESS INTERRUPTION, OR LOSS OF INFORMATION) ARISING OUT OF THE USE OR INABILITY TO USE THIS DOCUMENT, EVEN IF ATMEL HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.** Atmel makes no representations or warranties with respect to the accuracy or completeness of the contents of this document and reserves the right to make changes to specifications and product descriptions at any time without notice. Atmel does not make any commitment to update the information contained herein. Unless specifically provided otherwise, Atmel products are not suitable for, and shall not be used in, automotive applications. Atmel's products are not intended, authorized, or warranted for use as components in applications intended to support or sustain life.

© 2007 Atmel Corporation. All rights reserved. Atmel®, logo and combinations thereof, Everywhere You Are® and others are registered trademarks or trademarks of Atmel Corporation or its subsidiaries. ARM®, Thumb® and ARM Powered® are the registered trademarks or trademarks of ARM Ltd. Other terms and product names may be trademarks of others.

## Literature Requests

[www.atmel.com/literature](http://www.atmel.com/literature)



Printed on recycled paper.

6112C-ATARM-01-Feb-07

# AMEYA360

## Components Supply Platform

Authorized Distribution Brand :



Website :

Welcome to visit [www.ameya360.com](http://www.ameya360.com)

Contact Us :

➤ Address :

401 Building No.5, JiuGe Business Center, Lane 2301, Yishan Rd  
Minhang District, Shanghai , China

➤ Sales :

Direct +86 (21) 6401-6692

Email [amall@ameya360.com](mailto:amall@ameya360.com)

QQ 800077892

Skype [ameyasales1](#) [ameyasales2](#)

➤ Customer Service :

Email [service@ameya360.com](mailto:service@ameya360.com)

➤ Partnership :

Tel +86 (21) 64016692-8333

Email [mkt@ameya360.com](mailto:mkt@ameya360.com)