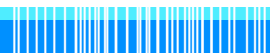


SAM7S512 SAM7S256 SAM7S128 SAM7S64 SAM7S321 SAM7S32 SAM7S161 SAM7S16 Summary

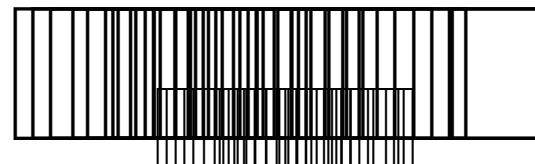
Features

- Incorporates the ARM7TDMI® ARM® Thumb® Processor
 - High-performance 32-bit RISC Architecture
 - High-density 16-bit Instruction Set
 - Leader in MIPS/Watt
 - EmbeddedICE™ In-circuit Emulation, Debug Communication Channel Support
- Internal High-speed Flash
 - 512 Kbytes (SAM7S512) Organized in Two Contiguous Banks of 1024 Pages of 256 Bytes (Dual Plane)
 - 256 Kbytes (SAM7S256) Organized in 1024 Pages of 256 Bytes (Single Plane)
 - 128 Kbytes (SAM7S128) Organized in 512 Pages of 256 Bytes (Single Plane)
 - 64 Kbytes (SAM7S64) Organized in 512 Pages of 128 Bytes (Single Plane)
 - 32 Kbytes (SAM7S321/32) Organized in 256 Pages of 128 Bytes (Single Plane)
 - 16 Kbytes (SAM7S161/16) Organized in 256 Pages of 64 Bytes (Single Plane)
 - Single Cycle Access at Up to 30 MHz in Worst Case Conditions
 - Prefetch Buffer Optimizing Thumb Instruction Execution at Maximum Speed
 - Page Programming Time: 6 ms, Including Page Auto-erase, Full Erase Time: 15 ms
 - 10,000 Write Cycles, 10-year Data Retention Capability, Sector Lock Capabilities, Flash Security Bit
 - Fast Flash Programming Interface for High Volume Production
- Internal High-speed SRAM, Single-cycle Access at Maximum Speed
 - 64 Kbytes (SAM7S512/256)
 - 32 Kbytes (SAM7S128)
 - 16 Kbytes (SAM7S64)
 - 8 Kbytes (SAM7S321/32)
 - 4 Kbytes (SAM7S161/16)
- 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 (SAM7S512/256/128/64/321/161) or One (SAM7S32/16) External Interrupt Source(s) and One Fast Interrupt Source, Spurious Interrupt Protected

This is a summary document.
The complete document is
available on the Atmel website
at www.atmel.com.



- **Debug Unit (DBGU)**
 - 2-wire UART and Support for Debug Communication Channel interrupt, Programmable ICE Access Prevention
 - Mode for General Purpose 2-wire UART Serial Communication
- **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 (SAM7S512/256/128/64/321/161) or twenty-one (SAM7S32/16) 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 (SAM7S512/256/128/64/321/161) or Nine (SAM7S32/16) Peripheral DMA Controller (PDC) Channels**
- **One USB 2.0 Full Speed (12 Mbits per Second) Device Port (Except for the SAM7S32/16).**
 - On-chip Transceiver, 328-byte Configurable Integrated FIFOs
- **One Synchronous Serial Controller (SSC)**
 - Independent Clock and Frame Sync Signals for Each Receiver and Transmitter
 - I²S Analog Interface Support, Time Division Multiplex Support
 - High-speed Continuous Data Stream Capabilities with 32-bit Data Transfer
- **Two (SAM7S512/256/128/64/321/161) or One (SAM7S32/16) Universal Synchronous/Asynchronous Receiver Transmitters (USART)**
 - Individual Baud Rate Generator, IrDA[®] Infrared Modulation/Demodulation
 - Support for ISO7816 T0/T1 Smart Card, Hardware Handshaking, RS485 Support
 - Full Modem Line Support on USART1 (SAM7S512/256/128/64/321/161)
- **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 Input and Two Multi-purpose I/O Pins per Channel (SAM7S512/256/128/64/321/161)
 - One External Clock Input and Two Multi-purpose I/O Pins for the first Two Channels Only (SAM7S32/16)
 - 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 and I²C Compatible Devices Supported (SAM7S512/256/128/64/321/32)
 - Master, Multi-Master and Slave Mode Support, All Two-wire Atmel EEPROMs and I²C Compatible Devices Supported (SAM7S161/16)
- **One 8-channel 10-bit Analog-to-Digital Converter, Four Channels Multiplexed with Digital I/Os**
- **SAM-BA[™] Boot Assistant**
 - Default Boot program
 - Interface with SAM-BA Graphic User Interface
- **IEEE[®] 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 (SAM7S161/16 I/Os Not 5V-tolerant)**
- **Power Supplies**
 - Embedded 1.8V Regulator, Drawing up to 100 mA for the Core and External Components
 - 3.3V or 1.8V VDDIO I/O Lines Power Supply, Independent 3.3V VDDFLASH Flash Power Supply
 - 1.8V VDDCORE Core Power Supply with Brown-out Detector



- Fully Static Operation: Up to 55 MHz at 1.65V and 85° C Worst Case Conditions
- Available in 64-lead LQFP Green or 64-pad QFN Green Package (SAM7S512/256/128/64/321/161) and 48-lead LQFP Green or 48-pad QFN Green Package (SAM7S32/16)

1. Description

Atmel's SAM7S is a series of low pincount Flash microcontrollers based on the 32-bit ARM RISC processor. It features a high-speed Flash and an SRAM, a large set of peripherals, including a USB 2.0 device (except for the SAM7S32 and SAM7S16), and a complete set of system functions minimizing the number of external components. The device is an ideal migration path for 8-bit microcontroller users looking for additional performance and extended memory.

The embedded Flash memory can be programmed in-system via the JTAG-ICE interface or via a parallel interface on a production programmer prior to mounting. Built-in lock bits and a security bit protect the firmware from accidental overwrite and preserves its confidentiality.

The SAM7S Series system controller includes a reset controller capable of managing the power-on sequence of the microcontroller and the complete system. During the power-on sequence, the system controller checks for a valid boot loader and if not found, it will boot the system into the user application. The system controller also monitors the system for a watchdog timer (WDT) and if the WDT is not reset, it will reset the system.

1.1 Configuration Summary of the SAM7S512, SAM7S156, SAM7S128, SAM7S64, SAM7S321, SAM7S32, SAM7S161 and SAM7S16

Table 1-1. Configuration Summary

Feature	SAM7S512	SAM7S156	SAM7S128	SAM7S64	SAM7S321	SAM7S32	SAM7S161	SAM7S16
Flash Memory (KB)	512	156	128	64	321	32	161	16
SRAM (KB)	32	32	32	32	32	32	32	32
ARM Cortex-M3	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
USB 2.0	Yes	Yes	Yes	Yes	Yes	No	Yes	No
UART	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
I2C	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
SPI	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
ADC	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
WDT	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Security Bit	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Lock Bits	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Figure 2-1. SAM7S512/256/128/64/321/161 Block Diagram

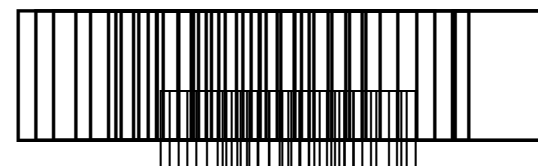
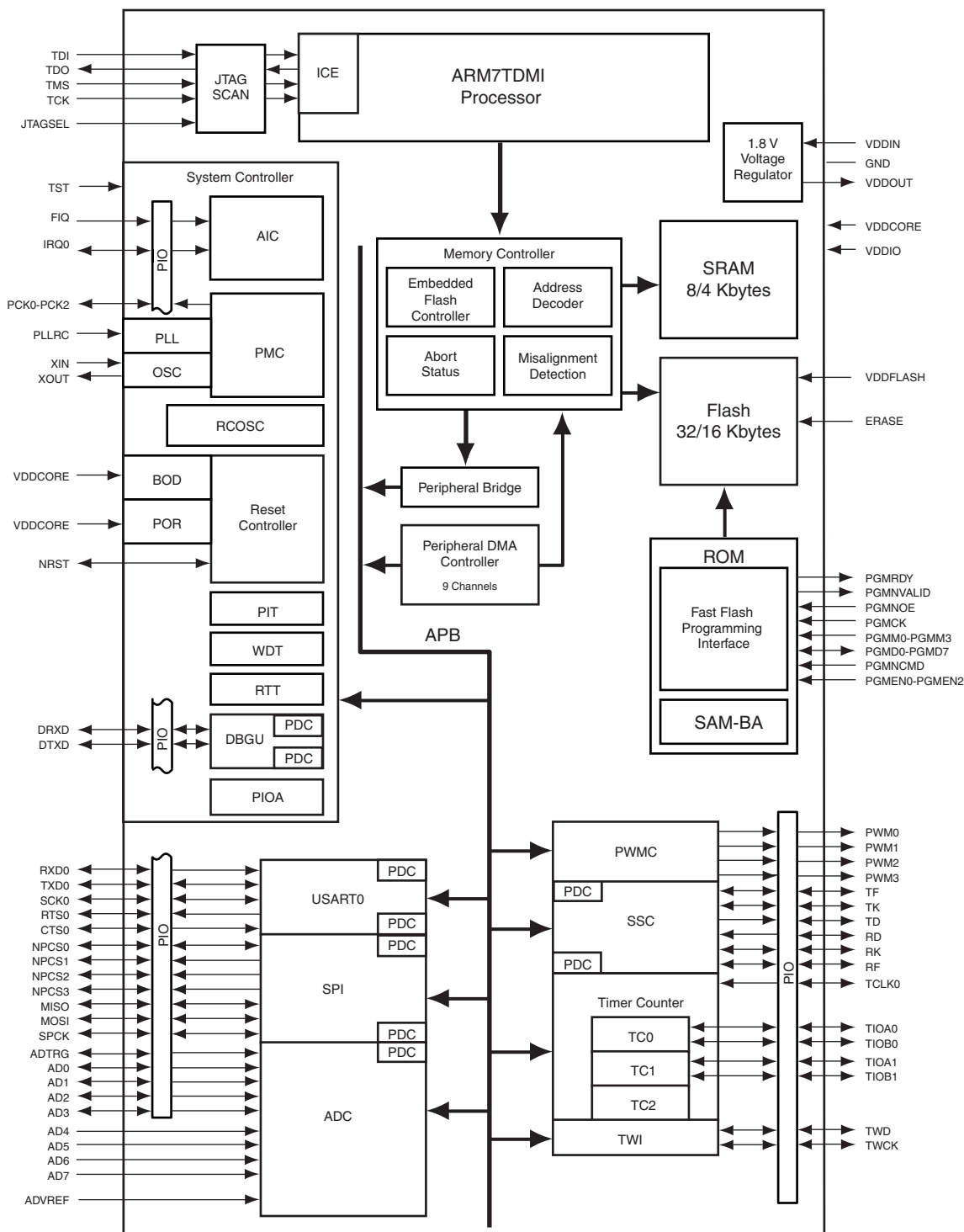


Figure 2-2. SAM7S32/16 Block Diagram



3. Signal Description

Table 3-1. Signal Description List


A complex grid-based diagram, likely a technical drawing or a map, rendered on a white background with a light gray grid. The diagram consists of numerous black-outlined rectangular shapes of varying sizes, arranged in a dense, interconnected pattern. These shapes are distributed across the grid, with some forming large, solid blocks and others appearing as smaller, more isolated elements. In the lower right quadrant, three specific rectangular shapes are highlighted with blue outlines, drawing attention to a particular area of the diagram. The overall structure suggests a detailed layout or a complex data visualization.

Table 3-1. Signal Description List (Continued)

Table 3-1. Signal Description List (Continued)

A complex geometric drawing consisting of a grid of squares and rectangles. The drawing is composed of black outlines on a white background. At the bottom, there is a horizontal band filled with blue lines, suggesting a hatched or shaded area. The overall structure is a dense arrangement of rectangular blocks of varying sizes, some of which are interconnected, creating a complex, architectural-like form. The drawing is presented in a landscape orientation.

4.

Package and Pinout

4.1

64-lead LQFP and 64-pad QFN Package Outlines

Figure 4-1. 64-lead LQFP Package (Top View)

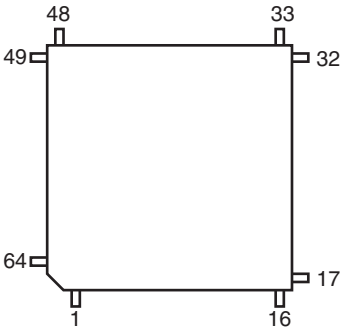
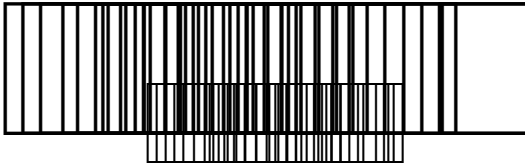
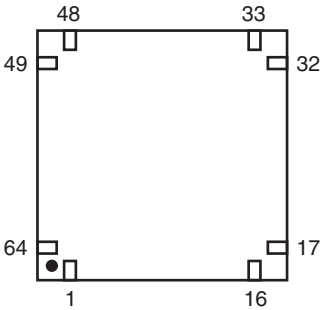
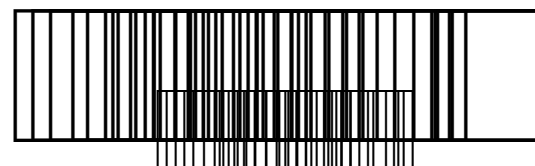


Figure 4-2. 64-pad QFN Package (Top View)



4-lead

This abstract graphic design features a dense, overlapping grid pattern of black lines on a white background. The pattern is composed of numerous thin, black lines that intersect to form a complex, layered effect. The lines are arranged in a way that creates a sense of depth and movement, with some lines appearing more prominent than others. The overall effect is a dense, textured surface that changes as the viewer's perspective shifts. The pattern is not uniform, with some areas being more densely packed with lines than others, creating a dynamic and visually engaging composition.

4.3 48-lead LQFP and 48-pin DIP Package Outlines

Figure 4-3. 48-lead LQFP Package (Top View)

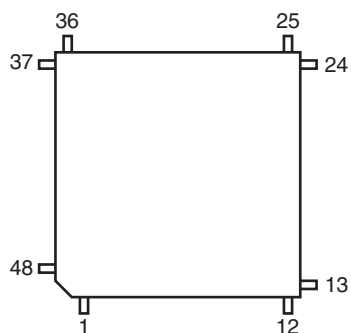
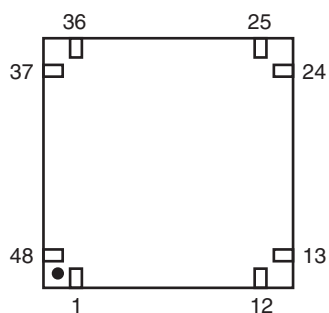


Figure 4-4. 48-pad QFN Package (Top View)



4.4 48-lead QFP and 48-pad QFN Pinout

Table 4-2. SAM7S32/16 Pinout

Table 4-2. SAM7S32/16 Pinout

5. Power Considerations

5.1 Power Supply

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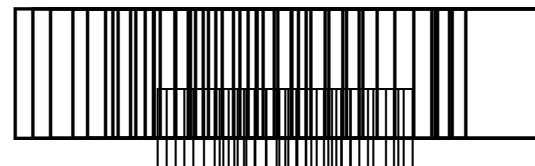
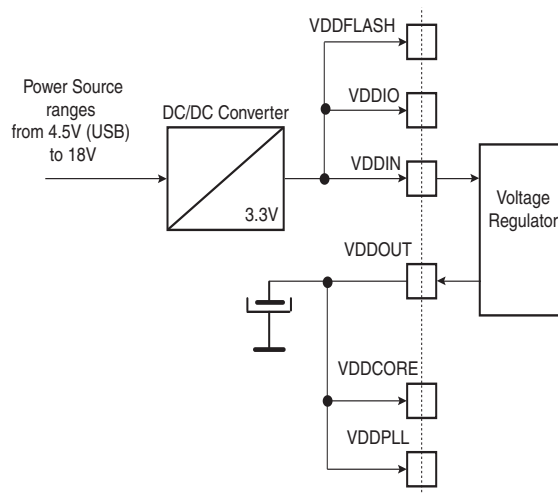
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5.2 Power Consumption

5.3 Voltage Regulator

5.4 Typical Powering Schematics

Figure 5-1. 3.3V System Single Power Supply Schematic



6. I/O Lines Considerations

6.1 JTAG Boundary Scan

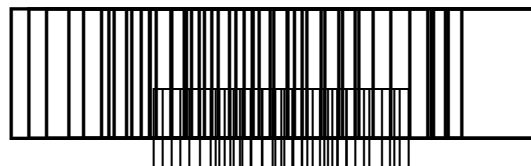
6.2 Test Pin

6.3 Reset Pin

6.4 ERASE Pin

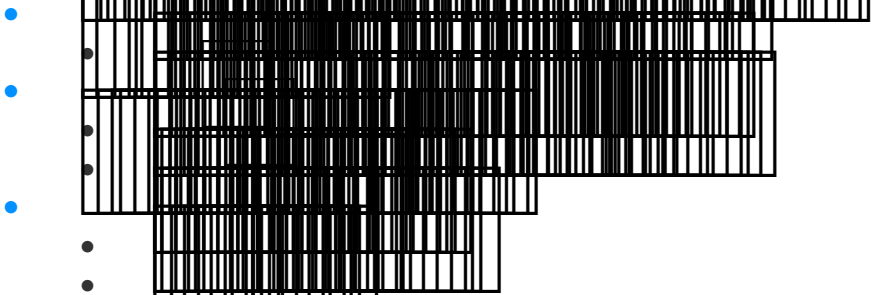
6.5 PIO Control Lines

6.6 I/O Line Drive Levels

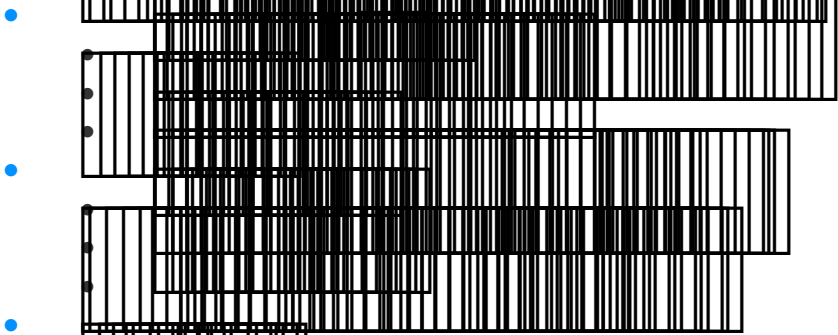


7. Processor and Architecture

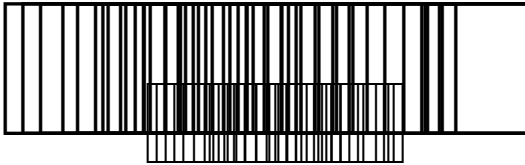
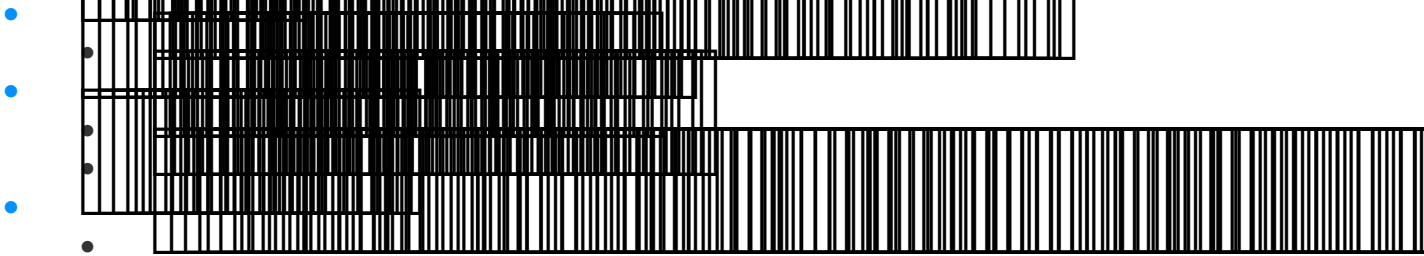
7.1 ARM7TDMI Processor



7.2 Debug and Test Features



7.3 Memory Controller



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8. Memories

8.1 SAM7S512



8.2 SAM7S256



8.3 SAM7S128



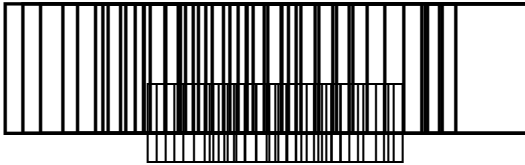
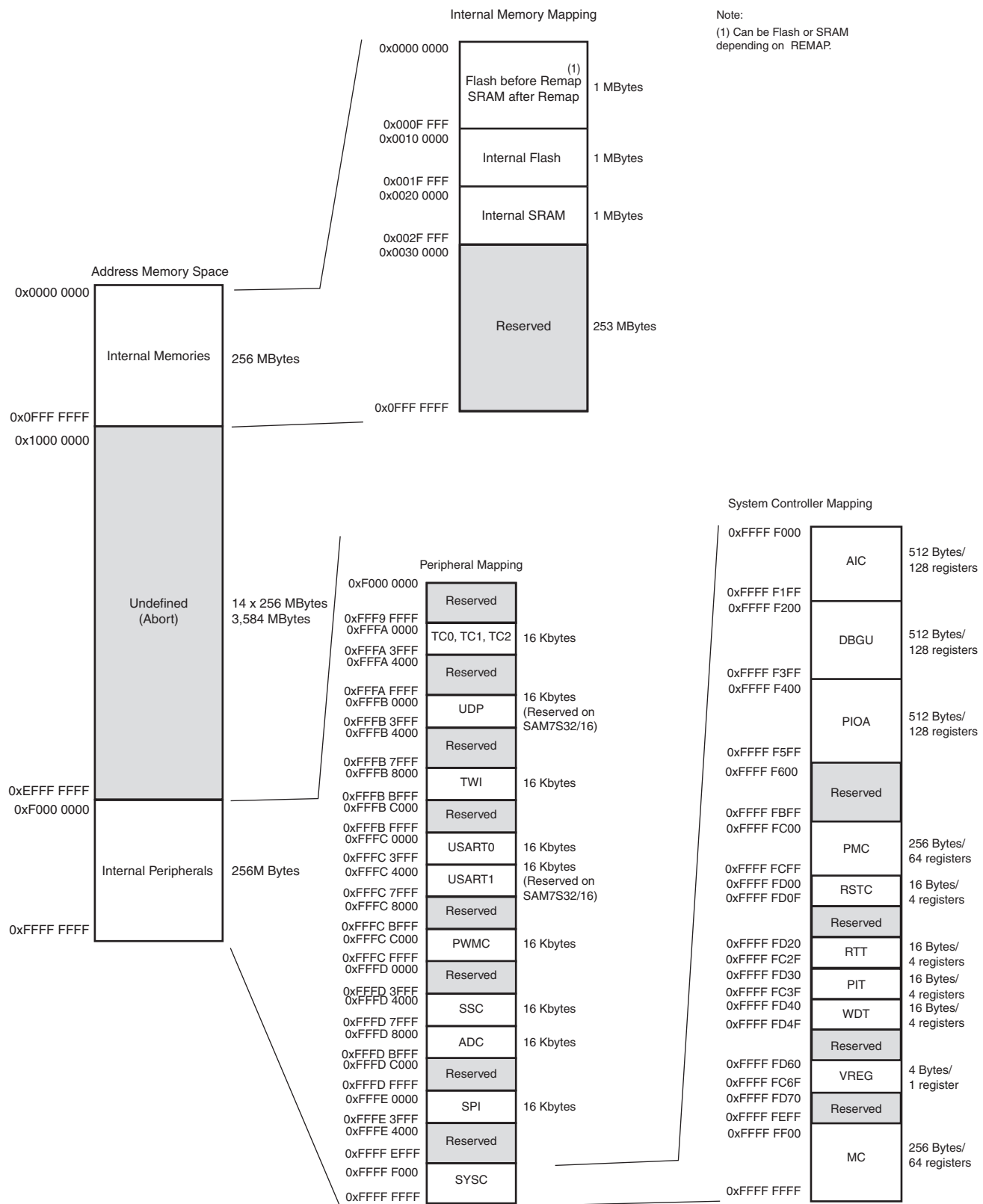
8.4 SAM7S64



8.5 SAM7S321/32

8.6 SAM7S161/16

Figure 8-1. SAM SAM7S512/256/128/64/321/32/161/16 Memory Mapping



8.7 Memory Mapping

8.7.1 Internal SRAM

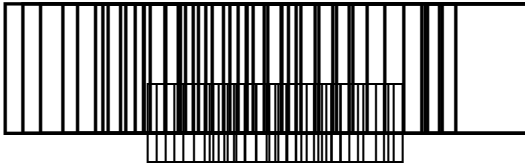
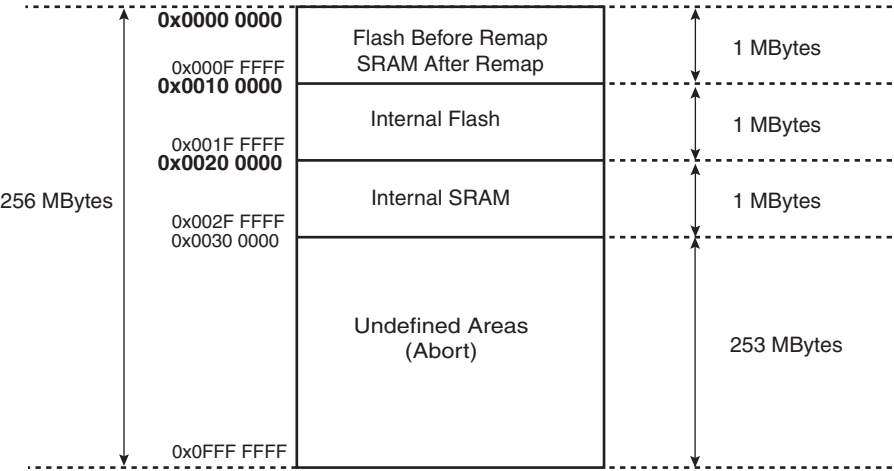
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8.7.2 Internal ROM

8.7.3 Internal Flash

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Figure 8-2. Internal Memory Mapping



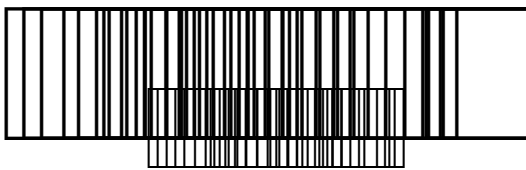
8.8 Embedded Flash

8.8.1 Flash Overview

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8.8.2 Embedded Flash Programming

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8.8.3 Lock Regions

8.8.3.1 SAM9S12

8.8.3.2 SAM9S28

8.8.3.3 SAM9S21

8.8.3.4 SAM9S04

8.8.3.5 SAM9S12

8.8.3.6 Sampling

summarizes the configuration of the eight devices.

Table 8-1. Flash Configuration Summary

[illegible]

8.8.4 Security Considerations

8.8.5 Non-Moisture Brownout Detector Control

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8.8.6 Calibration Bits

8.9 Fast Flash Programming Interface

8.10 SAM-BA Boot Assistant

The SAM-BA[®] Boot Recovery restores the SAM-BA Boot in the first two sectors of the on-chip flash memory. The SAM-BA Boot Recovery is performed when the TST pin and the PA0, PA1 and PA2 pins are all held high for 10 seconds. Then a known cycle of the serial is necessary.

9. System Controller

Figure 9-1. System Controller Block Diagram (SAM7S512/256/128/64/321/161)

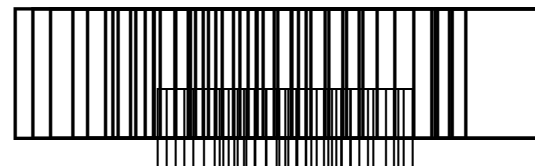
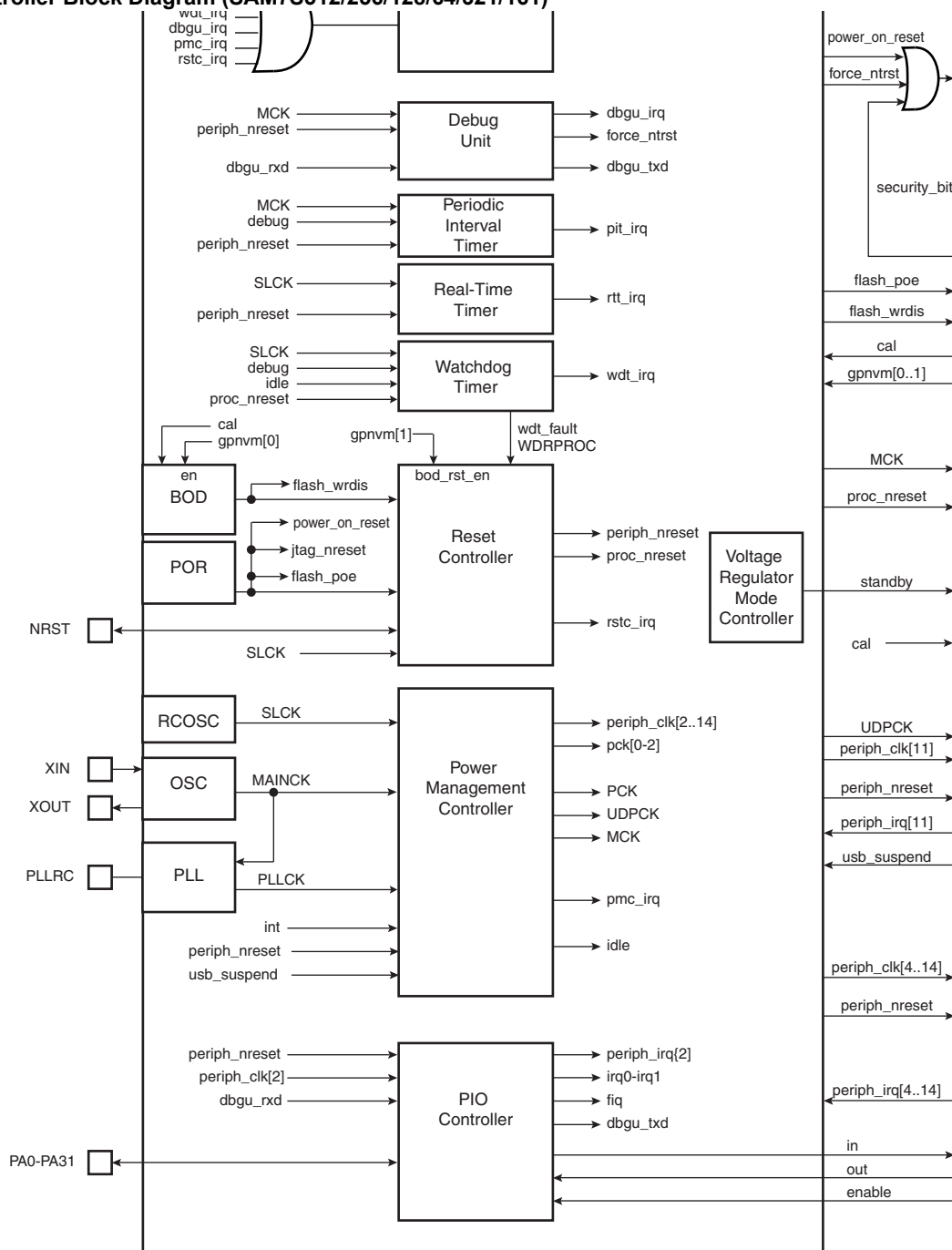
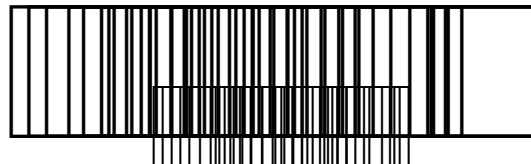
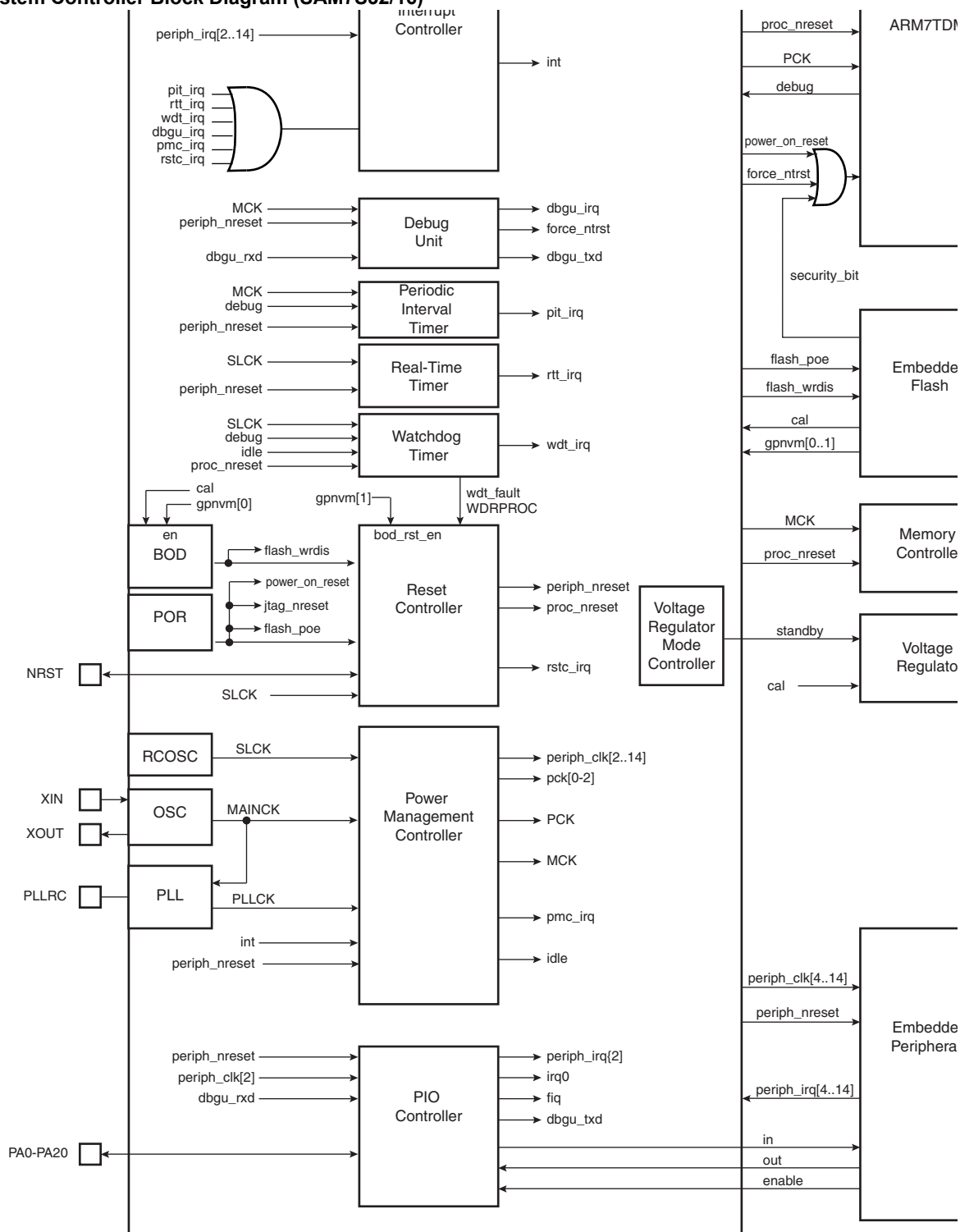
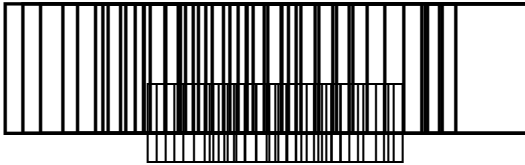


Figure 9-2. System Controller Block Diagram (SAM7S32/16)



9.1 Reset Controller

9.1.1 Brown-out Detector and Voltage Detector



9.2 Clock Generator

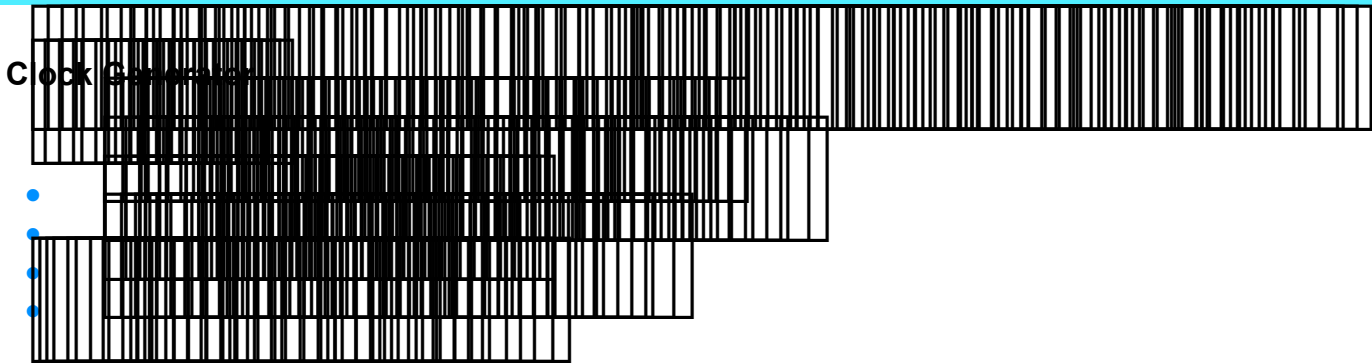
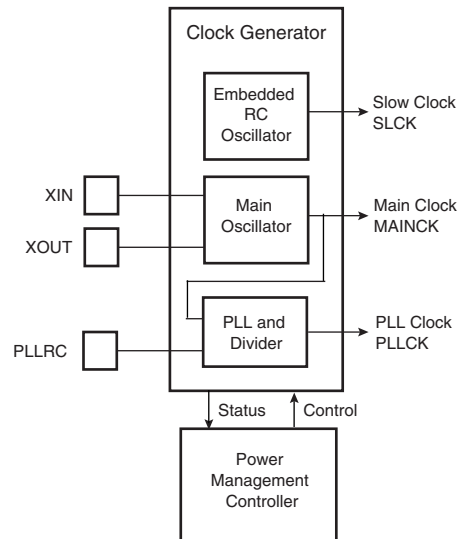


Figure 9-3. Clock Generator Block Diagram



9.3 Power Management Controller

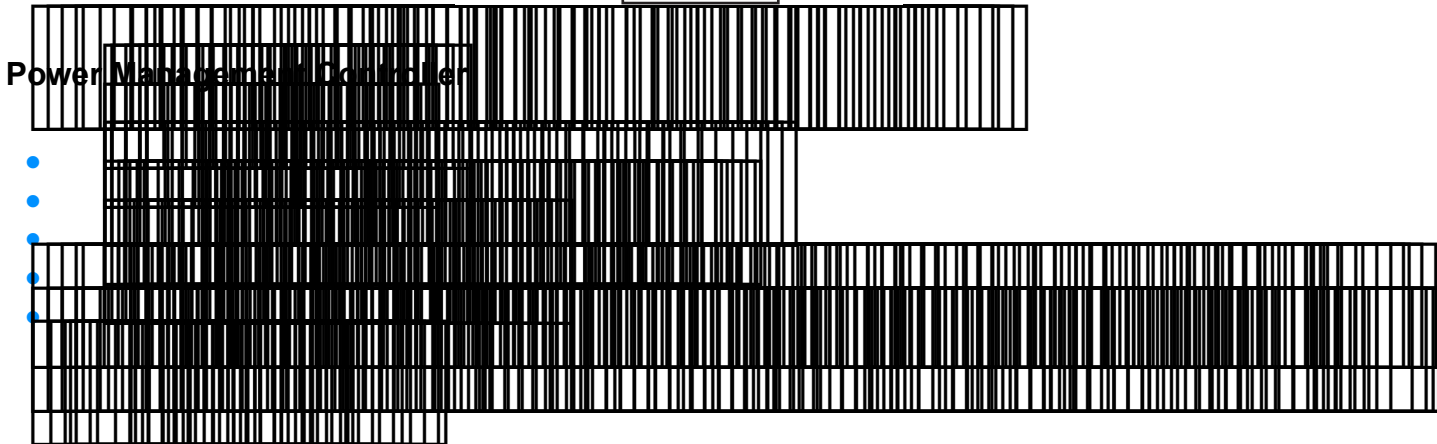
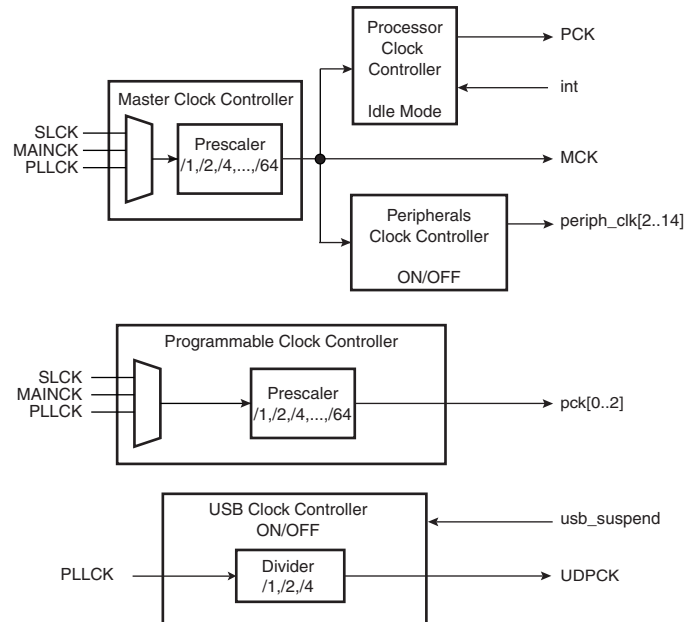
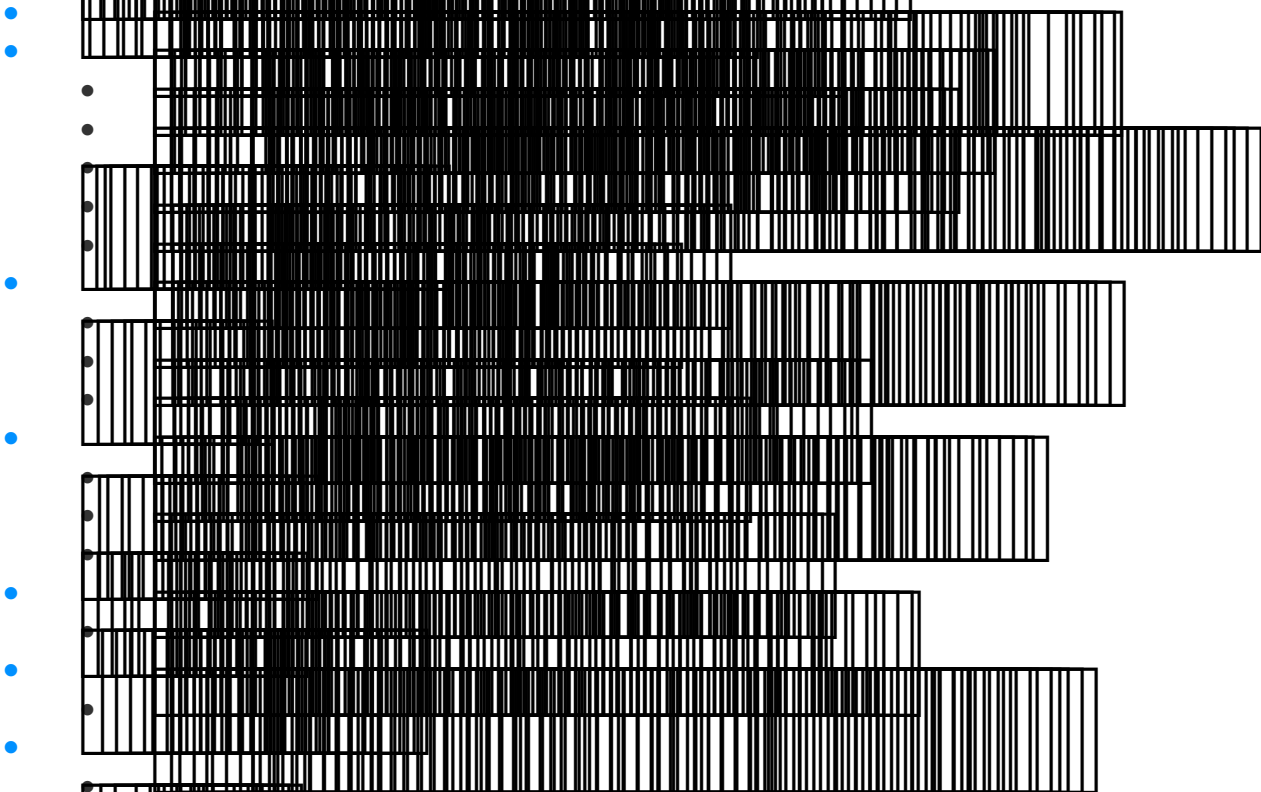


Figure 9-4. Power Management Controller Block Diagram



9.4 Advanced Internal Controller



9.5 Debug Unit



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9.6 Periodic Interval Timer

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9.7 Watchdog Timer

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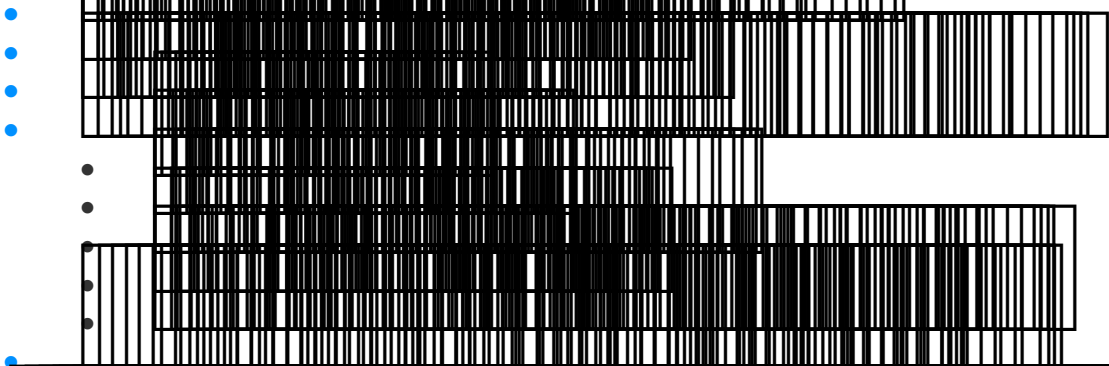
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9.8 Real-time Timer

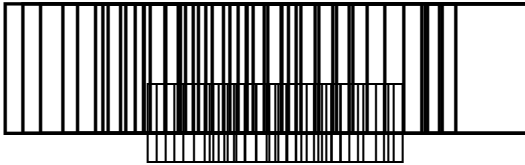
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9.9 PIO Controller



9.10 Voltage Regulator Controller



10. Peripherals

10.1 User Interface

10.2 Peripheral ports

Table 10-1. Peripheral Identifiers (SAM7S512/256/128/64/321/161)

A complex diagram consisting of a grid of rectangles. The rectangles are primarily black, with two specific rectangles highlighted in blue. The layout is dense, with many overlapping and adjacent shapes. The blue rectangles are located in the upper-left quadrant. The overall structure suggests a technical drawing or a data visualization.

Table 10-2. Peripheral Identifiers (SAM7S32/46)

Peripheral Multiline (red on 20 Lines)

10.4 PIO Controller A Multiplexing

Table 10-3. Multiplexing on PIO Controller A (SAM7S512/256/128/64/321/161)

This technical drawing illustrates a building facade design on a grid. The facade is composed of three primary vertical sections, each constructed from a series of rectangular blocks of different sizes. The leftmost section is the tallest, followed by a middle section of intermediate height, and a rightmost section that is the shortest. These sections are interconnected by a horizontal base line. The drawing uses a grid system to define the proportions and placement of the blocks, with vertical lines indicating the boundaries of the sections and horizontal lines marking the levels of the blocks. The overall composition is symmetrical and balanced, emphasizing geometric relationships and spatial organization.

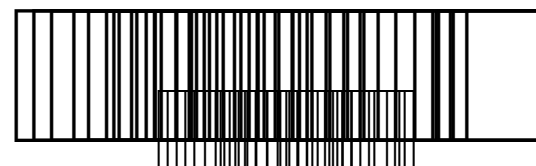
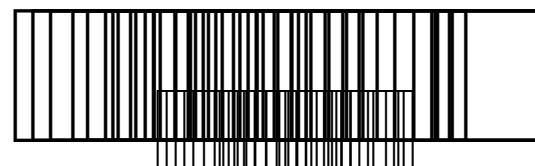


Table 10-4. Multiplexing on PIO Controller A (SAM7S32/16)



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Serial Synchronous Controller

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|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|

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10.11 USB Device Port (On-chip controller for SAM7S32/16)

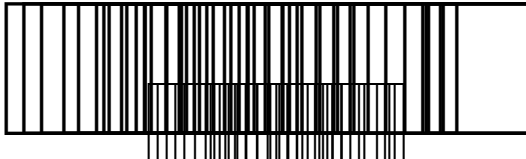
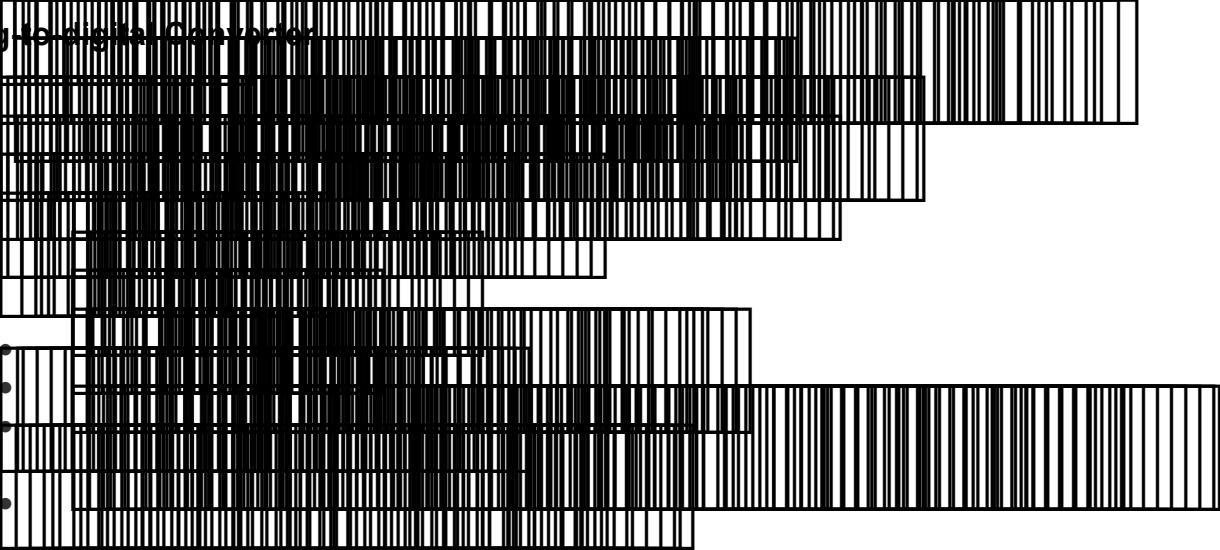
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10.12 Analog-to-digital Converter

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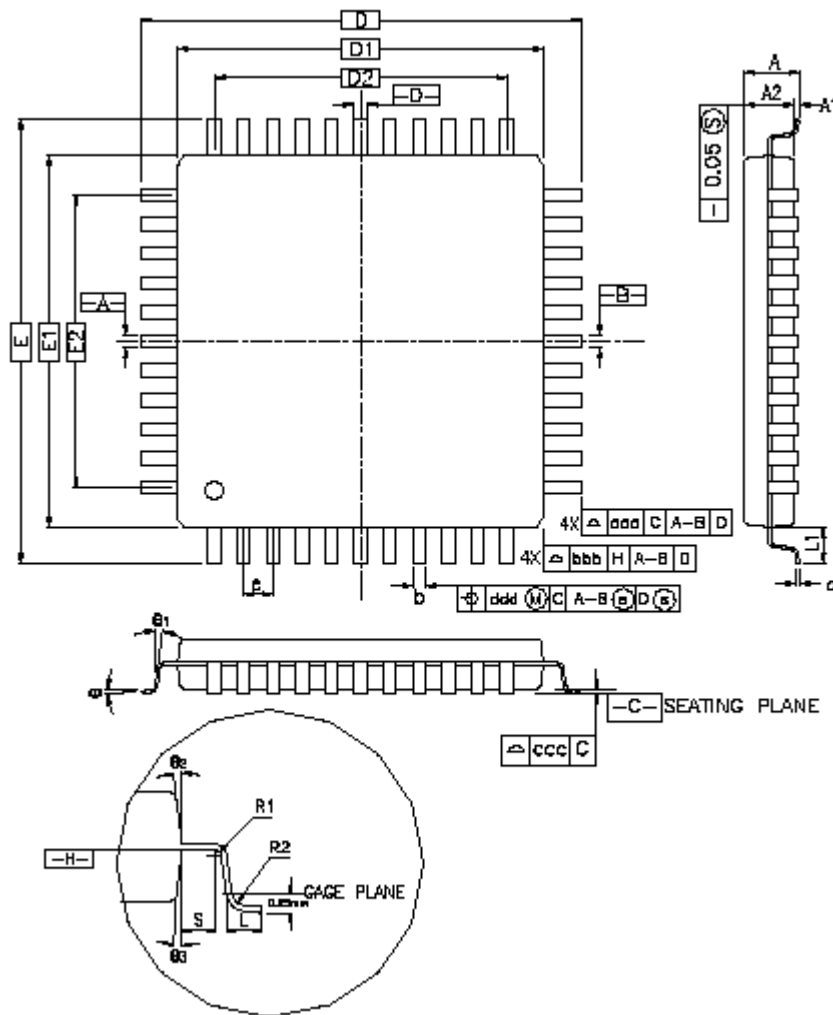
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11. Package Drawings

11.1 LQFP Packages

Figure 11-1. 48-and 64-lead LQFP Package Drawing



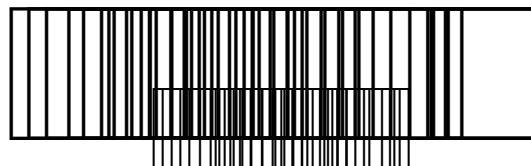
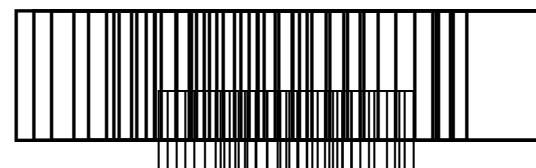


Table 11-2. 64-lead LQFP Package Dimensions (in mm)



11.2 QFN Packages

Figure 11-2. 48-pad QFN Package

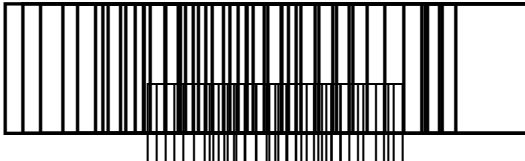
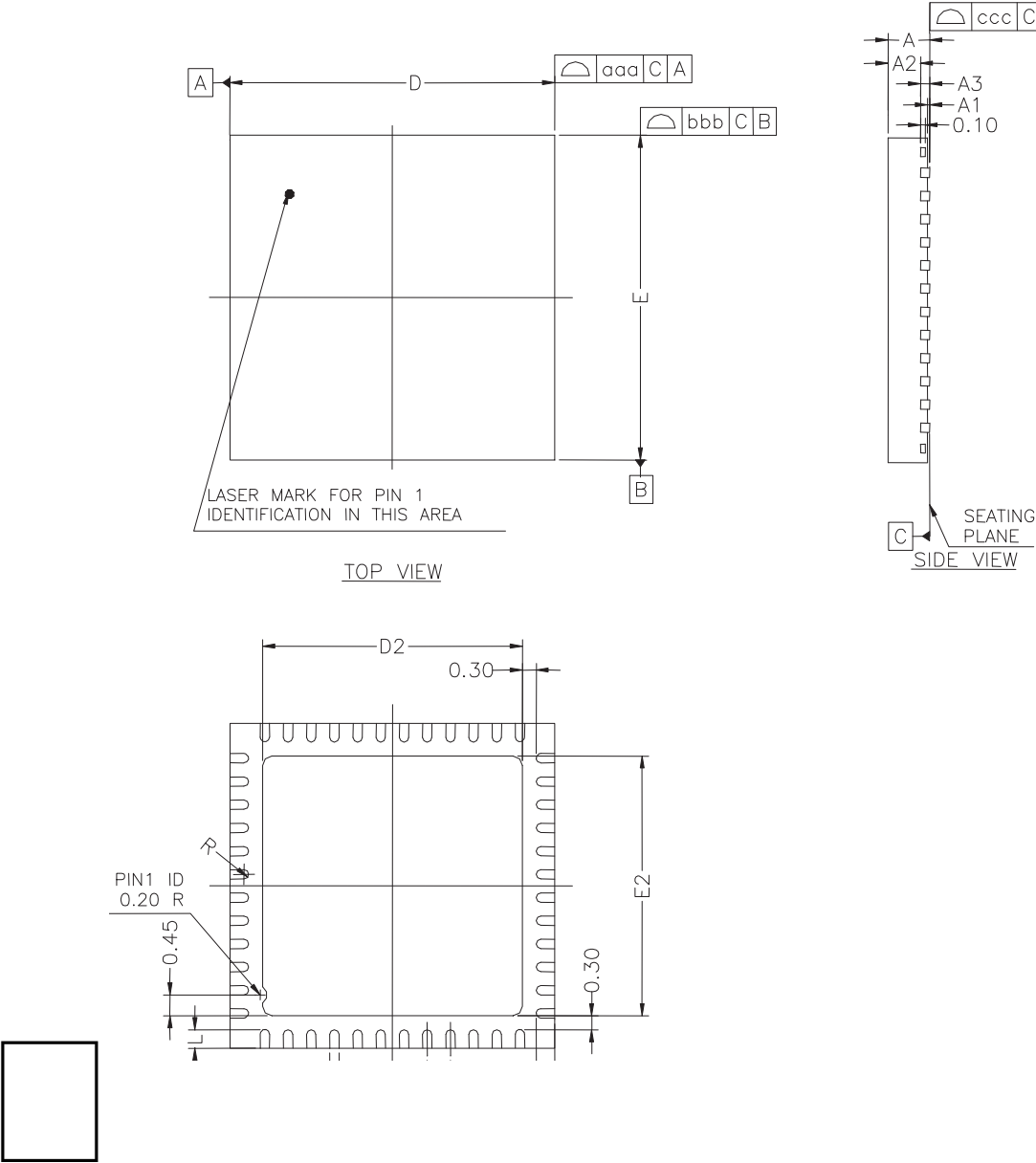


Table 11-3. 48-pad QFN Package Dimensions (in mm)

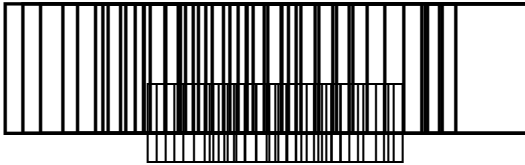
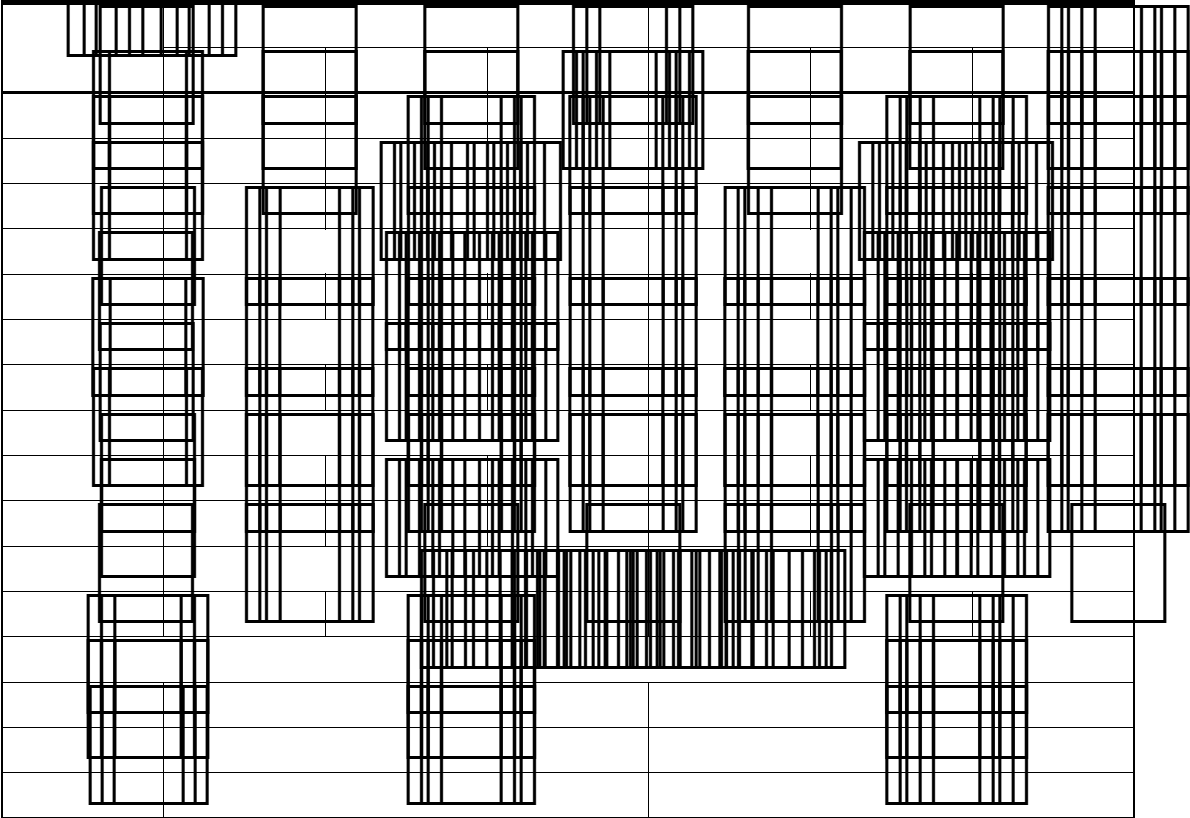


Figure 11-3. 64-pad QFN Package Drawing

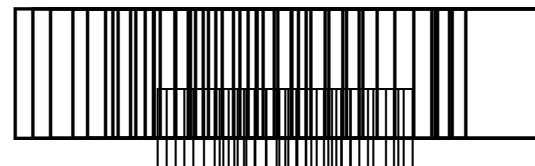
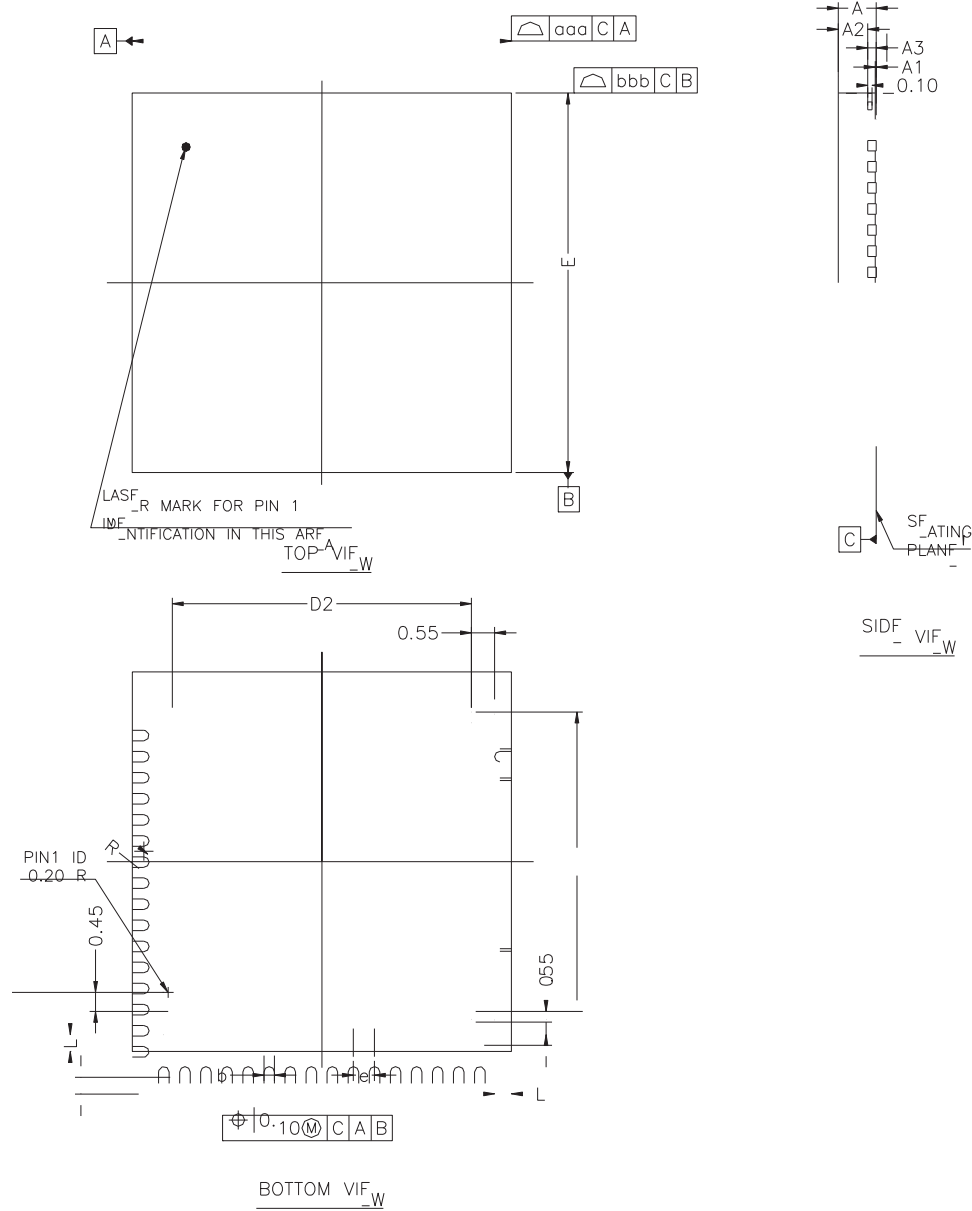
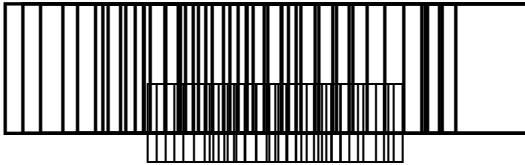


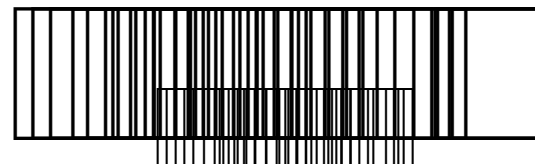
Table 11-4. 64-pad QFN Package Dimensions (in mm)



12. SAM7S Ordering Information

Table 12-1. SAM7S Series Ordering Information

MLR A Ordering Code	MLR B Ordering Code	MLR C Ordering Code	MLR D Ordering Code	Package	Package Type	Temperature Operating Range
AT91SAM7S16-AU AT91SAM7S16-MU	–	–	–	LQFP 48 QFN 48	Green	Industrial (-40° C to 85° C)
AT91SAM7S161-AU	–	–	–	LQFP 64	Green	Industrial (-40° C to 85° C)
AT91SAM7S32-AU-001 AT91SAM7S32-MU	AT91SAM7S32B-AU AT91SAM7S32B-MU			LQFP 48 QFN 48	Green	Industrial (-40° C to 85° C)
AT91SAM7S321-AU AT91SAM7S321-MU	–	–	–	LQFP 64 QFN 64	Green	Industrial (-40° C to 85° C)
–	AT91SAM7S64B-AU AT91SAM7S64B-MU	AT91SAM7S64C-AU AT91SAM7S64C-MU	–	LQFP 64 QFN 64	Green	Industrial (-40° C to 85° C)
–	AT91SAM7S128-AU-001 AT91SAM7S128-MU	AT91SAM7S128C-AU AT91SAM7S128C-MU	AT91SAM7S128D-AU AT91SAM7S128D-MU	LQFP 64 QFN 64	Green	Industrial (-40° C to 85° C)
–	AT91SAM7S256-AU-001 AT91SAM7S256-MU	AT91SAM7S256C-AU AT91SAM7S256C-MU	AT91SAM7S256D-AU AT91SAM7S256D-MU	LQFP 64 QFN 64	Green	Industrial (-40° C to 85° C)
AT91SAM7S512-AU AT91SAM7S512-MU	AT91SAM7S512B-AU AT91SAM7S512B-MU	–	–	LQFP 64 QFN 64	Green	Industrial (-40° C to 85° C)



Revision History

Rev	Rev Description	Rev Date
1.0	Initial release	2018-01-01
1.1	Added new features	2018-02-01
1.2	Fixed bugs	2018-03-01
1.3	Added new features	2018-04-01
1.4	Fixed bugs	2018-05-01
1.5	Added new features	2018-06-01
1.6	Fixed bugs	2018-07-01
1.7	Added new features	2018-08-01
1.8	Fixed bugs	2018-09-01
1.9	Added new features	2018-10-01
1.10	Fixed bugs	2018-11-01
1.11	Added new features	2018-12-01
1.12	Fixed bugs	2019-01-01
1.13	Added new features	2019-02-01
1.14	Fixed bugs	2019-03-01
1.15	Added new features	2019-04-01
1.16	Fixed bugs	2019-05-01
1.17	Added new features	2019-06-01
1.18	Fixed bugs	2019-07-01
1.19	Added new features	2019-08-01
1.20	Fixed bugs	2019-09-01
1.21	Added new features	2019-10-01
1.22	Fixed bugs	2019-11-01
1.23	Added new features	2019-12-01
1.24	Fixed bugs	2020-01-01
1.25	Added new features	2020-02-01
1.26	Fixed bugs	2020-03-01
1.27	Added new features	2020-04-01
1.28	Fixed bugs	2020-05-01
1.29	Added new features	2020-06-01
1.30	Fixed bugs	2020-07-01
1.31	Added new features	2020-08-01
1.32	Fixed bugs	2020-09-01
1.33	Added new features	2020-10-01
1.34	Fixed bugs	2020-11-01
1.35	Added new features	2020-12-01
1.36	Fixed bugs	2021-01-01
1.37	Added new features	2021-02-01
1.38	Fixed bugs	2021-03-01
1.39	Added new features	2021-04-01
1.40	Fixed bugs	2021-05-01
1.41	Added new features	2021-06-01
1.42	Fixed bugs	2021-07-01
1.43	Added new features	2021-08-01
1.44	Fixed bugs	2021-09-01
1.45	Added new features	2021-10-01
1.46	Fixed bugs	2021-11-01
1.47	Added new features	2021-12-01
1.48	Fixed bugs	2022-01-01
1.49	Added new features	2022-02-01
1.50	Fixed bugs	2022-03-01
1.51	Added new features	2022-04-01
1.52	Fixed bugs	2022-05-01
1.53	Added new features	2022-06-01
1.54	Fixed bugs	2022-07-01
1.55	Added new features	2022-08-01
1.56	Fixed bugs	2022-09-01
1.57	Added new features	2022-10-01
1.58	Fixed bugs	2022-11-01
1.59	Added new features	2022-12-01
1.60	Fixed bugs	2023-01-01
1.61	Added new features	2023-02-01
1.62	Fixed bugs	2023-03-01
1.63	Added new features	2023-04-01
1.64	Fixed bugs	2023-05-01
1.65	Added new features	2023-06-01
1.66	Fixed bugs	2023-07-01
1.67	Added new features	2023-08-01
1.68	Fixed bugs	2023-09-01
1.69	Added new features	2023-10-01
1.70	Fixed bugs	2023-11-01
1.71	Added new features	2023-12-01
1.72	Fixed bugs	2024-01-01
1.73	Added new features	2024-02-01
1.74	Fixed bugs	2024-03-01
1.75	Added new features	2024-04-01
1.76	Fixed bugs	2024-05-01
1.77	Added new features	2024-06-01
1.78	Fixed bugs	2024-07-01
1.79	Added new features	2024-08-01
1.80	Fixed bugs	2024-09-01
1.81	Added new features	2024-10-01
1.82	Fixed bugs	2024-11-01
1.83	Added new features	2024-12-01
1.84	Fixed bugs	2025-01-01
1.85	Added new features	2025-02-01
1.86	Fixed bugs	2025-03-01
1.87	Added new features	2025-04-01
1.88	Fixed bugs	2025-05-01
1.89	Added new features	2025-06-01
1.90	Fixed bugs	2025-07-01
1.91	Added new features	2025-08-01
1.92	Fixed bugs	2025-09-01
1.93	Added new features	2025-10-01
1.94	Fixed bugs	2025-11-01
1.95	Added new features	2025-12-01
1.96	Fixed bugs	2026-01-01
1.97	Added new features	2026-02-01
1.98	Fixed bugs	2026-03-01
1.99	Added new features	2026-04-01
2.0	Final release	2026-05-01

Features



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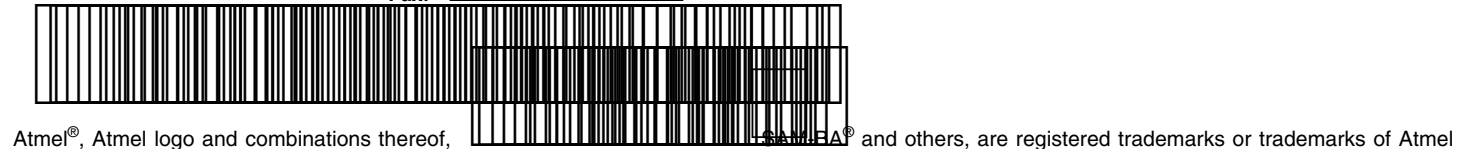
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