Product Change Notification - SYST-08WVEY132

Date:

09 Jan 2020

Product Category:

32-bit Microcontrollers

Affected CPNs:

Notification subject:

ERRATA - SAM G55 Series Family Silicon Errata and Data Sheet Clarifications

Notification text:

SYST-08WVEY132

Microchip has released a new Product Documents for the SAM G55 Series Family Silicon Errata and Data Sheet Clarifications of devices. If you are using one of these devices please read the document located at SAM G55 Series Family Silicon Errata and Data Sheet Clarifications .

Notification Status: Final

Description of Change:

This revision includes the following updates to Data Sheet Clarifications:
1) Module: Electrical Characteristics - Recommended Operating Conditions
2) Module: USB Host Port (UHP): User Interface
3) Module: System I/O Lines -Table 9-6 “System I/O Configuration Pin List”
4) Module: Reset Controller (RSTC)
5) Module: Product Mapping
6) Module: Supply Controller (SUPC)
7) Module: General Purpose Backup Registers (GPBR)
8) The offset listed for SYS_GPBR7 in Table 28-1. Register Mapping must be 0x1C.

Impacts to Data Sheet: None

Reason for Change: To Improve Productivity

Change Implementation Status: Complete

Date Document Changes Effective: 09 Jan 2020

NOTE: Please be advised that this is a change to the document only the product has not been changed.

Markings to Distinguish Revised from Unrevised Devices: N/A

Attachment(s):

SAM G55 Series Family Silicon Errata and Data Sheet Clarifications

Please contact your local Microchip sales office with questions or concerns regarding this notification.

Terms and Conditions:

If you wish to receive Microchip PCNs via email please register for our PCN email service at our PCN home page select register then fill in the required fields. You will find instructions about registering for Microchips PCN email service in the PCN FAQ section.
If you wish to change your PCN profile, including opt out, please go to the PCN home page select

login and sign into your myMicrochip account. Select a profile option from the left navigation bar and make the applicable selections.

Affected Catalog Part Numbers (CPN)

ATSAMG55G19A-UUT
ATSAMG55G19A-UUTRRC
ATSAMG55G19B-UNT
ATSAMG55G19B-UUT
ATSAMG55J19A-AU
ATSAMG55J19A-AUT
ATSAMG55J19A-MU
ATSAMG55J19A-MUT
ATSAMG55J19A-MUT-836
ATSAMG55J19A-MUTN01
ATSAMG55J19B-AU
ATSAMG55J19B-AUT
ATSAMG55J19B-MU
ATSAMG55J19B-MUC21
ATSAMG55J19B-MUT
ATSAMG55J19B-MUT-836
ATSAMG55J19B-MUTC21

SAM G55 Series Family
Silicon Errata and Data Sheet Clarification

The SAM G55 Series family of devices that you have received conform functionally to the current Device Data Sheet (Atmel-11289F-ATARM-SAM-G55G-SAM-G55J-Datasheet_27-May-16), except for the anomalies described in this document.

New Silicon Errata Issues

Note:	This document provides information on new errata issues for the SAM G55 Series family of devices. Refer to the current device data sheet for all pre-existing silicon errata issues.

There are no new silicon errata to report at this time.

© 2019-2020 Microchip Technology Inc.

Data Sheet Clarifications

The following typographic corrections and clarifications are to be noted for the latest revision of the device data sheet (Atmel-11289F-ATARM-SAM-G55G-SAM-G55J-Datasheet_27-May-16).

Corrections in tables and paragraphs are shown in **bold.** Where possible, the original bold text formatting has been removed for the clarity.

1. Module: Bootloader

Chapter 7 “Bootloader” in the data sheet has a new verbiage for the NRST line. The newly added text is shown in bold.

The SAM G55 devices ship with a factory-programmed bootoader in Flash. The Flash loader downloads code either through the SPI or through the TWI0.

The Bootloader mode is entered automatically on power-up if no valid firmware is detected in the Flash. A valid firmware is detected by performing a CRC on the content of the Flash. If the CRC is correct, the application is started. Otherwise, the Bootloader mode is entered.

Alternatively, the Bootloader mode can be forced by applying 10 low pulses of 1 ms on the NRST line (with a period of 10 ms maximum). When the Bootloader detects this sequence, it asserts the pin PA01 (NCHG) low as an acknowledge.

The Bootloader mode initializes the TWI0 in Slave Mode with the I^2C address 0x26, and the SPI in Slave Mode, 8-bit data length, SPI Mode 1.

2. Module: System Configuration - CCFG_USBMR Register

In the current device data sheet section 15.9.7, the PLLFREQADJUST bit is missing from the register description. This bit occupies a bit offset of 4 as shown below.

PLLFREQADJUST: USB PLL Output Automatic Synchronization

0:USB PLL clock is not adjust

1:USB PLL output is automatically adjust at 48 MHz +/-0.25% whatever the internal 32 KHz accuracy.

3. Module: Clock Generator - CKGR_PLLAR Register

In the current device data sheet section 18.20.9, the MULA bit field for the CKGR_PLLAR register extends from bit 16 to bit 27. The corrected bit field extends from bit 16 to bit 28.

4. Module: Clock Generator - CKGR_PLLBR Register

In the current device data sheet, the MULB bit field for the CKGR_PLLBR register extends from bit field 16 to 26. The corrected bit field extended from 16 to 27.

5. Module: Clock Generator - PMC_PMMR Register

In the current device data sheet Section 18.20.32, the PLLA_MMAX bit field for the PMC_PMMR register extends from bit 0 to bit 10. The corrected bit field extends from bit 0 to bit 12.

6. Module: Clock Generator - PMC_PMMR Register

In the current device data sheet Section 18.20.32, the PLLB_MMAX bit field for the PMC_PMMR register extends from bit 16 to bit 26. The corrected bit field extends from bit 16 to bit 27.

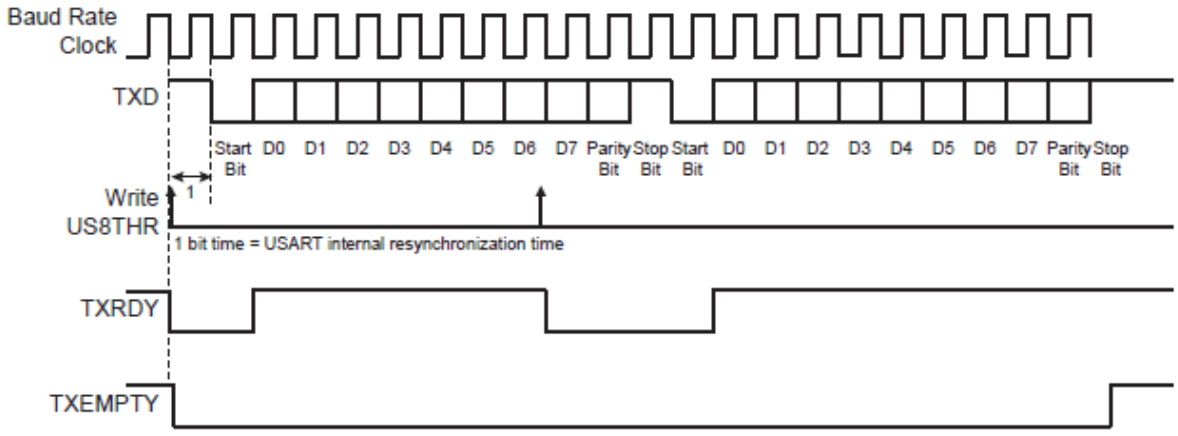
7. Module: I^2S Controller - I2SC_MR Register

In the current device data sheet Section 33.8.2, the table for the FORMAT bit is incorrect and lists left-justified format. This format is not supported for this device.

© 2019-2020 Microchip Technology Inc.

8. Module: USART - Transmitter Operations

Figure 30-6 is incorrect. The corrected figure is as shown below:



9. Module: USART - Multi-drop Mode

In the current device data sheet Section 30.6.3.6, the bit name SENTA is incorrect. The corrected name is SENDA.

10. Module: USART - ISO7816 Mode Overview

The last paragraph of the current device data sheet Section 30.6.4.1 has erroneous text. The corrected text is given in bold.

When operating in ISO7816, either in T = 0 or T = 1 modes, the character format is fixed. The configuration is 8 data bits and 1 or 2 stop bits, regardless of the values programmed in the Mode register fields CHRL, MODE9 and CHMODE. MSBF can be used to transmit LSB or MSB first. The Parity (PAR) bit can be used to transmit in normal or inverse mode. Refer to Section 31.7.3 “USART Mode Register” and “PAR: Parity Type”.

11. Module: USART - US_RTOR Register

In the Section 30.7.20, the TimeOut (TO) bit information is incomplete, hence the following information has been added.

TimeOut (TO) value is 17 bits for USART, which supports all modes including LIN mode.

16 bits for USART, which supports all modes.

8 bits for USART, which does not support ISO7816.

12. Module: USART - US_LINMR Register

The following sentence in the current device data sheet Section 30.7.25 has an error and must be disregarded:

This register can only be written if the WPEN bit is cleared in the USART Write Protection Mode Register.

© 2019-2020 Microchip Technology Inc.

13. Module: Electrical Characteristics - Recommended Operating Conditions

Table 39-2 is updated to clarify the V_{DDIO_SLOPE} parameter. The new values are shown below.

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
V_{DDIO_SLOPE}	Slope on VDDIO	Single Supply, See Figure 5-2	**1.5**			V/ms
V_{DDIO_SLOPE}	Slope on VDDIO	Dual Supply, See Figure 5-3	**7**			V/ms

14. Module: USB Host Port (UHP): User Interface

The addresses listed for the UHP Registers are incorrect. The base address is **0x20400000**. All 23 register addresses should be read as 0x20400000 + the offset listed in Table 36.2.

15. Module: System I/O Lines -Table 9-6 "System I/O Configuration Pin List"

The default function after reset of PA21 and PA22 is I/O.

16. Module: Reset Controller (RSTC)

The SYSC_WPMR register is not present. References to that register must be ignored.

17. Module: Product Mapping

The offset listed for GPBR in Figure 6-1. SAM G55 Product Mapping must be 0x90.

18. Module: Supply Controller (SUPC)

In the device data sheet Section 25.5.2, the Supply Controller (SUPC) user interface erroneously lists offsets 0x20 through 0x2C as reserved. They are not part of the SUPC.

19. Module: General Purpose Backup Registers (GPBR)

The offset listed for SYS_GPBR7 in Table 28-1. Register Mapping must be 0x1C.

20. Module: ADC Channel Status Register bit descriptions

The CHx bits in the ADC_CHSR register description must be as follows:

CHx: Channel x Status

0: The corresponding channel (or part of sequence, see ADC_SEQR1.USCHx field) is disabled.

1: The corresponding channel (or part of sequence, see ADC_SEQR1.USCHx field) is enabled.

Note: For example, when ADC_MR.USEQ = 1 and a '1' is written to CH2, the channel defined in ADC_SEQR1.USCH2 is part of the sequence of conversions.

© 2019-2020 Microchip Technology Inc.

APPENDIX A: REVISION HISTORY

Revision A Document (07/2019)

This is the initial released version of this document.

Revision B Document (01/2020)

This revision includes the following updates to Data Sheet Clarifications:

- 13. Module: Electrical Characteristics - Recommended Operating Conditions
- 14. Module: USB Host Port (UHP): User Interface
- 15. Module: System I/O Lines -Table 9-6 “System I/O Configuration Pin List”
- 16. Module: Reset Controller (RSTC)
- 17. Module: Product Mapping
- 18. Module: Supply Controller (SUPC)
- 19. Module: General Purpose Backup Registers (GPBR)
- The offset listed for SYS_GPBR7 in Table 28-1. Register Mapping must be 0x1C.

NOTES:

© 2019-2020 Microchip Technology Inc.

Note the following details of the code protection feature on Microchip devices:

- Microchip products meet the specification contained in their particular Microchip Data Sheet.
- Microchip believes that its family of products is one of the most secure families of its kind on the market today, when used in the intended manner and under normal conditions.
- There are dishonest and possibly illegal methods used to breach the code protection feature. All of these methods, to our knowledge, require using the Microchip products in a manner outside the operating specifications contained in Microchip's Data Sheets. Most likely, the person doing so is engaged in theft of intellectual property.
- Microchip is willing to work with the customer who is concerned about the integrity of their code.
- Neither Microchip nor any other semiconductor manufacturer can guarantee the security of their code. Code protection does not mean that we are guaranteeing the product as "unbreakable."

Code protection is constantly evolving. We at Microchip are committed to continuously improving the code protection features of our products. Attempts to break Microchip's code protection feature may be a violation of the Digital Millennium Copyright Act. If such acts allow unauthorized access to your software or other copyrighted work, you may have a right to sue for relief under that Act.

Information contained in this publication regarding device applications and the like is provided only for your convenience and may be superseded by updates. It is your responsibility to ensure that your application meets with your specifications. MICROCHIP MAKES NO REPRESENTATIONS OR WARRANTIES OF ANY KIND WHETHER EXPRESS OR IMPLIED, WRITTEN OR ORAL, STATUTORY OR OTHERWISE, RELATED TO THE INFORMATION, INCLUDING BUT NOT LIMITED TO ITS CONDITION, QUALITY, PERFORMANCE, MERCHANTABILITY OR FITNESS FOR PURPOSE**.** Microchip disclaims all liability arising from this information and its use. Use of Microchip devices in life support and/or safety applications is entirely at the buyer's risk, and the buyer agrees to defend, indemnify and hold harmless Microchip from any and all damages, claims, suits, or expenses resulting from such use. No licenses are conveyed, implicitly or otherwise, under any Microchip intellectual property rights unless otherwise stated.

For information regarding Microchip's Quality Management Systems, please visit www.microchip.com/quality.

Trademarks

The Microchip name and logo, the Microchip logo, Adaptec, AnyRate, AVR, AVR logo, AVR Freaks, BesTime, BitCloud, chipKIT, chipKIT logo, CryptoMemory, CryptoRF, dsPIC, FlashFlex, flexPWR, HELDO, IGLOO, JukeBlox, KeeLoq, Kleer, LANCheck, LinkMD, maXStylus, maXTouch, MediaLB, megaAVR, Microsemi, Microsemi logo, MOST, MOST logo, MPLAB, OptoLyzer, PackeTime, PIC, picoPower, PICSTART, PIC32 logo, PolarFire, Prochip Designer, QTouch, SAM-BA, SenGenuity, SpyNIC, SST, SST Logo, SuperFlash, Symmetricom, SyncServer, Tachyon, TempTrackr, TimeSource, tinyAVR, UNI/O, Vectron, and XMEGA are registered trademarks of Microchip Technology Incorporated in the U.S.A. and other countries.

APT, ClockWorks, The Embedded Control Solutions Company, EtherSynch, FlashTec, Hyper Speed Control, HyperLight Load, IntelliMOS, Libero, motorBench, mTouch, Powermite 3, Precision Edge, ProASIC, ProASIC Plus, ProASIC Plus logo, Quiet-Wire, SmartFusion, SyncWorld, Temux, TimeCesium, TimeHub, TimePictra, TimeProvider, Vite, WinPath, and ZL are registered trademarks of Microchip Technology Incorporated in the U.S.A.

Adjacent Key Suppression, AKS, Analog-for-the-Digital Age, Any Capacitor, AnyIn, AnyOut, BlueSky, BodyCom, CodeGuard, CryptoAuthentication, CryptoAutomotive, CryptoCompanion, CryptoController, dsPICDEM, dsPICDEM.net, Dynamic Average Matching, DAM, ECAN, EtherGREEN, In-Circuit Serial Programming, ICSP, INICnet, Inter-Chip Connectivity, JitterBlocker, KleerNet, KleerNet logo, memBrain, Mindi, MiWi, MPASM, MPF, MPLAB Certified logo, MPLIB, MPLINK, MultiTRAK, NetDetach, Omniscient Code Generation, PICDEM, PICDEM.net, PICkit, PICtail, PowerSmart, PureSilicon, QMatrix, REAL ICE, Ripple Blocker, SAM-ICE, Serial Quad I/O, SMART-I.S., SQI, SuperSwitcher, SuperSwitcher II, Total Endurance, TSHARC, USBCheck, VariSense, ViewSpan, WiperLock, Wireless DNA, and ZENA are trademarks of Microchip Technology Incorporated in the U.S.A. and other countries.

SQTP is a service mark of Microchip Technology Incorporated in the U.S.A.

The Adaptec logo, Frequency on Demand, Silicon Storage Technology, and Symmcom are registered trademarks of Microchip Technology Inc. in other countries.

GestIC is a registered trademark of Microchip Technology Germany II GmbH & Co. KG, a subsidiary of Microchip Technology Inc., in other countries.

All other trademarks mentioned herein are property of their respective companies.

© 2019-2020, Microchip Technology Incorporated, All Rights Reserved.

ISBN: 978-1-5224-5474-8

Worldwide Sales and Service

AMERICAS

Corporate Office
2355 West Chandler Blvd.
Chandler, AZ 85224-6199
Tel: 480-792-7200
Fax: 480-792-7277
Technical Support:
http://www.microchip.com/support
Web Address:
www.microchip.com

Atlanta
Duluth, GA
Tel: 678-957-9614
Fax: 678-957-1455

Austin, TX
Tel: 512-257-3370

Boston
Westborough, MA
Tel: 774-760-0087
Fax: 774-760-0088

Chicago
Itasca, IL
Tel: 630-285-0071
Fax: 630-285-0075

Dallas
Addison, TX
Tel: 972-818-7423
Fax: 972-818-2924

Detroit
Novi, MI
Tel: 248-848-4000

Houston, TX
Tel: 281-894-5983

Indianapolis
Noblesville, IN
Tel: 317-773-8323
Fax: 317-773-5453
Tel: 317-536-2380

Los Angeles
Mission Viejo, CA
Tel: 949-462-9523
Fax: 949-462-9608
Tel: 951-273-7800

Raleigh, NC
Tel: 919-844-7510

New York, NY
Tel: 631-435-6000

San Jose, CA
Tel: 408-735-9110
Tel: 408-436-4270

Canada - Toronto
Tel: 905-695-1980
Fax: 905-695-2078

ASIA/PACIFIC

Australia - Sydney
Tel: 61-2-9868-6733

China - Beijing
Tel: 86-10-8569-7000

China - Chengdu
Tel: 86-28-8665-5511

China - Chongqing
Tel: 86-23-8980-9588

China - Dongguan
Tel: 86-769-8702-9880

China - Guangzhou
Tel: 86-20-8755-8029

China - Hangzhou
Tel: 86-571-8792-8115

China - Hong Kong SAR
Tel: 852-2943-5100

China - Nanjing
Tel: 86-25-8473-2460

China - Qingdao
Tel: 86-532-8502-7355

China - Shanghai
Tel: 86-21-3326-8000

China - Shenyang
Tel: 86-24-2334-2829

China - Shenzhen
Tel: 86-755-8864-2200

China - Suzhou
Tel: 86-186-6233-1526

China - Wuhan
Tel: 86-27-5980-5300

China - Xian
Tel: 86-29-8833-7252

China - Xiamen
Tel: 86-592-2388138

China - Zhuhai
Tel: 86-756-3210040

ASIA/PACIFIC

India - Bangalore
Tel: 91-80-3090-4444

India - New Delhi
Tel: 91-11-4160-8631

India - Pune
Tel: 91-20-4121-0141

Japan - Osaka
Tel: 81-6-6152-7160

Japan - Tokyo
Tel: 81-3-6880- 3770

Korea - Daegu
Tel: 82-53-744-4301

Korea - Seoul
Tel: 82-2-554-7200

Malaysia - Kuala Lumpur
Tel: 60-3-7651-7906

Malaysia - Penang
Tel: 60-4-227-8870

Philippines - Manila
Tel: 63-2-634-9065

Singapore
Tel: 65-6334-8870

Taiwan - Hsin Chu
Tel: 886-3-577-8366

Taiwan - Kaohsiung
Tel: 886-7-213-7830

Taiwan - Taipei
Tel: 886-2-2508-8600

Thailand - Bangkok
Tel: 66-2-694-1351

Vietnam - Ho Chi Minh
Tel: 84-28-5448-2100

EUROPE

Austria - Wels
Tel: 43-7242-2244-39
Fax: 43-7242-2244-393

Denmark - Copenhagen
Tel: 45-4450-2828
Fax: 45-4485-2829

Finland - Espoo
Tel: 358-9-4520-820

France - Paris
Tel: 33-1-69-53-63-20
Fax: 33-1-69-30-90-79

Germany - Garching
Tel: 49-8931-9700

Germany - Haan
Tel: 49-2129-3766400

Germany - Heilbronn
Tel: 49-7131-72400

Germany - Karlsruhe
Tel: 49-721-625370

Germany - Munich
Tel: 49-89-627-144-0
Fax: 49-89-627-144-44

Germany - Rosenheim
Tel: 49-8031-354-560

Israel - Ra'anana
Tel: 972-9-744-7705

Italy - Milan
Tel: 39-0331-742611
Fax: 39-0331-466781

Italy - Padova
Tel: 39-049-7625286

Netherlands - Drunen
Tel: 31-416-690399
Fax: 31-416-690340

Norway - Trondheim
Tel: 47-7288-4388

Poland - Warsaw
Tel: 48-22-3325737

Romania - Bucharest
Tel: 40-21-407-87-50

Spain - Madrid
Tel: 34-91-708-08-90
Fax: 34-91-708-08-91

Sweden - Gothenberg
Tel: 46-31-704-60-40

Sweden - Stockholm
Tel: 46-8-5090-4654

UK - Wokingham
Tel: 44-118-921-5800
Fax: 44-118-921-5820

© 2019-2020 Microchip Technology Inc.