



Product Change Notification / SYST-11PSXT895

Date:

14-Aug-2023

Product Category:

32-bit Microcontrollers

PCN Type:

Document Change

Notification Subject:

Data Sheet - SAM C20/C21 Family Data Sheet

Affected CPNs:

[SYST-11PSXT895_Affected_CPN_08142023.pdf](#)

[SYST-11PSXT895_Affected_CPN_08142023.csv](#)

Notification Text:

SYST-11PSXT895

Microchip has released a new Datasheet for the SAM C20/C21 Family Data Sheet of devices. If you are using one of these devices please read the document located at [SAM C20/C21 Family Data Sheet](#).

Notification Status: Final

Description of Change:

| Section | Updates |
|--|---|
| 11. PAC - Peripheral Access Controller | Updated reset value of DSU Bit in 11.7.11. STATUSBRegister. Updated reset value in 11.7.5. INTFLAGAHB, 11.7.6. INTFLAGA, 11.7.7. INTFLAGB, 11.7.8. INTFLAGC, 11.7.9. INTFLAGD, 11.7.10. STATUSA, 11.7.11. STATUSB, 11.7.12. STATUSC and 11.7.13. STATUSDRegisters. |
| 15. Clock System | Updated Figure 15-1. |
| 19. PM - Power Manager | Updated the table of VREGSMOD Bits in 19.8.2. STDBYCFGRegister. |
| 20. OSCCTRL – Oscillators Controller | Updated Figure 20-2. Added note in CLKFAIL Bit in 20.8.4. STATUSRegister. |
| 21. OSC32KCTRL – 32.768 kHz Oscillators Controller | Added the fifth paragraph in 21.6.4. 32.768 kHz Internal Oscillator (OSC32K) Operation. |

| | |
|---|---|
| 24. RTC – Real-Time Counter | Updated Property field in 24.8.9. COUNT Register. |
| 25. DMAC – Direct Memory Access Controller | Changed <i>CLK_DMxAC_APB</i> by <i>CLK_DMxAC_AHB</i> in 25.5.3. Clocks. Changed (BEATSIZE+1) by (BEATSIZE) in 25.6.2.7. Addressing. |
| 27. NVMCTRL – Nonvolatile Memory Controller | Updated second paragraph in 27.6.2. Memory Organization. Updated the table of PSZ Bits in 27.8.3. PARAM Register. |
| 29. Event System (EVSYS) | Updated <i>User Multiplexer Number</i> Table with info of Users m=45 and m=46. Added note 1. |
| 31. SERCOM USART - SERCOM Synchronous and Asynchronous Receiver and Transmitter | Updated second paragraph in 31.6.2.5. Data Transmission. Added note in 31.6.3.5. LIN Host. Added note in 31.6.3.10. Sample Adjustment. Added note in HDRDLY and BRKLEN Bits in 31.8.3. CTRLC Register. |
| 32. SERCOM SPI – SERCOM Serial Peripheral Interface | Updated first paragraph in 32.6.3.5. Hardware Controlled SS. Added note in MSSEN Bit in 32.8.2. CTRLB Register. |
| 34. CAN - Control Area Network (SAM C21 Only) | Changed <i>CLK_CANx_APB</i> by <i>CLK_CANx_AHB</i> in 34.6.9. Sleep Mode Operation and 34.6.10. Synchronization. Changed <i>CLK_CAN_APB</i> by <i>CLK_CAN_AHB</i> in 34.8.7. CCCR Register, 34.9.5. Standard Message ID Filter Element and 34.9.6. Extended Message ID Filter Element. Updated description in 34.8.8. NBTP Register. |
| 35. Timer/Counter (TC) | Added the fourth note in 35.6.2.8. Capture Operations. Updated Property field and added note in CAPTMODE1, CAPTMODE0, COPENx, CAPTENx, ALOCK, PRESCALER, ONDEMAND, RUNSTDBY, PRESCSYNC, MODE, ENABLE and SWRST Bits in 35.7.1.1. CTRLA Register. Added info of PER Bit in 35.7.1.12. SYNCBUSY Register. |
| 36. Timer/Counter for Control Applications (TCC) | Updated Property field and added note in CPTENx, DMAOS, MSYNC, ALOCK, PRESCSYNC, RUNSTDBY, PRESCALER, RESOLUTION, ENABLE and SWRST Bits in 36.8.1. CTRLA Register. Updated Property field and added note in 36.8.2. CTRLBCLR, 36.8.14. STATUS, 36.8.15. COUNT, 36.8.19. CCx and 36.8.21. WAVEBUF Registers. Added note in 36.8.3. CTRLBSET and 36.8.18. PER Registers. Updated info of PGVx and PGEx Bits and added note in 36.8.16. PATT Register. Updated info of SWAPx, POLx and CICCENx Bits and added note in SWAPx, POLx, CICCENx, CIPEREN, RAMP and WAVEGEN Bits in 36.8.17. WAVE Register. Updated Property field, added note and updated info of PGVBx and PGEBx Bits in 36.8.20. PATTBUF Register. Updated Property field, added note and updated info of PERBUF and DITHERBUF Bits in 36.8.22. PERBUF Register. Updated Name, Offset and Property fields, added note and updated info of DITHERBUF Bits in 36.8.23. CCBUFx Register. |
| 38. ADC - Analog-to-Digital Converter | Removed an erroneous reference to DAC in 38.2. Features, Figure 38-1 and Figure 38-8. Updated second paragraph in 38.6.2.3. Operation. Updated 38.6.2.8. Conversion Timing and Sampling Rate with new information after Figure 38-6. Updated table of MUXPOS Bits in 38.8.9. INPUTCTRL Register. |
| 40. AC – Analog Comparators | Added note in 40.6.10. Offset Compensation. Updated table of MUXPOS and MUXNEG Bits in 40.8.12. COMPCTRL Register. |
| 41. DAC – Digital-to-Analog Converter (SAM C21 only) | Updated second paragraph in 41.6.1. Principle of Operation. Updated second bullet in 41.6.4. Interrupts. |
| 45. Electrical Characteristics 85°C (SAM C20/C21 E/G/J) | Updated Min. and Max. Values of V_{PIN} in Table 45-1. Updated Max. Values of IDLE2 in Table 45-11. Deleted note 2. Updated T_S in Table 45-22. Updated f_{OUT} in Table 45-52 and added note 3. Updated Table 45-57. Added note 5. Updated Typ. and Max. Values of I_{DD} in Table 45-58. |

| | |
|--|--|
| 46. Electrical Characteristics 105°C (SAM C20/C21 E/G/J) | Updated Max. Values of IDLE2 in Table 46-2. Deleted note 2. Updated Min. Value of $CY_{CEEPROM}$ in Table 46-12. Updated Typ. and Max. Values of I_{DD} in Table 46-20. |
| 47. Electrical Characteristics 105°C (SAM C20/C21 N) | Updated Typ. and Max. Values of I_{DD} in Table 47-25. |
| 48. Electrical Characteristics AEC - Q100 Grade 1, 125°C (SAM C20/C21 E/G/J) | Updated Typ. and Max. Values of I_{DD} in Table 48-33. |
| 53. Schematic Checklist | Added second paragraph in 53.1. Introduction. Added second paragraph in 53.2. Operation in Noisy Environment. Updated Figure 53-5 and added note in 53.5. External Reset Circuit. Updated Figure 53-12 and Table 53-7. Updated Figure 53-13, deleted note and added new note after Table 53-8. Updated Figure 53-14, deleted note and added new note after Table 53-9. Updated Figure 53-15 and added new note after Table 53-10. |

Impacts to Data Sheet: See above details

Reason for Change: To improve Productivity

Change Implementation Status: Complete

Date Document Changes Effective: 14 Aug 2023

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

Attachments:

[SAM C20/C21 Family Data Sheet](#)

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)

ATSAMC20J18A-AZVAO
ATSAMC20J17A-AZVAO
ATSAMC21G15A-AZ
ATSAMC21G16A-AZ
ATSAMC21G17A-AZ
ATSAMC21G18A-AZ
ATSAMC20G18A-AZ
ATSAMC20G17A-AZ
ATSAMC20G16A-AZ
ATSAMC20G15A-AZ
ATSAMC21G18A-AZ510
ATSAMC21G17A-AZVAO
ATSAMC21G18A-AZVAO
ATSAMC20G17A-AZVAO
ATSAMC21G17A-MU
ATSAMC20G16A-AUN01
ATSAMC20E15A-MNT
ATSAMC20E16A-MNT
ATSAMC20E17A-MNT
ATSAMC20E18A-MNT
ATSAMC21E15A-MNT
ATSAMC21E16A-MNT
ATSAMC21E17A-MNT
ATSAMC21E18A-MNT
ATSAMC21E18A-MNTDY
ATSAMC21E16A-MNTS2
ATSAMC20G15A-MNT
ATSAMC20G16A-MNT
ATSAMC20G17A-MNT
ATSAMC20G18A-MNT
ATSAMC21G15A-MNT
ATSAMC21G16A-MNT
ATSAMC21G17A-MNT
ATSAMC21G18A-MNT
ATSAMC21G16A-MNTS2
ATSAMC20E15A-ANT
ATSAMC20E16A-ANT
ATSAMC20E17A-ANT
ATSAMC20E18A-ANT
ATSAMC21E15A-ANT
ATSAMC21E16A-ANT
ATSAMC21E17A-ANT
ATSAMC21E18A-ANT
ATSAMC20J15A-MNT
ATSAMC20J16A-MNT
ATSAMC20J17A-MNT

ATSAMC20J18A-MNT
ATSAMC21J15A-MNT
ATSAMC21J16A-MNT
ATSAMC21J17A-MNT
ATSAMC21J18A-MNT
ATSAMC20J15A-ANT
ATSAMC20J16A-ANT
ATSAMC20J17A-ANT
ATSAMC20J18A-ANT
ATSAMC21J15A-ANT
ATSAMC21J16A-ANT
ATSAMC21J17A-ANT
ATSAMC21J18A-ANT
ATSAMC20J17A-ANTS2
ATSAMC20J18A-ANTS2
ATSAMC20G15A-ANT
ATSAMC20G16A-ANT
ATSAMC20G17A-ANT
ATSAMC20G18A-ANT
ATSAMC21G15A-ANT
ATSAMC21G16A-ANT
ATSAMC21G17A-ANT
ATSAMC21G18A-ANT
ATSAMC21J18A-UUT
ATSAMC20J17A-UUT
ATSAMC20J18A-UUT
ATSAMC21J17A-UUT
ATSAMC21E18A-MUTDY
ATSAMC21G16A-MZTVAO
ATSAMC20G17A-MZTVAO
ATSAMC21G17A-MZTV08-HK
ATSAMC21J18A-MZT
ATSAMC21J17A-MZT
ATSAMC21J16A-MZT
ATSAMC21J15A-MZT
ATSAMC20J18A-MZT
ATSAMC20J17A-MZT
ATSAMC20J16A-MZT
ATSAMC20J15A-MZT
ATSAMC20E15A-MUT
ATSAMC20E16A-MUT
ATSAMC20E17A-MUT
ATSAMC20E18A-MUT
ATSAMC21E15A-MUT
ATSAMC21E16A-MUT
ATSAMC21E17A-MUT
ATSAMC21E18A-MUT
ATSAMC20E17A-MUTS2
ATSAMC21E18A-MUT64

ATSAMC21E17A-MUT510
ATSAMC21E18A-MUTN01
ATSAMC21E16A-MUTN01
ATSAMC20E16A-MUTS2
ATSAMC21E18A-MUTS2
ATSAMC21G18A-MUT
ATSAMC20G15A-MUT
ATSAMC20G16A-MUT
ATSAMC20G17A-MUT
ATSAMC20G18A-MUT
ATSAMC21G15A-MUT
ATSAMC21G16A-MUT
ATSAMC21G17A-MUT
ATSAMC20G17A-MUTS2
ATSAMC21G18A-MUT64
ATSAMC21G18A-MUTN01
ATSAMC21G17A-MUTS2
ATSAMC20E18A-AUT
ATSAMC21E18A-AUT
ATSAMC20E15A-AUT
ATSAMC20E16A-AUT
ATSAMC20E17A-AUT
ATSAMC21E15A-AUT
ATSAMC21E16A-AUT
ATSAMC21E17A-AUT
ATSAMC20E16A-AUTS2
ATSAMC21E18A-AUT64
ATSAMC21J18A-MUT
ATSAMC20J15A-MUT
ATSAMC20J16A-MUT
ATSAMC20J17A-MUT
ATSAMC20J18A-MUT
ATSAMC21J15A-MUT
ATSAMC21J16A-MUT
ATSAMC21J17A-MUT
ATSAMC21J18A-MUT64
ATSAMC21J17A-MUTN02
ATSAMC21J18A-MUTN01
ATSAMC20J18A-AUT
ATSAMC21J18A-AUT
ATSAMC20J15A-AUT
ATSAMC20J16A-AUT
ATSAMC20J17A-AUT
ATSAMC21J15A-AUT
ATSAMC21J16A-AUT
ATSAMC21J17A-AUT
ATSAMC21J18A-AUT64
ATSAMC20J17A-AUTS2
ATSAMC21J18A-AUT-SL1

ATSAMC21J18A-AUT-SL2
ATSAMC21J18A-AUT-SL3
ATSAMC20G18A-AUT
ATSAMC21G18A-AUT
ATSAMC20G15A-AUT
ATSAMC20G16A-AUT
ATSAMC20G17A-AUT
ATSAMC21G15A-AUT
ATSAMC21G16A-AUT
ATSAMC21G17A-AUT
ATSAMC21G18A-AUT64
ATSAMC21G18A-AUTN01
ATSAMC21J18A-MZTV23
ATSAMC21E18A-MZT
ATSAMC21E17A-MZT
ATSAMC21E16A-MZT
ATSAMC21E15A-MZT
ATSAMC20E18A-MZT
ATSAMC20E17A-MZT
ATSAMC20E16A-MZT
ATSAMC20E15A-MZT
ATSAMC21E15A-MZT510
ATSAMC21E17A-MZT510
ATSAMC21E18A-MZT-SL1
ATSAMC21E18A-MZT-SL2
ATSAMC21E18A-MZT-SL3
ATSAMC21E18A-MZTV02
ATSAMC21E18A-MZTV05
ATSAMC21E17A-MZTV07
ATSAMC20E17A-MZTV10
ATSAMC21E17A-MZTV14
ATSAMC21E18A-MZTV15
ATSAMC21E18A-MZTV16
ATSAMC21E18A-MZTVAO
ATSAMC21E16A-MZTVAO
ATSAMC21E17A-MZTVAO
ATSAMC21E17A-MZTV14-BW
ATSAMC20E17A-MZTVAO
ATSAMC21E15A-MZTVAO
ATSAMC20E16A-MZTVAO
ATSAMC21E18A-MZT-SL3VAO
ATSAMC21E18A-MZTV05-VW
ATSAMC21E15A-AZT
ATSAMC21E16A-AZT
ATSAMC21E17A-AZT
ATSAMC21E18A-AZT
ATSAMC20E18A-AZT
ATSAMC20E17A-AZT
ATSAMC20E16A-AZT

ATSAMC20E15A-AZT
ATSAMC21E18A-AZT510
ATSAMC21E18A-AZTVAO
ATSAMC21E16A-AZTVAO
ATSAMC21E17A-AZTVAO
ATSAMC21E15A-AZTVAO
ATSAMC21G18A-MZT
ATSAMC21G17A-MZT
ATSAMC21G16A-MZT
ATSAMC21G15A-MZT
ATSAMC20G18A-MZT
ATSAMC20G17A-MZT
ATSAMC20G16A-MZT
ATSAMC20G15A-MZT
ATSAMC21G18A-MZT510
ATSAMC21G17A-MZT-SL1
ATSAMC21G17A-MZT-SL2
ATSAMC21G17A-MZT-SL3
ATSAMC21G17A-MZTV08
ATSAMC21G18A-MZTV11
ATSAMC21G17A-MZTV12
ATSAMC21G18A-MZTV13
ATSAMC21G17A-MZTV24
ATSAMC21G18A-MZTVAO
ATSAMC21G17A-MZTVAO
ATSAMC21J16A-MZTV03
ATSAMC21J17A-MZTV04
ATSAMC21J17A-MZTV09
ATSAMC21J18A-MZTV13
ATSAMC21J17A-MZTV17
ATSAMC21J18A-MZTVAO
ATSAMC21J17A-MZTVAO
ATSAMC21J16A-MZTVAO
ATSAMC21J15A-MZTVAO
ATSAMC20J16A-MZTVAO
ATSAMC20J17A-MZTVAO
ATSAMC21J17A-MZTV09-HK
ATSAMC21J17A-MZTV04-VW
ATSAMC21J16A-MZTV03-VW
ATSAMC21J15A-AZT
ATSAMC21J16A-AZT
ATSAMC21J17A-AZT
ATSAMC21J18A-AZT
ATSAMC20J18A-AZT
ATSAMC20J17A-AZT
ATSAMC20J16A-AZT
ATSAMC20J15A-AZT
ATSAMC21J17A-AZT510
ATSAMC21J18A-AZT510

ATSAMC21J17A-AZTV06
ATSAMC21J18A-AZTV19
ATSAMC21J18A-AZTVAO
ATSAMC21J17A-AZTVAO
ATSAMC21J16A-AZTVAO
ATSAMC20J16A-AZTVAO
ATSAMC20J18A-AZTVAO
ATSAMC20J17A-AZTVAO
ATSAMC21G15A-AZT
ATSAMC21G16A-AZT
ATSAMC21G17A-AZT
ATSAMC21G18A-AZT
ATSAMC20G18A-AZT
ATSAMC20G17A-AZT
ATSAMC20G16A-AZT
ATSAMC20G15A-AZT
ATSAMC21G18A-AZT510
ATSAMC21G17A-AZTV20
ATSAMC21G18A-AZTV21
ATSAMC21G17A-AZTVAO
ATSAMC21G18A-AZTVAO
ATSAMC20G17A-AZTVAO
ATSAMC21N18A-AZ
ATSAMC21N17A-AZ
ATSAMC20N18A-AZ
ATSAMC20N17A-AZ
ATSAMC21N18A-AZ510
ATSAMC20N17A-AZVAO
ATSAMC21N18A-AZVAO
ATSAMC21N17A-AZVAO
ATSAMC21N17A-AN
ATSAMC21N18A-AN
ATSAMC20N17A-ANT
ATSAMC21N17A-ANT
ATSAMC20N18A-ANT
ATSAMC21N18A-ANT
ATSAMC20N18A-AN
ATSAMC21N18A-AZT
ATSAMC21N17A-AZT
ATSAMC20N18A-AZT
ATSAMC20N17A-AZT
ATSAMC21N18A-AZT510
ATSAMC21N17A-AZTV01
ATSAMC21N18A-AZTV02
ATSAMC21N17A-AZTV03
ATSAMC21N18A-AZTV04
ATSAMC20N17A-AZTVAO
ATSAMC21N18A-AZTVAO
ATSAMC21N17A-AZTVAO

ATSAMC21N17A-AZTVAO-GM
ATSAMC21N18A-AZTVAO-GM
ATSAMC21N18A-AZTV02-VW
ATSAMC21E18A-MZ
ATSAMC21E17A-MZ
ATSAMC21E16A-MZ
ATSAMC21E15A-MZ
ATSAMC20E18A-MZ
ATSAMC20E17A-MZ
ATSAMC20E16A-MZ
ATSAMC20E15A-MZ
ATSAMC21E15A-MZ510
ATSAMC21E17A-MZ510
ATSAMC21E18A-MZV02
ATSAMC21E18A-MZV15
ATSAMC21E18A-MZVAO
ATSAMC20E17A-MZVAO
ATSAMC21E15A-MZVAO
ATSAMC20E16A-MZVAO
ATSAMC21E15A-AZ
ATSAMC21E16A-AZ
ATSAMC21E17A-AZ
ATSAMC21E18A-AZ
ATSAMC20E18A-AZ
ATSAMC20E17A-AZ
ATSAMC20E16A-AZ
ATSAMC20E15A-AZ
ATSAMC21E18A-AZ510
ATSAMC21G18A-MZ
ATSAMC21G17A-MZ
ATSAMC21G16A-MZ
ATSAMC21G15A-MZ
ATSAMC20G18A-MZ
ATSAMC20G17A-MZ
ATSAMC20G16A-MZ
ATSAMC20G15A-MZ
ATSAMC21G17A-MZ510
ATSAMC21G18A-MZ510
ATSAMC21G17A-MZVAO
ATSAMC20G17A-MZVAO
ATSAMC21J18A-MZ
ATSAMC21J17A-MZ
ATSAMC21J16A-MZ
ATSAMC21J15A-MZ
ATSAMC20J18A-MZ
ATSAMC20J17A-MZ
ATSAMC20J16A-MZ
ATSAMC20J15A-MZ
ATSAMC20J17A-MZVAO

ATSAMC21J15A-AZ
ATSAMC21J16A-AZ
ATSAMC21J17A-AZ
ATSAMC21J18A-AZ
ATSAMC20J18A-AZ
ATSAMC20J17A-AZ
ATSAMC20J16A-AZ
ATSAMC20J15A-AZ
ATSAMC21J17A-AZ510
ATSAMC21J18A-AZ510
ATSAMC21J18A-AZV22
ATSAMC21J16A-AZVAO
ATSAMC20J15A-MMZ
ATSAMC20J15A-MMZT
ATSAMC20J16A-MMZ
ATSAMC20J16A-MMZT
ATSAMC20J17A-MMZ
ATSAMC20J17A-MMZT
ATSAMC20J18A-MMZ
ATSAMC20J18A-MMZT
ATSAMC21J15A-MMZ
ATSAMC21J15A-MMZT
ATSAMC21J16A-MMZ
ATSAMC21J16A-MMZT
ATSAMC21J16A-MMZTV18
ATSAMC21J16A-MMZTVAO
ATSAMC21J17A-MMZ
ATSAMC21J17A-MMZT
ATSAMC21J17A-MMZTVAO
ATSAMC21J17A-MMZVAO
ATSAMC21J18A-MMZ
ATSAMC21J18A-MMZT