

Product Change Notification - SYST-31QEFB481

Date:

04 Feb 2020

Product Category:

32-bit Microcontrollers

Affected CPNs:

Notification subject:

Data Sheet - SAM C20/C21 Family Data Sheet

Notification text:

SYST-31QEFB481

Microchip has released a new Product Documents 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: This revision includes the following changes

Section Name	Update Description
Configuration Summary	<ul style="list-style-type: none"> Updated Table 1-3 SAM C21 Family Features with new values for the PTC
Block Diagram	<ul style="list-style-type: none"> Updated Table 1-4 SAM C20 Family Features with new values for the AC <p>Updated the arrow to bridge between PORT and AHB- APB Bridge B.</p>
Signal Descriptions	Updated Table 5-1 Signal Descriptions List - SAM C20/C21 with small typographical edits for VOUT and VREFA.
Multiplexed Signals	Updated Table 6-1, Table 6-2, Table 6-3, and Table 6-4 with new ADC-DAC/VREFA values in the REF column.
Processor and Architecture	Updated Table 10-3 and 10-4 in Interrupt Line Mapping with notations designating which chip the Peripheral Source applies to.
GCLK	<ul style="list-style-type: none"> Updated Figure 16-1 Block Diagram to correct missing information Updated the GENCTRL bit for the SYNCBUSY register
MCLK	<ul style="list-style-type: none"> Updated the AHBMASK Register to display the DIVAS and APBD bits Updated the TC4 bit of the APBCMASK Register to display the Description table Updated the APBDMASK Register with a new note on availability of features for SAMC2x "N" Series devices
PM	Updated the SLEEPMODE bit of the SLEEPCFG Register with new data in the table.

OSCCTRL	Updated the AMPGC bit of the XOSCCTRL Register with a new note.
SUPC	<ul style="list-style-type: none"> &bull; Updated Voltage Reference System Operation with new text referencing the INTREF &bull; Updated Selecting a Voltage Reference with new text for the INTREF &bull; Updated the ACTCFG bit of the BODVDD Register to remove an erroneous reference to Sleep Mode &bull; Updated the STDBYCFG bit of the BODVDD Register with new table values
EIC	Updated the LOCK Register with new reset values.
NVMCTRL	
PORT I/O Pin Controller	Corrected typographical error in OUTTGL reference in Features.
CAN	<ul style="list-style-type: none"> &bull; Updated Power Management with new interrupt text &bull; Updated Sleep Mode Operation with new introductory sentence
CCL	<ul style="list-style-type: none"> &bull; Updated Truth Table Inputs Selection for Internal Events Inputs Selection (EVENT) with C20/C21 availability text &bull; Updated the table for the INSELx bit in the LUTCTRLn Register
ADC	<ul style="list-style-type: none"> &bull; Updated Overview with supporting text for the INTREF voltage reference &bull; Updated Features with new supporting text for INTREF &bull; Updated Analog Connections with new supporting text for INTREF &bull; Updated Reference Configuration with new supporting text for INTREF &bull; Updated the REFSEL bit for the REFCTRL

	<p>Register</p> <ul style="list-style-type: none"> Updated the MUXPOS bit for the INPUTCTRL Register
<p>SDADC</p> <p>AC</p>	<ul style="list-style-type: none"> Removed erroneous information from Features for Conversion Range Updated the REFSEL bit for the REFCTRL Register Updated the Overview with information for CMP2 and CMP3 on E and G variants Updated Features with information on the INTREF Updated the Block Diagrams to replace Bandgap with INTREF Updated Analog Connections to replace Bandgap text with INTREF Updated Principle of Operation to replace Bandgap text with INTREF Updated the table for the MUXNEG bit of the COMPCTRL Register
<p>DAC</p> <p>FREQM</p>	<ul style="list-style-type: none"> Updated Analog Connections to replace Bandgap text with INTREF Updated the table for the REFSEL bit for the CTRLB Register Added a new note to the Block Diagram Updated the DIVREF bit description for the CFGA Register
<p>Electrical Characteristics at 85°C</p>	<ul style="list-style-type: none"> Updated Table 45-18 Decoupling Requirements in Voltage Regulator Characteristics with new values and a new note Updated Table 45-19 Operating Conditions in Analog-to-Digital Converter (ADC) Characteristics with INTREF replacing Bandgap

	<ul style="list-style-type: none"> Updated Table 45-23 Operating Conditions in Sigma-Delta Analog-to-Digital Converter (SDADC) Characteristics with the addition of a note and the removal of single-ended mode references Updated Crystal Oscillator Characteristics with a new equation and removed CSHUNT from the diagram
Electrical Characteristics at 105°C	Updated Table 47-8 Operating Conditions in Sigma-Delta Analog-to-Digital Converter (SDADC) Characteristics to remove the Single-ended mode reference and added new note.
AEC Q100 Grade 1, Electrical Characteristics at 125°C	Updated Table 48-3 Current Consumption with new values for the Maximum under Standby.
Schematic Checklist	Removed pF references from Figure 50-7 Crystal Oscillator Schematic and removed pF references from Table 50-5 in Crystal Oscillator

Impacts to Data Sheet: None

Reason for Change: To Improve Manufacturability

Change Implementation Status: Complete

Date Document Changes Effective: 04 Feb 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 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)

ATSAMC20E15A-ANT
ATSAMC20E15A-AUT
ATSAMC20E15A-AZ
ATSAMC20E15A-AZT
ATSAMC20E15A-MNT
ATSAMC20E15A-MUT
ATSAMC20E15A-MZ
ATSAMC20E15A-MZT
ATSAMC20E16A-ANT
ATSAMC20E16A-AUT
ATSAMC20E16A-AZ
ATSAMC20E16A-AZT
ATSAMC20E16A-MNT
ATSAMC20E16A-MUT
ATSAMC20E16A-MZ
ATSAMC20E16A-MZT
ATSAMC20E17A-ANT
ATSAMC20E17A-AUT
ATSAMC20E17A-AZ
ATSAMC20E17A-AZT
ATSAMC20E17A-MNT
ATSAMC20E17A-MUT
ATSAMC20E17A-MZ
ATSAMC20E17A-MZT
ATSAMC20E17A-MZTVAO
ATSAMC20E18A-ANT
ATSAMC20E18A-AUT
ATSAMC20E18A-AZ
ATSAMC20E18A-AZT
ATSAMC20E18A-MNT
ATSAMC20E18A-MUT
ATSAMC20E18A-MZ
ATSAMC20E18A-MZT
ATSAMC20G15A-ANT
ATSAMC20G15A-AUT
ATSAMC20G15A-AZ
ATSAMC20G15A-AZT
ATSAMC20G15A-MNT
ATSAMC20G15A-MUT
ATSAMC20G15A-MZ
ATSAMC20G15A-MZT
ATSAMC20G16A-ANT
ATSAMC20G16A-AUN01
ATSAMC20G16A-AUT
ATSAMC20G16A-AZ
ATSAMC20G16A-AZT

ATSAMC20G16A-MNT
ATSAMC20G16A-MUT
ATSAMC20G16A-MZ
ATSAMC20G16A-MZT
ATSAMC20G17A-ANT
ATSAMC20G17A-AUT
ATSAMC20G17A-AZ
ATSAMC20G17A-AZT
ATSAMC20G17A-MNT
ATSAMC20G17A-MUT
ATSAMC20G17A-MZ
ATSAMC20G17A-MZT
ATSAMC20G18A-ANT
ATSAMC20G18A-AUT
ATSAMC20G18A-AZ
ATSAMC20G18A-AZT
ATSAMC20G18A-MNT
ATSAMC20G18A-MUT
ATSAMC20G18A-MZ
ATSAMC20G18A-MZT
ATSAMC20J15A-ANT
ATSAMC20J15A-AUT
ATSAMC20J15A-AZ
ATSAMC20J15A-AZT
ATSAMC20J15A-MNT
ATSAMC20J15A-MUT
ATSAMC20J15A-MZ
ATSAMC20J15A-MZT
ATSAMC20J16A-ANT
ATSAMC20J16A-AUT
ATSAMC20J16A-AZ
ATSAMC20J16A-AZT
ATSAMC20J16A-MNT
ATSAMC20J16A-MUT
ATSAMC20J16A-MZ
ATSAMC20J16A-MZT
ATSAMC20J17A-ANT
ATSAMC20J17A-AUT
ATSAMC20J17A-AZ
ATSAMC20J17A-AZT
ATSAMC20J17A-MNT
ATSAMC20J17A-MUT
ATSAMC20J17A-MZ
ATSAMC20J17A-MZT
ATSAMC20J17A-UUT
ATSAMC20J18A-ANT
ATSAMC20J18A-AUT
ATSAMC20J18A-AZ
ATSAMC20J18A-AZT

ATSAMC20J18A-MNT
ATSAMC20J18A-MUT
ATSAMC20J18A-MZ
ATSAMC20J18A-MZT
ATSAMC20J18A-UUT
ATSAMC20N17A-ANT
ATSAMC20N18A-ANT
ATSAMC21E15A-ANT
ATSAMC21E15A-AUT
ATSAMC21E15A-AZ
ATSAMC21E15A-AZT
ATSAMC21E15A-AZTVAO
ATSAMC21E15A-MNT
ATSAMC21E15A-MUT
ATSAMC21E15A-MUTDY
ATSAMC21E15A-MZ
ATSAMC21E15A-MZT
ATSAMC21E16A-ANT
ATSAMC21E16A-AUT
ATSAMC21E16A-AZ
ATSAMC21E16A-AZT
ATSAMC21E16A-AZTVAO
ATSAMC21E16A-MNT
ATSAMC21E16A-MUT
ATSAMC21E16A-MUTDY
ATSAMC21E16A-MZ
ATSAMC21E16A-MZT
ATSAMC21E16A-MZTVAO
ATSAMC21E17A-ANT
ATSAMC21E17A-AUT
ATSAMC21E17A-AZ
ATSAMC21E17A-AZT
ATSAMC21E17A-MNT
ATSAMC21E17A-MUT
ATSAMC21E17A-MZ
ATSAMC21E17A-MZT
ATSAMC21E17A-MZTVAO
ATSAMC21E18A-ANT
ATSAMC21E18A-AUT
ATSAMC21E18A-AZ
ATSAMC21E18A-AZT
ATSAMC21E18A-AZTVAO
ATSAMC21E18A-MNT
ATSAMC21E18A-MNTDY
ATSAMC21E18A-MUT
ATSAMC21E18A-MUTDY
ATSAMC21E18A-MZ
ATSAMC21E18A-MZT
ATSAMC21E18A-MZTV02

ATSAMC21E18A-MZTV05
ATSAMC21E18A-MZTVAO
ATSAMC21G15A-ANT
ATSAMC21G15A-AUT
ATSAMC21G15A-AZ
ATSAMC21G15A-AZT
ATSAMC21G15A-MNT
ATSAMC21G15A-MUT
ATSAMC21G15A-MZ
ATSAMC21G15A-MZT
ATSAMC21G16A-ANT
ATSAMC21G16A-AUT
ATSAMC21G16A-AZ
ATSAMC21G16A-AZT
ATSAMC21G16A-MNT
ATSAMC21G16A-MUT
ATSAMC21G16A-MZ
ATSAMC21G16A-MZT
ATSAMC21G16A-MZTVAO
ATSAMC21G17A-ANT
ATSAMC21G17A-AUT
ATSAMC21G17A-AZ
ATSAMC21G17A-AZT
ATSAMC21G17A-MNT
ATSAMC21G17A-MU
ATSAMC21G17A-MUT
ATSAMC21G17A-MZ
ATSAMC21G17A-MZT
ATSAMC21G17A-MZTVAO
ATSAMC21G18A-ANT
ATSAMC21G18A-AUT
ATSAMC21G18A-AZ
ATSAMC21G18A-AZT
ATSAMC21G18A-MNT
ATSAMC21G18A-MUT
ATSAMC21G18A-MZ
ATSAMC21G18A-MZT
ATSAMC21G18A-MZTVAO
ATSAMC21J15A-ANT
ATSAMC21J15A-AUT
ATSAMC21J15A-AZ
ATSAMC21J15A-AZT
ATSAMC21J15A-MNT
ATSAMC21J15A-MUT
ATSAMC21J15A-MZ
ATSAMC21J15A-MZT
ATSAMC21J15A-MZTVAO
ATSAMC21J16A-ANT
ATSAMC21J16A-AUT

ATSAMC21J16A-AZ
ATSAMC21J16A-AZT
ATSAMC21J16A-AZTVAO
ATSAMC21J16A-AZVAO
ATSAMC21J16A-MNT
ATSAMC21J16A-MUT
ATSAMC21J16A-MZ
ATSAMC21J16A-MZT
ATSAMC21J16A-MZTV03
ATSAMC21J16A-MZTVAO
ATSAMC21J17A-ANT
ATSAMC21J17A-AUT
ATSAMC21J17A-AZ
ATSAMC21J17A-AZT
ATSAMC21J17A-AZTV06
ATSAMC21J17A-AZTVAO
ATSAMC21J17A-MNT
ATSAMC21J17A-MUT
ATSAMC21J17A-MUTB2
ATSAMC21J17A-MUTN02
ATSAMC21J17A-MZ
ATSAMC21J17A-MZT
ATSAMC21J17A-MZTV04
ATSAMC21J17A-MZTVAO
ATSAMC21J17A-UUT
ATSAMC21J18A-ANT
ATSAMC21J18A-AUT
ATSAMC21J18A-AZ
ATSAMC21J18A-AZT
ATSAMC21J18A-AZTVAO
ATSAMC21J18A-MNT
ATSAMC21J18A-MUT
ATSAMC21J18A-MZ
ATSAMC21J18A-MZT
ATSAMC21J18A-MZTVAO
ATSAMC21J18A-UUT
ATSAMC21N17A-AN
ATSAMC21N17A-ANT
ATSAMC21N18A-AN
ATSAMC21N18A-ANT