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Bulletin Date: 4/18/2017	**Bulletin Effective Date:** 4/18/2017
Title: EFM32LG Documentation Revision Notification	
Bulletin Details	

Description:

Silicon Labs is pleased to announce the updated Data Sheet and Reference Manual for the EFM32LGxxx (Leopard Gecko) family of 32-bit MCU devices. This update brings a new consolidated Data Sheet, rev 2.00, for all EFM32LG devices.

The EFM32LG Reference Manual is updated to rev 1.20.

The Data Sheet rev 2.00 changes are summarized below (table numbers refer to EFM32LG995 v1.30 Data Sheet):

- Added a Feature List section.
- Added ordering code decoder to the Ordering Information section.
- Separated the Memory Map into 2 Figures – one for core and code space listing and one for peripheral listing.
- Table 3.1 Absolute Maximum Ratings – Removed the footnote about storage temperature and added max source/sink current per I/O pin.
- Section 3.3.2 Environmental – Removed this section. Environmental specifications are available in the qualification report.
- Table 3.4 Current Consumption - Added maximum current specifications for the highest energy mode, I_{EM0}.
- Table 3.8 GPIO – Reduced maximum input leakage current (I_{IOLEAK}, max).
- Section 3.9.1. – Replaced "energyAware Designer" with "Configurator tool".
- Table 3.11 LFRCO – Added (min, typ, max) specifications for oscillation frequency over full power supply and full temperature range. Also added typical voltage drift and temperature drift specs.
- Figure 3.17 – Updated graphs for calibrated LFRCO Frequency vs. Temperature and Supply Range, and also fixed y-axis unit [kHz].
- Table 3.12 HFRCO - Added specifications for oscillation frequency over full power supply and temperature range, added typical voltage drift and temperature drift specs at each frequency band, and removed the duty cycle spec (DC_{HFRCO}).
- Figures 3.18 – 3.23 – Updated all HFRCO graphs (various frequency bands).
- Table 3.13 – Removed the duty cycle spec for AUXHFRCO ($DC_{AUXHFRCO}$).
- Table 3.15 ADC – Added the following specs:
  - Input bias current ($I_{ADCBIASIN}$) – added max (source and sink)
  - Input offset current ($I_{ADCOFFSETIN}$) – added max (source and sink)
  - VREF output voltage (V_{REF}) – added min, typ, max
  - VREF voltage drift (V_{REF_VDRIFT}) – added min, typ, max
  - VREF temperature drift (V_{REF_TDRIFT}) – added min, typ, max
  - VREF current consumption (I_{VREF}) – added typ, max, replacing I_{ADCREF}
  - ADC and DAC VREF matching (V_{REF_MATCH}) – added typical
- Table 3.16 DAC – Updated the footnote for active average current (I_{DAC}), and added the following new Vref specs at each voltage reference:

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- o VREF output voltage (V_{REF}) – added min, typ, max
- o VREF voltage drift (V_{REF_VDRIFT}) – added min, typ, max
- o VREF temperature drift (V_{REF_TDRIFT}) – added min, typ, max
- o VREF current consumption (I_{VREF}) – added typ, max
- o ADC and DAC VREF matching (V_{REF_MATCH}) – added typical
- Table 3.17 OPAMP – Removed note specifying that OPAMP specs stem from simulations, and added new specifications for the following:
  - o Active Current (I_{OPAMP}) – new specifications at various (new) bias program settings.
  - o Gain Bandwidth Product (GBW_{OPAMP}) – new (typ) specifications at new bias program settings and DC bias settings.
  - o Input Offset Voltage (V_{OFFSET}) – specified min, typ, max for Op Amps (OPA0-1).
  - o Input Bias Current ($I_{OPAMPBIASIN}$) – new min and max specifications.
  - o Input Offset Current ($I_{OPAMPOFF-SETIN}$) – new min and max specifications.
  - o Slew Rate (SR_{OPAMP}) – new specifications at new bias program settings.
  - o Updated footnote.
- Table 3.18 ACMP – Added new specifications for the following:
  - o Input Bias Current ($I_{ACMPBIASIN}$) – added min and max.
  - o Input Offset Current ($I_{ACMPOFFSETIN}$) – added min and max.
  - o Active Current (I_{ACMP}) – added two new condition settings, and footnote.
  - o Negative Response Time ($t_{RESPONSE\_N}$) – added new specifications.
  - o Positive Response Times ($t_{RESPONSE\_P}$) – added new specifications.
  - o Offset Voltage ($V_{ACMPOFFSET}$) – added specifications at new bias program settings.
  - o ACMP Hysteresis ($V_{ACMPHYST}$) – added specifications for negative and positive hysteresis at various bias program settings.
  - o VDD SCALED Input Accuracy ($V_{VDDSCALED}$) – added new specifications (typical).
- Table 3.19 VCMP – Added the following new specifications:
  - o Negative hysteresis ($V_{VCMPHYST\_N}$), replacing VCMP hysteresis
  - o Positive hysteresis ($V_{VCMPHYST\_P}$), replacing VCMP hysteresis
  - o Hysteresis Delta ($V_{VCMPHYST\_DELTA}$)
  - o Negative Response Time ($t_{RESPONSE\_N}$)
  - o Positive Response Time ($t_{RESPONSE\_P}$)
  - o Footnote for active current, I_{VCMP}.
- Corrected parameter descriptions for $t_{CS\_DIS\_MI}$ in Section 3.18 – USART SPI
- Table 3.33 Digital Peripherals – Added (typical) LE Peripheral Interface Clock Current (I_{LFCLK}) specifications with both the LFXO-LFA and LFXO-LFB clock trees.
- Removed MSL information (Moisture Sensitivity Level). Instead, MSL information can be found in the Qual report that is available on the Silicon Labs website.
- New formatting throughout.

Reason:
Updated specifications based on the results of additional silicon characterization.

Product Identification:

EFM32LG230F64G-E-QFN64	EFM32LG230F64G-E-QFN64R
EFM32LG230F128G-E-QFN64	EFM32LG230F128G-E-QFN64R
EFM32LG230F256G-E-QFN64	EFM32LG230F256G-E-QFN64R
EFM32LG232F64G-E-QFP64	EFM32LG232F64G-E-QFP64R
EFM32LG232F128G-E-QFP64	EFM32LG232F128G-E-QFP64R
EFM32LG232F256G-E-QFP64	EFM32LG232F256G-E-QFP64R
EFM32LG280F64G-E-QFP100	EFM32LG280F64G-E-QFP100R

EFM32LG280F128G-E-QFP100	EFM32LG280F128G-E-QFP100R
EFM32LG280F256G-E-QFP100	EFM32LG280F256G-E-QFP100R
EFM32LG290F64G-E-BGA112	EFM32LG290F64G-E-BGA112R
EFM32LG290F128G-E-BGA112	EFM32LG290F128G-E-BGA112R
EFM32LG290F256G-E-BGA112	EFM32LG290F256G-E-BGA112R
EFM32LG295F64G-E-BGA120	EFM32LG295F64G-E-BGA120R
EFM32LG295F128G-E-BGA120	EFM32LG295F128G-E-BGA120R
EFM32LG295F256G-E-BGA120	EFM32LG295F256G-E-BGA120R
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EFM32LG330F128G-E-QFN64	EFM32LG330F128G-E-QFN64R
EFM32LG330F256G-E-QFN64	EFM32LG330F256G-E-QFN64R
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EFM32LG332F128G-E-QFP64	EFM32LG332F128G-E-QFP64R
EFM32LG332F256G-E-QFP64	EFM32LG332F256G-E-QFP64R
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EFM32LG360F128G-E-CSP81	EFM32LG360F128G-E-CSP81R
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EFM32LG380F128G-E-QFP100	EFM32LG380F128G-E-QFP100R
EFM32LG380F256G-E-QFP100	EFM32LG380F256G-E-QFP100R
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EFM32LG840F128G-E-QFN64	EFM32LG840F128G-E-QFN64R
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EFM32LG842F128G-E-QFP64	EFM32LG842F128G-E-QFP64R
EFM32LG842F256G-E-QFP64	EFM32LG842F256G-E-QFP64R
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EFM32LG880F128G-E-QFP100	EFM32LG880F128G-E-QFP100R
EFM32LG880F256G-E-QFP100	EFM32LG880F256G-E-QFP100R
EFM32LG890F64G-E-BGA112	EFM32LG890F64G-E-BGA112R
EFM32LG890F128G-E-BGA112	EFM32LG890F128G-E-BGA112R
EFM32LG890F256G-E-BGA112	EFM32LG890F256G-E-BGA112R
EFM32LG895F64G-E-BGA120	EFM32LG895F64G-E-BGA120R
EFM32LG895F128G-E-BGA120	EFM32LG895F128G-E-BGA120R

EFM32LG895F256G-E-BGA120	EFM32LG895F256G-E-BGA120R
EFM32LG900F256G-E-D1I	
EFM32LG940F64G-E-QFN64	EFM32LG940F64G-E-QFN64R
EFM32LG940F128G-E-QFN64	EFM32LG940F128G-E-QFN64R
EFM32LG940F256G-E-QFN64	EFM32LG940F256G-E-QFN64R
EFM32LG942F64G-E-QFP64	EFM32LG942F64G-E-QFP64R
EFM32LG942F128G-E-QFP64	EFM32LG942F128G-E-QFP64R
EFM32LG942F256G-E-QFP64	EFM32LG942F256G-E-QFP64R
EFM32LG980F64G-E-QFP100	EFM32LG980F64G-E-QFP100R
EFM32LG980F128G-E-QFP100	EFM32LG980F128G-E-QFP100R
EFM32LG980F256G-E-QFP100	EFM32LG980F256G-E-QFP100R
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EFM32LG990F128G-E-BGA112	EFM32LG990F128G-E-BGA112R
EFM32LG990F256G-E-BGA112	EFM32LG990F256G-E-BGA112R
EFM32LG995F64G-E-BGA120	EFM32LG995F64G-E-BGA120R
EFM32LG995F128G-E-BGA120	EFM32LG995F128G-E-BGA120R
EFM32LG995F256G-E-BGA120	EFM32LG995F256G-E-BGA120R

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