



EFM32 Series 0: 3rd Party Software and Tools



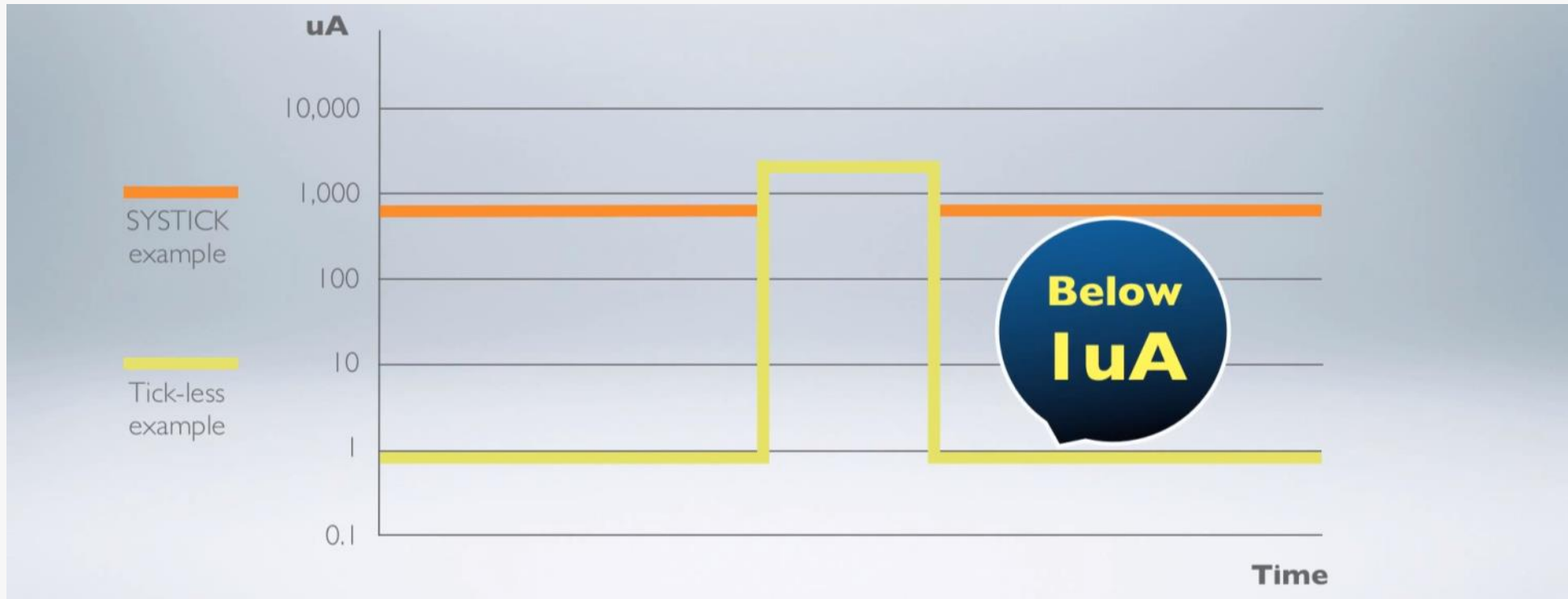


EFM32 3rd Party Software



Energy friendly RTOS support

- Real-time Operating Systems using EFM32 lower Energy Modes when idle
- Deep Sleep support in several RTOSs:
 - Keil RTX
 - FreeRTOS
 - AVIX-RT
 - ++



RTOS + add-ons

- **FreeRTOS**
 - freertos_blink example in Simplicity Studio
- **AVIX-RT: AVIX RTOS**
- **CMX: CMX-RTX, CMX-TINY+, File system, TCP/IP**
- **CooCox: CoOS RTOS**
- **Express Logic: ThreadX RTOS**
- **Keil: RTX RTOS, Flash File System,**
 - RTX example in Simplicity Studio (free)
- **Micrium: μ C/OS-II and μ C/OS-III**
 - ucos2_port and ucos3_port examples in Simplicity Studio
- **Micro Digital: SMX RTOS**
- **rt-labs: rt-kernel**
- **SEGGER: embOS, emFile, emUSB**

Open source projects

- FreeRTOS – RTOS
 - freertos example in Simplicity Studio
- FatFS – file system
 - fatcon example in Simplicity Studio
- LightWeight IP (lwIP) – TCP/IP stack
 - Application note «an0032 EFM32 Ethernet» using ASIX AX88796C MAC+PHY
 - Upcoming SW example using DK Ethernet MAC+PHY (Micrel KSZ8851SNL)
- Keil RTX
 - Examples in Simplicity Studio
- Speex – audio codec for speech
 - Application note «an0055 EFM32 Speex Codec» on encoding and decoding
- OpenBLT – bootloader tool



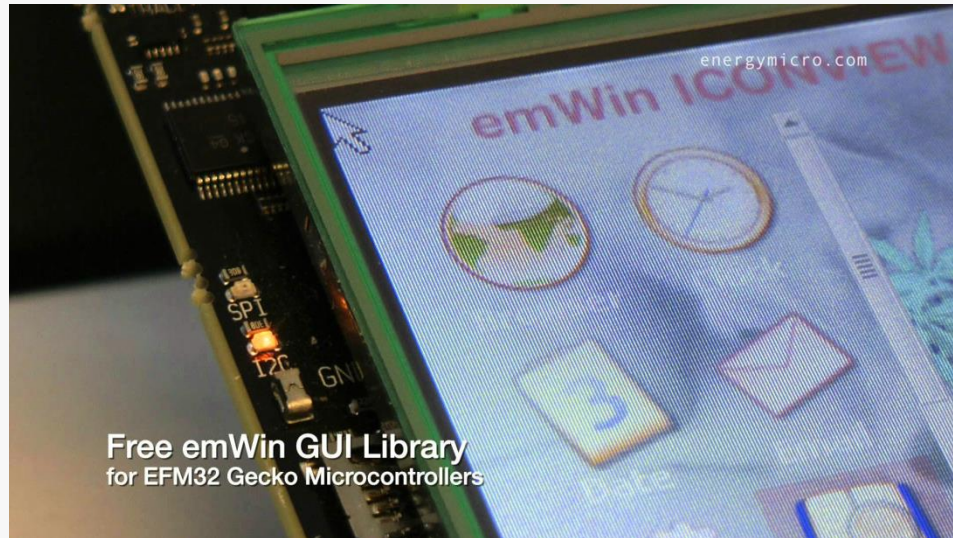
Graphics Libraries

➤ Segger emWin

- Free for all EFM32 users
- Several examples in Simplicity Studio

➤ High-end graphical user interface

- Built in support for EFM32 direct drive graphics acceleration
- Pre-compiled demo in Simplicity Studio



Wireless stacks/modules for EFM32

➤ Bluetooth:

- SEARAN dotstack:
 - Supports CSR, TI, Intel, Marvell and Broadcom BT chipsets
 - Also supports dual mode (BR/EDR + BTLE)

➤ Bluetooth Smart:

- Wicentric exactLE Bluetooth Smart protocol stack
 - Supports EM Microelectronics EM9301 HCI controller
 - Available on request

➤ Wireless M-Bus

- STZEDN (Steinbeis)
 - Reference design with EFM32LG+Si446x (Pico Board plug-in)
 - Also supports ADI, Semtech and TI RF modules

➤ Wi-Fi:

- Qualcomm Atheros SP137 Development Kit (AR4100P+EFM32)
- **Module:** RTX RTX41xx: EFM32+Qualcomm/Atheros AR4100
- **Module:** Digi XBee Pro S6

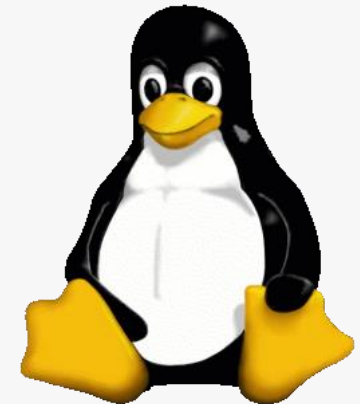
➤ 802.15.4:

- **Module:** Digi Xbee 868LP/865LP: EFM32+ADF7023



μClinux

- Latest 3.9 Linux kernel
- Requires external SRAM and Flash
- Much more than a RTOS – can run «regular» linux applications!
- Developed by Pengutronix
- <http://www.energymicro.com/news/energy-micro-and-pengutronix-demonstrate-the-world-s-most-energy-friendly-linux-for-arm-cortex-m3>



Continua Certified Solutions for Connected Health

- Partnership with Lamprey Networks
- HealthLink PHD
- HealthLink Android
- HealthLink Cloud



Pre-certified Class B self-test library

- Prevent unsafe operation of the controlled application
- Supports household appliances that require certification
- Pre-certified according to the IEC 60335 and IEC 60730 standards
- Free library for EFM32G devices





EFM32 3rd Party Tools



IDEs supported in Simplicity Studio

IDE	Compiler	Platform	Trace	Other features
IAR Embedded Workbench	IAR	Windows	ITM/ETM	Several 3rd party RTOS plug-ins. Code coverage. Power profiler
Keil MDK-ARM (μVision)	ARM	Windows	ITM/ETM	RTX RTOS, Middleware (TCP/IP, USB, File System etc). Code coverage
Rowley Crossworks	GCC	Windows, OS X, Linux	No	
Atollic TrueSTUDIO	GCC	Windows	ITM/ETM	Extensions for code coverage and verification
Eclipse w/Codesourcery	GCC	Windows, OS X, Linux	No	Wide range of plug-ins
Silicon Labs IDE	GCC/IAR	Windows, OS X, Linux	Not in first ver.	Built in Simplicity Profiler

- IDEs supporting EFM32, but no Simplicity Studio project support:
 - Altium TASKING, CooCox CoIDE, Crossware ARM Dev. Suite, Hitex HiTOP, iSystem winIDEA

Programming/Debugging/Test

➤ Programming and Debug

- EFM32 Starter and Development Kits
 - On-board Segger J-Link (can be used for debug out)
 - Instrumentation Trace/SWO support
 - Embedded Trace support on DKs
 - Power profiling (AEM)
- Any Serial Wire Debug capable debug adapter
 - Unlock or power profiling (AEM) not included

➤ Gang/Production Programming

- Elnec
- RK-SYSTEM
- Phytion
- Segger Flasher ARM
- BPM Microsystems

➤ Production test

- Goepel VarioTAP: Testing board components through test code library loaded into EFM32 through Serial Wire Debug.
 - Workaround for customers who are missing Boundary Scan