

Product Brief

XMC Digital Power Explorer Kit

Explore digital power control with XMC ARM® Cortex®-M microcontrollers

The new XMC Digital Power Explorer Kit utilizes Infineon's industry leading XMC range of ARM® Cortex®-M microcontrollers, OptiMOS™ BSC0924NDI MOSFETs and IRS2011S high and low side drivers. The kit's power board features synchronous buck converter with on-board resistive load banks. The load banks can be switched between 10%, 55% and 100% of the maximum load, so that the transient response and the quality of the control loop under different load conditions can be tested (for example continuous conduction mode vs. discontinuous conduction mode). The kit also includes 2 different control card options, XMC1300 control card (ARM® Cortex®-M0) and XMC4200 control card (ARM® Cortex®-M4F) with isolated on-board debugger, which allow designers to easily evaluate both XMC microcontroller families and make the right price/performance choice for their application. Multiple test points are provided on the power board for checking the quality of all the relevant signals. Communication option via PMBus™ is provided for easy integration in more complex power management systems.

Main features

- > Synchronous buck converter
- > 2 different control card options: XMC1300 and XMC4200
- > High resolution PWM (150 ps) and smart analog comparators on XMC4200
- > On board resistive load
- > PMBus™ communication option

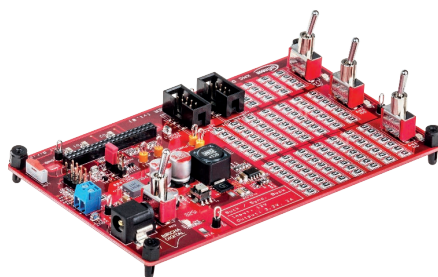
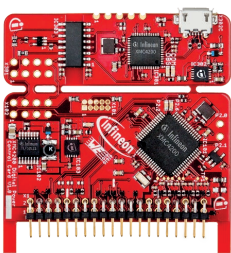
Key benefits

- > Easy entry into digital power control
- > Voltage mode control and peak current mode control (with slope compensation) available
- > Full software support

Applications

- > Industrial DC/DC power conversion
- > Telecom and server DC/DC power conversion

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XMC control card

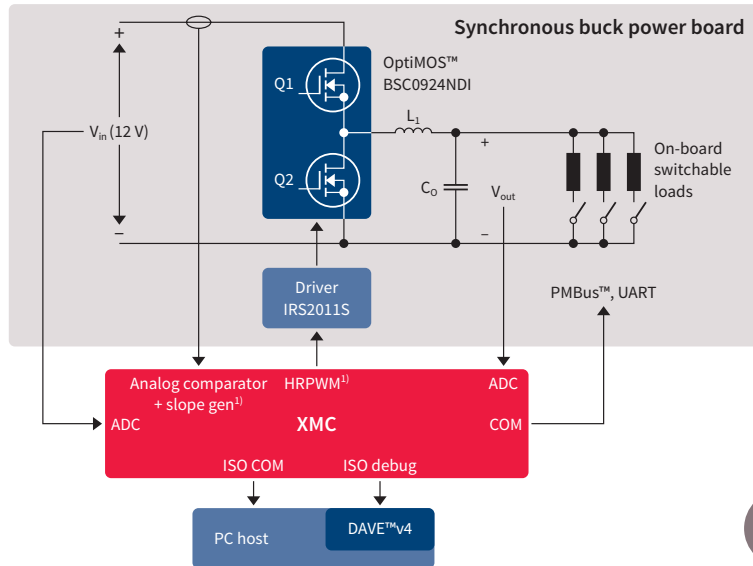
Synchronous buck power board

DAVE™ IDE and DAVE™ digital power APPs

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Block diagram – XMC Digital Power Explorer in peak current mode control



1) Only in XMC4200



The XMC Digital Power Explorer Kit has been aimed at analog power supply designers and embedded software programmers who need to accelerate their learning curve in digital power control. Infineon’s free DAVE™v4 IDE, including digital power APPs and plenty of other examples, provide the basis to quickly extract the maximum out of XMC in digital power applications.

The kit was developed in collaboration with Biricha Digital Ltd. and Würth Elektronik. Biricha Digital designed the power board employing years of training and consulting experience in digital power control. Würth Elektronik contributed by providing the best-in-class passive components and connectors, including their high-performance inductors and capacitors, perfectly fitting digital power control applications.

Product summary

Type	Description	Ordering code
KIT_XMC_DP_EXP_01	XMC Digital Power Explorer Kit	SP001343072
XMC4200-F64K256 AB	ARM® Cortex®-M4F microcontroller	SP001017514
XMC1302-T038X0200 AB	ARM® Cortex®-M0 microcontroller	SP001248394
BSC0924NDI	Dual n-channel OptiMOS™	SP000934750
IRS2011S	High-side and low-side – gate driver	IRS2011SPBF
IFX1763XEJ V33	Low dropout voltage regulator	IFX1763XEJV33XUMA1
IFX90121EL V50	Fixed 5 V, 500 mA, 2.2 MHz step-down DC/DC converter	IFX90121ELV50XUMA1

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