

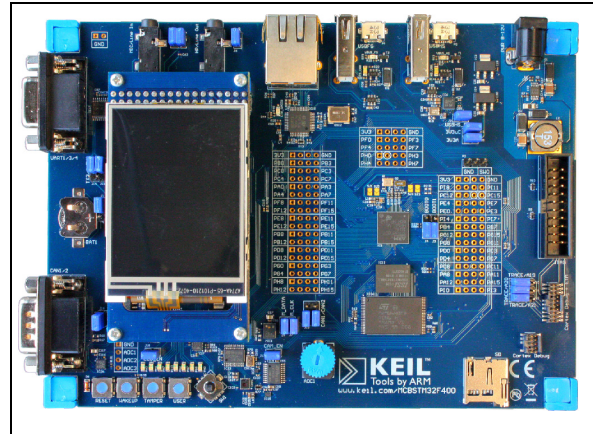


## Keil™ starter kit for STM32F4 series microcontrollers (STM32F407IG MCU)

Data brief

### Features

- The Keil MDK-Lite development tools:
  - µVision®4 IDE/Debugger for application programming and debugging
  - ARM C/C++ compiler
  - RTX real-time kernel, a multi-tasking operating system for embedded applications
  - MDK-Lite supports applications with up to 32 KB code-size
- ULINK-ME in-circuit debugger/programmer with USB interface to host PC and 20-pin JTAG or 10-pin CoreSight debug interface
- Full-featured Keil evaluation board with a 168 MHz STM32F407IG MCU



### Description

The Keil starter kit is a complete, cost-effective solution for starting application development and evaluating the STMicroelectronics STM32F4 series ARM Cortex™-M4 processor-based microcontrollers.

The STM3240G-SK/KEI starter kit provides all the hardware and software you need to start developing applications for the STM32 ARM core-based families of microcontrollers. It comes complete with a full-featured evaluation board (including Ethernet, USB HS, VGA camera, external memories, CAN, USARTs, Audio, and QVGA Touchscreen LCD), Keil's MDK-ARM Lite Edition (32 KB) development tools, and the ULINK-ME™ (USB/JTAG) adapter.

Keil starter kits are available for a full range of ST ARM core-based microcontrollers.

Table 1. Device summary

Reference	Order code
Keil™ starter kit for STM32F4 series microcontrollers	STM3240G-SK/KEI

## Starter kit architecture

Keil development software is a suite of software development tools for creating and debugging microcontroller applications that includes:

- **μVision® integrated development environment**, which integrates the ARM Compilation Tools and Keil's debugging software so that users can quickly and easily develop and debug their applications while they run on a target microcontroller.
- **ARM Compilation Tools (RVCT)** 32 Kbyte code-size limited version of the optimizing C/C++ compiler for ARM™ core-based microcontrollers.
- **ULINK-ME™ USB/JTAG in-circuit debugger / programmer**, which integrates fully with μVision, allowing users to download the application to the target and debug it while it runs on the ST ARM core-based microcontroller on the evaluation board.
- **Keil™ evaluation board**, an application board that provides a full range of features to help users evaluate and start developing applications for the included STM32F407IG microcontroller. The Keil MCBSTM32F400 evaluation board includes the following key features:
  - 168 MHz STM32F407IG ARM Cortex-M4 processor-based MCU in 176-pin BGA package
  - On-chip memory: 1 MB Flash, 192 KB SRAM
  - On-board memory: 2 MB SRAM, 8 MB NOR Flash, 512 MB NAND Flash, 8 KB EEPROM (I<sup>2</sup>C) with NFC (wireless near field communication) interface
  - 2.4 inch color QVGA TFT LCD with resistive touch-screen
  - 10/100 Ethernet port
  - USB 2.0 Full Speed - USB, USB-OTG, and USB Host
  - USB 2.0 High Speed - USB, USB-OTG, and USB Host
  - CAN interface
  - Serial/UART port
  - MicroSD Card interface
  - 5-position joystick
  - Push-buttons for Reset, Wakeup, Tamper and User
  - 8 LEDs directly connected to port pins
  - 3-axis digital Accelerometer
  - 3-axis digital Gyroscope
  - Analog voltage control for ADC input (potentiometer)
  - Audio CODEC/DAC with line-in/out and speaker/microphone
  - Digital microphone
  - Digital VGA camera
  - All MCU signals are connected to headers grouped by ports
  - Two jumpers to select boot mode
  - Power supply via: High Speed (micro) USB connector, Full Speed (micro) USB connector, Power jack (8 V-12 V)
  - Debug interface connectors: 20-pin JTAG (0.1 inch connector), 10-pin Cortex debug (0.05 inch connector), 20-pin Cortex debug + ETM Trace (0.05 inch connector)

## Ordering information

Keil starter kits can be ordered from Keil or from your nearest ST distributor or sales office for STM32F4 series microcontroller (ST order code: STM3240G-SK/KEI).

For more information and complete documentation, please refer to the Keil web site or the STMicroelectronics microcontroller support site on [www.st.com](http://www.st.com).

## Revision history

**Table 2. Document revision history**

Date	Revision	Changes
18-Nov-2011	1	Initial release.
11-May-2012	2	Modified Features and Description for clarification.

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