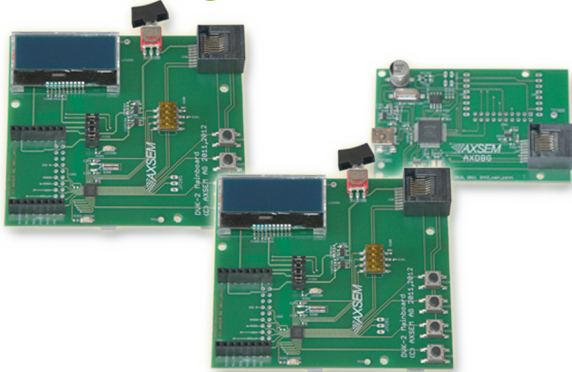


# The Comprehensive Development Kit

For The **INTERNET** Of **THINGS**



**Fast-track to successful applications!**

## Overview

The DVK-2 is AXSEM's second-generation development kit for the designer starting out with AXSEM's family of high performance RF devices and microcontrollers. Our complete development system includes all hardware and software necessary to develop systems in shortest times.

The DVK-2 features the AX8052F100 ultra-low-power microcontroller on the main boards. It allows developers to design, program and evaluate their applications using AXSEM's radio chips and microcontrollers under real world conditions. A range of RF-modules with different AXSEM RF ICs for various RF carrier frequencies are available as add-ons.

## Hardware

The DVK-2 hardware is designed to demonstrate the features of the AX8052F100 and AXSEM RF-ICs. The ultra-low-power micro-controller can be used in all operating modes including low clock speeds and sleep modes. A pair of main boards together with an RF add-on is the perfect base to evaluate and develop RF systems. All RF-modules are matched to 50  $\Omega$  and are equipped with SMA connectors that can either be used with antennas or connected to laboratory equipment.

## Software

The DVK-2 comes with a productivity enhancing IDE and C-compiler. The AXCode::Blocks integrated development environment (IDE) is a complete tool suite that supports development and debugging of C and assembler code for AXSEM microcontrollers. Its intuitive GUI provides an environment that accelerates the development cycle. The tabbed interface with code highlighting and folding helps to keep overview, while code completion, smart indent and a class browser help to speed-up code generation.

## Code Generators

The AX-RadioLab, AX-RadioLab51 and AX-MicroLab code generators create fully functional sample code for a variety of applications. While the AX-RadioLab code generators focus on typical Radio Applications, AX-MicroLab creates typical microcontroller application examples.

## C-compiler

A full featured C-compiler is available for free download at [www.axsem.com](http://www.axsem.com), allowing the developer to begin immediately. The included optimizer can be flexibly configured for speed or code size.

## Debug Link

The AXSEM debug link features not only unlimited break-points, but also a UART style terminal link. This UART link can be used together with AXCode::Blocks for printf style debugging without extra hardware effort.

 **AXSEM**

## DVK-2

**Development and Evaluation Kit for AXSEM's lowest power Radio Transceivers**

**AXSEM. The most intelligent RF.**

**Your key benefits:**

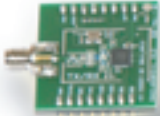
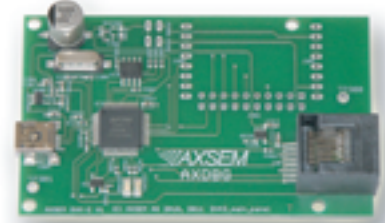
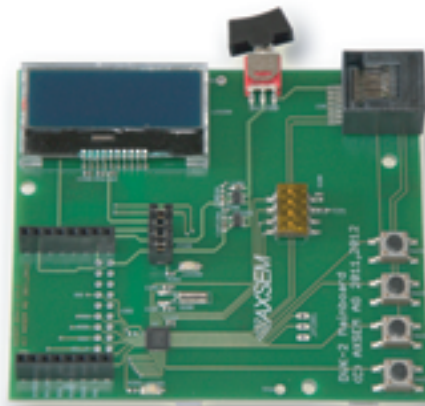
- **Complete system for application development and performance testing**
- **AXCode::Blocks IDE with unlimited break points and direct access to RF-registers**
- **Free C-compiler**
- **AX-RadioLab code generators for easy creation of RF-software**
- **Support of synchronous and asynchronous protocols**
- **USB debug interface**
- **Compatible with arduino shields**

## APPLICATIONS

- Internet of Things
- Automatic meter reading
- Security applications
- Building automation
- Wireless networks
- Compatible with: Wireless M-Bus, POCSAG, FLEX, KNX, Sigfox, Z-Wave, enOcean

## Content<sup>1</sup>

- 2 main boards
- debug adapter
- debug cable
- USB cable
- batteries
- documentation



## Add-on Modules

- AX5051 general purpose transceiver modules for 868/915 MHz: Unsurpassed wide band performance.
- AX5031 general purpose transmitter modules for 868/915 MHz: Data transmission for wide and narrow band applications.
- AX5043 lowest power radio transceiver modules for 169, 433 and 868/915 MHz: -126 dBm @ 9.5mA.

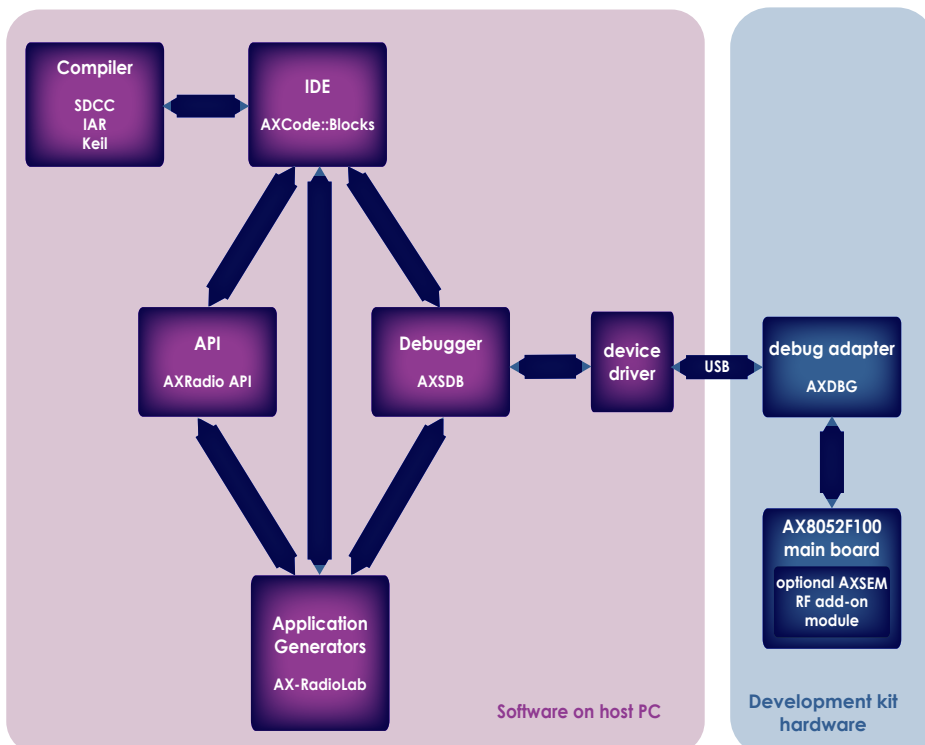
## Software

- AXCode::Blocks is the graphical Integrated Development Environment (IDE) for AX8052 projects.
- AX-RadioLab GUI generates C-code, compiles it and downloads to the main board for AX5043 radio based radio systems
- AX-RadioLab51 GUI generates C-code, compiles it and downloads to the main board for AX5051 radio based radio systems
- AX-MicroLab is the C-code generator for micro controller application examples.
- AXSDB is the AXSEM symbolic command line debugger.
- SDCC is the C-compiler that AXSEM offers along with its development software.

All software for download at [www.axsem.com](http://www.axsem.com)

## Development Board Features

- AX8052F100
- RF-SPI interface to AXSEM RF modules
- 32 kHz XTAL
- 2 LED
- 2x16 LCD display
- RS-232 interface
- Port break-out
- 4 push buttons
- AXSEM debug link connector
- Battery or debug link powered



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Note 1: Subject to change at AXSEM's discretion