

deRFarm7

radio modules with high performance MCU
IEEE 802.15.4 | Sub-GHz | 2.4 GHz

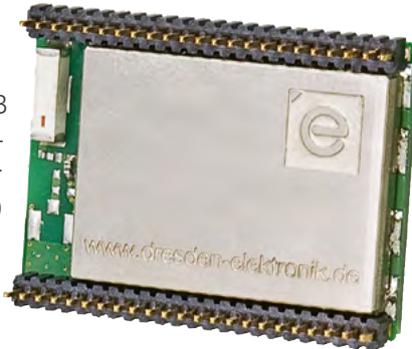
Applications

- as router | coordinator
- in 6LoWPAN | ZigBee | RF4CE wireless sensor networks
- lighting applications
- alarm systems
- building + home automation
- smart metering
- industrial automation
- personal sensors | health care
- logistics | transportation

Radio modules deRFarm7

The range of compact low power radio modules from dresden elektronik has been expanded with a powerful family of modules called "deRFarm7". Based on the 32Bit-ARM7 microcontroller AT91SAM7X512 and the 2.4 GHz or Sub-GHz transceiver AT86RF231/AT86RF212 the modules are especially suitable as routers, coordinators and gateways in low power wireless sensor networks. The 46 pin interface gives access to most hardware functions of the microcontroller.

Equipped with 512 kB Flash and 128 kB RAM the new deRFarm7 modules offer sufficient capabilities for all tasks within a sensor network. With an operating voltage of 3.0 - 3.6 VDC and a current consumption of 45 mA at 12 MHz MCU clock, a fixed power supply is recommended although a sleeping current of less than 250 μ A lets the modules even run from batteries.



These modules can be integrated into your own sensor network with a minimum of additional hardware. All modules come with a preinstalled wireless UART application.

All deRF radio modules operate according to the IEEE 802.15.4 standard for the frequency ranges 2.4 GHz and 868/915 MHz and are especially suited for ZigBee, 6LoWPAN and proprietary ISM applications but also for the RF4CE protocol.

The deRFarm7 module is part of the deRFdevelopmentKit 6LoWPAN. The kit contains also deRFnode and deRFgateway development boards and deRFmega128 radio modules, an USB radio stick and all necessary drivers, documentations and many software examples. The software CD contains a complete IEEE 802.15.4

MAC implementation in source code. This sophisticated and powerful framework gives the developer a good starting point for the creation of own networking applications and protocols by providing many precompiled examples as well as a variety of sample applications covering typical 802.15.4 features from simple point-to-point-connections up to sensor network examples with tree routing and even beacon-enabled networks. The kit equips the user with a complete development environment for a quick start in 6LoWPAN wireless sensor networks.



deRFdevelopmentKit 6LoWPAN

Key Features

- powerful 32-Bit ARM7 MCU
- Ethernet MAC
- native USB device
- 48 MHz Clock, 512 k Flash, 128 kRAM
- 2.4 GHz and Sub-GHz 802.15.4 transceiver
- transceiver with a link budget up to 115 dB @ Sub-GHz and 104 dB @ 2.4 GHz
- VCC 3.0 ... 3.6 V, 45 mA TxRx @ 12 MHz MCU clock
- common interfaces like I2C, SPI UART are available
- programming via JTAG and USB
- certified acc. to ETSI, FCC
- deliverable with onboard chip antenna for easy integration or U.F.L connector for external antennas



Benefits

- compact design with rich features
- operable as wireless IEEE 802.15.4 gateway to Ethernet
- high flexibility due to pin compatibility to all deRF radio modules
- most ARM CPU features are accessible on the 46 module pins
- ready to use with vendor supplied wireless UART application
- no additional components necessary

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