NEW
deRFmega256

deRFmega128-22M00
BN-033674
0074.7469
CE
FCC-ID:
MAC: 00-21-2E-FF-FF-00-15-F3

deRFmega128-22M10
BN-033675
0074.7459
CE
FCC-ID:
MAC: 00-21-2E-FF-FF-00-15-E9

Extra small radio modules

small size, low power and cost-effective
IEEE 802.15.4 | Sub-GHz | 2.4 GHz

Applications

- as end device | router | coordinator | gateway
- in 6LoWPAN | ZigBee | proprietary wireless sensor networks

- smart metering
- lighting applications
- building + home automation
- industrial automation
- personal sensors | health care
- logistics | transportation

ZigBee®
Control your world

Extra small radio modules

small modules - big effect: With the combination of low power consumption, small size, high processing power and many antenna options, the new module generation is perfect for integrating into your individual low power product. The new radio modules are SMT only modules either with the 8-bit AVR or the high-performance 32-bit ARM Cortex-M3 microcontroller from Atmel. Whether as an energy-saving end device, router or network coordinator, both series satisfy the requirements of various types of devices.

The module variants with RF pads are new. Using these, you can create your own antenna designs. In addition, control lines for power amplifiers and antenna diversity are available and allow user-specific expansions. The AVR based module series has also a slightly longer variant with a ceramic chip antenna.

13.2 x 23.6 mm   13.2 x 19 mm
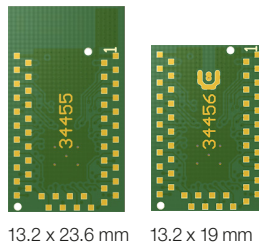
AVR

At 13.2 x 19 mm the AVR SoC modules with RF pads are currently the smallest modules and have the lowest power consumption in the new series. This makes them especially well-suited for battery-powered devices. The modules with Atmel's newly launched 8-bit AVR single-chip ATmega256RFR2 features doubled memory size, higher output power and link budget as well as better energy efficiency compared to the existing modules deRFmega128.

- for lowest power consumption
- two power amplified versions for long range devices with +18 dBm output power and build in antenna diversity
- new modules with AVR single-chip ATmega256RFR2 for large ZigBee Stacks (Smart Energy 2.0, ZigBee Light Link)

Cortex-M3

The Cortex-M3 modules with RF pads offer low power consumption combined with extended programming ressources and satisfy the demands of all device types in a sensor network. With 256 kb Flash and 48 kb RAM the modules are clearly targeted towards routers, coordinators and gateways.

- for high performance with USB interface
- for 2.4 and Sub-GHz

The new OEM modules are supported by the MAC Stack, 6LoWPAN and ZigBee software and have a 128-bit AES unit for data encryption.

For easy evaluation the modules can be run with a corresponding adapter board on the development platforms from dresden elektronik, like deRFnode or deRFgateway.

Module overview (deRFmega256RFR2 starts end of Q1 / 2013)

2.4 GHz				Sub-GHz
ATmega128RFA1 | ATmega256RFR2			ATSAM3S4 + AT86RF232	ATSAM3S4 + AT86RF212
AVR			Cortex-M3	
max. 16 MHz			max. 64 MHz	
1.8...3.3 VDC				
128kb Flash, 16kb RAM | 256kb Flash, 32kb RAM			256kb Flash, 48kb RAM	
RF pad	Chip ceramic antenna	RF pad	RF pad	RF pad
13.2 x 21.5 mm	13.2 x 23.6 mm	13.2 x 19 mm	13.2 x 21.5 mm	13.2 x 21.5 mm
UART, SPI, I2C			UART, SPI, I2C, ADC + USB interface	
PA + antenna diversity on board	control lines for power amplifier (PA) + antenna diversity			
long range device	low power end device	low power end device	low power end device, router, coordinator, gateway	low power end device, router, coordinator, gateway

Please visit our website for more information.