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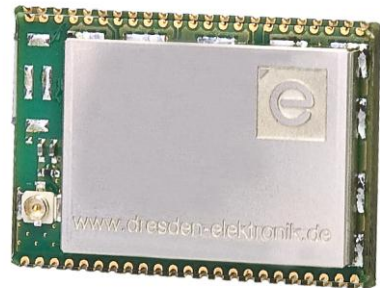
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Radio modules deRFmega128 22A02|22C02 Datasheet

- Main component of the pluggable radio module deRFmega128-22A02 is Atmel's ATmega128RFA1 microcontroller. This single chip solution of an 8Bit-AVR and a 2.4 GHz transceiver is intended for wireless solutions in accordance with the standard IEEE 802.15.4 and for ZigBee / 6LoWpan / RF4CE applications.
- The radio module 22A02 features two 23 pin male connectors (1.27 mm pitch) which allow full access to all functions of the ATmega128RFA1. The 22C02 is a solderable variant.
- The onboard coaxial jack (U.FL) allows the connection of different antennas or pigtailed. The integrated transceiver generates +2.4 dBm transmit power and obtains a receiver sensitivity of -101 dBm giving a link budget of up to 103 dB. A hardware 128-Bit AES encryption engine is part of the transceiver.
- A serial 1-Mbit-EEPROM offers high memory capacity e.g. for a firmware update over-the-air.
- The power supply ranges from 1.8 VDC to 3.6 VDC. In transmitting and receiving mode the power consumption is approx. 18 mA, in sleep mode it is less than 2 µA.



Technical Data

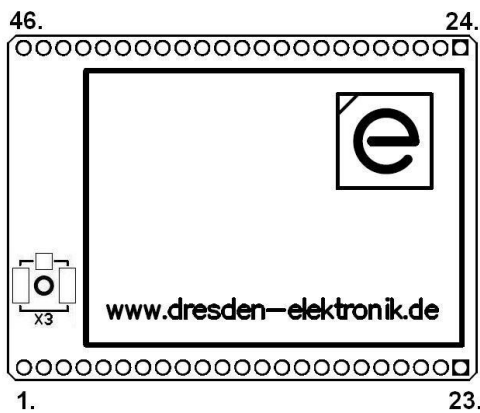
Dimensions	30 x 22.7 x 8.2 mm (22A02) 30 x 20.4 x 4.1 mm (22C02)
Operating temperature	-40 to 85°C
Control and display elements	no
Power supply	1.8 to 3.6 VDC
Power consumption	Active: 18 mA Sleep: <2 µA
Connections	2 x 23 Pin I/O Connector / U.FL coaxial jack
Antenna	none
Antenna gain	not available
Antenna diversity	none
Range	Depending upon the antenna used > 200 m (line of sight) with a 0dB antenna
Frequency range	2.4 GHz
Transmitting power	+2.4 dBm
Receiver sensitivity	-101 dBm
IEEE Standard	IEEE 802.15.4
Data rate (brutto)	250 kbit/s, 500 kbit/s, 1 Mbit/s, 2 Mbit/s
Microcontroller	ATmega128RFA1
Transceiver	integrated
Interfaces	JTAG, UART, I2C, ADC, GPIO, SPI
Certification	CE, ETSI, FCC

Technical Data

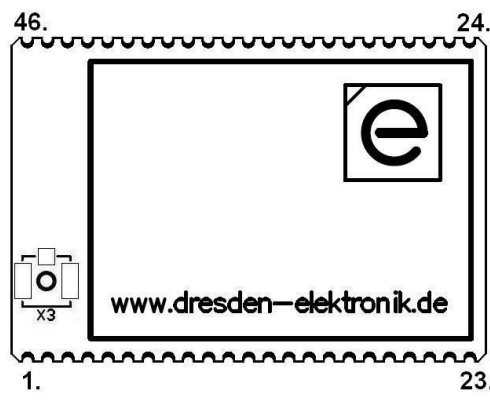
Pin configuration

1:	VCC	13	PB1/SCK	24:	VCC	36:	PF1/ADC1
2:	DGND	14:	CLKI	25:	DGND	37:	PE6/T3
3:	AREF	15:	PB2/MOSI	26:	PE0/RXD0	38:	PF4/TCK
4:	PG1	16:	PB0	27:	PD2/RXD1	39:	PE7
5:	RSTN	17:	PB3/MISO	28:	PE1/TXD0	40:	PF5/TMS
6:	PG2	18:	PB6	29:	PD6/T1	41:	PF2/ADC2
7:	PD0/SCL	19:	PB4	30:	PE2/XCK0	42:	PF6/TDO
8:	PG5	20:	PB7	31:	PE3	43:	RSTON
9:	PD1/SDA	21:	PB5	32:	PD4	44:	PF7/TDI
10:	PD3/TXD1	22:	DGND	33:	PE4	45:	DGND
11:	PD7/T0	23:	DGND	34:	PF0/ADC0	46:	DGND
12:	PD5/XCK1			35:	PE5		

Connections



Top View deRFmega128-22A02



Top View deRFmega128-22C02

Scope of delivery

Radio Module deRFmega128-22A02
Radio Module deRFmega128-22C02

Order No.

BN-028498
BN-028987

Accessories (optional)

JTAG adapter
RS232 level shifter

BN-027863
BN-028560

Development Boards

Adapter deRFtoRCB
Sensor Terminal Board

BN-028216
BN-026533

Development Kits

deRFdevelopmentKit RFmega128

BN-028388

Board variants

Radio module deRFmega128-22A00
Radio Module deRFmega128-22C00

BN-028182
BN-028986

More information about the variants are described in detail in the user manual.

Order online: <http://www.dresden-elektronik.de>

Order Information

Variants