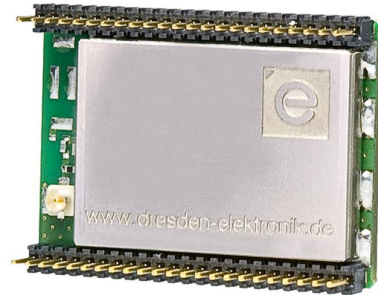




- § Main component of the pluggable Radio module deRFmega128-22A022 is Atmel's ATmega128RFA1 micro controller. This single chip solution of an 8Bit-AVR and a 2.4 GHz transceiver is intended for wireless solutions in accordance with the standard IEEE 802.15.4 and for ZigBee / 6LoWpan / RF4CE applications.
- § The Radio module 22A022 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 over 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 range is from 1.8 VDC to 3.6 VDC. In the transmitting and receiving mode the power consumption is approx. 18 mA, in sleep mode it is less than 2 µA.

**22A022**



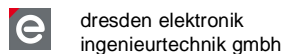
**22C02**



### Technical Data

<b>Dimensions</b>	30 x 22.7 mm (22A022) 30 x 20.4 mm (22C02)
<b>Control and display elements</b>	no
<b>Power supply</b>	1.8 – 3.6 VDC
<b>Power consumption</b>	Active: 18 mA      Sleep: <2 µA
<b>Connections</b>	2 x 23 Pin I/O Connector U.FL coaxial jack
<b>Antenna</b>	none
<b>Antenna gain</b>	not available
<b>Antenna diversity</b>	none
<b>Range</b>	Depending upon the antenna used > 200 m (line of sight) with a 0dB antenna
<b>Frequency range</b>	2.4 GHz
<b>Transmitting power</b>	+2.4 dBm
<b>Receiver sensitivity</b>	-101 dBm
<b>IEEE Standard</b>	802.15.4
<b>Data rate (brutto)</b>	250 kbit/s, 500 kbit/s, 1 Mbit/s, 2 Mbit/s
<b>Micro controller</b>	ATmega128RFA1
<b>Transceiver</b>	integrated
<b>Interfaces</b>	1xJTAG, 2xUART, 1xTWI
<b>Certification</b>	CE, ETSI, FCC

### Technical Data



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### Contact

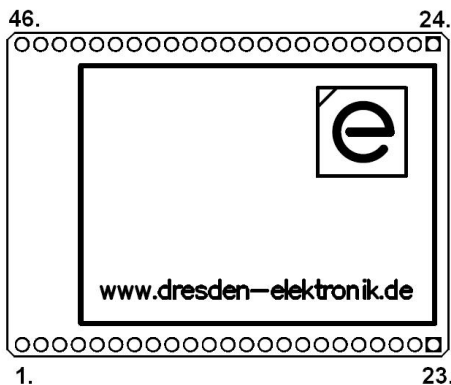
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E-mail: [wireless@dresden-elektronik.de](mailto:wireless@dresden-elektronik.de)  
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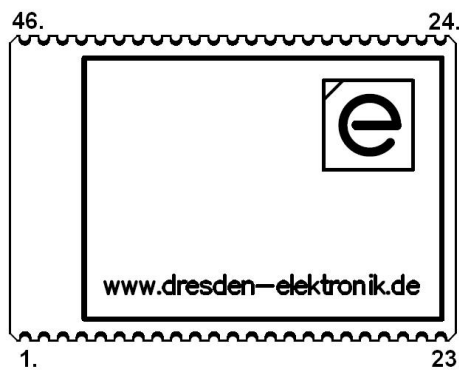


### Pin configuration

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		



Top View deRFmega128-22A022



Top View deRFmega128-22C02

### Connections

### Scope of delivery

Radio Module deRFmega128-22A022  
Radio Module deRFmega128-22C02

article no. 29187  
article no. 28987

### Accessories (optional)

JTAG adapter  
RS232 level shifter

article no. 27863  
article no. 28560

### Development Boards

Adapter deRFtoRCB  
Sensor Terminal Board

article no. 28216  
article no. 26533

### Development Kits

deRFdevelopmentKit RFmega128

article no. 28388

### Board variants

Radio module deRFmega128-22A002  
Radio Module deRFmega128-22C00

article no. 29186  
article no. 28986

order online: <http://www.dresden-elektronik.de/shop/cat4.html>

– technical information subject to change without notice –

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### Scope of delivery / Accessories

### Variants

### Contact