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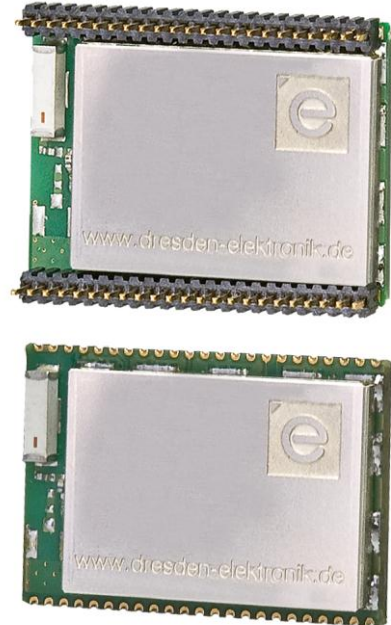
Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



# Radio modules deRFmega128 22A00|22C00

## Datasheet

- Main component of both radio modules deRFmega128-22A00 and -22C00 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 22A00 features two 23 pin male connectors (1.27 mm pitch) which allow full access to all functions of the Atmega128RFA1. The 22C00 is a solderable variant.
- The chip ceramic antenna provides a transmitting power of +2.4 dBm ERP. Distances of more than 200 m can be reached for line of sight conditions. The integrated transceiver obtains a receiver sensitivity of -101 dBm and uses 128-Bit AES encryption.
- 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.



### Technical Data

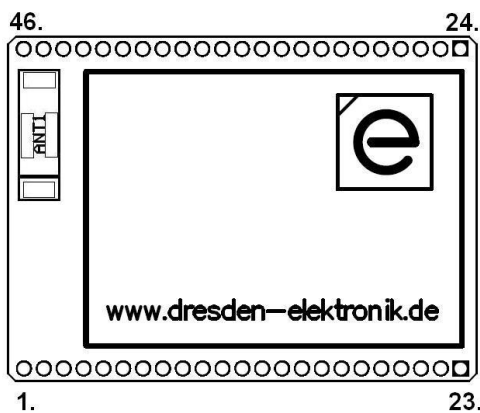
<b>Dimensions</b>	30 x 22.7 x 8.2mm (22A00) 30 x 20.4 x 4.1mm (22C00)
<b>Operating temperature</b>	-40 to +85°C
<b>Control and display elements</b>	none
<b>Power supply</b>	1.8 to 3.6 VDC
<b>Power consumption</b>	Active: 18 mA      Sleep: <2 µA
<b>Connections</b>	2 x 23 pins
<b>Antenna</b>	chip ceramic antenna
<b>Antenna gain</b>	+1.3 dBi (Peak), -0.5 dBi (Average)
<b>Antenna diversity</b>	none
<b>Range</b>	> 200 m (line of sight)
<b>Frequency range</b>	2.4 GHz
<b>Transmitting power</b>	+2.4 dBm ERP
<b>Receiver sensitivity</b>	-101 dBm
<b>IEEE Standard</b>	IEEE 802.15.4
<b>Data rate (brutto)</b>	250 kbit/s, 500 kbit/s, 1 Mbit/s, 2 Mbit/s
<b>Microcontroller</b>	ATmega128RFA1
<b>Transceiver</b>	integrated
<b>Interfaces</b>	JTAG, UART, I2C, ADC, GPIO, SPI
<b>Certification</b>	CE, ETSI, FCC

### Technical Data

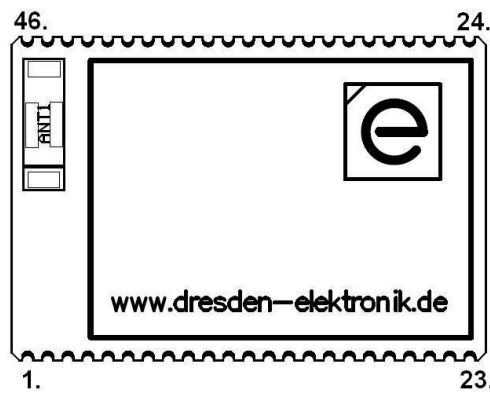
**Pin configuration**

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 deRFmega128-22A00



Top View deRFmega128-22C00

**Scope of delivery**

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

**Order No.**

BN-028182  
BN-028986

**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 deRFmega128-22A02  
Radio module deRFmega128-22C02

BN-028498  
BN-028987

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

Order online: <https://shop.dresden-elektronik.de/>

**Order Information**

**Variants**