

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

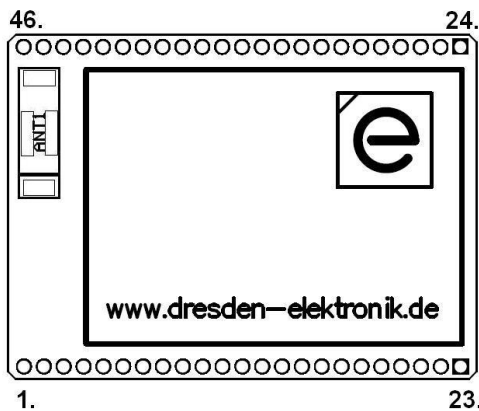
Dimensions	30 x 22.7 x 8.2mm (22A00) 30 x 20.4 x 4.1mm (22C00)
Operating temperature	-40 to +85°C
Control and display elements	none
Power supply	1.8 to 3.6 VDC
Power consumption	Active: 18 mA Sleep: <2 µA
Connections	2 x 23 pins
Antenna	chip ceramic antenna
Antenna gain	+1.3 dBi (Peak), -0.5 dBi (Average)
Antenna diversity	none
Range	> 200 m (line of sight)
Frequency range	2.4 GHz
Transmitting power	+2.4 dBm ERP
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

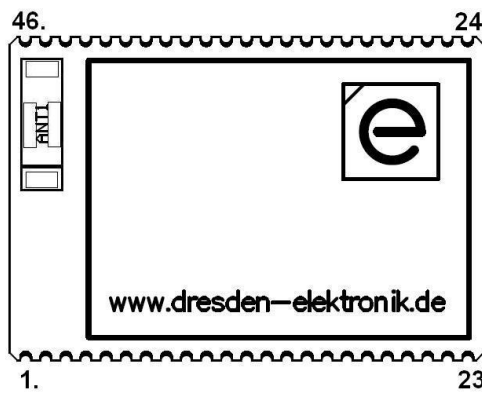
Pin configuration

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 deRFmega128-22A00



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