Chipsmall

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With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

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Radio modules deRFmega128
22M00 | 22M10
Datasheet

- The main component of the deRFmega128-22M00 | 22M10 radio modules is the ATmega128RFA1. Atmel's single chip solution combines an 8-bit AVR microcontroller with a 2.4 GHz transceiver for wireless applications like ZigBee or 6LoWPAN and complies with the IEEE 802.15.4 standard.

- The radio modules are designed as energy-saving end devices for wireless sensor networks. The user can access all important signals via a total of 51 or 55 solderable LGA pads (0.80 mm pitch), positioned at the radio module's bottom side.

- <u>Type 22M00:</u> has an integrated antenna eliminating the need for additional RF design. It minimizes the integration time and BOM costs on customized designs.

  <u>Type 22M10:</u> with its RF pads it enables own external antenna designs or coaxial sockets.

- The integrated transceiver has a receiver sensitivity of -100 dBm as well as an 128-bit AES data encryption unit.

- At 8 MHz MCU clock the radio modules have a very low current consumption of approx. 18 mA in transmit and in receive mode. Current consumption in sleep mode is less than 1 µA. The supply voltage can range from 1.8 VDC up to 3.6 VDC.

deRFmega128-22M00

deRFmega128-22M10

Technical Data

|	
Dimensions	19.0 x 13.2 x 3.0 mm (22M10) 23.7 x 13.2 x 3.0 mm (22M00)
Operating temperature	- 40 to +85°C
Controls and display elements	None
Power supply	1.8 to 3.6 VDC
Power consumption @ 3.3 VDC	TX: 18 mA @ +3 dBm | RX: 18 mA Sleep: <1 µA
Connections	55 pads (22M10), 51 pads (22M00)
Antenna	RF pads (22M10) Chip ceramic antenna (22M00)
Antenna gain (22M00)	+1.3 dBi (peak) | - 0.5 dBi (average)
Antenna diversity	Yes* (22M10), No (22M00)
External front end connection	Yes (22M10), No (22M00)
Range (22M00)	>200 m (line of sight)
Frequency range	2.4 GHz
Transmit power	+3 dBm
Receiver sensitivity	-100 dBm (250kbit/s)
Communication standard	IEEE 802.15.4
Data rate (gross)	250 kbit/s, 500 kbit/s, 1 Mbit/s, 2 Mbit/s
Microcontroller	ATmega128RFA1
Transceiver	Integrated
Interfaces	JTAG, UART, I2C, ADC, SPI, GPIO
Certification	CE, ETSI, FCC (22M00) CE, ETSI, FCC pending (22M10)

Technical Data

* external components required

Pin Assignment

1:	DGND	15:	PD7	29:	PE1/TXD0	43:	PF3/ADC3/DIG4
2:	VCC	16:	PD0/SCL	30:	PE2/XCK0	44:	DGND
3:	DGND	17:	PD1/SDA	31:	DGND	45:	PF7/TDI
4:	RSTN	18:	PD5/XCK1	32:	PE3	46:	PF6/TDO
5:	RSTON	19:	PD6	33:	PE4	47:	PF5/TMS
6:	PG0/DIG3	20:	PB0	34:	PE5	48:	PF4/TCK
7:	PG1/DIG1	21:	PB2/MOSI	35:	NC	49:	DGND
8:	PG2/AMR	22:	PB1/SCK	36:	NC	50:	VCC
9:	PG5	23:	PB3/MISO	37:	PD4	51:	DGND
10:	PE7	24:	PB4	38:	AVDD		
11:	PE6	25:	PB5	39:	AREF	52:	RFGND*
12:	PD3/TXD1	26:	PB6	40:	PF0/ ADC0	53:	RFOUT*
13:	PD2/RXD1	27:	PB7	41:	PF1/ ADC1	54:	RFGND*
14:	CLKI	28:	PE0/RXD0	42:	PF2/ADC2/DIG2	55:	RFGND*

* 22M10 only
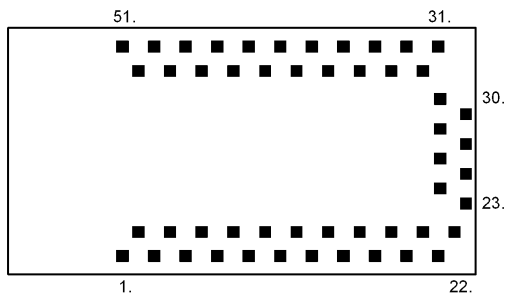
Footprint deRFmega128-22M00
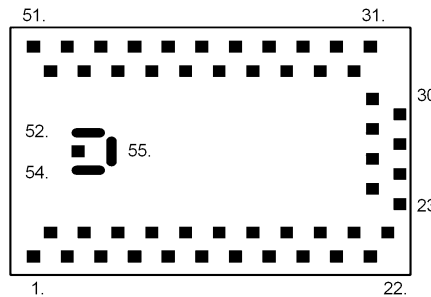
Footprint deRFmega128-22M10

For detailed dimensions and notes to be applied please refer to the user manual.

Scope of delivery	Part number
Radio module deRFmega128-22M00	BN-034491
Radio module deRFmega128-22M10	BN-034492

Development boards

deRFnode-2TNP2-00N00	BN-031634
Adapter board deRFmega128-22T00	BN-034224
Adapter board deRFmega128-22T02	BN-034476
deRFbreakout Board	BN-032688

Board options

Radio module deRFmega128-22M12	BN-035722

Pin Assignment

Order Information

Options

More detailed information about all variants can be found in the user manual.
Order online: https://shop.dresden-elektronik.de