

DESCRIPTION

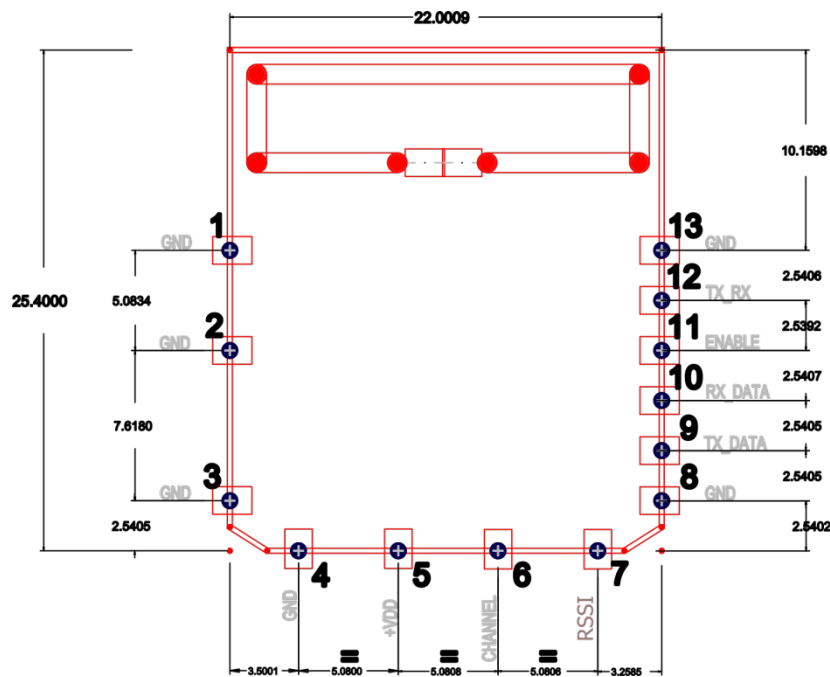
Transceiver of digital data working in the bandwidth 870MHz, with reception frequencies 868,3MHz and 869,85MHz. FSK modulation and high efficiency integrated antenna.

It transmits data in transparent way coming from proprietary protocols with a maximum data of 9600 bps (NRZ) and of 4800 with Manchester coding.

The main features are: Effective radiated Power of 6dBm, reception sensitivity-108dBm FSK mode, voltage supply from 2.1 V to 3.6 V. It's comply with ETSI EN 300220-1 V2.3.1.

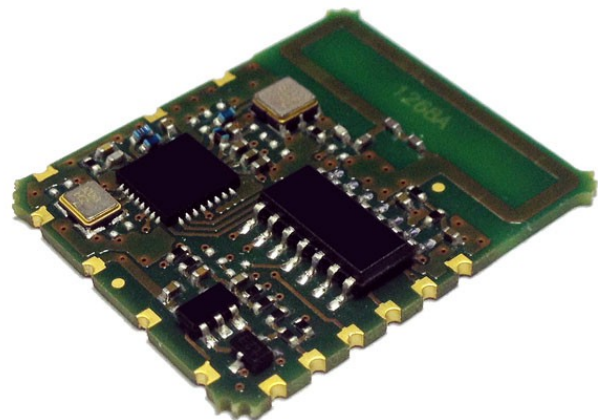
The device has a compact size in SMD format, available in reel for automated assembly.

MECHANICAL DIMENSIONS AND PIN-OUT



Absolute limit values

Voltage supply	-0,3V +3,6V
Digital voltage input	-0,3V ÷ Vcc+0,6V
Digital voltage output	0V ÷ Vcc
Voltage input pin. 6,8,11,12	-0,3 ÷ Vcc
Working temperature	-20°C ÷ +70°C



The technical specifications are subject to change without notice. AUREL SpA does not assume responsibilities for any damages caused by improper use of the device.

PIN DESCRIPTION

Pin 1	GND	Connected to the negative voltage supply
Pin 2	GND	Connected to the negative voltage supply
Pin 3	GND	Connected to the negative voltage supply
Pin 4	GND	Connected to the negative voltage supply
Pin 5	+Vcc	Connected to the positive voltage supply: +2,1V ÷ +3,6V
Pin 6	CN/SEL	RF CHANNEL SELECTION: 0 o NC = frequency 868,3MHz 1 = frequency 869,85MHz
Pin 7	RSSI	Not implemented feature
Pin 8	GND	Connected to the negative voltage supply
Pin 9	DIGITAL DATA INPUT	Transmitter digital data input: Low logic level: transmission of Low logic level 0 High logic level: transmission of High logic level 1
Pin 10	DIGITAL DATA OUTPUT	Receiver digital data output
Pin 11	ENABLE	Connect to the positive or negative voltage supply as below: 0 = PWDN (switched-off device with a current consumption < 1uA) 1 = Active (switched-on device ready to receive and transmit)
Pin 12	TX/RX	Connect to the positive or negative voltage supply as follows: 0 o N.C = Reception (Active receiver, transmitter switched-off) 1 = Transmission (switched-off receiver, transmitter active) NOTE: For the switching times please see the technical specification below Pin connected to pull down resistance
Pin 13	GND	Connect to the negative power supply

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Technical specification

	Min	Typical	Max	Unit	NOTE
V_s voltage supply	2,1	3	3,6	V	
Current consumption in power-down mode Pin 6 (ENABLE) = 0 Pin 10 (+Vcc) = 1			1	uA	
Current consumption RX = ON Pin 10 (+Vcc) = 1 Pin 6 (ENABLE) = 1 Pin 5 (TX/RX) = 0 oNC		6		mA	
Current consumption in "FSK transmission" mode: Pin +Vcc (+Vcc) = 1 Pin EN (ENABLE) = 1 Pin TX/RX (TX/RX) = 1		27		mA	
Reception frequency 1 Pin CN/SEL = 0	868,29	868,3	868,31	MHz	
Reception frequency 2 Pin CN/SEL = 1	869,84	869,85	869,86	MHz	
RF Sensitivity in FSK		-108		dBm	
ERP		6		dBm	
FSK deviation - ΔF		±25		KHz	
Blocking to ± 2MHz		72		dB	see note 3
Blocking to ± 10MHz		90		dB	see note 3
Immunity to LTE bandwidth with sensitivity -107dBm		90		dB	
Immunity to LTE bandwidth with sensitivity -95dBm		100		dB	
Output Square wave	0,05	1	5	KHz	
Input Square wave	0,01		5	kHz	
Low logic level output (Digital outputs)			gnd+0,4	V	see note 4
High logic level output (Digital outputs)	V _{cc} -0,25			V	see note 4
High logic level input (Digital input)	V _s -0,6		V _s +0,6	V	
Low logic level input (Digital input)			0,4	V	
Emission RF spurious in antenna			-60	dBm	
Switch-on Time PWRDN → TX-ON Usage condition: (pin 5) = 1 (pin 10) = 1 (pin 6) = 0 → 1		10	15	ms	
Switch-on Time PWRDN → RX-ON Usage condition: (pin 5) = 0 (pin 10) = 1 (pin 6) = 0 → 1		10	15	ms	see note 5
Switching time TX → RX		500		us	see note 5
Switching time RX → TX		500		us	see note 5
Operating temperature	-20		+70	°C	
Dimensions	25,4 x 22 x 2,5 mm				

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NOTE 2: Test carried out with the criterion described on paragraph 8.5 of the ETSI EN 300 220-1 V2.3.1 normative.

NOTE 3: Test carried out with the criterion described on paragraph 8.4 of the ETSI EN 300 220-1 V2.3.1 normative.

NOTE 4: Values obtained with a maximum 100K Ω load.

NOTE 5: Time employed from the device to reach the declared technical specification.

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