

**DESCRIPTION**

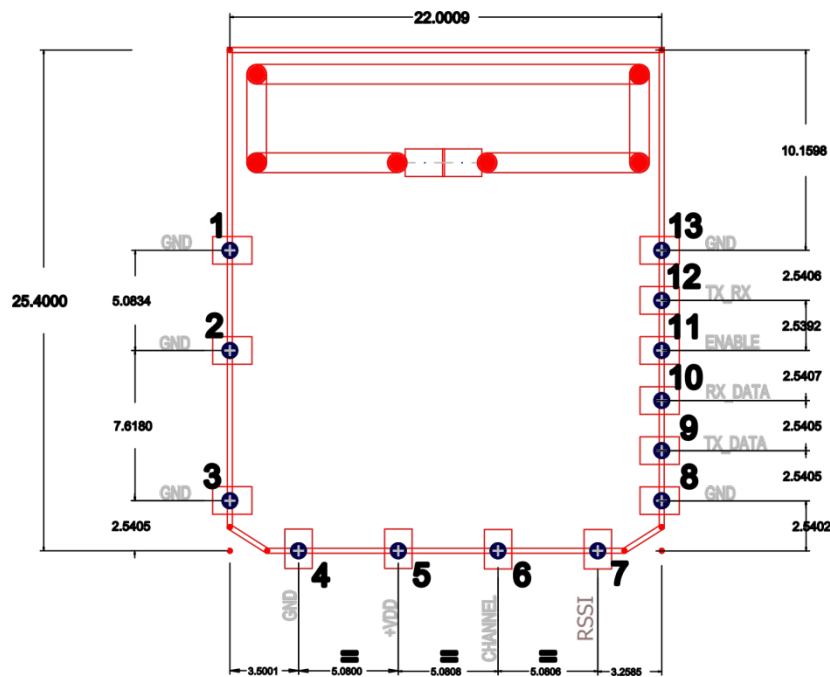
Transceiver of digital data working in the bandwidth 870MHz, with reception frequencies 868,3MHz and 869,85MHz. FSK modulation and high efficiency integrated antenna.

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.

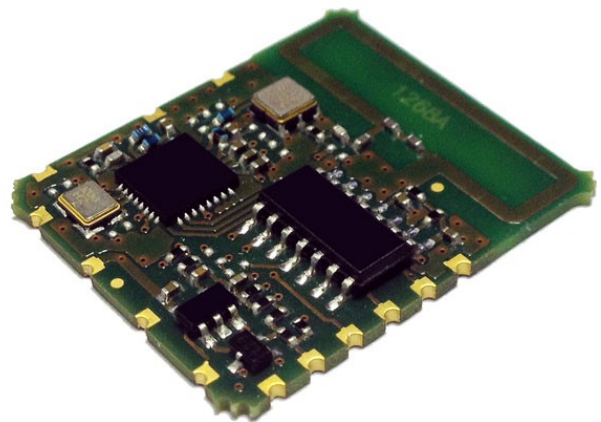
The device has a compact size in SMD format, available in reel for automated assembly.

**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**

<b>Pin 1</b>	<b>GND</b>	Connected to the negative voltage supply
<b>Pin 2</b>	<b>GND</b>	Connected to the negative voltage supply
<b>Pin 3</b>	<b>GND</b>	Connected to the negative voltage supply
<b>Pin 4</b>	<b>GND</b>	Connected to the negative voltage supply
<b>Pin 5</b>	<b>+Vcc</b>	Connected to the positive voltage supply: +2,1V ÷ +3,6V
<b>Pin 6</b>	<b>CN/SEL</b>	RF CHANNEL SELECTION: 0 o NC = frequency 868,3MHz 1 = frequency 869,85MHz
<b>Pin 7</b>	<b>RSSI</b>	Not implemented feature
<b>Pin 8</b>	<b>GND</b>	Connected to the negative voltage supply
<b>Pin 9</b>	<b>DIGITAL DATA INPUT</b>	Transmitter digital data input: Low logic level: transmission of Low logic level 0 High logic level: transmission of High logic level 1
<b>Pin 10</b>	<b>DIGITAL DATA OUTPUT</b>	Receiver digital data output
<b>Pin 11</b>	<b>ENABLE</b>	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)
<b>Pin 12</b>	<b>TX/RX</b>	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
<b>Pin 13</b>	<b>GND</b>	Connect to the negative power supply

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**Technical specification**

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

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

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