

RF01

● Product Features:

RF01 is a wireless 2.4G module with transceiver function. It adopts GFSK modulation and universal SPI interface, which is convenient for the application of smart home products; it is made into SMD-8 package with small volume, which is convenient for the application in various small size wireless electronic products.

● Technical Parameters:

Supply Voltage: 1.9-3.6VDC, typical value 3.3V

Frequency Range: 2410-2470MHz

Antenna Mode: PCB antenna on board

Receiving Sensitivity: -96dBm@250kbps

Nominal Maximum Transmit Power: 7dBm

Communication Interface: SPI

Air Rate: 250kbps

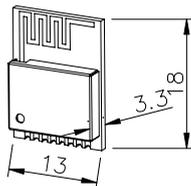
Transmit Current: 25mA (7dBm)

Shutdown Current: 1.0uA

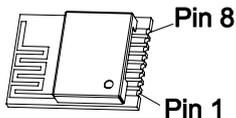
Size: 18*13*3.3mm

Operating Temperature: -15-60°C

Storage Temperature: -20-70°C



● Pin Descriptions:



Number	1	2	3	4	5	6	7	8
Name	VCC	GND	CE	CSN	SCK	MOSI	MISO	IRQ

● FCC ID: 2BM3CRF01

Regulatory and Certification Information

Federal Communications Commission (FCC) Statement

- List of applicable FCC rules

This device complies with FCC Part 15.249

- Summarize the specific operational use conditions

This device and its antenna must not be co-located or operating in conjunction with any other antenna or transmitter. And the module should be installed at a minimum distance of 20 cm away from a person nearby. The host product manufacturer should state this information to the host instruction manual.

- Limited module procedures

Not applicable.

- Trace antenna designs

Not applicable.

- RF exposure considerations

This modular complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter. This modular must be installed and operated with a minimum distance of 20 cm between the radiator and user body.

- Antennas

Antenna Type: PCB Antenna

Antenna Gain: 0 dBi @ 2410-2470 MHz

- Label and compliance information

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Caution: The user is cautioned that any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

If the FCC identification number is not visible when the module is installed inside another device, then the outside of the device into which the module is installed must also display a label referring to the enclosed module. This exterior label can use wording such as the following: "Contains Transmitter Module FCC ID: 2BM3CRF01 or Contains FCC ID: 2BM3CRF01".

- Information on test modes and additional testing requirements

Any final host product with the modular transmitter installed should be under test according to guidance given in KDB 996369 D04. Use IAR Embedded Workbench IDE V3.10.4 to create an MCU program, then burn the program into the MCU. The MCU sends a fixed frequency signal to the RF01 module, and then press the button to select different channels of the RF01 module.

When something wrong happens in configuring test modes for host product with module, host product manufacturer should coordinate with module manufacturer for technical support. It is recommended that some investigative measurements should be taken to confirm that host product with module installed does not exceed the spurious emissions limits or band edge limits.

- Additional testing, Part 15 Subpart B disclaimer

The modular transmitter is only FCC authorized for the specific rule parts (FCC Part 15.249) list on the grant, and that the host product manufacturer is responsible for compliance to any other FCC rules that apply to the host not covered by the modular transmitter grant of certification. The final host product still requires Part 15 Subpart B compliance testing with the modular transmitter installed when contains digital circuitry.

- Note EMI Considerations

EMI consideration for transmitting simultaneously:

This module is stand-alone modular. If the end product has multiple certified modules integrated in a host and transmitting simultaneously: When after radiated emission testing, if there are no additional emissions generated due to simultaneous-transmission operations compared to single transmitter operation testing, it is not necessary to file the additional simultaneous transmission test data, FCC class II permissive changes are not necessary. However, RF exposure for transmitting simultaneously is also needed. A formula is also shown below:

$$\sum_{i=1}^a \frac{P_i}{P_{th,i}} + \sum_{j=1}^b \frac{ERP_j}{ERP_{th,j}} + \sum_{k=1}^c \frac{Evaluated_k}{Exposure Limit_k} \leq 1$$

To obtain better engineering design while installing this module:

It is recommended to place the module as close as possible to the edge of the baseplate. If conditions permit, make the antenna feed point closest to the edge of the baseplate. Please ensure that the module is not covered by any metal shell. Do not lay copper, wire, or place components in the antenna area of the module PCB.

- How to make changes

Only the module grantee is permitted to make permissive changes. If the host integrator is expected to install the module in a way different from this manual or wants to change the module, please contact:

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Email: sales@a-brt.com