

WMA1104

Low power RF module

User Manual

Table of Content

1. Product Features.....	2
2. Specification.....	2
3. RF module Operation.....	3
4. FCC.....	3

1. Product Features

- Optional communication interface: RS232, TTL or RS485
- Serial format: 8, N, 1
- Baud Rate: 9600 BPS
- 8 channel frequency option
- Transparent data reception and transmission
- Half duplex: Integrated receiver and transmitter. 10ms auto switching for sending and receiving
- Single-chip radio frequency integrated circuit and MCU, less external circuitry, low power consumption, high reliability
- Industrial grade operating temperature: -35C ~ +75C

2. Specification

- Frequency: 433MHz
- Power supply: DC3.1-5.5V
- RF output: $\leq 50\text{mW}$
- Transmitting current: $< 40\text{mA}$
- Receiving current: $< 20\text{mA}$ (TTL)
- Receiving sensitivity: -112dBm (1200bps), -108dBm (9600bps)
- Antenna Impedance: 50Ω (SMA or customized)
- Transmission Range:
 - 200m (BER=10-5@9600bps, 10cm antenna is 2m above ground in open area)
 - 400m (BER=10-5@1200bps, 10cm antenna is 2m above ground in open area)
- Size: 70mm x 45mm x 19mm (without antenna port)

3. RF module Operation

WMA1104 Low power RF module transmits UART data to another wireless receiver. Modules could directly connect with microcontroller, computer and other UART components with RS-232, RS-485 and UART/TTL level interface.

3.1 Indicator LED

- A. POWER LED stays lit when the RF module is powered on.
- B. Signal LED blinks during data transmission.

3.2 Data transmission

WMA1104 provides transparent data transmission interface. It supports a variety of applications and protocols. And a variety of topography: point to point, point to multipoint transparent transmission.

WMA1104 products provide 150 bytes of internal memory and FIFO (first in first out) data transmission mode.

4. FCC

FCC ID: ZMPWMA1104

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.

FCC WARNING

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.

This device must be installed to provide a separation distance of at least 20 cm from all persons and must not be collocated or operating in conjunction with any other antenna or transmitter.

NOTE 1: 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.

NOTE 2: Any changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

NOTE 3: The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modifications could void the user's authority to operate the equipment.