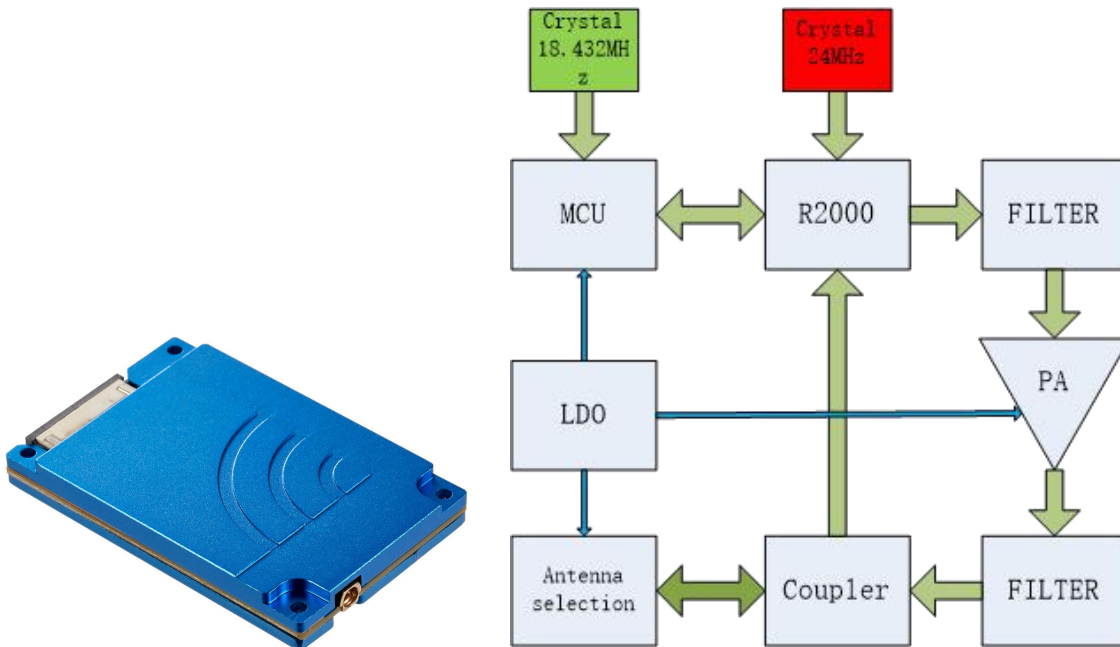


# HZ510 1-port Long distance UHF RFID Module

## For fixed reader / handheld reader integration



### General Description

The HZ510 module is a miniaturized UHF RFID reader. The core component adopts R2000 as the core platform. R2000 is a high-performance and highly integrated reader IC, integrating functions such as analog radio frequency front end and baseband digital signal processing module, etc. The user only needs to do power processing on the basis of the module, which can be easily controlled through the API function library, suitable for the development of various application scenarios.

### Typical Applications

- ✓ Handheld RFID Reader integration
- ✓ Split-type Fixed RFID Reader integration
- ✓ Integrated RFID Reader
- ✓ RFID Tag Writer
- ✓ RFID embedded equipment such as Tag Printer, ATM, anti-counterfeiting equipment, identification system equipment, WMS system channel equipment and so on, intelligent mobile phone, handheld terminal, desktop reader, industrial control device and so

## Key Features

- ✓ UHF RFID Transceiver
- ✓ Frequency range : 840MHz - 960MHz
- ✓ Power consumption : 1200mA @ +30dBm
- ✓ +5V single supply operation
- ✓ ISO 18000-6B,EPC global UHF Class 1 Gen 2 / ISO 18000-6C support
- ✓ Decoding : FM0, Miller 2/4/8
- ✓ Data rate : 40k ,160k,320k, 400k
- ✓ Fully interoperable in different global regulatory environments such as US, EU, CN

## 1.1 Maximum Rated Parameters

Parameter	Symbol	Min	Typ	Max	Unit
Storage temperature	Ts	-40		+85	°C
Junction temperature	Tj			+125	°C
Supply voltage	VCC	+3.7	+5	+6.0	V
Supply Current	A		2000		mA

## 1.2 Specifications

VCC = 5V, TA = 25°C

Parameter	Conditions	Min	Typ	Max	Unit
<b>RF</b>					
Frequency Range		840		960	MHz
Frequency Step	CHN(FCC)		250(500)		KHz
Transmitting Frequency Stability	Operating Temperature +25°C		10		PPm
Output Power		0		33	dBm
Transmitting Power, Step			1		dB
Power Flatness		-1		+1	dB
Occupy bandwidth	Output Power = 25dBm		250		KHz
ACP	±250 kHz(±1 CH)		-40		dBc
	±500 kHz(±2 CH)		-60		
Output Load VSWR	Output Power = 30dBm		1.5		
<b>POWER SUPPLY</b>					
Supply Voltage		3.5	5	6.0	V
Supply Current	Output Power = 30dBm		1200		mA
<b>Temperature Range</b>					
Operating Temperature	Output Power = 30dBm	-20		+70	°C

### 1.3 Function

- ★ Air Interface Protocol: ISO 18000-6B, EPC global UHF Class 1 Gen 2 / ISO 18000-6C support
- ★ Optional working mode: fixed frequency / frequency hopping
- ★ Adjustable RF output power,1 dB step-by-step
- ★ Support RSSI: The intensity of the perceived signal
- ★ Support tag data filtering
- ★ support Anti-collision algorithm
- ★ Support multiple tags inventory

### 1.4 Technical Parameter

- ★ Forward link modulation: PR-ASK
- ★ Continuous reading tag distance (EPC code reading) : 0-15 m, with 100 consecutive readings, the success rate is greater than 95% (without interference).  
Test condition: 8dBi line polarization antenna, radio frequency cable insertion loss less than 1dB, standard tag (sensitivity better than -18dbm)
- ★ Continuous writing tag distance (EPC code writing) : 0-8 m, with 100 consecutive writings, the success rate is greater than 90% (without interference).  
Test condition: 8dBi line polarization antenna, radio frequency cable insertion loss less than 1dB, standard tag (sensitivity better than -18dbm)
- ★ Inventory Speed: > 400 tags/sec

Operating Voltage	3.7V~6V
Operating Current	2A
Air Interface Protocol	EPC C1G2 / ISO 18000-6C , ISO 18000-6B
Frequency Range	840MHz~960MHz US, Canada and other regions following U.S. FCC Europe and other regions following ETSI EN 302 208 with & without LBT regulations Mainland China Japan Korea Malaysia Taiwan
Output Power	0~33dBm
Output Power Precision	±1dB
Receive Sensitivity	≤-80dBm
Tag RSSI	supported
Antenna port detection	supported
Communication interface	TTL UART serial
RF connector type	MMCX
Interface cable type	12Pin 1.0mm pitch FFC cable
Max Baud rate	460800bps
Heat Dissipation	Air cooling with external heat sink
Operating Temperature	- 20°C ~ + 70°C

Storage Temperature	- 40°C ~ + 85°C
Operating humidity	< 95% ( + 25°C)

Note:

- ◆ Heat dissipation design should be considered when working continuously for a long time with high output power.
- ◆ The power supply voltage should not exceed 6V, otherwise the internal circuit may be damaged.

### 1.5 PIN Configuration And Function Descriptions



PIN	Definition	Description
1	3.7V-6V DC	Power supply
2	3.7V-6V DC	
3	GND	Device Ground
4	GND	
5	EN_POWER	Enable (Connected high level, module works. Without high level, module does not work.)
6	NC	NC
7	NC	NC
8	NC	NC
9	UART_RXD	Serial, TTL compatibility
10	UART_TXD	
11	NC	NC
12	NC	

### 1.6 Outline Dimensions

