

# UHF RFID Reader Module

**HYM740P**



Winnix Technologies Co., Limited

## Brief introduction

HYM740P UHF RFID reader modules uses R2000 chip, which complies with EPC C1G2 protocol, its working frequency is 840~960MHz, with LBT function(Customizable). It supports dense reader working mode (DRM). Max Power is 31dbm. With standard 8dBi antenna, the reading distance can reach up to 15 meters, maximum identifying speed can reach up to 400/S; with simple power supply and interface circuit, a high-performance RFID system can be established. It is suitable for logistics, costume, medical industry, and complex assets management, etc.

## Technical data

No	Item	Technical data	Unit	Remark
1	Max current	1600	mA	Max power output
2	Standby current	≤1	mA	EN pin low level
3	Frequency range	840~960	MHz	
4	Default working frequency	Frequency hopping	MHz	Frequency interval 250KHz
5	Channel bandwidth	≤250	KHz	
6	Frequency hopping speed	≤2	s	
7	Fixed power	31	dBm	
8	Stepping interval	1	dB	5~30dBm, adjustable by software
9	Label protocol	EPC C1G2 /ISO18000-6C		
10	Communication protocol	Asynchronous serial ports protocol		
11	Starting time	≤50	ms	
12	Radio-frequency power rising time	≤500	μs	
13	Radio-frequency power dropping time	≤500	μs	

14	Adjacent channel power leaking ratio	$\leq -40$	dB	$\pm 1\text{CH}$
		$\leq -60$	dB	$\pm 2\text{CH}$
15	Frequency stabilizing ratio	$\pm 10$	ppm	$-25^{\circ}\text{C} \sim +40^{\circ}\text{C}$
		$\pm 20$	ppm	$-40^{\circ}\text{C} \sim +60^{\circ}\text{C}$
16	Max reading range	15	m	8dBi antenna
17	Muti-tags	$>400/\text{s}$		

## Characteristics of DC

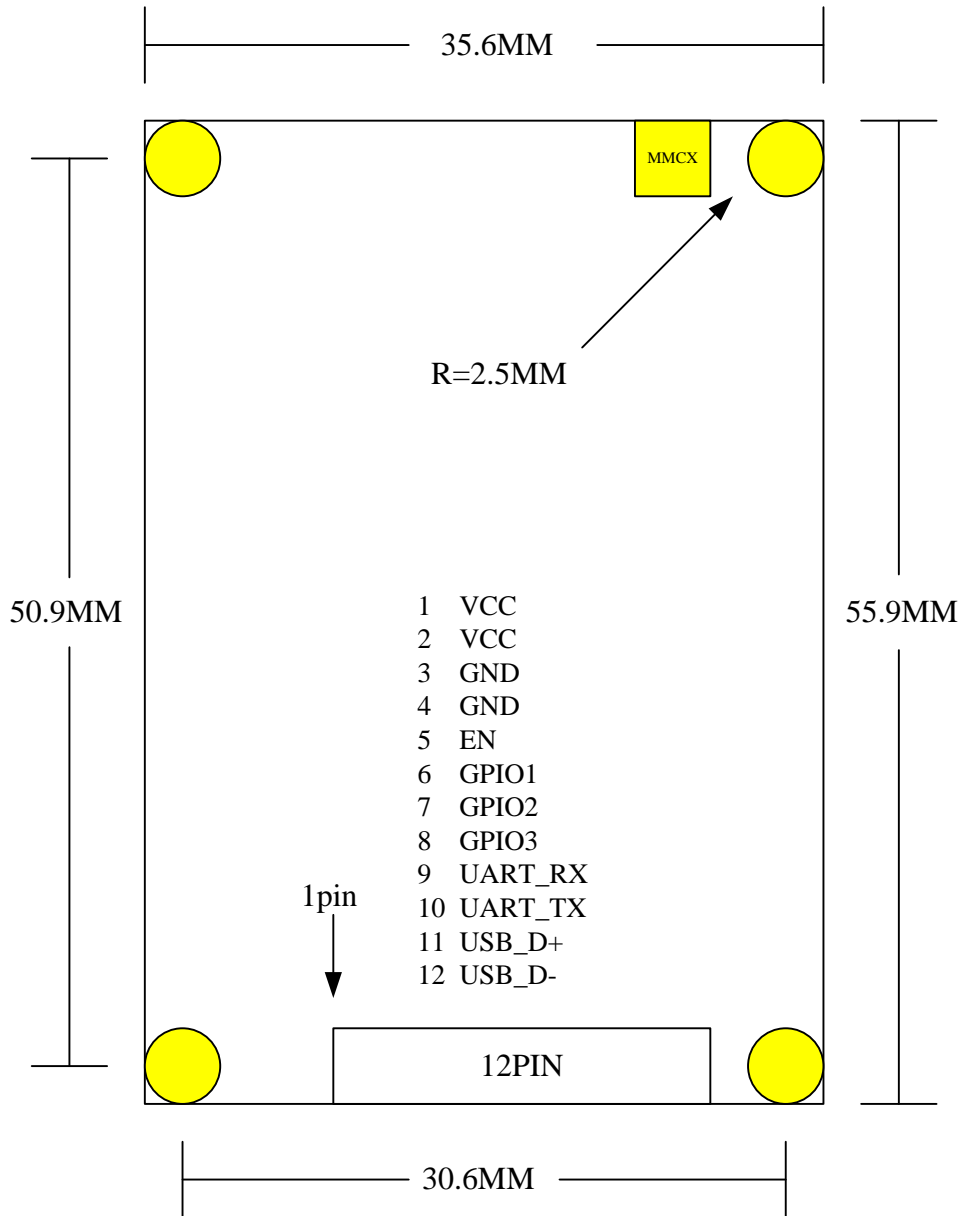
Data	Mini value	Typical value	Max value	Unit	Remark
Voltage of power	3.3	4	5.5	V	Direct current
Input high level	2	3.3	3.5	V	GPIO
	2	3.3	3.5	V	EN
Input low level	-0.5	0	0.5	V	GPIO
	-	-	0.18	V	EN
Output high level	2.3	-	3.3	V	GPIO
Output low level	0	-	1	V	GPIO
Enable current	2	5	25	$\mu\text{A}$	$V_{\text{EN}} \geq 2\text{V}$

## Requirement on antenna

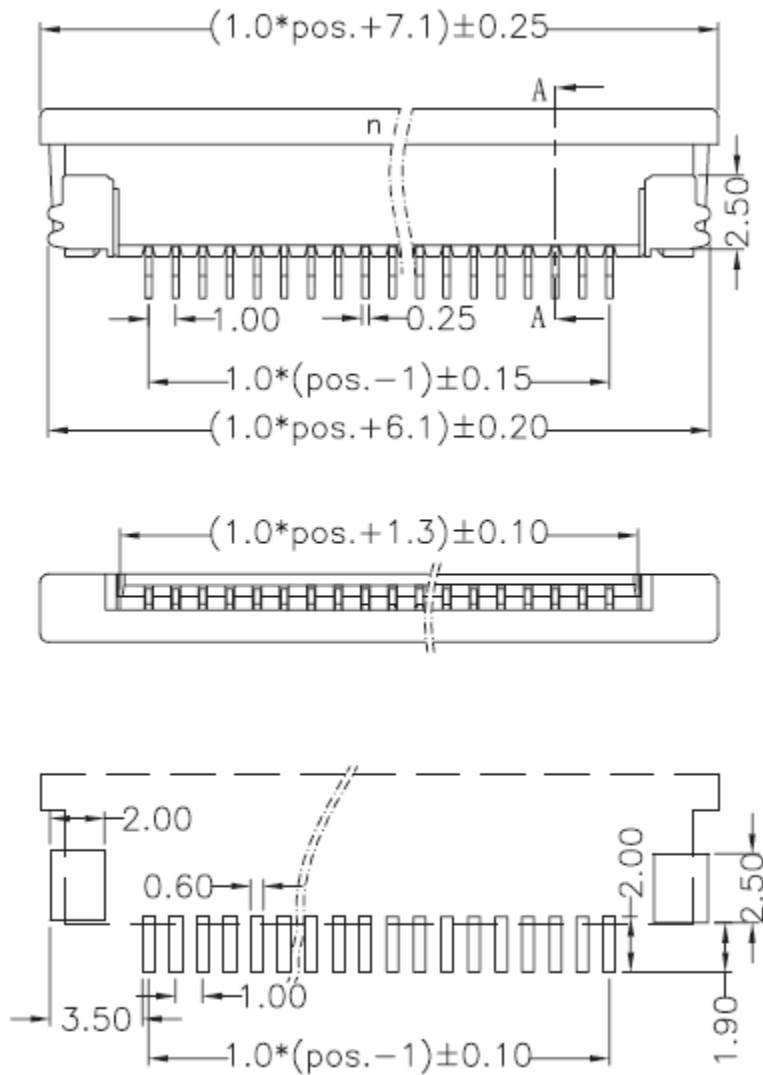
No	Item	Technical data	Unit	Remark
1	VSWR	1.5		

## Appearance and structure

- Size: 55.9×35.6×7.5mm
- Weight: 20g



Drawing 1 Front view of the reader



**P.C.B Layout**

Drawing 2 Pin connector

## 12pin Interface definition

Pin	Signal name	Signal direction	Function/compatibility description
1	VCC	Input	Module supplying power
2	VCC	Input	Module supplying power
3	GND	-	Module connecting ground
4	GND	-	Module connecting ground
5	EN	Input	Module enabling, highly effective
6	GPIO	Bidirection	Generic port
7	GPIO	Bidirection	Generic port
8	GPIO	Bidirection	Generic port
9	UART_RX	Input	Asynchronous serial interface receiving

10	UART_TX	Output	Asynchronous serial interface sending
11	DBG_RX	-	Test port
12	DBG_TX	-	Test port

## 6pin debug Interface definition

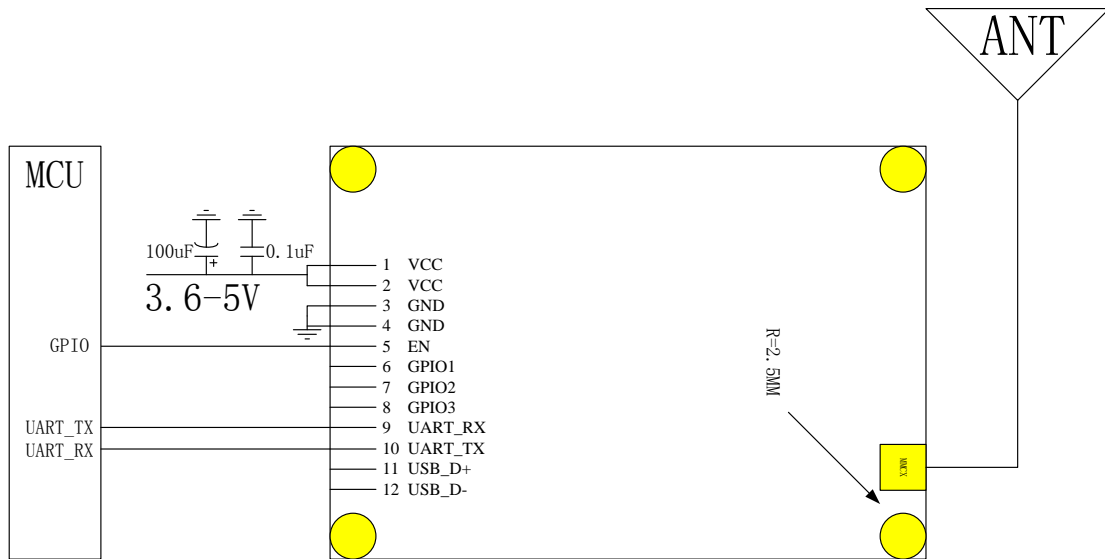
Pin	Signal name	Signal direction	Function/compatibility description
1	VCC	Input	Module supplying power
2	GND	-	Module connecting ground
3	EN	Input	Module enabling, highly effective
4	GPIO	Bidirection	Generic port
5	UART_RX	Input	Asynchronous serial interface receiving
6	UART_TX	Output	Asynchronous serial interface sending

NOTICE:The 6 pin interface is for debug

## Environment requirement

No	Item	Technical data	Unit	Remark
1	Working temperature	-25~+75	℃	
2	Storage temperature	-40~+85	℃	
3	Relative humidity	10%~90%	RH	

## Reference design



When module working with battery directly, set EN pin with 10k resistance to low level.

