

UHF RFID Reader Module

HYM740

Winnix Technologies Co., Limited

Brief introduction

HYM740 UHF RFID reader uses R2000 chip, which complies with EPC C1G2 protocol, its working frequency is 902~928MHz, with LBT function. It supports dense reader working mode (DRM)。With standard 7dBi antenna, the reading distance can reach 24 meters, maximum identifying speed can reach 400/S; with simple power supply and interface circuit, a high-performance RFID system can be established. It is suitable for logistics, apparel, medical industry, and complex assets management, etc.

Technical data

No	Item	Technical data	Unit	Remark
1	Max current	1.2	A	Max power output
2	Standby current	≤1	mA	EN pin low level
3	Frequency range	902~928	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	30	dBm	
8	Stepping interval	1~2	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	≤-40	dB	±1CH
		≤-60	dB	±2CH
15	Frequency stabilizing ratio	±10	ppm	-25℃ ~ +40℃
		±20	ppm	-40℃ ~ +60℃
16	Max reading range	24	m	7dBi antenna
17	Multi-tags	>400/s		

Characteristics of DC

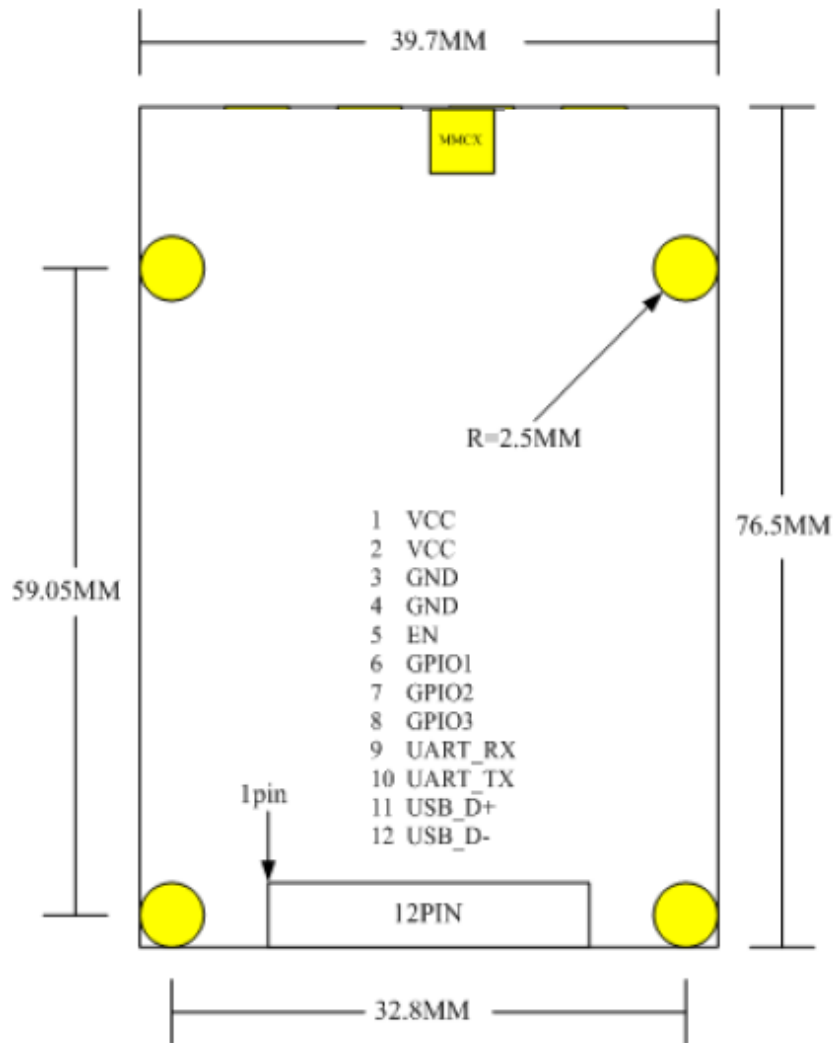
Data	Mini value	Typical value	Max value	Unit	Remark
Voltage of power	4.5	5	5.5	V	Direct current
Input high level	2	3.3	5.5	V	GPIO
	2	-	5	V	EN
Input low level	-0.3	0	0.8	V	GPIO
	-	-	0.18	V	EN
Output high level	2.9	-	-	V	GPIO
Output low level	-	0	0.1	V	GPIO
Enable current	2	5	25	uA	$V_{EN} \geq 2V$

Requirement on antenna

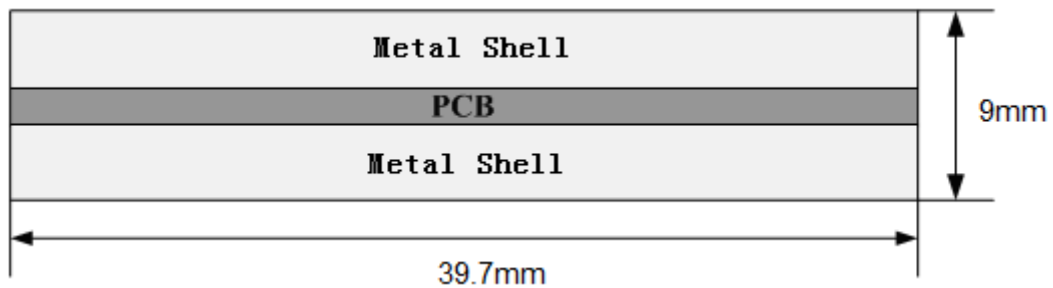
No	Item	Technical data	Unit	Remark
1	Standing wave ratio	≤ 1.5		

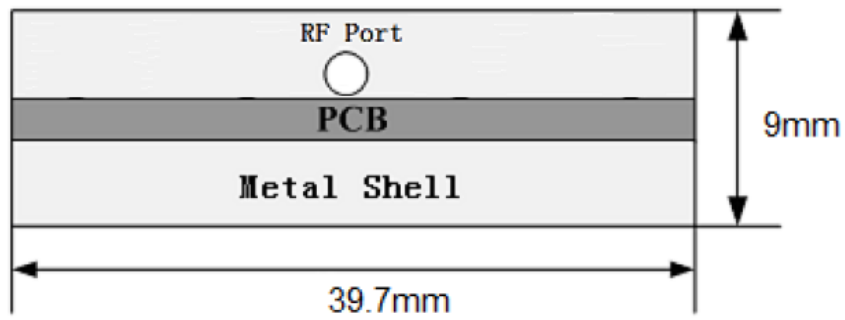
Appearance and structure

- Size: 76.5×39.7×9mm
- Weight: 50g

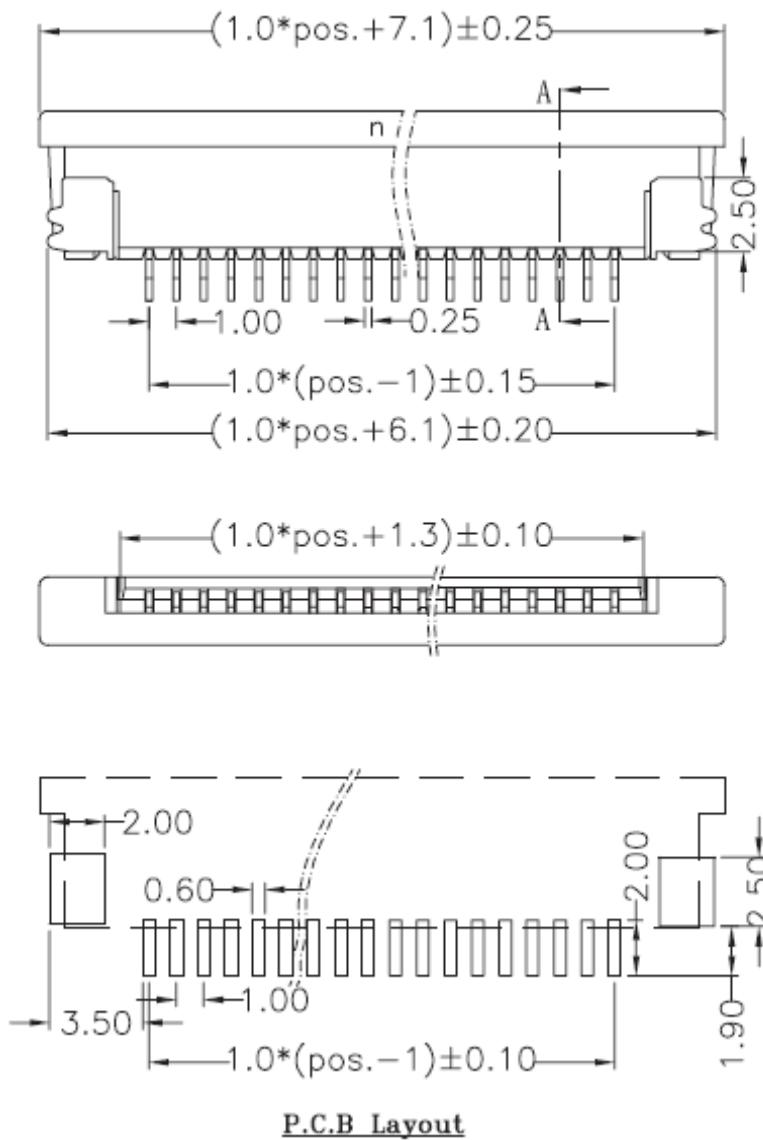


Drawing 1 Front view of the reader





Drawing2 Side view of the reader



P.C.B Layout

Drawing3 Pin connector

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

OEMs information: RealID Technology Co., Ltd. was established in December 2012, the registered capital of 990 million yuan. It is a professional company specializing in RFID system design, equipment development and related technical services. RealID Technology Co., Ltd. gathered a number of highly qualified management personnel, first-class product development elite, to provide customers with first-class hardware products, program design, and custom services.

Changes or modifications made to the equipment not expressly approved by Winnix may void the FCC / IC authorization to operate this equipment.

The use of the transceiver module is authorized in mobile or fixed host devices taking into account the conditions listed below

- OEM Integrator must ensure that the end user manual may not contain any information about the way to install or remove the module from the final product.

- Depending on the final host device additional authorization requirements for the nontransmitter functions of the transmitter module may be required (i.e., Verification, or Declaration of Conformity) The OEM integrator is responsible for ensuring that after the module is installed and operational the host continues to be compliant with the Part 15B unintentional radiator requirements.

- The information on the label and in the user manual is required to be incorporated in the user manual of the final host. see 47 CFR15 requirements for more details (e.g. 15.19 / 15.21 / 15.101 / 15.105 / RSSGEN / ICES)

- Additional label with the words 'Contains FCC ID: RVZHYM740' shall be applied and visible from the outside of the host product.

- The module must be installed and used in strict accordance with the manufacturer’s instructions as described in the user documenta on that comes with the module

- The end user manual for the final host product operating with this transmitter must include operatng instructions to satisfy RF exposure compliance requirements. e.g

Radiofrequency radiation exposure Information:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance of 25 cm between the radiator and your body.This transmitter must not be colocated or operating in conjunction with any other antenna or transmitter

- When the final host product operating with this transmitter deviate from above, installation of this module into specific final hosts may require the submission of a Class II permissive change application containing data pertinent to RF Exposure, spurious emissions, ERP/EIRP, and host/module authen ca on, or new application if appropriate

Feel free to contact us if additional guidance is required.

Manual Requirements according 15.19 / RSSGEN

This device complies with Part 15 of the FCC Rules [and with Industry Canada licence exempt RSS standard(s)].

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 opera on.

Manual Requirements according 15.21

Changes or modifi ca ons made to this equipment not expressly approved by (manufacturer name) may void the FCC authorization to operate this equipment.

Environment requirement

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

Declaration

1) Marketing

The device must be sold to dealers.

2) Professional installation

Installed by licensed professionals (EUT sold to dealer who hire installers)

3) Application

The intended use is generally not for the general public. It is generally for industry/commercial use.

RF EXPOSURE

This Module complies with FCC RF radiation exposure limits set forth for an uncontrolled environment under the following condition: The device shall be used in such way that at least a distance of 25 centimeters is maintained between the antennas and the body of the user and nearby persons.

Antenna Information

The HY740 includes an external antenna port.

Here are some design guidelines to help ensure antenna performance:

- . Never place the ground plane or route copper traces directly underneath the antenna portion of the module.
- . Never place the antenna close to metallic objects.
- . In the overall design, ensure that wiring and other components are not placed near the antenna.
- . Do not place the antenna in a metallic or metallized plastic enclosure.
- . Do not place the antenna in a metallic or metallized plastic enclosure.
- . Keep plastic enclosures 1cm or more from the antenna in any direction.