

# **UHF Module User Manual**



# 1 Quick Guide

## 1.1 Product introduction

The CMC303 is a UHF RFID Reader hybrid module which integrates high performance UHF RFID reader chipset, TCXO, Balun, Coupler, Saw filter, Power amp and low pass filter. UHF RFID reader chipset uses PR9200 of PHYCHIPS which integrates 900MHz radio, baseband processor, industry standard enhanced Cortex-M0 MCU, memory (64k Flash & 1 6k SRAM) and many other features. This module fully compliant with ISO18000-6C/EPC Global Gen II reader protocol and provide all functions of PR9200. Also reduce size, cost and power consumption. The CMC303 includes automatic tx leakage cancellation to improve reader's performance and compensate sensitivity for some variation according to the surrounding environment. Also it helps a developer adopt the proper antenna and realize the optimized RFID reader system more easily and quickly.

### Application:

- Management of warehousing logistics, assets, livestock, books, tickets, access control, container, etc.
- Various occasions when mobile data collection is needed

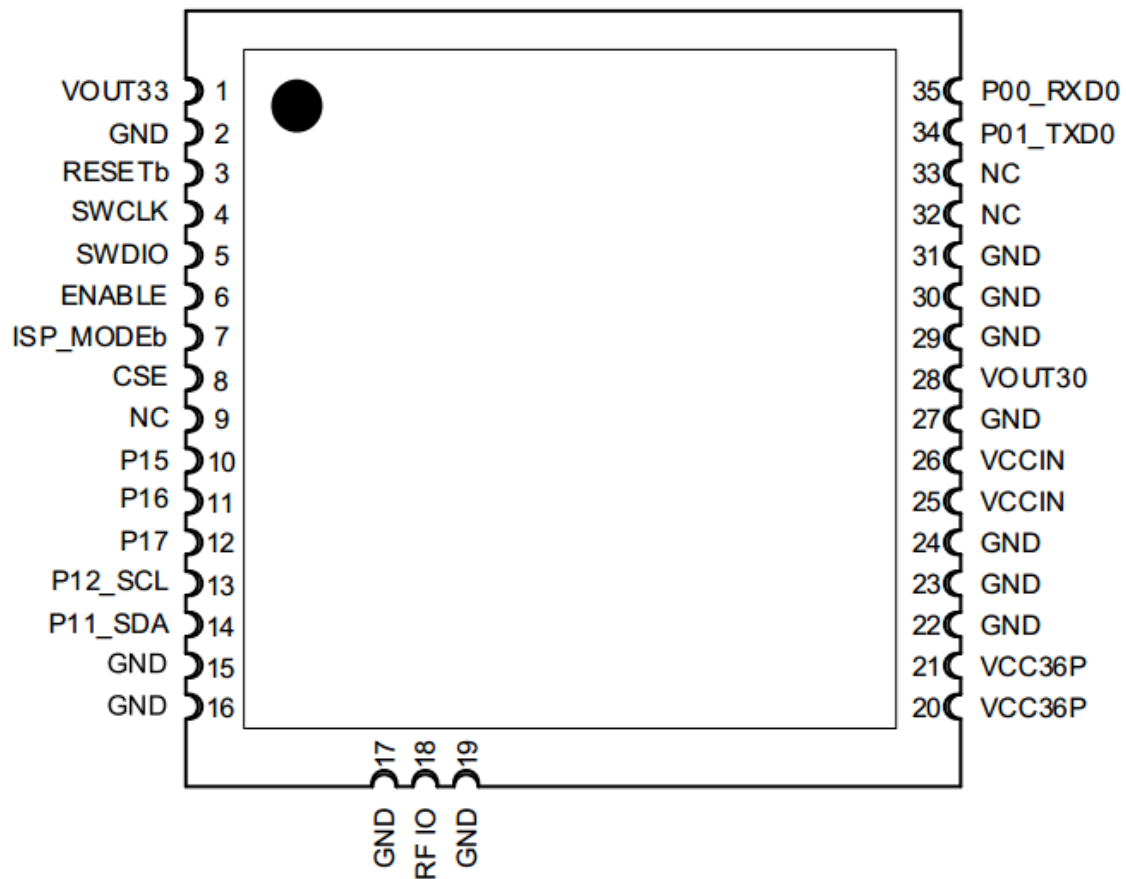
### Features:

- ◆ Compliant with the EPC Class1 Gen2 (ISO18000-6C) ;
- ◆ Real-time no-leakage inventory file list, timing inventory, closing trigger inventory
- ◆ Fast positioning file storage location, so that arbitrary placement, fast search
- ◆ High reliability, aluminum out case, for the harsh work condition.

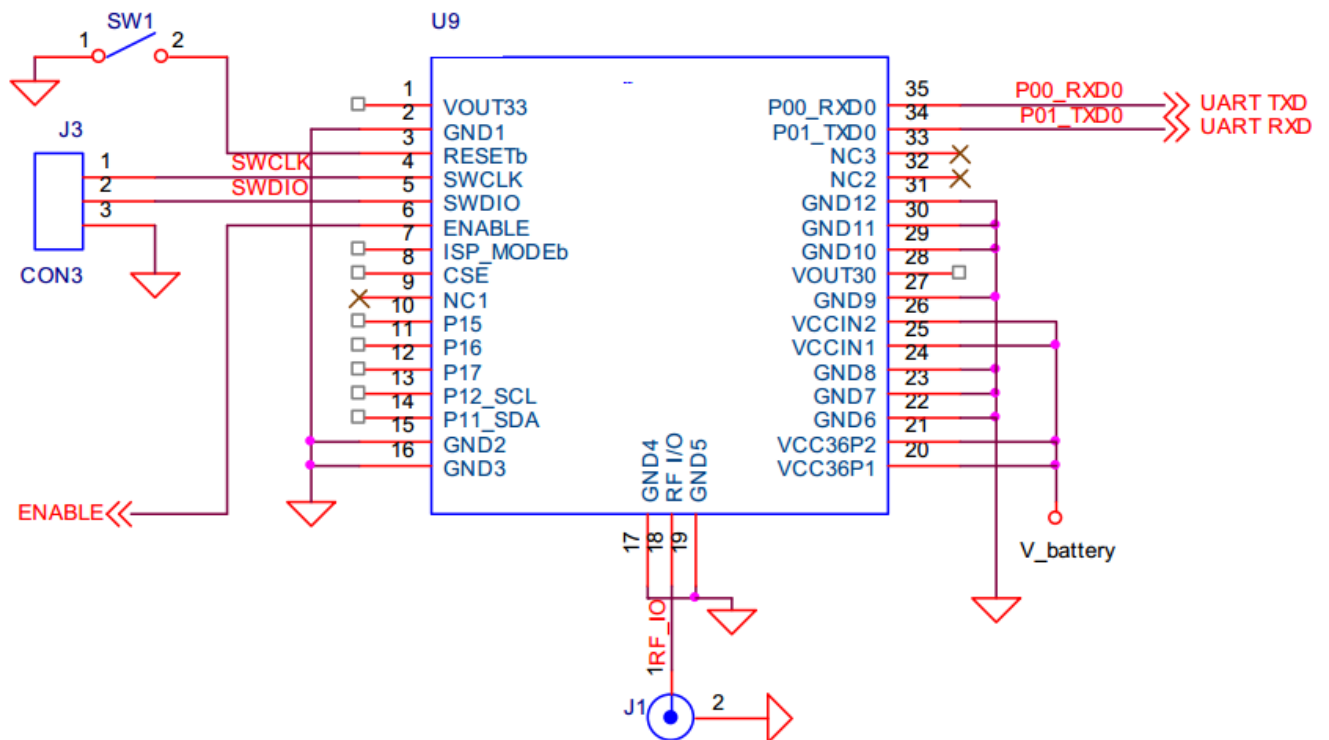
### Specifications:

Specifications	Protocol	ISO18000 (EPC Class1 Gen2)
	Operating Frequency	US:902MHz~928MHz (standard) Europe:865MHz~868MHz China:920MHz~928MHz
	Working mode	FHSS or fixed frequency with software settings
	Output power	1dBm~30dBm (1dBm step by software)
	Back Link Frequency(BLF)	250 kHz
	Modulation Type	DSB-ASK
	Communication interface	UART
	DC Power	3.7V/1.5A
	Power consumption	Maximum up to 5W
Physical parameters	size	24mm*24mm*3.5mm
	weight	10g
Environmental parameters	Working temperature	-20℃~+50℃
	Storage temperature	-40℃~+85℃
	Storage humidity	5%~95% no condensation

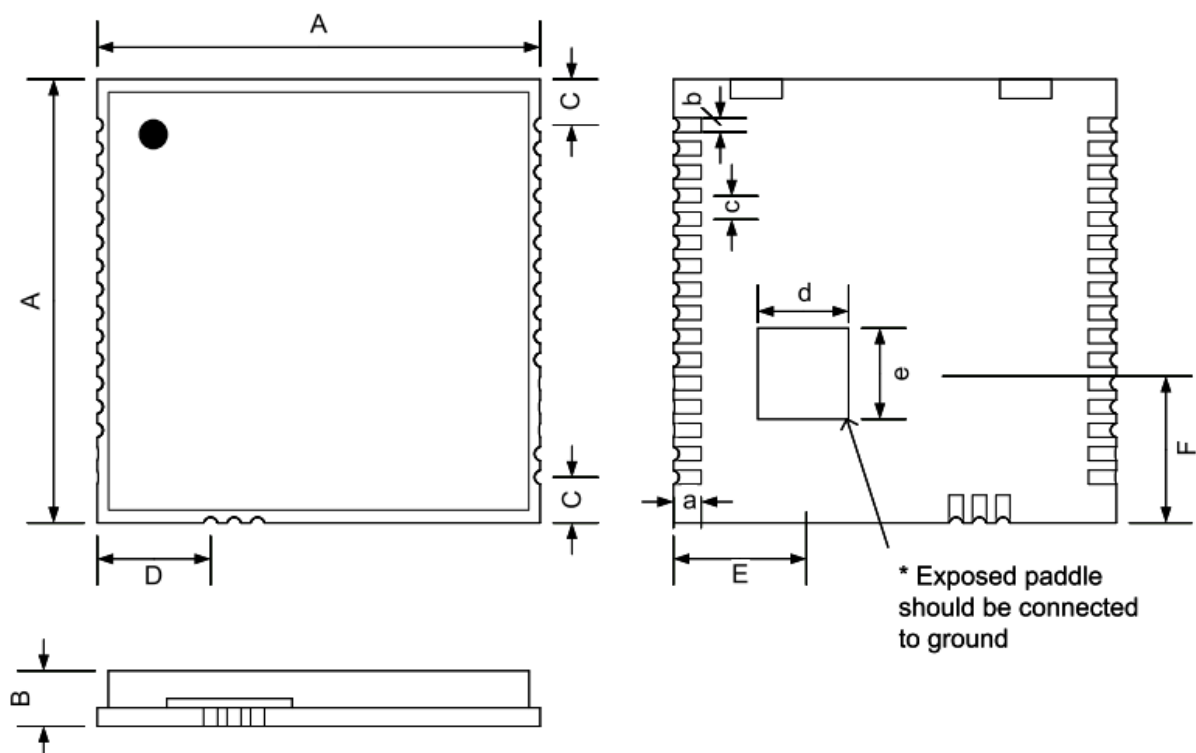
## 1.2 Pin Description for UHF module :



## 1.3 Application Circuit for UHF module :



## 1.4 Product size (mm)



Package on Dimension (Unit : mm)				
SYM	MIN	TYP	MAX	Remark
A	23.5	24	24.5	
B	2.9	3	3.3	
C		2.475		
D		6.145		
E		6.55		
F		8.37		
a		1.5		
b		0.75		
c		1.27		
d		3.3		
e		3.3		

## 1.5 Packing Information

Packing materials for the CMC303 shipment consist of the anti-static tray and the outer box which can hold up to five hundred pieces of the CMC303 each box.

## **Federal Communication Commission Interference Statement**

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 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.

## **FCC Caution:**

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

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 Radiation Exposure Statement:**

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This transmitter module must not be co-located or operating in conjunction with any other antenna or transmitter. The module must be installed in UHF Module.

This End equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body.

## **IMPORTANT NOTE:**

In the event that these conditions can not be met (for example certain laptop configurations or co-location with another transmitter), then the FCC authorization is no longer considered valid and the FCC ID can not be used on the final product. In these circumstances, the OEM integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate FCC authorization.

## **End Product Labeling**

The final end product must be labeled in a visible area with the following:  
"Contains FCC ID: 2AC9W-CMC303".

## **Manual Information to the End User**

The OEM integrator has to be aware not to provide information to the end user regarding how to install or remove this RF module in the user's manual of the end product which integrates this module.

## Integration instructions for host product manufacturers according to UHF Module user manual

### 2.2 List of applicable FCC rules

Part 15.247

### 2.3 Specific operational use conditions

The module is limited to installation in mobile or fixed application.

A separate approval is required for all other operating configurations, including portable configurations with respect to Part 2.1093 and difference antenna configurations.

### 2.4 Limited module procedures

Not applicable as this is not a limited modular.

### 2.5 Trace antenna designs

Not applicable as there is no trace antenna design in this modular.

### 2.6 RF exposure considerations

For the end host, the antennas used for this transmitter must be installed to provide a separation distance of at least 20cm from all persons and must not be collocated or operating in conjunction with any other antenna or transmitter.

### 2.7 Antennas

For 902MHz-928MHz

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	N/A	N/A	Ceramic	N/A	4

### 2.8 Label and compliance information

Host product manufacturers are required to provide a physical or e-label stating "Contains FCC ID: 2AC9W-CMC303" with their finished product.

### 2.9 Information on test modes and additional testing requirements

Test modes should take into consideration different operational conditions for a stand-alone modular transmitter in a host, as well as for multiple simultaneously transmitting modules or other transmitters in a host product.

### 2.10 Additional testing, Part 15 Subpart B disclaimer

This modular transmitter is only FCC authorized for FCC Part 15.247 as listed on the grant, and 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.