



DOCUMENT NUMBER AND REVISION

CC2500 RF Module REV:A

DOCUMENT TITLE:

SPECIFICATION OF RF Module

CUSTOMER PART NO.	
MODEL NUMBER	CC2500
SAMPLE LOT NO.	
CUSTOMER APPROVAL	
DATE	

DEPARTMENT	NAME	SIGNATURE	DATE
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☒ **PRELIMINARY SPECIFICATION**

☒ **FINAL SPECIFICATION AND SAMPLE**

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FINAL SPECIFICATION
CC2500 RF Module REV:A
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A	2023.07.11	First Issue.	HuangXiangli



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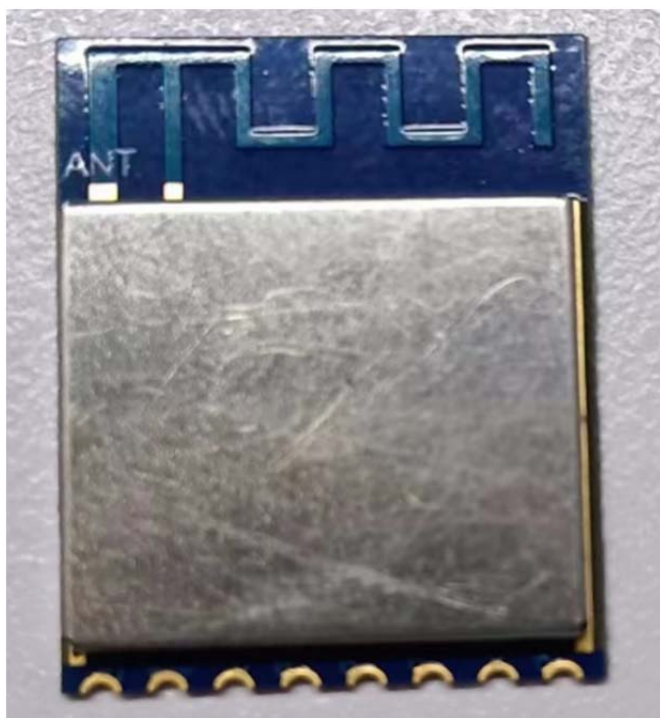
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Specification of CC2500 RF Module

1. GENERAL DESCRIPTION

The CC2500 module is a low cost and highly integrated 2.4GHz RF transceiver designed for very low power wireless applications. These RF modules, working in the license free ISM band of 2.4GHz MHz can be easily integrated into your application, thereby reducing development time and cost.



2. MECHANICAL SPECIFICATIONS

The mechanical detail is shown in Fig. 1 and Table 1 as below:

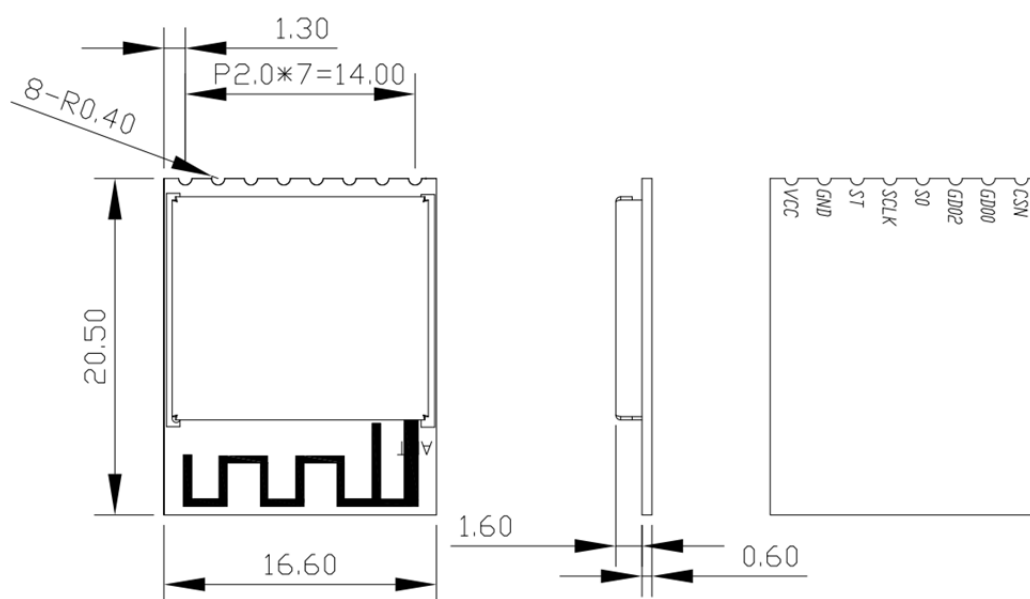


Figure 1(a): Module's outline



Table 1

Parameter	Specifications	Unit
Outline dimensions	20.50(L) x 16.60(W) x0.8(H)	mm

3. INTERFACE SIGNALS

SPI interface assignment :

Pin No	Symbol	Function	Remark
1	VCC	Power	1.8V-3.6V
2	GND	Power	Ground
3	SI	Digital Input	Serial configuration interface, data input
4	SCLK	Digital Input	Serial configuration interface, clock input
5	SO	Digital Onput	Serial configuration interface, data output.
6	GND02	Digital Output	Digital output pin for general use: Test signals/ FIFO status signals/Clear Channel Indicator/ Clock output, down-divided from XOSC/Serial output RX data
7	GND00	Digital I/O	Digital output pin for general use: Test signals/ FIFO status signals/Clear Channel Indicator/ Clock output, down-divided from XOSC/Serial output RX data/ Serial input TX data
8	CSN	Digital Input	Serial configuration interface, chip select

4. ABSOLUTE MAXIMUM RATINGS

Item	Symbol	Unit	Min	Max	Note
Power voltage	VCC	V	-0.3	+3.6	1
Voltage on any digital pin		V	-0.3	VDD+0.3 , max 3.6	1
Voltage ramp-up rate	VCC	kV/ μ s		120	1
Input RF level		dBm		+10	1
Operation Temperature	Topr	°C	-40	+85	3

Notes

1、 If used beyond the absolute maximum ratings, the product may be permanently damaged. It is strongly recommended that the device be used within the electrical characteristics in normal operations. If exposed to the condition not within the electrical characteristics, it may affect the reliability of the device.

2、 The operating temperature is defined as the temperature range where the products operation is guaranteed. All the contents of electrical and optical specifications are guaranteed under the room temperature condition.



5. ELECTRICAL SPECIFICATIONS

Operating Conditions :

Parameter	Sym.	Min	Typ.	Max	Unit
Operating temperature	Topr	-40		85	°C
Operating supply voltage	VCC	1.8		3.6	V

General Characteristics : Ta = 25°C

Item	Min	Typ	Max	Unit	Condition/Note
Frequency range	2400		2483.5	MHz	
Frequency Error	-40	0	+40	kHz	+/-40kHz
Data rate	1.2		500	kbps	2-FSK
	1.2		250	kbps	GFSK and OOK
	26		500	kbps	(Shaped)MSK(also known as differential offset QPSK) Optional Manchester encoding(halves the data rate)
Current consumption, TX states		21.2		mA	Transmit mode, 0 dBm output power
Receiver sensitivity		-89		dBm	Data rate=250kbps, MDMCFG2.DEM_DCFILT_OFF=0V
RF output Max.power		+1		dBm	Output power is programmable and full range is available across the entire frequency band.
Current consumption in power down modes		0.4		uA	Voltage regulator to digital part off, register values retained (SLEEP state). All GDO pins programmed to 0x2F (HW to 0)

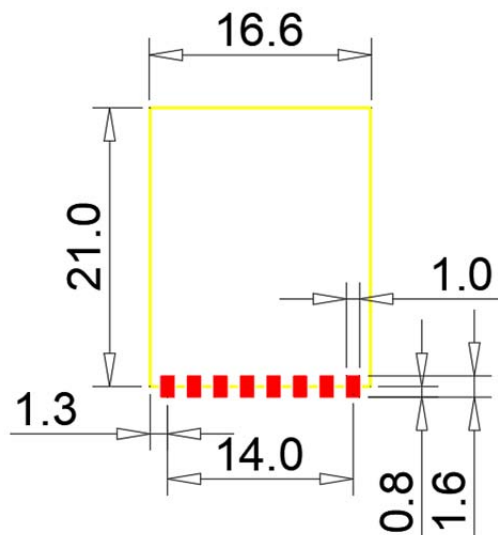
6. MODULE'S CERTIFICATION DETAILS

FCC ID: 2AXU3CC2500

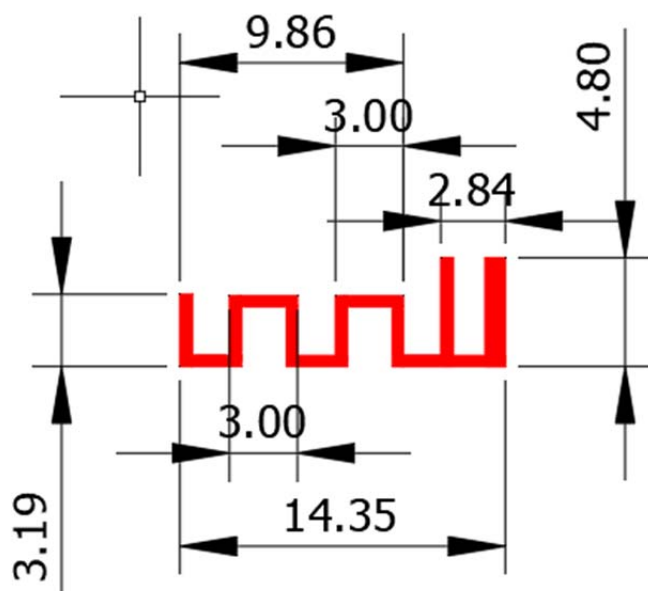
IC ID: 26955-CC2500



7. THE RECOMMENDED MODULE'S PCB PACKAGE



8. ANTENNA OUTLINE DIMENSIONS: (mm) :





9. FCC AND IC CAUTIONS:

IC Caution:

User manuals for licence-exempt radio apparatus shall contain the following or equivalent notice in a conspicuous location in the user manual or alternatively on the device or both.

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions:

- (1) this device may not cause interference, and
- (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

- (1) l'appareil ne doit pas produire de brouillage, et
- (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

This device must be installed and operated with a minimum distance of 20 cm between the radiator and user body.

Lors de l'installation et du fonctionnement de l'unité, la distance minimale entre le radiateur et le corps de l'utilisateur doit être de 20 cm.

This radio transmitter [IC: 26955-CC2500] has been approved by Innovation, Science and Economic Development Canada to operate with the antenna types listed below, with the maximum permissible gain indicated. Antenna types not included in this list that have a gain greater than the maximum gain indicated for any type listed are strictly prohibited for use with this device.

The ISED certification label of a module shall be clearly visible at all times when installed in the host product; otherwise, the host product must be labelled to display the ISED certification number for the module, preceded by the word "contains" or similar wording expressing the same meaning, as follows:

Contains IC: 26955-CC2500



FCC Caution:

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the 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 RF Radiation Exposure Statement:

- 1 : This Transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.
2. This equipment complies with RF radiation exposure limits set forth for an uncontrolled environment.
3. This equipment should be installed and operated with minimum distance 20cm between the radiator& your body.

Host product manufacturers that they need to provide a physical or e-label stating, "Contains FCC ID: 2AXU3CC2500" with their finished product.

Only those antennas with same type and lesser gain filed under this FCC ID can be used with this device.

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.

The final host integrator must ensure there is no instruction provided in the user manual or customer documentation indicating how to install or remove the transmitter module except such device has implemented two-ways authentication between module and the host system.

The final host manual shall include the following regulatory statement: This equipment has been tested and found to comply with the limits. 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 module has been tested and found to comply with part 15.247 requirements for Modular Approval.

This module is intended for OEM integrator. The OEM integrator is responsible for the compliance to all the rules that apply to the product into which this certified RF module is integrated. Additional testing and certification may be necessary when multiple modules are used.

Antenna Manufacturer: Shenzhen Jinghua Displays Electronics Co., Ltd

Antenna Model: N/A

Antenna type: PCB antenna

Antenna gain: 1.04 dBi