

Tejjer Technology Co.,Ltd.

<http://www.tejjer.com>

128 Hailiang Road, Sanjia Street, Jiaojiang District, Taizhou city, Zhejiang Province

Tel: 0086-576-88820565 Fax: 0086-576-88325588

XN297 module specification

Important Notice:

TEJER reserves the right to make changes to its products or to discontinue any integrated circuit product or service without notice. TEJER integrated circuit products are not designed, intended, authorized, or warranted to be suitable for use in life-support applications, devices or systems or other critical applications. Use of TEJER products in such applications is understood to be fully at the risk of the customer.

Tejjer Technology Co.,Ltd.

<http://www.tejjer.com>

128 Hailiang Road, Sanjia Street, Jiaojiang District, Taizhou city, Zhejiang Province

Tel: 0086-576-88820565 Fax: 0086-576-88325588

Revision History

Rev. No.	History	Issue Date	Remark
1.0	Initial issue T22301071	January-2023	Preliminary

Tejjer Technology Co.,Ltd.

http://www.tejjer.com
128 Hailiang Road, Sanjia Street, Jiaojiang District, Taizhou city, Zhejiang Province
Tel: 0086-576-88820565 Fax: 0086-576-88325588

Table of Contents

目录

1. General Description.....	4
2. Electrical specification.....	4
3. Interface.....	7
4. Module packaging information.....	8
5. FCC Warning.....	8
6. IC Warning.....	9

Tejjer Technology Co.,Ltd.

<http://www.tejjer.com>

128 Hailiang Road, Sanjia Street, Jiaojiang District, Taizhou city, Zhejiang Province

Tel: 0086-576-88820565 Fax: 0086-576-88325588

1. General Description

The T22301071 module is designed for 2.4GHz ISM band wireless applications using XN297 GFSK transceiver. The module has a three-wire SPI interface for communication. The maximum data rate is 4Mbps

2. Electrical specification

Symbol	Condition at VCC = 3V±5%, T=25℃	Parameter			Unit
		Min	Typ	Max	
ICC	Sleep		2		uA
	Standby I		30		uA
	Standby III		650		uA
	Standby II		780		uA
	TX at -35dBm output power		9		mA
	TX at -20dBm output power		9.5		mA
	TX at 0dBm output power		16		mA
	TX at 2dBm output power		19		mA
	TX at 8dBm output power		30		mA
	TX at 13dBm output power		66		mA
	RX at 2Mbps		16.5		mA
	RX at 1Mbps		15.5		mA
	RX at 250kbps		15		mA
General RF					
f_{OP}	Operating frequency	2400		2483	MHz
PLL_{res}	PLL Programming resolution		1		MHz
f_{XTAL}	Crystal frequency		16		MHz
DR	Data rate	1		2	Mbps
Δf_{250K}	Frequency deviation at 250kbps		125		KHz
Δf_{1M}	Frequency deviation at 1Mbps		160	250	KHz
Δf_{2M}	Frequency deviation at 2Mbps		320	500	KHz
FCH_{250K}	Channel spacing at 250Kbps		1		MHz
FCH_{1M}	Channel spacing at 1Mbps		1		MHz
FCH_{2M}	Channel spacing at 2Mbps		2		MHz
Transmitter					
PRF	Typical output power	2	8	13	dBm
PRFC	Output Power Range	-35		13	dBm
PBW1	20dB Bandwidth for		2		MHz

Tejjer Technology Co.,Ltd.

<http://www.tejjer.com>

128 Hailiang Road, Sanjia Street, Jiaojiang District, Taizhou city, Zhejiang Province

Tel: 0086-576-88820565 Fax: 0086-576-88325588

	Modulated Carrier at 2Mbps				
<i>PBW 2</i>	20dB Bandwidth for Modulated Carrier at 1Mbps		1		MHz
<i>PBW 3</i>	20dB Bandwidth for Modulated Carrier at 250Kbps		500		KHz
Receiver					
<i>RX_{max}</i>	Maximum received signal at <0.1% BER		0		dBm
<i>RXSENS1</i>	Sensitivity (0.1%BER) @2Mbps		-83		dBm
<i>RXSENS 2</i>	Sensitivity (0.1%BER) @1Mbps		-87		dBm
<i>RXSENS3</i>	Sensitivity (0.1%BER) @250Kbps		-91		dBm
<i>C / I_{CO}</i>	C/I Co-channel (@2Mbps)		10		dBc
<i>C / I_{1ST}</i>	1st Adjacent Channel Selectivity C/I		-6		dBc
<i>C / I_{2ND}</i>	2nd Adjacent Channel Selectivity C/I		-10		dBc
<i>C / I_{3RD}</i>	3rd Adjacent Channel Selectivity C/I		-22		dBc
<i>C / I_{4TH}</i>	4th Adjacent Channel Selectivity C/I		-28		dBc
<i>C / I_{5TH}</i>	5th Adjacent Channel Selectivity C/I		-34		dBc
<i>C / I_{CO}</i>	C/I Co-channel (@1Mbps)		10		dBc
<i>C / I_{1ST}</i>	1st Adjacent Channel Selectivity C/I		1		dBc
<i>C / I_{2ND}</i>	2nd Adjacent Channel Selectivity C/I		-18		dBc
<i>C / I_{3RD}</i>	3rd Adjacent Channel Selectivity C/I		-23		dBc
<i>C / I_{4TH}</i>	4th Adjacent Channel Selectivity C/I		-28		dBc
<i>C / I_{5TH}</i>	5th Adjacent Channel Selectivity C/I		-32		dBc

Tejjer Technology Co.,Ltd.

<http://www.tejjer.com>

128 Hailiang Road, Sanjia Street, Jiaojiang District, Taizhou city, Zhejiang Province

Tel: 0086-576-88820565 Fax: 0086-576-88325588

C/I_{6TH}	6th Adjacent Channel Selectivity C/I		-35		dBc
C/I_{CO}	C/I Co-channel (@250Kbps)		2		dBc
C/I_{1ST}	1st Adjacent Channel Selectivity C/I		-8		dBc
C/I_{2ND}	2nd Adjacent Channel Selectivity C/I		-18		dBc
C/I_{3RD}	3rd Adjacent Channel Selectivity C/I		-24		dBc
C/I_{4TH}	4th Adjacent Channel Selectivity C/I		-28		dBc
C/I_{5TH}	5th Adjacent Channel Selectivity C/I		-32		dBc
C/I_{6TH}	6th Adjacent Channel Selectivity C/I		-35		dBc
Operating conditions					
VDD	Supply voltage	2.2	3	3.3	V
VSS	Ground		0		V
V_{OH}	Output high level voltage	VDD-0.3		VDD	V
V_{OL}	Output low level voltage	VSS		VSS+0.3	V
V_{IH}	Input high level voltage	2.0	3	3.6	V
V_{IL}	Input low level voltage	VSS		VSS+0.3	V

* Note: In the channels, such as 2416 and 2432 MHz, integer times of 16MHz crystal, receiver sensitivity degrades about 2dB; and modulation quality of the emission signal (EVM) falls by 10%.

Note: In 250KBps mode, it should not be more than 16 bytes of payload length, because of frequency drift in open-loop transmission.

Tejjer Technology Co.,Ltd.

<http://www.tejjer.com>

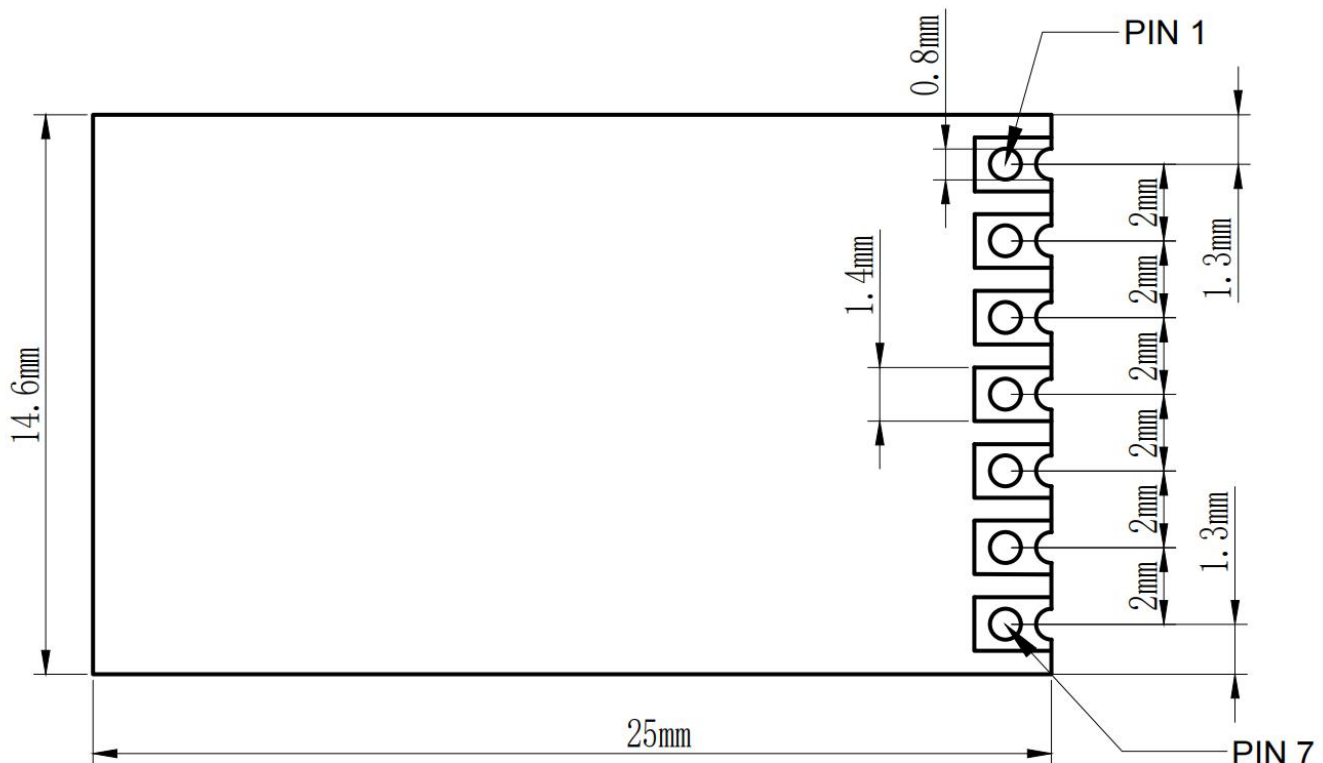
128 Hailiang Road, Sanjia Street, Jiaojiang District, Taizhou city, Zhejiang Province

Tel: 0086-576-88820565 Fax: 0086-576-88325588

3.Interface

Pin No.	Pin name	Comment	Note
1	VIN	RF Module Supply Voltage Input	2.3V-3.3V
2	NC	/	
3	NC	/	
4	DATA	SPI Data I/O	
5	SCK	SPI Clock	
6	CSN	SPI Chip Selection	
7	GND	Ground	

4. Module packaging information



TOP View

5. FCC Warning

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.

Warning: Any Changes or modifications not expressly approved by the party responsible for compliance could

void the user's authority to operate the equipment.

Note: 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 or more of the following measures:

- (1) Reorient or relocate the receiving antenna.
- (2) Increase the separation between the equipment and receiver.
- (3) Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

Tejjer Technology Co.,Ltd.

<http://www.tejjer.com>

128 Hailiang Road, Sanjia Street, Jiaojiang District, Taizhou city, Zhejiang Province

Tel: 0086-576-88820565 Fax: 0086-576-88325588

(4) Consult the dealer or an experienced radio/TV technician for help.

FCC Radio Frequency Exposure Statement

The antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from

all persons and must not be collocated or operating

in conjunction with any other antenna or transmitter, End-Users

must be provided with transmitter operation conditions for satisfying RF exposure compliance.

Labelling Instruction for Host Product Integrator

Please notice that if the FCC identification number is not visible when the module is installed inside another device, then the outside of the device into which the module is installed must also display a label referring to the enclosed module. This exterior label can use wording such as the following:

"Contains FCC ID: 2AXTW-XN297" any similar wording that expresses the same meaning may be used.

Installation Notice to Host Product Manufacturer

The OEM integrator is responsible for ensuring that the end-user has no manual instruction to remove or install module. The module is limited to installation in mobile application, a separate approval is required for all other operating configurations, including portable configurations with respect to §2.1093 and difference antenna configurations.

6. IC Warning

This device contains license-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's license-exempt RSS(s). Operation is subject to the following two conditions:

(1) This device may not cause interference.

(2) This device must accept any interference, including interference that may cause undesired operation of the device.

Please notice that if the IC identification number is not visible when the module is installed inside another device, then the outside of the device into which the module is installed must also display a label referring to the enclosed module. This exterior label can use wording such as the following: "Contains IC: 26591-XN297" any similar wording that expresses the same meaning may be used.