

XE972 User Manual

Confidential

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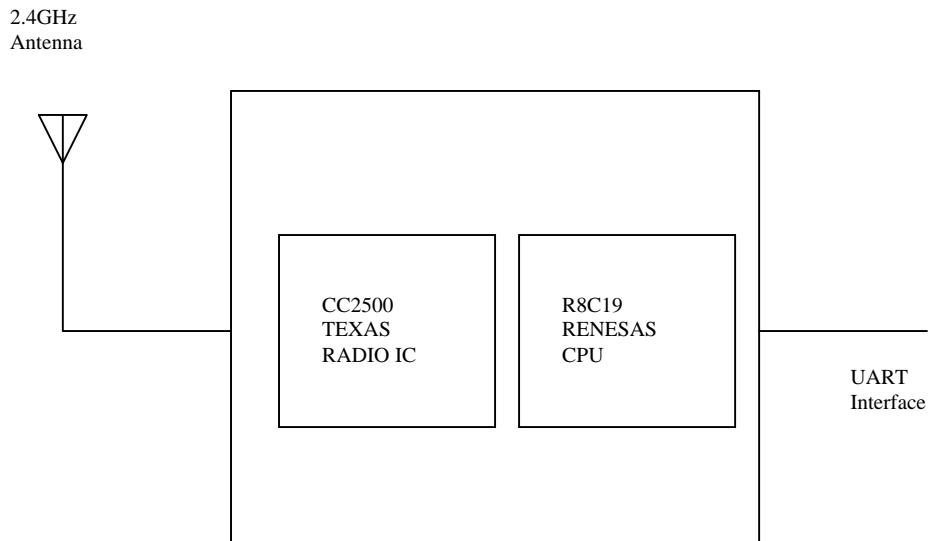
1. General

1.1 Overview

This specification covers XE972 Data Radio Unit, which complies with ARIB STD T-66, FCC Part 15 247 RSS-210 and ETSI EN 300 400.

This unit consist of Texas CC2500 radio IC and Renesas CPU R8C19 for Radio Data communication in 2.4GHz band.

All detailed specification may be changed without notice.



1.2 Features

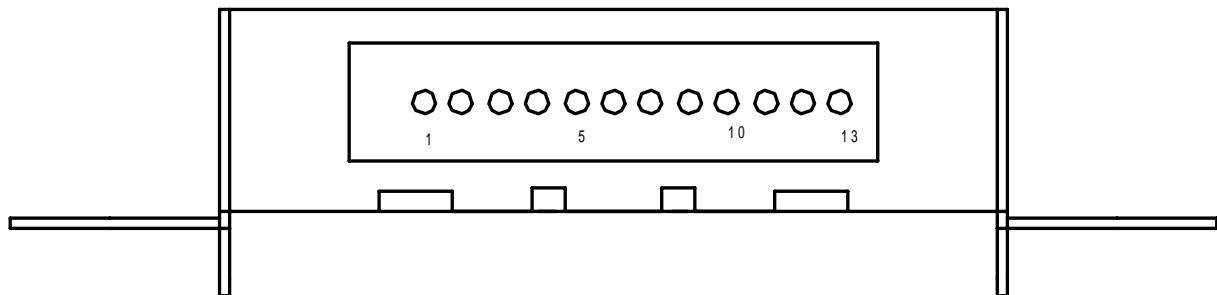
- Radio Data rate up to 32kbps.
- Support Slow Hopping 22channels in 2.401GHz ~ 2.4115GHz
- Ultra Low Power Consumption
- RoHS Compliant
- Support USART connection speed up to 115.2kbps
- Small Package Size (38.8 x 23.8 x 6.5)
- Integrated 26MHz TCXO

1.3 Application

- Radio Data Modem
- Wireless Controller
- Wireless Data Logger
- Wireless Security Sensor

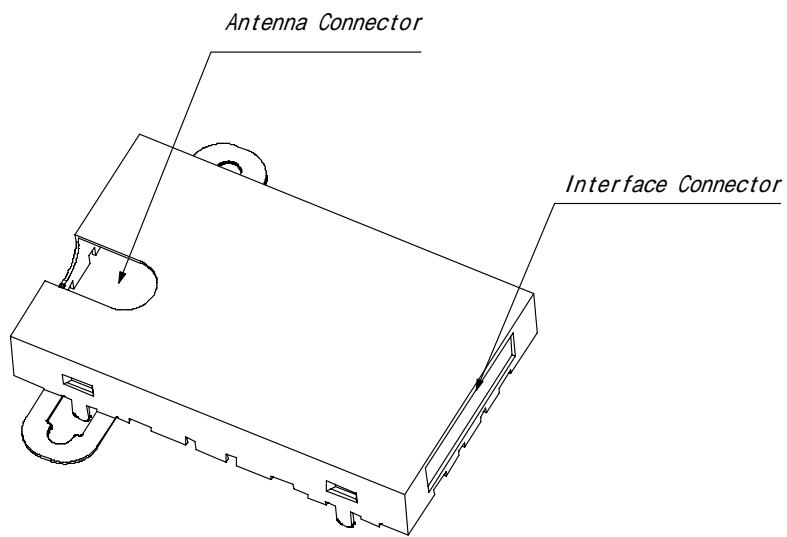
1.4 Interface connector pin assignment

Back Side View of XE972

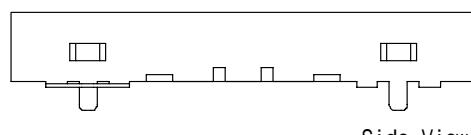
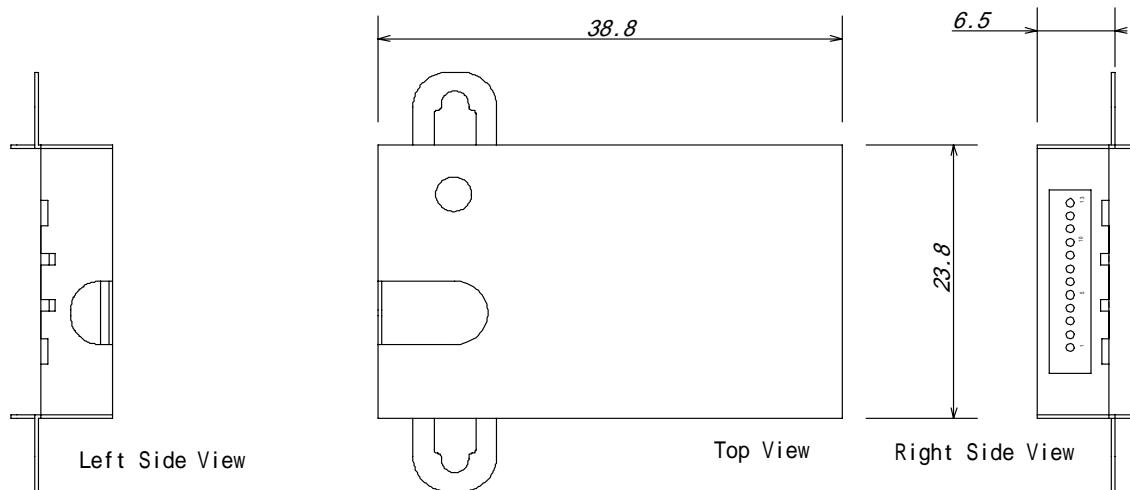


1. +B (Power In)	2. +3V REF (Reference Voltage Out)
3. GND (Power GND)	4. CS (Carrier Sense)
5. PWR CONT (Unit Power Control)	6. PTT (Transmit Switch)
7. GD_MONI (Not Used)	8. RTS (UART RTS)
9. CTS (UART CTS)	10. RXD (UART RXD)
11. TXD (UART TXD)	12. MODE (Not Used)
13. RESET (Unit Reset)	

1.5 Outline View



1.6 Package Dimensions



Weight 8 g

4. Characteristics

4.1 Electrical Characteristics

Absolute Maximum Rating				
Rating	Minimum	Typical	Maximum	Unit
Supply Voltage	3.1	3.5	6.5	V
Operating Temperature Range	-20	25	55	C
RX Current consumption			50	mA
TX Current consumption			80	mA

4.2 RF Characteristics

Transmitter

Specification	Condition	Min.	Typ.	Max.
Output Transmit Power	Normal			9dBm
Frequency Range	Normal GHz	2.401		2.4115
20dB Bandwidth	Normal MHz			0.1
Modulation Characteristics	Normal MHz			0.05
Carrier Frequency Drift	-20 ~ +50 C			2.5ppm

Receiver

Specification	Condition	Min.	Typ.	Max.
Sensitivity	BER 0.1%			- 105dBm
Maximum Input Level	Normal			-20dBm
Adjacent Channel rejection	Normal		18dB	

3. Notes

FCC Statements:

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.

CHANGES OR MODIFICATIONS NOT EXPRESSLY APPROVED BY THE MANUFACTURER FOR COMPLIANCE COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT

CAUTION: This device and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter. End user cannot modify this transmitter device. Any unauthorized modification made on the device could avoid the user's authority to operate this device.

CAUTION: To comply with FCC RF exposure compliance requirements, a separation distance of at least 20cm must be maintained between the antenna of this device and all persons.

The following sentence has to be displayed on the outside of the device in which the transmitter module is installed:
"Contains FCC ID:PH3XE972

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:

- 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.

IC Statements:

The term "IC:" before the radio certification number only signifies that Industry Canada technical specifications were met.

This device complies with RSS 210 of Industry Canada "IC". "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."

"The installer of this radio equipment must ensure that the antenna is located or pointed such that it does not emit RF field in excess of Health Canada limits for the general population; consult Safety Code 6, obtainable from Health Canada's website www.hc-sc.gc.ca/rpb"

L' utilisation de ce dispositif est autorisée seulement aux conditions suivantes :

- (1) il ne doit pas produire de brouillage et
- (2) l' utilisateur du dispositif doit être prêt à accepter tout brouillage radioélectrique reçu, même si ce brouillage est susceptible de compromettre le fonctionnement du dispositif.

"The installer of this radio equipment must ensure that the antenna is located or pointed such that it does not emit RF field in excess of Health Canada limits for the general population; consult Safety Code 6, obtainable from Health Canada's website www.hc-sc.gc.ca/rpb"

"To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that permitted for successful communication."

The following sentence has to be displayed on the outside of the device in which the transmitter module is installed:
"Contains IC:3070C-XE972