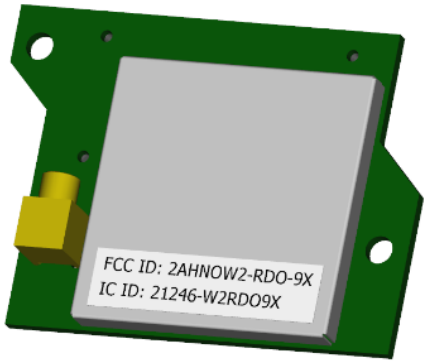
W2-RDO-9X Module

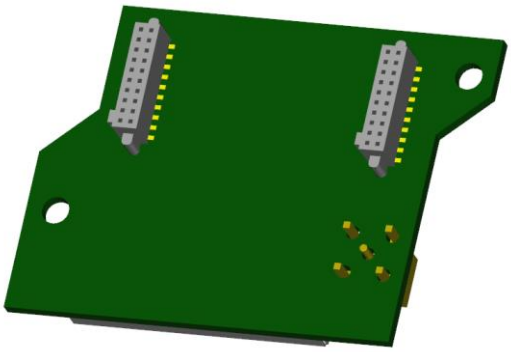
The W2-RDO-9X module is a fully integrated radio module designed for high performance at very low-power and low-voltage operation in cost-effective wireless systems. The device is intended for the ISM (Industrial, Scientific and Medical) band 902–928 MHz.

The module provides extensive hardware support for packet handling, data buffering, burst transmissions, clear channel assessment, link quality indication, and Wake-On-Radio. The main operating parameters can be controlled through an SPI interface.

Ramtech W2-RDO-9X Front



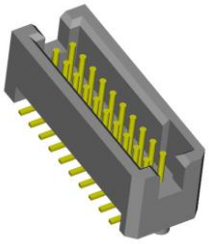
Ramtech W2-RDO-9X Back



DEVICE OVERVIEW

- Frequency: 915.90MHz - 917.10MHz
- Configurable Data Rates: 0 to 200 kbps
- Output Power up to: 14dBm / 25mW
- Rx Sensitivity:
  - –135 dBm at 300 bps
  - –129 dBm at 1.2 kbps
  - –116 dBm at 50 kbps
- Power Supply: 3.3V @ 50mA
- Supported Modulation Formats: 2-FSK
  - 2-GFSK
  - 4-FSK
  - 4-GFSK
  - MSK
  - OOK
- Internal Chipset:
  - Texas Instruments CC1125
- RF Connector: 50 Ohm MCX
- Digital Interface: SPI

Mating Connector



Samtec TFM-110-02-L-D-A

Distance between Pin 1 centres: 30.5mm

REGULATIONS COMPLIANCE

- FCC CFR 47 Part 15.247
- FCC CFR 47 Part 15.109
- IC RSS-247 Issue 1
- ICES-003 Issue 6

DIGITAL INTERFACE

See Texas Instruments CC1125 User Guide

http://www.ti.com/lit/pdf/swru295

© Ramtech Electronics Ltd 2016

PINOUT

CN1

PIN		I/O	DESCRIPTION
Name	NO.		
AGND	1, 19	PWR	GND Supply.
ID1	2	OUTPUT	Product Type Identifier. Internally connected to **DETECT** line. When **DETECT** pulled High **ID1** will go High.
ID2	8	OUTPUT	Product Type Identifier. Internally connected to **DETECT** line. When **DETECT** pulled High **ID2** will go High.
ID3	4	OUTPUT	Product Type Identifier. Not connected to **DETECT** line. When **DETECT** pulled High **ID3** will not go High.
DETECT	5	INPUT	Product Type Detection Enable. Used to identify connected module type. Set High and read from **IDx** to identify module connected. Pull Low when not in use.
GDO0	10	I/O	Software Configurable Input / Output pin.
GDO2	12	I/O	Software Configurable Input / Output pin.
CS	14	INPUT	SPI Chip Select Active-Low.
CLK	16	INPUT	SPI Serial Clock.
MOSI	18	INPUT	SPI Master Out Slave In.
MISO	20	OUTPUT	SPI Master In Slave Out.
N/C	3, 6, 7, 9, 11, 13, 15, 17, 19	-	Not Internally Connected

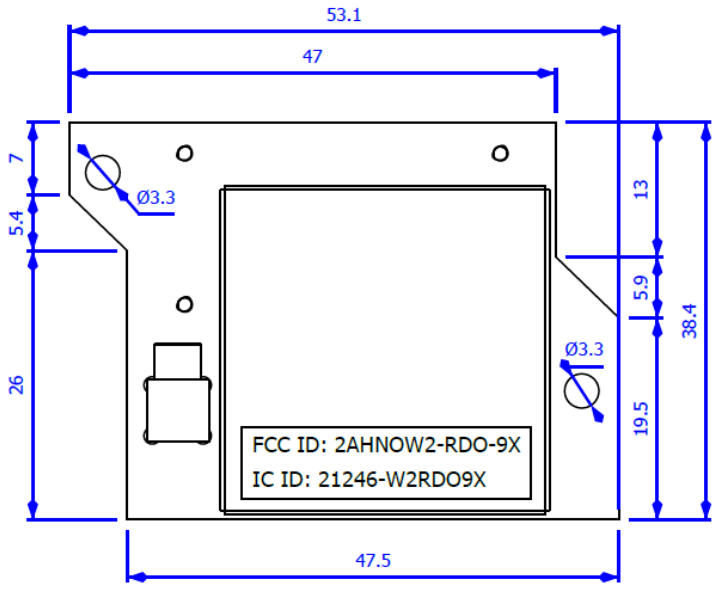
CN2

PIN		I/O	DESCRIPTION
Name	NO.		
AGND	2	PWR	GND Supply.
VDD	7, 9	PWR	3.3V Power Supply.
RESET	15	INPUT	Asynchronous, active-low digital Reset.
N/C	1, 3, 4, 5, 6, 8, 10, 11, 12, 13, 14, 16, 17, 18, 19, 20	-	Not Internally Connected.

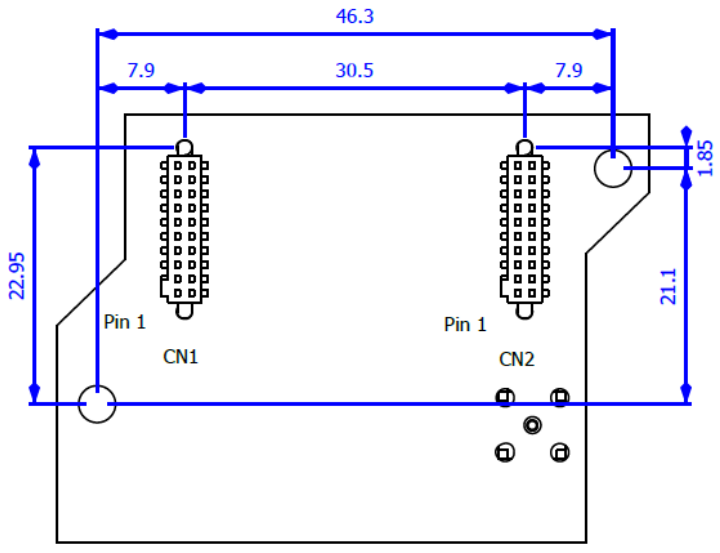
© Ramtech Electronics Ltd 2016

DIMENSIONS

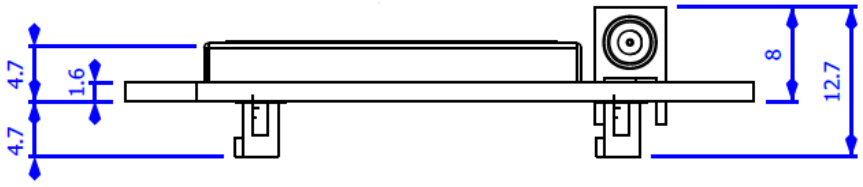
Top



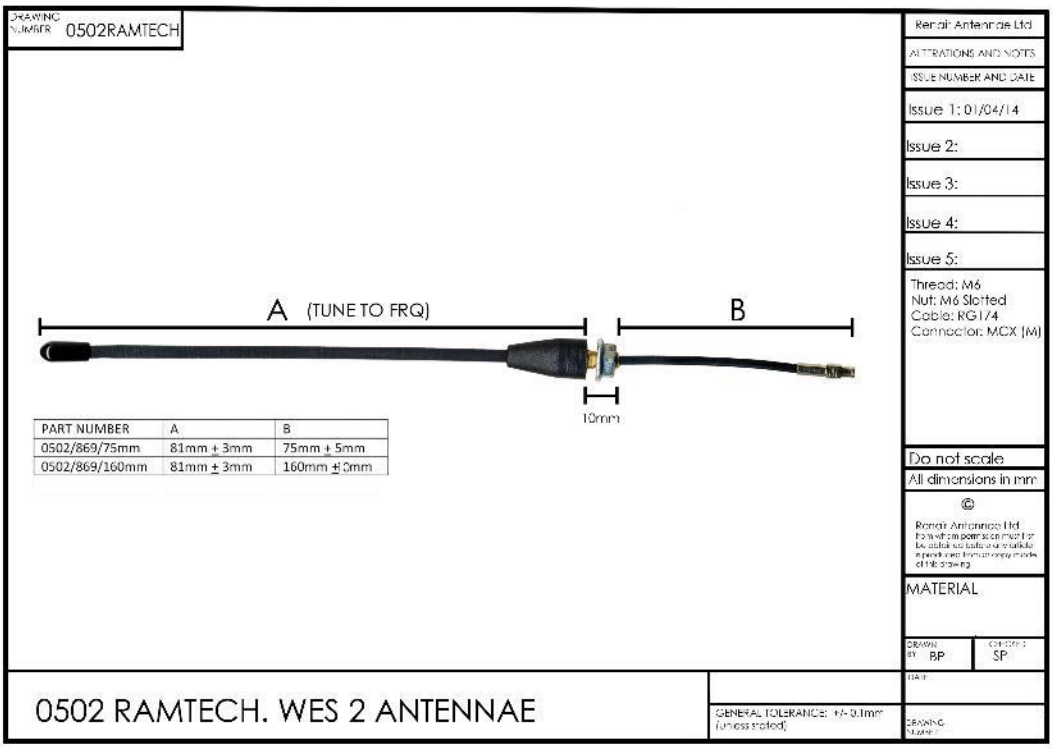
Bottom



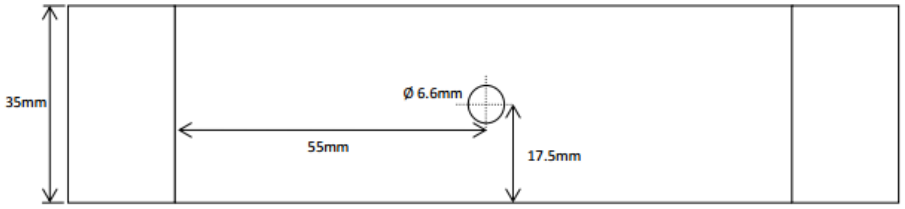
Side

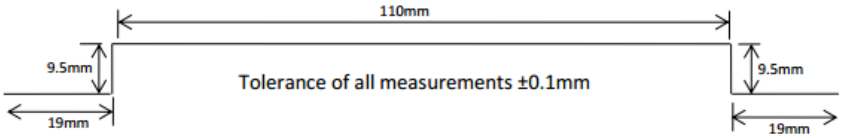


ANTENNA



GROUND PLANE





© Ramtech Electronics Ltd 2016

WARNING STATEMENTS

FCC Warning Statement – FCC ID: 2AHNOW2-RDO-9X

- 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 equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. End users must follow the specific operating instructions for satisfying RF exposure compliance. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

- Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment

Industry Canada Warning Statement – IC ID: 21246-W2RDO9X

English

- Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. 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 necessary for successful communication.

- 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.

French

- Conformément à la réglementation d'Industrie Canada, le présent émetteur radio peut fonctionner avec une antenne d'un type et d'un gain maximal (ou inférieur) approuvé pour l'émetteur par Industrie Canada. Dans le but de réduire les risques de brouillage radioélectrique à l'intention des autres utilisateurs, il faut choisir le type d'antenne et son gain de sorte que la puissance isotrope rayonnée équivalente (p.i.r.e.) ne dépasse pas l'intensité nécessaire à l'établissement d'une communication satisfaisante.

- 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.

© Ramtech Electronics Ltd 2016