

MCT241

2.4GHz MICRO TRANSCEIVER

The information, specifications, and illustrations in this manual are those in effect at the time of printing. We reserve the right to change specifications or design at any time without notice.

Kar-Tech, Inc.

January 26, 2016
TH

2.4GHz Macro transceiver

DESCRIPTION

The MCT241 is a direct sequence spread spectrum transceiver unit, designed to be compatible with US (FCC Part 15.247), Canadian (RSS-247), EU(EN 60950-1, EN 300 328, EN 301 489) and Australian(AS/NZS 4268) regulations for license free use in the 2.4 GHz ISM band. The MCT241 is designed for mobile applications in accordance to Part 2.1091(b).

The MCT241 is not designed for multiple antenna applications and should not be used to transmit simultaneously with any other transmitter.

OPERATION

The MCT241 is a radio transceiver module for the 2.4 GHz ISM bands. The transceiver microcontroller includes a CPU, GPI/O, a fully integrated frequency synthesizer, a power amplifier, a modulator and a receiver unit. The MCT241 microcontroller monitors the input data. The data is sent to the RF processor and then to RF circuit, and then to the antenna. The data received from antenna is sent to the microcontroller for processing. The microcontroller is responsible for the control of the entire communication. The MCT241 transceiver contains a DC regulator which generates a constant 1.8 VDC for the digital circuitry. The RF section runs on the 3.3V supply.

2.4GHz Macro transceiver

The MCT241 is Direct Sequence Spread Spectrum that can use one of 16 channels, where Channel 1 is 2.405GHZ and Channel 16 is 2.480GHZ.

2.4GHz Macro transceiver

TRANSCEIVER PICTORIAL



Description:

Before starting the test, charge the transmitter fully using the standard Micro USB charger. Press power switch to turn transmitter on.

To Power ON:

Press and hold the POWER switch for about 2 seconds, until red and green light starts to blink.

To Power OFF:

Press and hold the POWER switch for about 2 seconds, then release. Both lights will be off.

TRANSCEIVER

Power supply	3.7VDC NOMINAL
Operating temperature	0°C to +45°C
Storage temperature.....	-40°C to +60°C
RF Frequency.....	2.405-2.480 GHz
RF Transmit power (EIRP).....	100 mW
RF Receive Sensitivity	-126 dBm

2.4GHz Macro transceiver

FCC Statement

FCC Statement

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.

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 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.

Changes or modifications not expressly approved by the party responsible for compliance could void your authority to operate the equipment.

2.4GHz Macro transceiver

IC Statement

This device complies with Industry Canada's licence-exempt RSSs. 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.

Cet appareil est conforme aux CNR exemptes de licence d'Industrie Canada. Son fonctionnement est soumis aux deux conditions suivantes:

- (1) Ce dispositif ne peut causer d'interférences ; et
- (2) Ce dispositif doit accepter toute interférence, y compris les interférences qui peuvent causer un mauvais fonctionnement de l'appareil.

2.4GHz Macro transceiver

FCC and IC SAR Statement

This device meets the government's requirements for exposure to radio waves. The guidelines are based on standards that were developed by independent scientific organizations through periodic and thorough evaluation of scientific studies. The standards include a substantial safety margin designed to assure the safety of all persons regardless of age or health.

The SAR limit of USA (FCC/IC) is 1.6 W/kg averaged over one gram of tissue. Device types: MCT241 has also been tested against this SAR limit. This device has been tested and meets the RF exposure guidelines with a conservative distance 0 mm. The use of belt clips, holsters and similar accessories should not contain metallic components in its assembly. The use of accessories that do not satisfy these requirements may not comply with RF exposure requirements, and should be avoided.