

2WMMR

User Manual

Rev V1

October 27, 2013

Compliance With FCC Regulations

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 antenna.
2. Increase the separation between the equipment and device.
3. Connect the equipment into an outlet on a circuit different from that to which the device is connected.
4. Consult the dealer or an experienced radio/TV technician for help

This device complies with Part 90 of 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



The User and the Installer should be aware that changes and modifications to the equipment not expressly approved by **Telematics Wireless could void warranty and the user's authority to operate the equipment.**



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1. Introduction

The 2WMMR is a plug and play multi channel/frequency RF Transceiver unit operates at 450-470MHz ISM band.

The 2WMMR unit is designated to transceiver/collect wireless transmissions of water meter.

The 2WMMR includes module Bluetooth FCC ID S7APARANIESD1XXV2 or module WI-FI FCC ID MCQ-50M880

The 2WMMR includes the following on board interfaces which are used to send the collected data:

- TCP/IP stack and 10/100 BASE-T Ethernet connection
- USB
- RS232

2. About 2WMMR

2.1. *Front Panel*



2.2. *Rear Panel*





2.3. *FCC Label*



2.4 RF Electrical Specification

Table 2.4.1 Parameters of the Receiver

Parameter	Value
Receive frequency	Programmable 450-470 MHz
Sensitivity (BER 1E-3)	-123 dBm (for 4.8 kbps)
Modulation	4GFSK
Frequency deviation	1.2 kHz
Bit rate	4.8 kbps
Coding	NRZ/Manchester
Frequency stability (including initial stability, temperature and aging)	<0.5 ppm

Table 2.4.2 Parameters of the Transmitter

Parameter	Value
Transmit Frequency	450-470 MHz
Modulation	4GFSK
Bit rate	4.8 kbps
Chip rate	2.4 kChip/sec
Bandwidth	6.25 kHz
Frequency stability (including initial stability, temperature and aging)	<0.5 ppm
Peak Output power	35 dBm or 20dBm (programmable)
Harmonics	< - 65 dBc

2.5 Environmental Conditions

Operating Temperature: -20° C to + 85° C

Storage Temperature: -40° C to +85° C

Humidity: Up to 95%