



Water Meter Reader Model: MMR3 USER MANUAL

Revision 1.0, July 6, 2020

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1. General description

The MMR3 is a plug and play RF transceiver unit operates at 916.3MHz.

The MMR3 unit collects wireless transmissions from water meters. The water meters are compatible with Silver Spring network. The received data is saved in the internal memory or transmitted via RS232/USB to external PC.

2. External photos



MMR3- General view



MMR3- Front panel



MMR3- Rear panel

3. LED indicators

Tx mode IND red LED is lit when transmitting data.
 Rx mode IND green LED is lit when receiving mode is enable.
 Standby mode IND orange LED is lit while in standby mode.

4. Technical Data

4.1 Electrical Characteristics

Parameter	Value
Input Voltage	120VAC ,60Hz
Control interface	USB, RS232

4.2 Radio Characteristics

Transmitter	
Parameter	Value
Transmit Frequency	916.3MHz
Modulation	2FSK
Modulation Coding	Manchester
Bit rate(net data rate)	60 kbps
Peak Output power (without Antenna)	14dBm
Sensitivity (BER 1E-3)	-95 dBm

4.3 Environmental Characteristics

Operating Temperature	-30° C to + 70° C
Storage Temperature	-40° C to + 70° C
Humidity	Up to 95%

4.4 Antenna requirement

This radio transmitter 4732A-MMR31 has been approved by ISED Canada to operate with the antenna types listed below with the maximum permissible gain indicated. Antenna types not included in this list that have a gain greater than the maximum gain indicated for any type listed are strictly prohibited for use with this device.

Le présent émetteur radio 4732A-MMR31 a été approuvé par ISED Canada pour fonctionner avec les types d'antenne énumérés ci-dessous et ayant un gain admissible maximal. Les types d'antenne non inclus dans cette liste, et dont le gain est supérieur au gain maximal indiqué, sont strictement interdits pour l'exploitation de l'émetteur.

Antenna manufacturer	Model no.	Gain
Panorama	PCX-TNC-C3G	2dBi

5. Regulation Information

FCC Part 15 Class B digital device notice

The digital circuit of this device 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.

CAN ICES-3 (B)/NMB-3(B)

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

FCC and Industry Canada interference Notice

This device complies with Part 15 of FCC rules and with Industry Canada license-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 received, including interference that may cause undesired operation of the device.

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;*
- (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.*



FCC and Industry Canada Radiation Hazard Warning

WARNING! To comply with FCC and IC RF exposure compliance requirements, the device should be located at a distance of at least 20 cm from all persons during normal operation. The antennas used for this product must not be co-located or operated in conjunction with any other antenna or transmitter.

Le dispositif doit être placé à une distance d'au moins 20 cm à partir de toutes les personnes au cours de son fonctionnement normal. Les antennes utilisées pour ce produit ne doivent pas être situés ou exploités conjointement avec une autre antenne ou transmetteur.

WARNING! Changes or modifications to this equipment not expressly approved by the party responsible for compliance (ST Engineering Telematics Wireless Ltd.) could void the user's authority to operate the equipment.