

Product User Guide

RFC1000-IP69K



RFC1000-IP69K
Wireless Transceiver

Product Overview

For environments that require high pressure, high temperature washdown, MadgeTech has designed the RFC1000-IP69K. This new splash-proof transceiver can be installed directly in the wash down location, ensuring 100% communication throughout the entire process. MadgeTech has gone through extensive testing to ensure that the new RFC1000-IP69K can withstand wash down cycles using caustic chemicals, making it ideal for harsh environments. This model includes a high powered transceiver with an IP69K ingress protection rating. The RFC1000-IP69K has a substantially longer transmit range, providing better performance in occluded environments such as ovens, and refrigerators. This new The RFC1000-IP69K also includes an external antenna which is protected by a neoprene boot, allowing more flexibility with mounting positions in both orientation and proximity to metal walls.

Transmission Distance

- The RFC1000-IP69K transmits to other RFC1000-IP69Ks up to 4000 feet maximum typical outdoors/line of sight, 2000 feet maximum typical indoors/urban.
- The RFC1000-IP69K transmits to data loggers up to 2000 feet maximum typical outdoors/line of sight, 500 feet maximum typical indoors/urban.
- The RFC1000-IP69K can connect to a maximum of 64 data loggers. The RFC1000-IP69K transmits on a frequency of 2.405 GHz - 2.475 GHz.

Operating Environment

The RFC1000-IP69K is rated for use in an environment with temperatures from -20 °C to 85 °C and a humidity range of 0 %RH to 100 %RH. The device has been specifically tested to ensure its ability to resist water ingress as well as dust. The RFC1000-IP69K will withstand high pressure and high temperature wash down cycles using caustic chemicals, as the enclosure is made of Acetal plastic. The cover is made of 300 series stainless steel and the antenna is protected by a Neoprene boot. This model is ideal for areas where additional durability and a water proof rating are required. The RFC1000-IP69K ensures communication with the MadgeTech wireless loggers even in the harshest of environments.

The power supply of the RFC1000-IP69K is not rated as splash proof. Exposing the power supply to moisture will potentially damage the unit. Additional precautions should be taken by the user if the power supply will be exposed to a condensing environment.



Installation Guide

Installing the Software

The MadgeTech 4 Software makes the process of downloading and reviewing data quick and easy, and is free to download from the MadgeTech website.

1. Download the MadgeTech 4 Software on a Windows PC by going to: www.madgetech.com/software-download.
2. Locate and unzip the downloaded file (typically you can do this by right clicking on the file and selecting Extract).
3. Open the MTInstaller.exe file.
4. You will be prompted to select a language, then follow the instructions provided in the MadgeTech 4 Setup Wizard to finish the MadgeTech 4 Software installation.



Installing the USB Interface Driver

USB Interface Drivers can easily be installed on a Windows PC, if they are not already available and running.

1. Download the USB Interface Driver on a Windows PC by going to: www.madgetech.com/software-download.
2. Locate and unzip the downloaded file (typically you can do this by right clicking on the file and selecting Extract).
3. Open the Preinstaller.exe file.
4. Select Install on the dialog box.

Deploying and Activating Devices

Step 1: Plug the RFC1000-IP69K into the USB port on the base station computer. *(Additional RFC1000-IP69Ks can be used as repeaters to transmit over greater distances)*

Step 2: If using multiple RFC1000-IP69Ks plug each one into a wall outlet in the desired locations. *(If transmitting over a distance greater than 700 feet indoors or 2500 feet outdoors or there are walls/obstacles/corners that need to be maneuvered around, set up additional RFC1000-IP69Ks as needed.)*

Step 3: Verify that the data loggers are in wireless transmission mode. *(See Channel Programming steps above)*

Step 4: On a Windows PC, launch the MadgeTech 4 software program. All active data loggers will be listed in the software showing that the device(s) are recognized.

Step 5: To activate the data loggers, click on one to highlight, then click the **Claim** icon, and then click the **Start** button. Repeat this step to activate additional listed data loggers.

Channel Programming

Different wireless channels may be used to create multiple networks in one area, or to avoid wireless interference from other devices. Any MadgeTech data logger or RFC1000-IP69K wireless transceiver on the same network is required to use the same channel. If the devices are not on the same channel, the devices will not communicate with one another. The RFC1000-IP69K is programmed by default on channel 25.

CHANNEL NOTE: *MadgeTech wireless data loggers and RFC1000 wireless transceivers purchased prior to April 15, 2016 are programmed by default to channel 11. Please refer to the Product User Guide provided with these devices for instructions to change the channel selection if needed.*

Product User Guide

Configuring the Channel Settings of the RFC1000-IP69K wireless transceiver

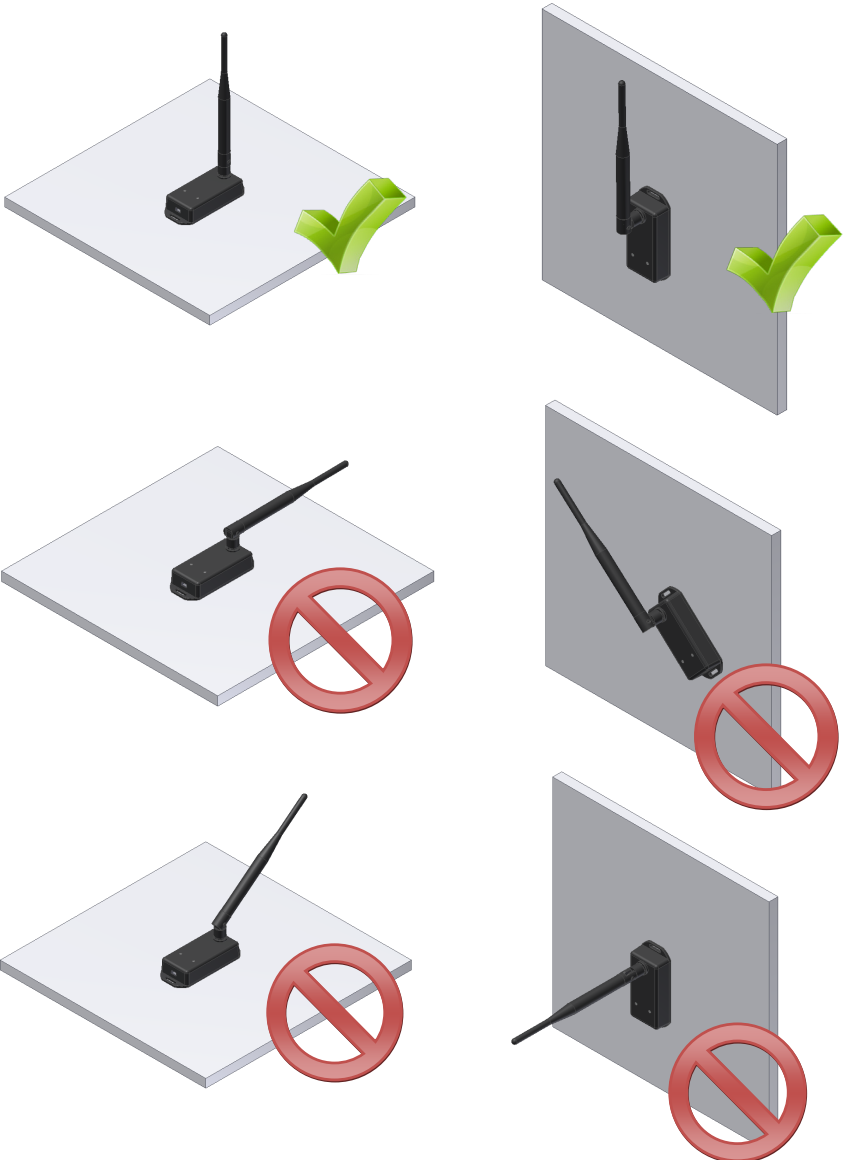
- Unplug the RFC1000-IP69K.
- Use a Phillips head screwdriver to unscrew the enclosure.
- Find the dip switches located on the front of the PCB circuit board.
- Change the dip switches to match the desired channel using the diagram above.
- Screw the enclosure back together and reconnect the RFC1000-IP69K.

The default wireless channel for MadgeTech wireless devices is channel 25. Different wireless channels may be used to create multiple networks in one area, or to avoid wireless interference from other devices. The images below show the orientations available of the switches for each channel. Channel 26 (all switches in the up position) is not supported.



Mounting Instructions

For best wireless performance, both the RFC1000-IP69K and the MadgeTech Data Loggers should be mounted in the same orientation. This usually means that the external antenna should be pointing straight up. The antenna can pivot to accommodate either a wall mount or a desk mount. The antennas of the RFC1000-IP69K should also be at least 1.5 inches away from any metal.



Compliance Information

- “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.”
- “To satisfy FCC RF Exposure requirements for mobile and base station transmission devices, a separation distance of 20cm or more should be maintained between the antenna of this device and persons during operation. To ensure compliance, operation at closer than this distance is not recommended. The antenna(s) used for this transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.”
- “This device complies 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, 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, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.”

- “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.

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.”

Interface Type	USB (to PC) / Wireless (to Data Logger)
Operating Environment	-20 °C to +85 °C, 0 %RH to 100 %RH non-condensing
LED Indicators	Red: Indicates that the device has power Green: Will blink when communicating with a wireless data logger
Enclosure Materials	Enclosure Body: Acetal Plastic Cover: 300 Series Stainless Steel Antenna Boot: Neoprene
Dimensions	Enclosure 3.4 in x 2.9 in x 1.3 in With antenna, normal to case: 3.4 in x 2.9 in x 8.8 in With antenna, laid down: 9.2 in x 2.9 in x 2.6 in
Weight	14.1 oz (400 g)
Compatible Data Loggers	RFOT, Therm•Alert, RF2000A Series
Approvals	FCC ID: OA3MRF24J40MC, IC#: 7693A-24J40MC, ETSI 300 328 (EU R&TTE)
Transmission Distance (To other RFC1000-IP69K's)	4,000 ft max. outdoors - line of sight unobstructed 1,000 ft max. indoors - typical urban environment
Transmission Distance (To data loggers)	2,000 ft max. outdoors - line of sight unobstructed 500 ft max. indoors - typical urban
Maximum number of connected data loggers	64
Ingress Protection	IP69K
Frequency	2.405 GHz - 2.475 GHz

Specifications subject to change.

See MadgeTech's terms and conditions at www.madgetech.com

Countries approved for use, purchase and distribution of the RFC1000-IP69K:

Canada, Chile, Columbia, Ecuador, Honduras, Malaysia, Mexico, Peru, Singapore, South Africa, Thailand, United States, Venezuela, Vietnam

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