

Installation and Operation Guide

It's Under Control®

ZM-24

Zigbee® Transceiver Module



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FEDERAL COMMUNICATIONS COMMISSION NOTICE

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:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the 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.

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.
2. This device must accept any interference received including interference that may cause undesired operation.



FCC ID: MMURTI1400

IC (Canada): 3166A-RTI1400



117 612 914

DECLARATION OF CONFORMITY (DOC)

The Declaration of Conformity for this product can be found on the RTI website at: www.rticorp.com/declaration

SAFETY SUGGESTIONS

Read Instructions. Read all safety and operating instructions before operating the unit.

Retain Instructions. Keep the safety and operating instructions for future reference.

Heed Warnings. Adhere to all warnings on the unit and in the operating instructions.

Follow Instructions. Follow operating instructions and instructions for use.

Heat. Keep the unit away from heat sources such as radiators, heat registers, stoves, etc., including amplifiers that produce heat.

Water and Moisture. Do not use the unit near water—for example, near a sink, in a wet basement, near a swimming pool, near an open window, etc.

Object and Liquid Entry. Do not allow objects to fall or liquids to be spilled into the enclosure through openings.

Cleaning. The unit should be cleaned only as recommended in this installation and operation guide.

Servicing. Do not attempt any service beyond that described in the operating instructions. Refer all other service needs to qualified service personnel.

Damage Requiring Service. The unit should be serviced by qualified service personnel when:

- Objects have fallen or liquid has been spilled into the unit.
- The unit does not appear to operate normally or exhibits a marked change in performance.
- The unit has been dropped or the enclosure has been damaged.

WARNING!

**TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK,
DO NOT EXPOSE THE UNIT TO RAIN OR MOISTURE.**

LIMITED WARRANTY AND DISCLAIMER

Remote Technologies Incorporated warrants its products for a period of one (1) year from the date of purchase from Remote Technologies Incorporated or an authorized Remote Technologies Incorporated distributor.

This warranty may be enforced by the original purchaser and subsequent owners during the warranty period, so long as the original dated sales receipt or other proof of warranty coverage is presented when warranty service is required. Except as specified below, this warranty covers all defects in material and workmanship in this product. The following are not covered by the warranty:

Damage resulting from:

1. Accident, misuse, abuse, or neglect.
2. Failure to follow instructions contained in this Guide.
3. Repair or attempted repair by anyone other than Remote Technologies Incorporated.
4. Failure to perform recommended periodic maintenance.
5. Causes other than product defects, including lack of skill, competence or experience of user.
6. Shipment of this product (claims must be made to the carrier).
7. Being altered or which the serial number has been defaced, modified or removed.

Remote Technologies Incorporated is not liable for any damages caused by its products or for its failure of its products to perform, including any lost profits, lost savings, incidental damages, or consequential damages.

Remote Technologies Incorporated is not liable for damages based upon inconvenience, loss of use of the product, loss of time, interrupted operation, commercial loss, any claim made by a third party or made by you for a third party.

Remote Technologies Incorporated's liability for any defective product is limited to repair or replacement of the product, at our option.

If your ZM-24 Zigbee Transceiver Module needs service, please contact Remote Technologies Incorporated by telephone, fax or E-mail for return information. **Please do not return products to Remote Technologies Incorporated without return authorization.**

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CHAPTER 1 | WELCOME

Thank you for using the ZM-24 Zigbee® Transceiver Module.

The ZM-24 Transceiver Module provides bi-directional communication between two-way enabled RTI remote controls and control processors utilizing Zigbee® wireless communication. Capable of being configured in two different modes, the ZM-24 can be hard-wired directly to a control processor as the coordinator or be used as a wireless repeater device to create an ultra-reliable, self-healing “mesh” network.

Utilizing the latest in wireless technology, the ZM-24 Zigbee® Transceiver Module is capable of more than just receiving signals - it can transmit signals as well. This creates a bi-directional communication link between Zigbee® enabled RTI control processors and handheld remote controls. Feedback, such as song meta-data or volume level from supported devices can now be viewed on the remote control. The ZM-24 is easy to install, since only one module needs to be hardwired to the control processor. This device becomes the “coordinator,” while additional “repeater” modules can be added by simply powering them from any electrical outlet within communication range of other modules. The ZM-24 units will then create a self-healing “mesh” network which adapts to changes or problems with the communication path.

IMPORTANT NOTES

Please read these important notes about the ZM-24:

- The ZM-24 should be placed in an area where it is around normal room temperature (between 60°F to 90°F).
- Avoid installing the ZM-24 in a location where it can come in contact with direct sunlight.
- Do not let the ZM-24 get wet. It should not be handled with wet hands or placed in an area where it could get wet.
- Do not subject the ZM-24 to smoke, dust, or vibrations.
- Do not disassemble the unit. Service of the ZM-24 should be performed by authorized personnel only.

Contents within the box include the following items:

- One (1) ZM-24 Radio Frequency Receiver Module.
- One (1) 1/2-wave whip antenna.
- One (1) 10 ft. (3m) hook-up wire.
- One (1) operation manual.

UNPACKING AND INSPECTION

After unpacking your new ZM-24 Zigbee® Transceiver Module, save all of the packing materials in case you ever have to ship the unit.

Thoroughly inspect the ZM-24 and packing materials for signs of damage. Report any damage to the carrier immediately. Report any equipment malfunctions to RTI or an authorized RTI distributor.

CHAPTER 2 | FEATURES

The ZM-24 provides superior quality and reliability as well as these specific features:

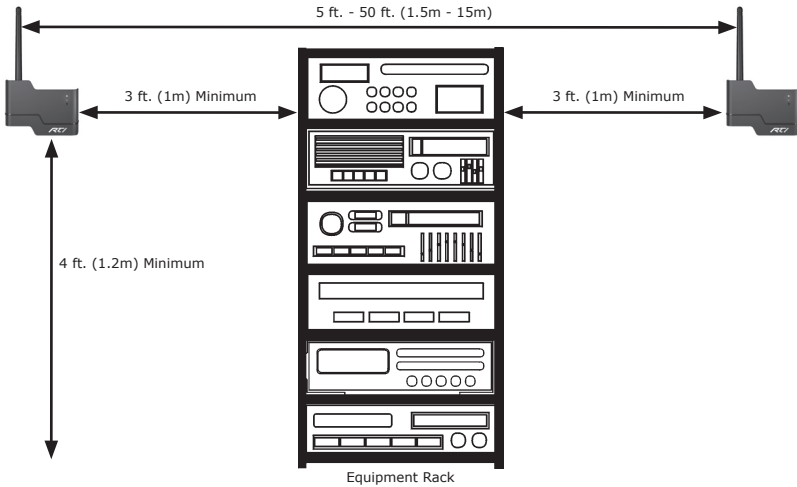
- Enables bi-directional Zigbee® communication.
- Wireless Zigbee® communication range between ZM-24 modules up to 100 feet.
- Connects to a central processor from up to 1000 feet away using standard Cat5 cable.
- Can be used in “coordinator” mode or create a self-healing mesh network by adding modules configured in “repeater” mode.
- Utilizes IEEE802.15.4 wireless Zigbee® communication at 2.4Ghz.
- Durable plastic enclosure and adjustable antenna.
- Receives power from an RTI control processor or from the included power supply.
- Easy mounting with a detachable wall bracket.

CHAPTER 3 | INSTALLATION AND OPERATION

MOUNTING

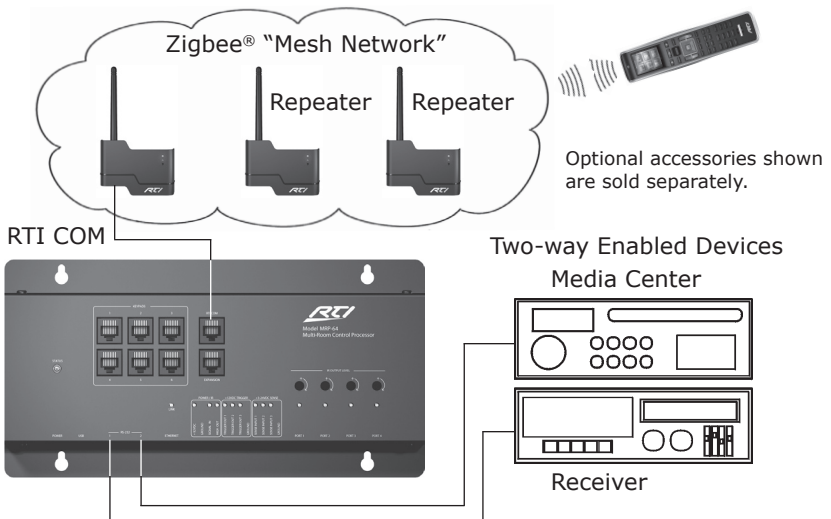
The ZM-24 can be mounted on a shelf, wall, or cabinet. See below for recommended positioning. For the best reception connect two or more ZM-24 units together. This will help eliminate RF reception drop-out due to multi-path interference.

INSTALLATION



CONNECTION OPTIONS

This diagram illustrates some of the ZM-24 connection options.



CHAPTER 4 | SPECIFICATIONS

Power	+9VDC to +16VDC, 60mA
RTI Com Port	Two-way Zigbee® Communication Port, RJ45 Connection, drives up to 1000 ft (300 m) of wire
Wireless Networking	IEEE802.15.4 Zigbee© network compliant
RF Frequency Range	2.4Ghz - 2.5Ghz
Operating Temperature	+32°F to +122°F (0°C to +50°C)
Operating Humidity	5% to 95% Non-condensing
Enclosure	High-impact molded ABS plastic, black
Mounting	Detachable bracket
Dimensions - Antenna Flat (W x H x D)	3.5" (89mm) x 4.0" (101mm) x 1.1" (28mm)
Dimensions - Antenna Extend. (W x H x D)	3.5" (89mm) x 7.25" (184mm) x 1.1" (28mm)
Weight	4 oz (113g)
Warranty	One Year (Parts & Labor)

All specifications subject to change without notice.

CHAPTER 5 | TROUBLESHOOTING

If you are having problems with your ZM-24 Transceiver Module, please read the information below before contacting technical support.

If you continue to have problems, see Chapter 7 for more information on contacting RTI technical support.

The Data LED is constantly flashing red.

- This does not necessarily indicate a problem that will effect performance. If it does, move the ZM-24 to a different area.

The Data LED never turns green.

- Make sure the ZM-24 is wired correctly to the central control system, and verify the control system is powered-up.
- Make sure the RTI universal system controller is programmed to output RF data.

The Data LED turns green when it receives a command, but the control system does not respond.

- If there is also an infrared repeater connected to the control system, make sure it is not injecting noise onto the signal line.
- Make sure the programming in the central control system matches the universal system controller.

CHAPTER 6 | SERVICE AND SUPPORT

For news about the latest updates, new product information, and new accessories, please visit our web site at:

www.rticorp.com

CONTACTING RTI

For general info, you can contact RTI at:

Tel. (952) 253-3100

Fax (952) 253-3131

info@rticorp.com

RTI TECHNICAL SUPPORT

At RTI, customer service and satisfaction is an utmost priority. If you are encountering any problems or have a question about your RTI product, please contact RTI Technical Support for assistance.

RTI provides technical support by telephone, fax or e-mail. For the highest quality service, please have the following information ready, or provide it in your fax or e-mail.

- Your Name
- Company Name
- Telephone Number
- E-mail Address
- Product model and serial number (if applicable)

If you are having a problem with hardware, please note the equipment in your system, a description of the problem, and any troubleshooting you have already tried.

If you are having a problem with software, please note what version you have installed, the operating system on your PC, a description of the problem, and any troubleshooting you have already tried.

If you are calling about a software or programming question or problem, please be at your computer when you place your call. This will considerably speed up the troubleshooting process.

For technical support or assistance with your ZM-24, software, or accessories, contact RTI at:

(952) 253-3137

support@rticorp.com

www.rticorp.com

For questions regarding service or repair of your ZM-24, contact RTI at:

(952) 253-3136

service@rticorp.com

www.rticorp.com

Please do not return products to RTI without return authorization.

CHAPTER 6 | SERVICE AND SUPPORT

Shipment of ZM-24 for Service

RTI will pay all labor and material expenses for all repairs covered by this product's warranty. If necessary repairs are not covered by warranty, or if a unit is examined which is not in need of repair, you may be charged for the repairs or examination.

If it is necessary to ship the ZM-24 for service:

- Please pack it securely (we suggest that it be insured).
- Do not include accessories such as power cords or manuals unless instructed to do so.

You must pay any shipping charges incurred in getting your ZM-24 to RTI. RTI will pay reasonable return shipping charges via a carrier of our choice to any destination within the United States if the repairs are covered under warranty.

A copy of the original dated sales receipt must be provided whenever warranty service is required. You will need this receipt to establish the date of purchase.

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