



**APPENDIX H**  
**: USER'S MANUAL**

# TRF-GE1 G Extender Owner's Manual



*Congratulations on your choice!*

*TRF-GE1 G Extender Owner's Manual © 2012 Universal Remote Control, Inc.*

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## Congratulations!

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Thank you for purchasing the Total Control TRF-GE1 G Extender for the MRX-20 Advanced Network System Controller. The TRF-GE1 G Extender is used to extend the normal operational range (30-50 feet) between the TRG-100/200 Umotion remote and the MRX-20 Advanced Network System Controller.

## Features and Benefits

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- **Extends communication, via the wired network, between a TRG-100/TRG-200, and the MRX-20 for on-screen motion control**

Substitutes the internal antenna found in the MRX-20 with its internal antenna, creating a new origin point for RF communication. This allows the on-screen motion control for the MRX-20 to work virtually anywhere in the project using a TRG-100/200 Umotion remote control.

- **Compact design for easy installation**

Easily and discretely install a TRF-GE1 G Extender. Maintain your home decor while controlling your Total Control MRX Advanced Network System Controller.

## Parts Guide

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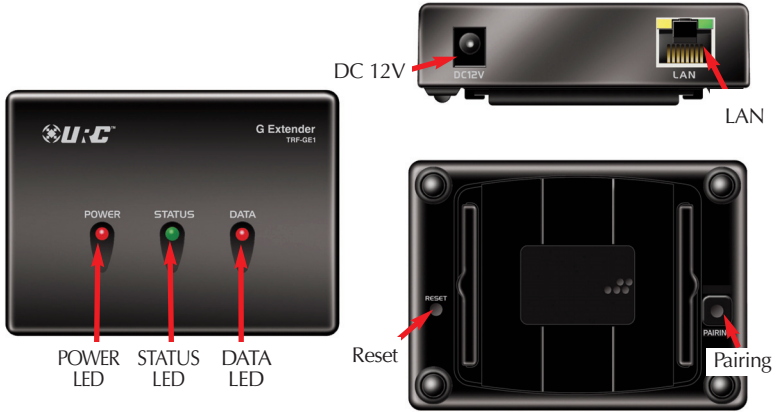
The TRF-GE1 G Extender includes:

1 - TRF-GE1 G Extender  
1 - AC Power Adapter

1 - Owner's Manual  
1 - Wall Mount and 4 Screws

## TRF-GE1 Panel Descriptions

The front, rear and bottom panel consists of:



**Power LED:** When illuminated this light indicates the TRF-GE1 is ON.

**Status LED:** The **Status LED** signifies when the TRF-GE1 is connected to the network:

- **Connected:** Illuminates **green**.
- **Not Connected:** Remains OFF.

**Data LED:** The **Data LED** flashes as the TRF-GE1 receives and transmits data.

**DC 12V (1A):** Plug in the included AC/DC adapter to power up the TRF-GE1.

**LAN:** Communicate over the network to an MRX-20 using an Ethernet cable.

**Reset:** Pressing the **Reset** button, with a stylus or paper clip, refreshes the TRF-GE1. Unplugging and re-plugging the power cable also resets the unit.

Pressing and holding the **Reset** button for 10 seconds, factory defaults the TRF-GE1 and places the unit back to its original factory condition.

**Pairing:** Place the TRF-GE1 G in pairing mode by pressing and holding the **Pairing** button for three seconds. For pairing a TRG-100/200 with a TRF-GE1 G, refer to the section: ***Pairing a TRF-GE1 G with a TRG-100/200.***

- **Entering pairing mode:** Successfully entering the pairing mode is confirmed by the following LED responses:

**Power LED:** Turns ON.

**Status LED:** Flashes orange ON and OFF.

**Data LED:** Remains OFF.

- **Confirmation of pairing:** A successful pairing between a TRF-GE1 and a TRG-100/200 is confirmed with the following LED responses:

**Power LED:** Turns ON.

**Status LED:** Flashes green ON and OFF three times.

**Data LED:** Remains OFF.

## Pairing a TRF-GE1 and a TRG-100/200

Before you can begin to use the TRF-GE1 G Extender with the TRG-100/200 Umotion remote, it is necessary to pair them. The TRF-GE1 G has a **Pairing** button on the bottom of the unit, this makes pairing possible without the use of a PC.

### Entering Pairing mode:

1. Use a stylus or paper clip to press and hold the **Pairing** button (on the bottom of the TRF-GE1 G) for three seconds.
2. When in pairing mode, press and hold the **Main** and **Sel** buttons for three seconds on the TRG-100/200 remote.
3. Once paired, both the TRG-100/200's **Umotion** button and the TRF-GE1 **Status** light will flash three times.

Keep in mind, although multiple TRG-100/200's can pair with one TRF-GE1 G Extender it is recommended that only one\* TRG-100/200 control the on-screen menu.

\*Multiple Umotion remotes paired to a single TRF-GE1 may cause the unit to respond sluggishly.

Roaming throughout your home with a TRG-100/200, is **NOT** recommended since it can only be paired with one TRF-GE1 G Extender and work within its 30 – 50 feet range.





## Specifications

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Microprocessor: ARM32-bit Cortex- M3(120MHz)

Power Supply: 12V DC 1A

RAM: 128Mbyte Mobile DDR

RF Range(radio frequency): 50 to 100 feet, depending upon the environment

RF Frequency: 2.425~2.475 GHz

NAND: 128Mbyte

FLASH: 768Kbytes

SRAM: 128 + 4 Kbyte

Weight: 3.058 oz

Size: 3.74" X 2.7" X 1.1"

Power: 12V DC 1A

## USA Limited Warranty Statement

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Your Universal Remote Control, when delivered to you in new condition, is warranted against defects in materials or workmanship as follows:

**UNIVERSAL REMOTE CONTROL, INC.** warrants this product against defects in material or workmanship for a period of one (1) year and as set forth below. Universal Remote Control will, at its sole option, repair the product using new or comparable rebuilt parts, or exchange the product for a comparable new or rebuilt product. **In the event of a defect, these are your exclusive remedies.**

This Limited Warranty covers only the hardware components packaged with the Product. It does not cover technical assistance for hardware or software usage and it does not cover any software products whether or not contained in the Product; any such software is provided "AS IS" unless expressly provided for in any enclosed software Limited Warranty.

To obtain warranty service, you must deliver the product, freight prepaid, in its original packaging or packaging affording adequate protection to Universal Remote Control at the address provided in the Owner's Manual. **It is your responsibility to backup any macro programming, artwork, software or other materials that may have been programmed into your unit. It is likely that such data, software, or other materials will be lost during service and Universal Remote Control will not be responsible for any such damage or loss.** Adated purchase receipt, Bill of Sale, Installation Contract or other verifiable Proof of Purchase is required. For product support and other important information visit Universal Remote Control's website: <http://www.UniversalRemote.com> or call the Customer Service Center (914) 835-4484.

This Limited Warranty only covers product issues caused by defects in material or workmanship during ordinary consumer use. It does not cover product issues caused by any other reason, including but not limited to product issues due to commercial use, acts of God, third-party installation, misuse, limitations of technology, or modification of or to any part of the Universal Remote Control product. This limited Warranty does not cover Universal Remote Control products sold as USED, AS IS, REFURBISHED, so-called "B STOCK" or consumables (such as batteries). This Limited Warranty is invalid if the factory-applied serial number has been altered or removed from the product. This Limited Warranty is valid only in the United States of America. **This Limited Warranty specifically excludes products sold by unauthorized resellers.**

**LIMITATION OF REMEDIES**

UNIVERSALREMOTE CONTROL SHALL NOT BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES FOR BREACH OF ANY EXPRESS OR IMPLIED WARRANTY OR CONDITION ON THIS PRODUCT. IN NO EVENT SHALL UNIVERSAL REMOTE CONTROL BE LIABLE, WHETHER IN CONTRACT OR IN TORT (INCLUDING NEGLIGENCE) FOR DAMAGES IN EXCESS OF THE PURCHASE PRICE OF THE PRODUCT, ACCESSORY OR SOFTWARE, OR FOR ANY INDIRECT, INCIDENTAL, SPECIAL OR CONSEQUENTIAL DAMAGES OF ANY KIND, OR LOSS OF REVENUE OR PROFITS, LOSS OF BUSINESS, LOSS OF INFORMATION OR DATA, SOFTWARE OR APPLICATIONS OR OTHER FINANCIAL LOSS ARISING OUT OF OR IN CONNECTION WITH THE ABILITY OR INABILITY TO USE THE PRODUCTS, ACCESSORIES OR SOFTWARE TO THE FULL EXTENT THESE DAMAGES MAY BE DISCLAIMED BY LAW.

EXCEPT TO THE EXTENT PROHIBITED BY APPLICABLE LAW, THERE IS NO OTHER WARRANTY EXPRESSED OR IMPLIED. UNIVERSAL REMOTE CONTROL WILL NOT BE HELD RESPONSIBLE FOR STATEMENTS MADE BY OTHERS CONCERNING THE MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ON THIS PRODUCT. Some states or jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, or allow limitations on how long an implied warranty lasts, so the above limitations or exclusions may not apply to you. This Limited Warranty gives you specific legal rights and you may have other rights which vary from state to state or jurisdiction to jurisdiction.

REV020708

## Federal Communication Commission Interference Statement

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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 radiofrequency 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 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.

### Warning!

Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

Note : The manufacturer is not responsible for any Radio or TV interference caused by unauthorized modifications to this equipment. Such modifications could void the user's authority to operate the equipment.

### FCC Caution

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.

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

### Federal Communication Commission (FCC) Radiation Exposure Statement

The device and the antenna for this device must be installed to ensure a minimum separation distance of 20 cm more from a person's body. Other operating configurations should be avoided.

# Declaration of Conformity

Company Name : OH SUNG ELECTRONICS CO., LTD.  
 Company Address : #181 GONG DAN-DONG, GUMI, GYEONG BUK,  
 REPUBLIC OF KOREA  
 Contact Information : Phone: +82-54-468-7281, Fax: +82-54-461-8368  
 Brand Name : UNIVERSAL remote control  
 Product Name : BASE STATION  
 Model Name : TRF-GE1

This product herewith complies with the requirements of EMC Directive (2004/108/EC) and R&TTE Directive(1995/5/EC) issued by the Commission of the European Community

Compliance with these directives implies conformity to the following European Community

■ EMC Directive

- EN 55022 (2010)
- EN 55024 (2010)
- EN 61000-3-2 (2006) + A1 (2009) + A2 (2009)
- EN 61000-3-3 (2008)

■ R&TTE Directive

- EN 60950-1 (2006) + A11 (2009) + A1 (2010) + A12 (2011)
- ETSI EN 301 489-1 V1.9.2 (2011), ETSI EN 301 489-17 V2.2.1 (2012)
- ETSI EN 300 328 V1.7.1 (2006)
- EN 50385 (2002)

List of test reports and/or certificate verified compliance with the standards above

■ EMC Directive

- Report No.
- Testing Laboratory : Gumi College EMC Center

■ R&TTE Directive

- Certificate No.
- Certificate Body : SIEMIC (No. 2200)

Date of issue : March 16, 2012

Name and signature of authorized person : Hak-Ki Kim  
 General Manager  
 OH SUNG ELECTRONICS CO., LTD.



















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