

It's Under Control®

T1-B

Universal System Controller

Operation Guide



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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.



IC (Canada): 3166A-RTI1100



DECLARATION OF CONFORMITY (DOC)

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

BATTERY DISPOSAL



For environmental reasons, your T1-B Universal System Controller uses “environmentally sound” Lithium-ion rechargeable batteries. These batteries do not contain any poisonous heavy metals that can damage the environment.

In the interest of recycling, please do not dispose of these batteries in the household waste at the end of their useful life. Instead, dispose of them at an appropriate collection site.

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.

Do Not Open Battery Compartment. This device contains Lithium-Ion or Lithium-Polymer batteries. Batteries should only be replaced by an authorized service center or trained installer.

Power Sources. Connect the unit only to a power supply of the type described in the operating instructions, or as marked on the unit.

Power Cord Protection. Route power supply cords so that they are not likely to be walked on or pinched by items placed on or against them, paying particular attention to the cord plugs at power receptacles and at the point at which they exit from the unit.

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.

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:

- The power supply cord or the plug has been damaged.
- Objects have fallen or liquid has been spilled into the unit.
- The unit has been exposed to rain.
- 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

Remote Technologies Incorporated warrants its products for a period of one (1) year (90 days only for included battery packs) 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 T1-B Universal System Controller 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.

DISCLAIMER

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CHAPTER 1 | WELCOME

Thank you for purchasing the T1-B Universal System Controller.

The T1-B is the second generation of RTI's popular T1 universal system controller. Completely customizable and programmable, the T1-B allows all other factory remote controls to be combined into one simple, ergonomic user interface providing powerful one-handed system control. Featuring a sleek new industrial design and perfect assortment of keypad buttons for commonly used functions, the T1-B can operate today's sophisticated media system, no matter how complex, at an affordable price.

While the T1-B is perfect for any media room, it is powerful enough to control virtually any aspect of the home or office. Buttons can be individually programmed to control devices or execute multi-step macros for complex installations involving many components. Source buttons can be custom labeled to match the device being controlled for more intuitive control. The integrated tilt switch, coupled with a Lithium-Ion battery and charging dock insure hours of uninterrupted control.

When other RTI devices are employed, the T1-B is capable of RF transmission through walls and cabinets, RS-232 control, contact closures, power sensing and much more. Whether used as a standalone device or integrated into a complete RTI control solution, the T1-B will provide powerful and intuitive control of any electronics system - from simple to sophisticated.

FEATURES

The T1-B provides superior quality and reliability as well as these features:

- Comfortable ergonomic design permits effortless, one-handed operation.
- Tilt switch can automatically turn on the backlight when picked up.
- Eight source and four general purpose assignable/programmable keypad buttons with keycap labels.
- Forty assignable/programmable keypad buttons.
- Intuitive layout of keypad buttons for commonly used functions.
- Transmits IR and RF (or both - on a single button press!).
- Optional RF receiver allows you to transmit through walls, cabinets, etc.
- System includes a Lithium-Ion battery and docking station.
- Docking station backlight may be disabled.
- Extremely wide IR transmitting frequency range.
- Optional 'Voltage' and 'Video' sensing modules to monitor power status of equipment when used with certain RTI processors.
- Optional interface for RS-232 controlled equipment when used with certain RTI processors.
- Non-volatile Flash memory stores your system configuration even when power is not present.
- Field upgradable firmware.
- USB Programming.

CHAPTER 1 | WELCOME

UNPACKING AND INSPECTION

After unpacking your new T1-B Universal System Controller, save all of the packing materials in case you ever have to ship the unit.

Thoroughly inspect the T1-B and packing materials for signs of damage. Report any damage to the carrier immediately. Report any equipment malfunctions to Remote Technologies Incorporated or an authorized Remote Technologies Incorporated distributor.

PRODUCT CONTENTS

Contents within the box include the following items:

- One (1) T1-B universal system controller
- One (1) Docking station.
- One (1) Universal power supply for docking station
- One (1) Operation guide.
- Five (5) Keycap clusters (32 keycaps per cluster).
- One (1) Wall-mount bracket.
- Three (5) Mounting screws for wall-mount bracket.
- Two (2) Drywall anchors.

CHAPTER 2 | INTRODUCTION

IMPORTANT NOTES

Please read these important notes about the T1-B:

- The T1-B should be placed in an area where it is around normal room temperature (between 60° F to 90° F).
- Do not let the T1-B get wet. It should not be handled with wet hands or placed in an area where it could get wet.
- Do not subject the T1-B to smoke, dust, or vibrations.
- Only use the power supply that is provided with the T1-B. Using the wrong type of power supply may result in damage to the battery or electronic components.
- Do not disassemble the unit. Service of the T1-B should be performed by authorized personnel only.

COMPATIBILITY

The T1-B and *Integration Designer*® software are compatible with infrared (IR) commands with carrier frequencies between 15KHz and 460KHz, as well as those commands that do not use a carrier. This covers virtually all of the remotes that exist to date.

SOFTWARE REQUIREMENTS

The recommended minimum system requirements needed to run the *Integration Designer*® software are as follows:

- Windows XP®, Windows Vista® or later version of Microsoft operating system.

CLEANING

To clean your T1-B, lightly dampen a lint-free cloth with a mild detergent, and wipe the keypad and outer surfaces.

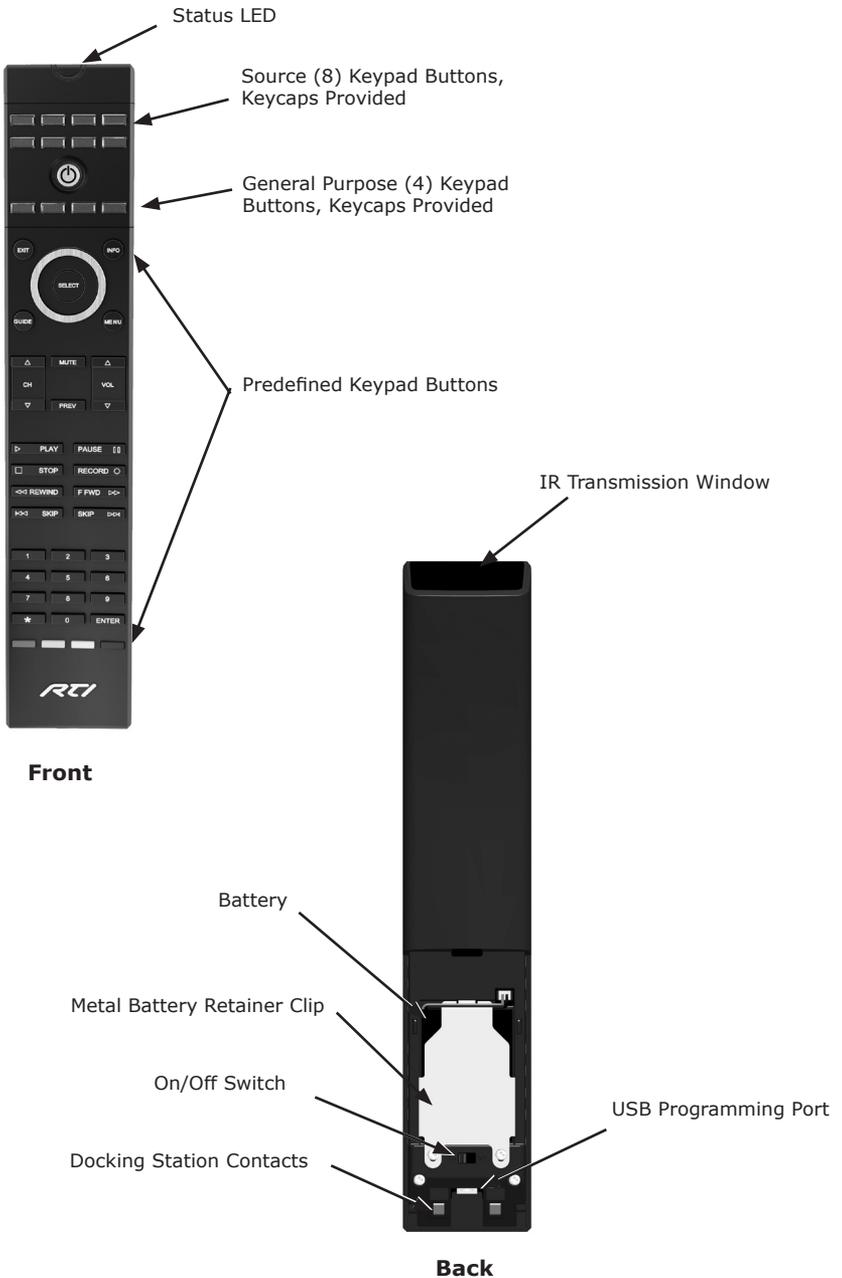
BATTERY AND DOCKING STATION

The T1-B uses a Lithium-Ion rechargeable battery. This battery does not exhibit any type of "Memory Effect" from being charged too often. Since the T1-B can safely be charged after each use, a docking station is included for convenience. If left out of the docking station, the T1-B will remain in sleep mode for 1 – 2 months before shutting down. At that point the battery must be recharged.

If the T1-B battery capacity is reduced to approximately one hour of remaining run-time, the Status LED will illuminate red while the unit is powered-up.

The T1-B Docking Station can be placed on a flat surface such as a shelf or table, or it can be mounted to a wall using the included mounting bracket. The docking station LED illuminates red to indicate a charge in progress. The LED will illuminate blue when the battery in the unit is fully charged or does not need to be charged, unless the backlight dip switch located on the bottom of the docking station is set to the "off" position. A fully discharged battery will take approximately 2-4 hours to completely re-charge.

CHAPTER 2 | INTRODUCTION

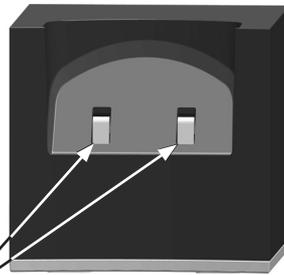


CHAPTER 2 | INTRODUCTION

T1-B in Docking Station

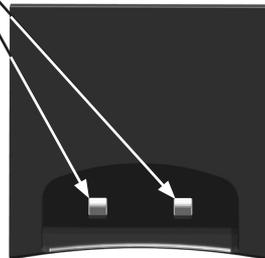


Docking Station Front



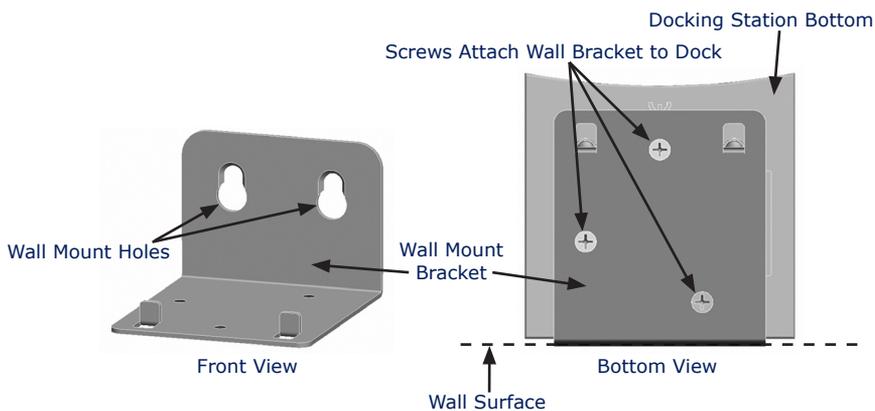
Charge Contacts

Docking Station Top

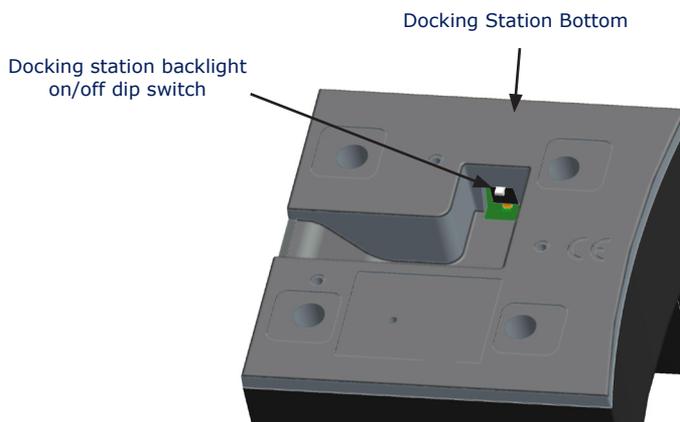


CHAPTER 2 | INTRODUCTION

Docking Station Wall Mount Bracket



Docking Station Backlight On/Off Adjustment



CHAPTER 3 | OPERATION

GETTING STARTED

NOTE: The following steps for initial installation including removing the battery door should be performed by an authorized service center or trained installer only.

The T1-B is shipped with the battery plugged in. The installer should turn on the power switch.

The T1-B is turned-on by touching any keypad button. If the tilt sensor is enabled, picking up the unit will also turn it on.

THE SOURCE BUTTONS

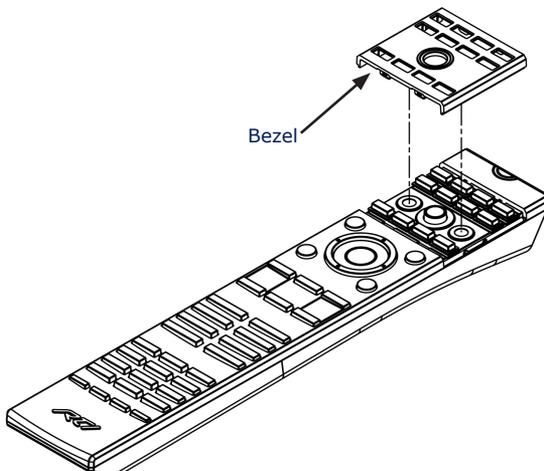
The eight source buttons at the top of the T1-B keypad have a special function, so they behave differently from the other buttons. These buttons are used to select the active source "page." Whenever a source button is selected, all of the other buttons on the keypad will switch to the programming associated with that page. In order to indicate the active page, a red LED is always illuminated more brightly behind one of the source buttons.

Despite their special function, the source buttons can be programmed to run commands or macros in the same way that the other buttons can.

USING THE KEYCAP LABELS

The T1-B includes five sets of 32 keycaps that include labelling for sources and functions.

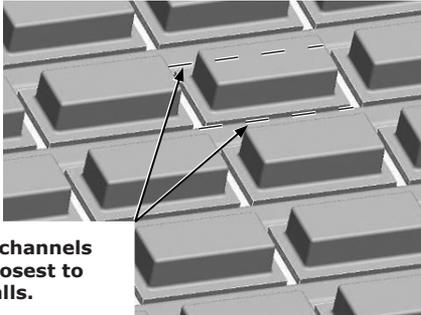
Prior to applying the keycap labels, remove the bezel from the T1-B. The bezel is held on with magnets.



CHAPTER 3 | OPERATION

Using a scissors, individually cut-out the keycaps that will be used:

After the keycap is cut out from one of the sets, press it over an empty keycap



Cut along the channels that are the closest to the keycap walls.

button. Make sure to press down firmly on the keycap until it is firmly seated. Note: the keycaps can be permanently secured by using an adhesive that bonds to silicon rubber. The following instant adhesive glue works well and is readily available:

Silicon Adhesive: Loctite PRISM® 401 (p/n 40104)
U.S. Resellers: Contact East: # 173-606
 McMaster-Carr: # 74765A63
 Grainger: # 3KE58

Follow these steps to apply the Loctite #401 adhesive:

1. Apply a thin layer of the adhesive to the entire top surface of the desired keycap button.
2. Press the desired keycap over the button.
3. Press down firmly on the keycap for 15 seconds.

Repeat these steps for each keycap on the T1-B. When finished applying keycaps, replace the bezel on the T1-B.

PROGRAMMING THE T1-B

The T1-B is programmed using RTI's *Integration Designer*® software.

A PC running Windows XP®, Windows Vista® or higher with a USB port is required. The required USB cable is included with the RTI IR-PRO dealer kit.

Note: The T1-B will not operate normally while connected to a PC's USB port. Make sure you disconnect it from the computer to navigate pages or transmit commands. In addition, the T1-B will not be able to sync with a computer's USB port while it is transmitting a command or running a macro.

CHAPTER 4 | SPECIFICATIONS

Power	3.6 VDC, 950mAh Lithium-Ion Battery Pack
Power Management	Automatic On/Off (tilt switch)
Infrared Control Range	30 feet (9.1 meters) @ 60 degrees
Infrared Frequency Transmission Range	15 kHz - 460 kHz
Radio Frequency Control Range	Up to 100 feet (30.5 meters) with optional System Interfaces/Processors
Radio Frequency Carrier	433 MHz
Operating Temperature	+32° F to +122° F (0° C to +50° C)
Operating Humidity	5% to 95% Non-condensing
Backlight	Blue LED, Red LED
Nominal Run Time on Full Charge	3 hours continuous use (20 to 30 days on average use)
Standby Time on Full Charge	30 days
Battery Charge Time	3 to 4 hours
Total System Memory	256K Flash (non-volatile) memory
Device Capability	Total number of devices is limited only by memory
Macro Capability	Unlimited steps per macro. Total number of macros is limited only by memory Macro capability on every button
Communications	USB programming port
Dimensions (L x W x D)	10.0 in (254mm) x 1.9 in (48mm) x 1.0 in (25mm)
Enclosure	High-impact molded ABS plastic
Weight	8.7 oz. (246 g) with battery pack
Warranty	One Year (Parts & Labor) / 90 days on battery

All specifications subject to change without notice.

CHAPTER 5 | TROUBLESHOOTING

If you are having problems with your T1-B Universal System Controller, please read the information below before contacting technical support.

If you continue to have problems, see Chapter 6 for more information on contacting RTI technical support.

USB COMMUNICATION PROBLEMS

- Make sure the battery pack connector is attached properly and the battery is charged.
- Verify that your PC is using Windows XP® or higher. The *Integration Designer™* software requires a USB device driver that may not be installed on earlier versions of Windows.
- Make sure that both ends of the USB cable are connected securely.
- Make sure the PC detects the presence of the T1-B. If it doesn't, unplug the USB cable, wait for about ten seconds, and plug it in again.
- If the download fails after some data has been transferred, try resending the program.

IR CODE PROBLEMS

- If you are using an IR repeater system, make sure it is working correctly with the original OEM remote. If not, you will need to troubleshoot the IR repeater system.
- If you are still having problems, try adjusting the IR code "Minimum Repeats" value in the *Integration Designer™* programming software.
- If the IR code is executed inside a macro that contains multiple IR codes, try inserting a small time delay before the problem code. If there already is a delay, try increasing it.

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 you computer when you place your call. This will considerably speed up the troubleshooting process.

For technical support or assistance with your T1-B, software, or accessories, contact RTI at:

(952) 253-3137

support@rticorp.com

www.rticorp.com

For questions regarding service or repair of your T1-B, 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 T1-B 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 T1-B Universal System Controller 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 T1-B Universal System Controller 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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