

# TSR-302

## Handheld Touch Screen Remote

- > Advanced handheld wireless remote
- > Rugged, easy-grip ergonomic design
- > Fingerprint-resistant silk finish
- > Fully programmable functionality
- > Backlit, soft-feel tactile buttons
- > 2.8" capacitive color touch screen display
- > Smart Graphics™ support<sup>[9]</sup>
- > Voice recognition capability<sup>[1,2]</sup>
- > High-performance H.264 streaming video<sup>[2]</sup>
- > Rava® SIP intercom and phone technology<sup>[2]</sup>
- > Customizable audio feedback
- > On-screen keyboard and mouse
- > Customizable screensaver
- > Built-in microphone and speaker
- > Dual-mode RF wireless performance — Extended Range 2.4 GHz RF plus Wi-Fi®<sup>[7]</sup>
- > Instant-Waking® behavior — like an IR remote with all the benefits of 2-way RF!
- > Supports roaming for extended wireless coverage<sup>[6]</sup>
- > User-replaceable Li-Polymer battery pack
- > Inductive charging technology
- > Includes table dock charger<sup>[8]</sup>



The Crestron® TSR-302 Handheld Touch Screen Remote is an advanced wireless controller, engineered to deliver ultimate performance, reliability, and ease of use for home theater, whole-house control, and multimedia presentation. Ruggedized for durability and wrapped in a silky smooth, easy-grip housing, the TSR-302 offers exceptional comfort and ergonomics for hours of one-handed use. Dual-mode wireless performance with roaming capability assures dependable connectivity throughout the home or workplace.

The TSR-302's backlit, soft-feel buttons provide positive tactile response and clear visibility under all lighting conditions. Its high-contrast 2.8" capacitive touch screen with Smart Graphics™ affords completely customizable control over audio, video, lighting, shades, climate, security, and other technologies. Scrolling menus of media titles and channel presets make it quick and easy to find and select any TV channel, video title, or music track. Additional advanced features include the abilities to control any function using voice commands, view security cameras and other video sources, and communicate using built-in intercom and phone capabilities.<sup>[1,2]</sup>

### Smart Graphics™

Crestron touch screens use Smart Graphics to deliver the ultimate user experience with unparalleled efficiency and functionality. Smart Graphics enables your Crestron system programmer to swiftly create a dynamically rich user interface that is custom tailored to your needs using fluid gesture-driven controls, kinetic effects, animated feedback, rich metadata, embedded apps and widgets, customizable themes, and streaming video. Using Smart Graphics, the TSR-302 offers an engaging and intuitive touch

screen experience, providing easy access to all your favorite channels, media titles, weather and other useful information, and real-time status display of lighting levels, temperature settings, door locks, and other technologies.<sup>[1]</sup>

### Backlit Tactile Buttons

A full complement of buttons provides immediate access to everything you need to watch TV or listen to music. A press of any button returns a natural, positive tactile response for effortless use. Each button is clearly labeled using familiar text and icons for intuitive operation. Adjustable button backlighting affords excellent legibility in darkened rooms. Every button on the TSR-302 is fully programmable to deliver precise and predictable behavior, whether simply adjusting audio volume and flipping through channels, controlling a DVR or DVD player, navigating onscreen setup menus, or operating a pan/tilt camera.

### Voice Recognition

Some things are easier said than done, so why not just *say* what you want and let Crestron *do* it for you? With built-in voice recognition, the TSR-302 provides the ability to use spoken commands to control virtually anything. Voice recognition can be used to quickly turn devices on or off, select and play a specific media title or playlist, change the channel, choose a lighting scene, lock the doors, arm the security system, or enter a password. Simply press the Voice Recognition button on the touch screen and say a command and Crestron does the rest.<sup>[1,2]</sup>

### Streaming Video

High-performance streaming video capability makes it possible to view security cameras and other video sources right on the TSR-302's touch screen display. Native support for H.264 and MJPEG formats allows the TSR-302 to display live streaming video from an IP camera, a streaming server (Crestron [CEN-NVS200](#), [DM-TXRX-100-STR](#), or similar<sup>[3]</sup>), or a [DigitalMedia™](#) switcher.<sup>[2]</sup>

# TSR-302 Handheld Touch Screen Remote



## Rava® SIP Intercom

[Rava SIP Intercom Technology](#) enables hands-free VoIP communication with other Rava-enabled touch screens and door stations, supporting 2-way intercom, video intercom<sup>[4]</sup>, and paging. VoIP phone capability is also possible through integration with a SIP-compatible IP phone system or SIP server, allowing hands-free telephone functionality complete with speed-dialing, caller ID, custom ringers, and other enhancements. Built-in echo cancellation affords full-duplex performance for clear, seamless voice communication using the TSR-302's integrated microphone and speaker.<sup>[2]</sup>

## On-Screen Keyboard & Mouse

On-screen multi-language keyboard and mouse capabilities provide for entry of passwords, URLs, and text search items, and enable the TSR-302's touch screen to be used as a wireless mouse touchpad to control a computer running TouchPoint® Virtual Mouse & Keyboard Software ([VMK-WIN](#)).

## Audio Feedback

Customized audio files can be loaded on the TSR-302 to add personalized sounds, button feedback, and voice prompts.

## Dual-Mode Wireless

To deliver the ultimate in wireless touch screen performance and functionality, the TSR-302 employs a combination of Crestron Extended Range 2.4 GHz RF (ER) and Wi-Fi® wireless technologies.

- **Extended Range RF (Required)** – Primary functionality is supported via Crestron ER (Extended Range) wireless communications, providing seamless control with true feedback using the TSR-302's tactile buttons and basic touch screen objects. A single ER gateway<sup>[3]</sup> enables ultra dependable wireless performance at a range of up to 200 feet (60 m) indoors.<sup>[5]</sup> Roaming capability allows for even greater coverage using up to eight ER gateways.
- **Wi-Fi (Optional)** – While the TSR-302 can be operated using only ER wireless, advanced wireless capabilities such as streaming video, intercom, voice recognition, and dynamic graphics can only be supported using both ER and Wi-Fi together (dual-mode). Crestron enhanced Wi-Fi wireless performance achieves a remarkable 50 feet (15 m) omnidirectional coverage indoors.<sup>[5]</sup> For Wi-Fi networks with multiple access points, the TSR-302 supports the ability to hand off communication from one access point to another if the active connection is lost.<sup>[6]</sup> The choice of 802.11 b, g, and n protocols affords reliable, high-speed wireless performance in virtually any RF environment. For optimal Wi-Fi performance, Crestron offers the [CEN-WAP-1500](#) High Power Dual-Band Wireless Access Point.

**IMPORTANT: EVERY INSTALLATION OF THE TSR-302 REQUIRES A CRESTRON ER WIRELESS GATEWAY TO ENABLE ESSENTIAL WIRELESS CAPABILITY. THE TSR-302 WILL NOT WORK WITH WI-FI ALONE.<sup>[7]</sup>**

## Instant-Waking®

To ensure the most transparent user experience possible, the TSR-302 has been engineered to wake instantly at the press of a button or touch of the touch screen. Button presses are sent immediately, just like an IR remote but with none of IR's limitations. So spontaneous actions like muting the audio, pausing the video, or changing the channel can be executed on-the-fly with just a single button press.

## Extended Battery Life

With such powerhouse performance, one might assume the TSR-302 to be power-hungry. In fact, employing intelligent power management and robust Lithium Polymer battery technology, the TSR-302 can actually deliver several days of typical use between charges.

## Table Dock Charger

The TSR-302 includes a stylish, low-profile table dock for charging its internal battery. Inductive charging technology eliminates any exposed electrical contacts on the charging dock or remote, affording a cleaner feel and appearance while eliminating any risk of worn out contacts. When placed on the table dock, the TSR-302 remains fully operational while charging.<sup>[8]</sup>

# TSR-302 Handheld Touch Screen Remote

## SPECIFICATIONS

*Note: See also TSR-302-DS for additional specifications.*

### Touch Screen Display

**Display Type:** TFT Active matrix color LCD  
**Size:** 2.8 inch (72 mm) diagonal  
**Aspect Ratio:** 3:4 QVGA (portrait orientation)  
**Resolution:** 240 x 320 pixels  
**Brightness:** 350 nits (cd/m<sup>2</sup>) typical  
**Contrast:** 500:1 typical  
**Color Depth:** 16-bit, 64k colors  
**Viewing Angle:** ±75° horizontal, +75/-55° vertical  
**Illumination:** LED Backlit  
**Touch Screen:** Projected Capacitive

### Buttons

**Power, Home:** (2) Programmable pushbuttons with icons for power and home; holding both buttons simultaneously for >10 seconds initiates hardware reset  
**Functions:** (7) Programmable pushbuttons labeled for MENU, GUIDE, INFO, MUTE, EXIT, LAST, and DVR  
**VOL, CH:** (2) Programmable rocker buttons with icons for volume up/down and channel up/down  
**Navigation Pad:** (1) Programmable 5-way thumbpad with up, down, left, and right arrow buttons, and center SELECT button  
**Transport:** (8) Programmable pushbuttons with icons for rewind, play, forward, previous, pause, next, stop, and record  
**Keypad:** (12) Programmable pushbuttons labeled for alphanumeric entry, CLEAR, and ENTER  
**Multi-Function Buttons:** (4) Programmable pushbuttons color-coded red, green, yellow, and blue for context-dependent functions  
**Illumination:** White LED backlighting behind all buttons, adjustable intensity

### Memory

**LPDDR2 RAM:** 1 GB  
**Flash:** 4 GB  
**Maximum Project Size:** 512 MB

### Graphics Engine

Supports Smart Graphics™ [9], multi-language on-screen keyboard, screensaver

### Languages

**Smart Graphics:** Arabic, Chinese (Simplified), Chinese (Traditional), Czech, Danish, Dutch, English (UK), English (US), Finnish, French, German, Greek, Hebrew, Hungarian, Italian, Japanese, Korean, Norwegian, Polish, Portuguese, Portuguese (Brazilian), Romanian, Russian, Slovak, Spanish, Swedish, Thai  
**On-Screen Keyboard:** Arabic, Chinese (Simplified), Croatian, Czech, Danish, Dutch, English (UK), English (US), Finnish, French (Canada), French (Switzerland), German, Hebrew, Hungarian, Italian, Japanese, Norwegian

Bokmal, Polish, Portuguese, Russian, Serbian, Spanish, Swedish, Turkish  
**Voice Recognition:** Afrikaans (South Africa); Chinese, Mandarin (China, Simplified); Chinese, Mandarin (Hong Kong, Simplified); Chinese, Mandarin (Taiwan, Traditional); Chinese, Yue (Hong Kong, Traditional); Czech (Czech Republic); Dutch (Netherlands); English (Australia); English (Canada); English (Generic); English (India); English (New Zealand); English (South Africa); English (UK); English (US); French (France); German (Germany); isiZulu (South Africa); Italian (Italy); Japanese (Japan); Korean (South Korea); Polish (Poland); Portuguese (Brazil); Russian (Russia); Spanish (Spain); Turkish (Turkey)

### Wireless Communication (Primary) – Extended Range RF [7]

**RF Transceiver:** 2-way RF, 2.4 GHz ISM Channels 11-26 (2400 to 2483.5 MHz), IEEE 802.15.4 compliant  
**Transmitting Power:** 75 mW (Ch.11), 100 mW (Ch.12-23), 15 mW (Ch.24), 3.5 mW (Ch.25), 1 mW (Ch.26) @ High Setting; 1 mW (Ch.11-25), 0.5 mW (Ch.26) @ Low Setting  
**Range (typical):** 100 to 200 feet (30 to 60 m) maximum indoor, 1000 feet (300 m) outdoor, subject to site-specific conditions  
**Gateway:** Requires a Crestron Extended Range (ER) Wireless Gateway [3]  
**Roaming:** Supports roaming between a maximum of eight gateways

### Wireless Communication (Secondary) – Wi-Fi® [7]

**Transceiver:** IEEE 802.11b/g/n Wi-Fi (2.4 GHz 2-way RF), static IP or dynamic IP via DHCP  
**Security:** 64 & 128-bit WEP, WPA™ & WPA2™-PSK with TKIP & AES  
**Range:** Up to 50 feet (15 m), subject to site-specific conditions  
**Gateway:** Requires a CEN-WAP-1500 or similar 802.11b/g/n wireless access point and Ethernet-enabled Crestron control system



TSR-302-B – Shown with TSR-302-DS-B dock (included)

# TSR-302 Handheld Touch Screen Remote

**Handoff:** Supports handoff between a maximum of four Wi-Fi wireless access points<sup>[6]</sup>

## Wired Communications

**USB:** USB client for console only

## Video

**Streaming Formats:** H.264 (MPEG-4 part 10 AVC) or MJPEG, up to 1280x720 @ 15 fps<sup>[2]</sup>

## Audio

**Features:** Built-in microphone and speaker, Rava<sup>®</sup> SIP Intercom<sup>[2]</sup>, multi-language voice recognition<sup>[1,2]</sup>

**Audio Feedback Formats:** MP3

## Connectors

**USB:** (1) Micro-B USB console port behind battery compartment cover, for installer use only

## Battery

**Rechargeable Battery:** Li-Polymer, 3.7 Volt, 2260 mAh, model TSR-302-BTP, user replaceable

**Usage per Charge:** 4 hours continuous at full brightness

**Charging Time:** 3 hours

## Power Requirements

**Power Pack:** 0.9 Amp @ 19 Volts DC;  
100-240 Volts AC, 50/60 Hz power pack, model PW-1909WU included

*Note: Power connection made via the charging dock<sup>[8]</sup>*

## Environmental

**Temperature:** 32° to 104° F (0° to 40° C);  
50° to 104° F (10° to 40° C) while charging

**Humidity:** 10% to 90% RH (non-condensing)

## Construction

Ruggedized plastic, silk finish, soft-feel rubberized buttons, inductive charging (no exposed electrical contacts)

## Dimensions

**Height:** 1.45 in (37 mm)

**Width:** 2.34 in (60 mm)

**Depth:** 10.08 in (256 mm)

## Weight

9.4 oz (266 g)

## MODELS & ACCESSORIES

### Available Models

**TSR-302-B:** Handheld Touch Screen Remote, Black

### Included Accessories

**TSR-302-DS-B:** Table Dock for TSR-302, Black (Qty. 1 included)

**TSR-302-BTP:** Battery Pack for TSR-302 (Qty. 1 included)

**PW-1909WU:** Wall Mount Power Pack 19VDC, 0.9A, Universal (Qty. 1 included)

### Available Accessories

**CEN-GWEXER:** infiNET EX<sup>®</sup> and ER Wireless Gateway

**MC3:** 3-Series Control System<sup>®</sup> w/infiNET EX<sup>®</sup> & ER Wireless Gateway

**DIN-AP3MEX:** DIN Rail 3-Series<sup>®</sup> Automation Processor w/infiNET EX<sup>®</sup> & ER Wireless Gateway

**CEN-WAP-1500:** High Power Dual-Band Wireless Access Point

**CEN-NVS200:** Network Video Streamer

**DM-TXRX-100-STR:** HD Streaming Transmitter/Receiver

**SW-VMK-WIN:** TouchPoint<sup>®</sup> Virtual Mouse & Keyboard Software for Windows<sup>®</sup>

### Notes:

1. Voice recognition, weather information, and certain other functions require an Internet connection.
2. Voice recognition, streaming video, intercom, and dynamic graphics capabilities require dual-mode wireless (ER + Wi-Fi).
3. Item(s) sold separately.
4. H.264 compatible IP camera required.
5. Wireless range subject to site-specific conditions.
6. True roaming is supported for ER wireless communication only, affording uninterrupted wireless performance for primary touch screen functions. Wi-Fi "handoff" capability enables automatic handoff amongst up to four pre-designated Wi-Fi wireless access points, wherein the last successful Wi-Fi connection is maintained indefinitely until that connection is lost, at which point communication is handed off to the next nearest access point. A very brief interruption to wireless Ethernet communication may occur during the handoff. Primary ER wireless communication is unaffected by the Wi-Fi handoff process.
7. ER (Extended Range) RF wireless communication supports basic wireless touch screen functionality, and is required for all applications. For advanced functionality including streaming video, intercom, voice recognition, and dynamic graphics, Wi-Fi wireless communication is also required (dual-mode). The TSR-302 will not work with Wi-Fi alone.
8. The TSR-302 ships with (1) **TSR-302-DS** Table Dock included. Additional docks may be ordered separately. Refer to the TSR-302-DS spec sheet for additional information.
9. Supports Smart Graphics only. Not compatible with "traditional" UI projects.

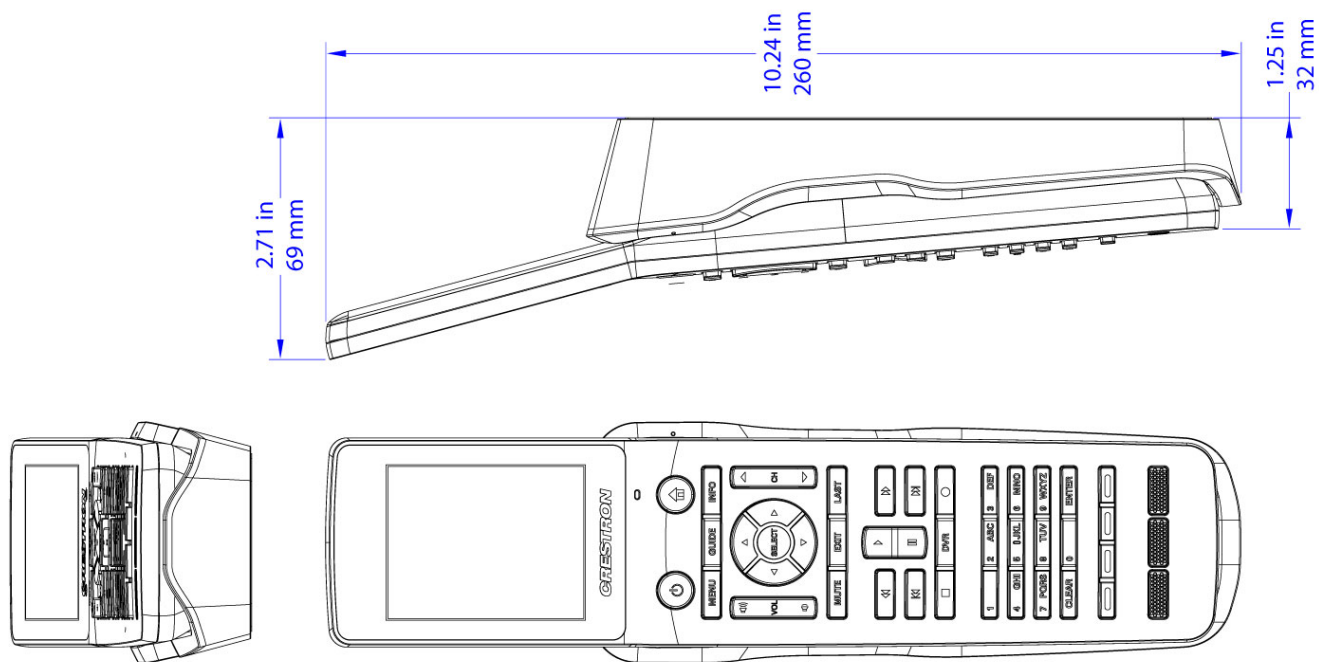
This product may be purchased from an authorized Crestron dealer. To find a dealer, please contact the Crestron sales representative for your area. A list of sales representatives is available online at [www.crestron.com/salesreps](http://www.crestron.com/salesreps) or by calling 800-237-2041.

The specific patents that cover Crestron products are listed online at: [patents.crestron.com](http://patents.crestron.com).

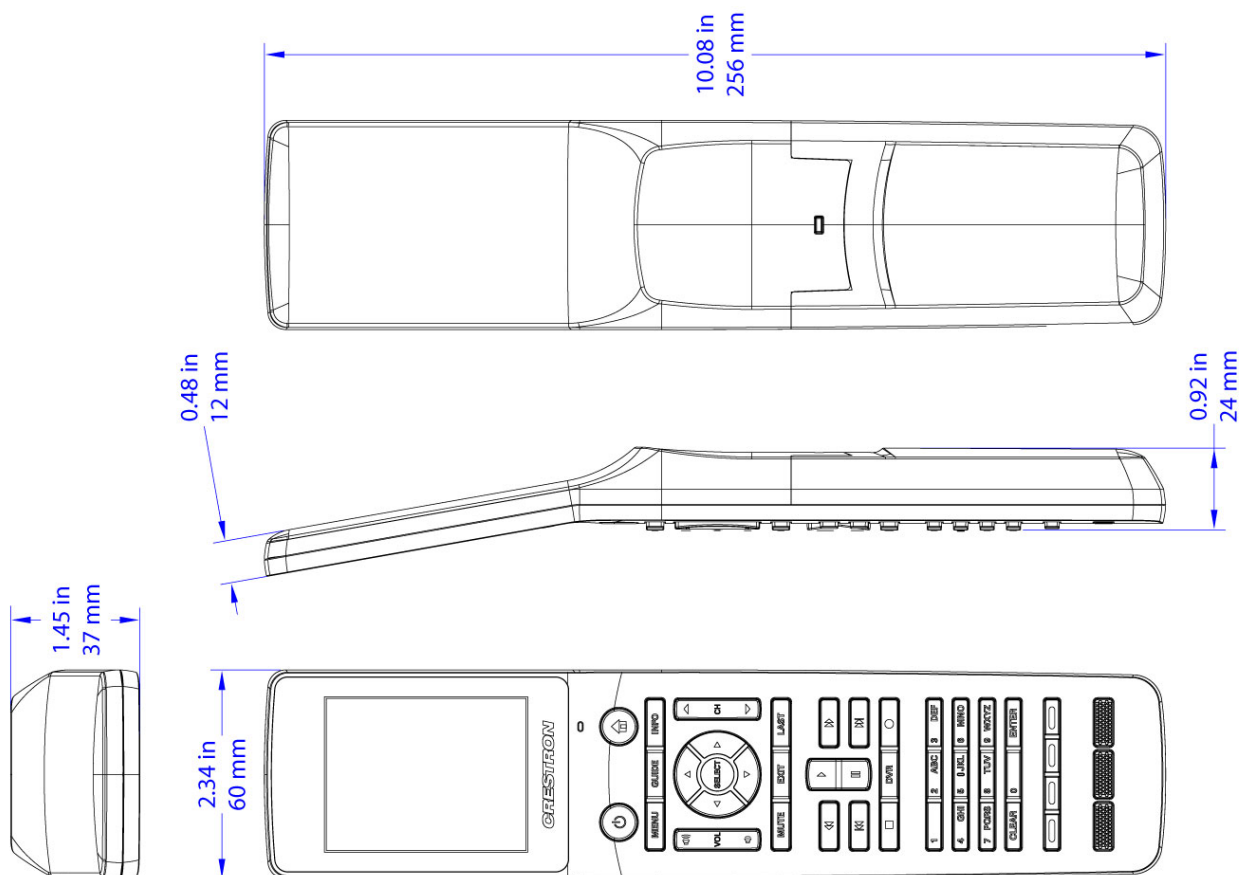
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WITH DOCK



WITHOUT DOCK