



**Miccus<sup>®</sup> Home RTX 2.0**  
**Long Range Wireless Audio**  
**Transmitter or Receiver**



**Model No.: MHRTX-20**

## Quick Start Guide:

- 1. Attach the antenna:** on the back of the Miccus® Home RTX 2.0, remove the white rubber connector cover and attach the supplied antenna to the antenna terminal (turn clockwise until slightly snug). Optimize antenna performance by positioning the antenna upright.
- 2. Connecting to the Miccus® Home RTX 2.0:** Connect the appropriate included cable (Optical/TOSLINK or RCA to 3.5mm) to the appropriate audio input (TX mode only) or output (RX mode only) on the back of the RTX 2.0.
- 3. Power on/off:** *Before connecting to power, set the selector switch to TX (transmit mode), or RX (receive mode).* The Miccus® Home RTX 2.0 can be operated using any USB port or 5v/500mA USB power supply. Connect the micro end of the USB cable to the RTX 2.0 and the other end to USB power; the Home RTX 2.0 will automatically power on. If powered off, the Home RTX 2.0 can be powered back on by holding the multi-function/power button for 5 seconds until the LED indicators power on.
- 4. Pairing:** Place your Bluetooth® receiving or transmitting device into pairing mode; follow the manufacturer specific instructions. Then press and hold the Home RTX 2.0 multi-function/ power button for 3 seconds until a channel (CH) indicator light begins fast flashing. This indicates pairing mode. Once paired the appropriate CH indicator LED will light solid and blink every 5 seconds in accordance with the codec being used. **Note:** if your phone or tablet requires a passkey for pairing use: **0000**
- 5. Dual-Link Pairing:** Dual link pairing allows for two Bluetooth® receiving devices to pair with the Miccus® Home RTX 2.0 simultaneously. Once you've paired your first set of headphones to the Miccus® Home RTX 2.0 (step 4 above), to pair a second set of headphones, press and hold the RTX 2.0 multi-function/ power button for 3 seconds until the CH indicator light begins fast flashing. Once the second set of headphones is paired, both CH indicator lights will be solid or blink every 5 seconds in accordance with the codec being used.

**Note:** The Home RTX 2.0 can transmit dual audio streams using the aptX Low Latency codec. The Home RTX 2.0 automatically recognizes an audio feed as either digital optical, or 3.5mm analog according to the cable connected.

CH1 or CH2 LED SOLID BLUE	RTX 2.0 connected with SBC or aptX codecs
CH1 or CH2 LED blue 2 blinks every 5 seconds	RTX 2.0 connected with aptX Low Latency codec

For detailed instructions and troubleshooting please continue reading the Miccus® Home RTX 2.0 user manual or visit [www.miccus.com](http://www.miccus.com) for how-to videos.

## About the Miccus® Home RTX 2.0

The Miccus® Home RTX 2.0 is the first dual link long range wireless transmitter or receiver featuring Bluetooth® v4.2 and two simultaneous aptX Low Latency audio streams. Use as either a Bluetooth® receiver or transmitter and add Bluetooth® technology to your existing television or stereo equipment. The Home RTX 2.0 supports dual link pairing; which means two devices can be paired at the same time. The Miccus® Home RTX 2.0 also features optical audio pass thru. Use the same audio source and daisy chain two or more Miccus® Home RTX 2.0's together; double or even triple the number of low latency audio streams available for use. Avoid the use of an optical splitter box; use the digital audio pass thru of the Home RTX 2.0 to send television audio to both the RTX 2.0 and your soundbar.

## What's in the Box?

- |                                          |                                         |
|------------------------------------------|-----------------------------------------|
| A. Miccus® Home RTX 2.0                  | D. 3.5mm male to 3.5mm male Audio Cable |
| B. Dipole Antenna                        | E. Micro USB charging cable             |
| C. Optical / TOSLINK digital audio cable | F. USB Power Supply                     |
|                                          | G. User Manual                          |

## Getting Acquainted

- ① Antenna
- ② CH1 Indicator (blue)
- ③ CH2 indicator (blue)
- ④ Optical Indicator
- ⑤ 3.5mm Indicator
- ⑥ 3.5mm audio output
- ⑦ Optical audio output (TOSLINK)
- ⑧ Antenna Connector
- ⑨ USB
- ⑩ Optical audio input (TOSLINK)
- ⑪ 3.5mm audio input
- ⑫ RX/TX Mode



## System Requirements

The Miccus® Home RTX 2.0 transmits or receives high quality stereo audio paired with any compatible A2DP Bluetooth® profile transmitting or receiving device.

**Transmit Mode (TX):** Use the RTX 2.0 with any device capable of *Receiving* a Bluetooth® wireless audio signal (Bluetooth® profiles refer to this feature as A2DP). Such capable devices include Bluetooth® enabled headphones/speakers or an adapter such as the Miccus® Home RTX, Mini-jack RTX, Home RTX Mini, and SR-71 Stealth Headphones.

**Receive Mode (RX):** Use the RTX 2.0 with any device capable of *Transmitting* a Bluetooth® wireless audio signal (Bluetooth® profiles refer to this feature as A2DP). Such capable devices include mobile phones, tablets, and PC's or a Bluetooth® audio adapter such as the Miccus® Home RTX, Home RTX Mini, Mini-jack TX4, and Mini-jack RTX.

**Bluetooth® Codec Support:** The Miccus® Home RTX 2.0 provides support for four common Bluetooth® audio codecs: SBC, AAC, aptX, aptX Low Latency. In order to pair using a given codec, both the transmitting device and the receiving device must support the codec. The Home RTX 2.0 will automatically pair at the highest quality common codec that both devices support. All Bluetooth® audio devices commonly support the SBC codec. Unless device specific documentation indicates otherwise, it is most likely the Home RTX 2.0 will pair with your device using the SBC codec.

### Note:

- The Miccus Home RTX 2.0 will use the aptX Low Latency codec only when paired with another device that also supports aptX Low Latency.
- If television or video audio is your primary use, then it is recommended to purchase the Miccus® SR-71 Stealth headphones or other A2DP compatible Bluetooth® headphones/speakers that support the aptX Low Latency codec. With dual-link pairing enabled the aptX Low Latency codec is non-functional.
- When dual link paired with two sets of aptX Low Latency headphones, the Home RTX 2.0 will dual-link stream in aptX Low Latency.

Other End Bluetooth Device	Audio Latency
aptX Low Latency	38ms (+ or – 5ms)
aptX	70ms (+ or – 10ms)
SBC	220ms (+ or – 50ms)

## Detailed Instructions for Use

### Power on/off

The Miccus® Home RTX 2.0 supports micro USB power. Connect the micro end of the included USB power cable to the Home RTX 2.0's micro USB jack; connect the other end to the compatible USB power supply unit (5V/500mA), computer, or television USB port. Any USB charger that is rated at an output of 5V@500mA or higher is compatible and may be used with the Miccus® Home RTX 2.0.

### Connecting Cables

The Miccus® Home RTX 2.0 ships with the following audio cables:

- a) TOSLINK digital optical cable
- b) 3.5mm (mini-plug) male to 3.5mm (mini-plug) male cable



**Note:** If your television or stereo system requires a different cable, please contact Miccus Customer Support and we may be able to help you: support@miccus.com, 616-604-4449.

- In TX (transmit) mode, the Miccus® Home RTX 2.0 requires an audio input source like a computer, tablet, smartphone, television or stereo system, etc. that can offer the Home RTX 2.0 an audio signal/music to transmit. The cable being used must be connected to the appropriate input: either TOSLINK / optical to the "Optical In" or 3.5mm to the "3.5mm In."

- To receive a wireless stream in RX (receive) mode, the Miccus® Home RTX 2.0 must be connected to an auxiliary input on a stereo or powered speaker system. The cable being used must be connected to the appropriate output: either TOSLINK/optical to the "Optical Out" or 3.5mm to the "3.5mm Out."

**Note:** The included USB cable with ferrite core is for USB power only and does not offer an audio or data type connection. For optimal performance, always use the provided USB cable with your Miccus® Home RTX 2.0. Since the Miccus® Home RTX 2.0 is a long range Bluetooth® device it may be susceptible to RF interference; the USB cable with ferrite core can help reduce potential interference during operation.

### Pairing

**Note:** The Miccus® Home RTX 2.0 and your Bluetooth® device should be no more than one meter apart when pairing (the closer the better until paired).

#### Transmit Mode (TX):

- With the Home RTX 2.0 powered off, locate the RX/TX switch on the back left of the Home RTX 2.0. Select TX mode by pressing and latching the switch to the in position. **Note:** when connected to USB power, using this switch will power on the RTX 2.0.
- TX mode requires a wired audio source connection to either the 3.5mm audio input or the TOSLINK/optical audio input. Connect your audio source with the appropriate cable.
- Power on your headphones, speaker or other compatible A2DP Bluetooth® profile device and engage pairing mode.
- Power on the Home RTX 2.0. There are three ways to power on the Home RTX 2.0: **1)** connect the RTX 2.0 to USB power, **2)** If already connected to USB power and powered off, press and hold the power button for 5 seconds until the indicator lights come on, **3)** In the off position, switch the RTX 2.0 between TX and RX mode.
- Engage pairing mode on the RTX 2.0: press and hold the multi-function/power button for 3 seconds until the CH light begins fast flashing.

6. Once paired, the Home RTX 2.0 channel indicator light (either CH1 or CH2) will stop flashing fast and light solid. If in Low Latency mode the LED will blink twice every 5 seconds.
7. In TX (transmit mode) dual link pairing allows for two Bluetooth® receiving devices to pair with the Miccus® Home RTX 2.0 simultaneously. Once you've paired your first set of headphones to the Miccus® Home RTX 2.0 (steps 1-6 above), to pair a second set of headphones, press and hold the RTX 2.0 multi-function/power button for 3 seconds until the CH indicator light begins fast flashing. When the second set of headphones is paired, both CH lights will light solid. When paired with 2 sets of the Miccus SR-71 stealth headphones, the RTX 2.0 CH lights will blink every 5 seconds indicating the aptX Low Latency codec is active for both audio streams. The aptX Low Latency codec eliminates any noticeable lip sync or audio delay when used for video or television audio.

**Note:** In order for the Home RTX 2.0 to recognize the change between TX and RX mode, it must be powered off when switching between the two. If already connected to USB power the Home RTX 2.0 will automatically power on when the TX/RX selector switch is pressed or depressed.

#### **Pairing Mode (RX): Pairing with a Bluetooth® transmitter**

1. With the Home RTX 2.0 powered off, locate the RX/TX switch on the back left of the Home RTX 2.0. Select RX mode by depressing and unlatching the switch to the out position. **Note:** when connected to USB power, using this switch will power on the RTX 2.0.
2. RX mode is designed for use with an audio device such as a stereo system or powered stereo speakers connected to either the 3.5mm audio output or the TOSLINK/optical audio output on the RTX 2.0. Connect your audio source with the appropriate cable.
3. Engage pairing mode on the RTX 2.0: press and hold the multi-function/power button for 3 seconds until the CH light begins fast flashing.
4. Open up the Bluetooth menu on your smartphone, tablet or other compatible A2DP Bluetooth® profile device and select the RTX 2.0. If your tablet or cell phone requires a passkey, use "0000"

5. Power on the Home RTX 2.0. There are three ways to power on the Home RTX 2.0: **1)** connect the RTX 2.0 to USB power, **2)** If already connected to USB power and powered off, press and hold the power button for 5 seconds until the indicator lights come on, **3)** In the off position, switch the RTX 2.0 between TX and RX mode.
6. Once paired, the Home RTX 2.0 channel indicator light (either CH1 or CH2) will stop flashing fast and light solid. If in Low Latency mode the LED will blink twice every 5 seconds.
7. In RX (receive mode) dual link pairing allows for two Bluetooth® transmitting devices to pair with the Miccus® Home RTX 2.0 simultaneously. Once you've paired your first smartphone or tablet to the Miccus® Home RTX 2.0 (steps 1-6 above), to pair a second smartphone or tablet, press and hold the RTX 2.0 multi-function/power button for 3 seconds until the CH indicator light begins fast flashing. Open up the Bluetooth menu on your smartphone, tablet or other compatible A2DP Bluetooth® profile device and select the RTX 2.0. If your tablet or cell phone requires a passkey, use "0000" Once the second smartphone or tablet is paired, both CH indicator lights will light solid. If your smartphone or tablet supports aptX Low Latency both CH indicator lights will light solid and blink every 5 seconds.

**Note:** The Home RTX 2.0 has an automatic re-connect feature. If left powered on or if powered back on it will automatically reconnect to the last paired device when within range.

In RX (receive mode) two smartphones or tablets can be simultaneously paired with the Home RTX 2.0. Both devices can also simultaneously stream music to the Home RTX 2.0. To hear audio from only one of the two devices, pause the audio, or use muting or adjust volume. Shift audio freely between devices.

To begin streaming audio simply press the play button on your audio source and adjust volume to taste.

LIGHT	FUNCTION
LED	Blue (CH1 & CH2)
LED	Green (3.5mm & Optical)
LED blinks blue rapidly	Pairing mode
LED solid green	Optical or 3.5mm Connected
CH 1 and CH 2 blue LED off, 3.5mm or optical green	Standby Mode (no pairing detected)
LED blue stays on	Connected with either the SBC or aptX codecs
LED blue stays on with 2 blinks every 5 seconds	Connected with the aptX Low Latency codec

## Optical Pass Through

The Miccus Home RTX 2.0 features digital audio pass through. Digital audio coming into the Home RTX 2.0 via the "Optical In" will also pass through to the "Optical output." Most televisions and stereo systems feature only one optical audio output. The Home RTX 2.0 allows the user to receive an optical audio feed from a television or stereo system and transmit/stream that audio feed to two pair of headphones or Bluetooth speakers simultaneously. The Home RTX 2.0 can then pass that same audio onto a soundbar, stereo receiver, or another Miccus Home RTX 2.0 without the use of an optical audio splitter. Use the same audio source and daisy chain two or more Miccus® Home RTX 2.0's together; double or even triple the number of low latency audio streams available for use.

## Factory Reset

If for any reason the Home RTX 2.0 is not working as expected, clear the memory and restore default settings to the Home RTX 2.0.

- Ensure the Home RTX 2.0 is connected to USB power.

- Press and hold the multi-function button for roughly 10 seconds until the unit powers off.
- Once powered off, memory has been cleared and the unit has returned to its factory default settings.
- When powered back on, the Home RTX 2.0 will enter pairing mode directly.

## FAQ and Troubleshooting

PROBLEM	SOLUTION
Miccus Home RTX 2.0 does not turn on	<ol style="list-style-type: none"> <li>1. Check the USB power connection</li> <li>2. Make sure to press and hold the power button for 5 seconds.</li> </ol>
Audio breaks up or wireless range is too low	<ol style="list-style-type: none"> <li>1. Make sure the antenna is attached securely and positioned correctly.</li> <li>2. Move the Miccus Home RTX 2.0 away from other 2.4 GHz equipment such as Wi-Fi routers and microwaves.</li> </ol>
No sound/audio output	<ol style="list-style-type: none"> <li>1. Check the cables to make sure they are connected to the correct jacks.</li> <li>2. Press play on your music source.</li> <li>3. Check to make sure your volume is set to a listenable level.</li> </ol>
Can't control Volume	<ol style="list-style-type: none"> <li>1. By design the Miccus Home RTX 2.0 is a passive transmitter or receiver and has no volume control. User volume level must be adjusted via the input and/or output sources connected to the Miccus Home RTX 2.0.</li> </ol>

PROBLEM	SOLUTION
Static or noise in the audio	<ol style="list-style-type: none"> <li>1. Make sure to use the supplied USB adapter as television, stereo, or PC USB ports can introduce noise into the signal. The Home RTX 2.0 ships with a USB cable featuring a ferrite core to help eliminate potential RF (radio frequency) interference.</li> <li>2. Move the Miccus Home RTX 2.0 away from any amplifiers or powered speakers.</li> <li>3. Make sure the Miccus Home RTX 2.0 is cabled to the correct line level input or output on your stereo receiver.</li> <li>4. Dual link pairing: your first receiving device may experience an audio interruption / noise while your 2nd receiving device is connecting. This is due to audio buffering. It may take roughly 30 seconds for audio to stream as normal.</li> </ol>
Can't pair my device with the Home RTX 2.0	<ol style="list-style-type: none"> <li>1. Make sure the Miccus Home RTX 2.0 and the device you're pairing with are right next to each other.</li> <li>2. Make sure all other Bluetooth compatible receiving or transmitting devices you're not trying to pair with are either powered off or Bluetooth disabled.</li> <li>3. Make sure both devices are in pairing mode. LED equipped devices will typically flash fast when in pairing mode and flash slow when connected.</li> </ol>

PROBLEM	SOLUTION
Can't pair my device with the Home RTX 2.0	4. Make sure your device is compatible with the wireless A2DP Bluetooth stereo audio profile.
Can't dual link pair my devices to the Miccus Home RTX 2.0	1. When the standard Dual-Link Pairing procedure won't connect more than one device, follow standard pairing steps 1-6 to pair both receiving or transmitting devices individually then power down the Miccus Home RTX 2.0 and your second device. Next, power on both receiving or transmitting devices again then place the Miccus Home RTX 2.0 into pairing mode again. Wait for both devices to reconnect. Both CH1 and CH2 indicator lights will light solid when reconnected.

### Care and Maintenance

- To keep from damaging the Miccus® Home RTX 2.0's internal circuit, avoid exposure to liquid, moisture and humidity.
- Extreme temperatures can shorten the life of electronic devices.
- Don't use abrasive cleaning solvents to clean the Miccus® Home RTX 2.0.
- Do not dispose of the Miccus® Home RTX 2.0 in fire as it will result in an explosion.
- Avoid contact with sharp objects. They may scratch or damage the Miccus® Home RTX 2.0.
- Do not drop: dropping the Miccus® Home RTX 2.0 can damage the internal circuit.

## Care and Maintenance

- Bluetooth v4.2
- Supports both the A2DP, and AVRCP Bluetooth® profiles
- Audio Codec Support: SBC, AAC, aptX, aptX Low Latency
- Optical Audio Support: PCM, LPCM @ 48KHz
- Operating Range: Up to 160ft (50 meters) line of sight
- Operating Frequency: 2.402 GHz to 2.480 GHz
- USB Power: DC 5V @500mA or higher
- Size: 4.37 x 2.5 Inches Weight: 3.0 oz

## Support

Further details and answers to common questions are found at <http://www.miccus.com/help.asp>

If your question is not answered via the support page, feel free to email us at [support@miccus.com](mailto:support@miccus.com); please include a product name in your email subject line. For live technical assistance please call **1 (616) 604-4449** Monday-Friday, 11am-4pm EST.

## FCC 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.

## Federal Communications Commission (FCC) Statement:

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 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 to this unit not expressly approved by the party responsible for compliance could void the user authority to operate the equipment. Tested to comply with FCC standard: FOR HOME OR OFFICE USE. This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This device and its antenna(s) must not be co-lated or in conjunction with any other antenna or transmitter.

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