SonicCast Transmitter

2.4 GHz Low-latency Wireless Audio with DSP

BY KARE AUDIO

User Guide

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FCC Notice

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

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.

Note: 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.

1 Year Limited Warranty

This 1-year limited warranty covers product failures due to the manufacturer's defects for one year after the original purchase. The warranty is only valid if the product is purchased from KARE Audio or one of its authorized resellers. If the product fails within one year of the original purchase, it will be repaired or replaced at no charge with the same or newer model of equal value.

This warranty includes this product for home use, including speakers, transmitters, and accessories against defects in material and workmanship. Proof of purchase is required. This warranty is provided at the discretion of KARE, LLC. and does not cover cosmetic damage or damage due to acts of nature, accident, misuse, abuse, negligence, or modification.

Parts

Quantity	Part #	Description	Image
1	610-36	Optical Cable	
1	811	RCA to 3.5mm	
1	RFA1-HP-C	3.5mm to 3.5mm	
1	RFA1-PS	USB Power Adapter	
1	RFA1-PC	USB A to Micro USB B	
1	RFA1	Transmitter	
1	VC12	Hook and Loop	

Identifying and Using Features
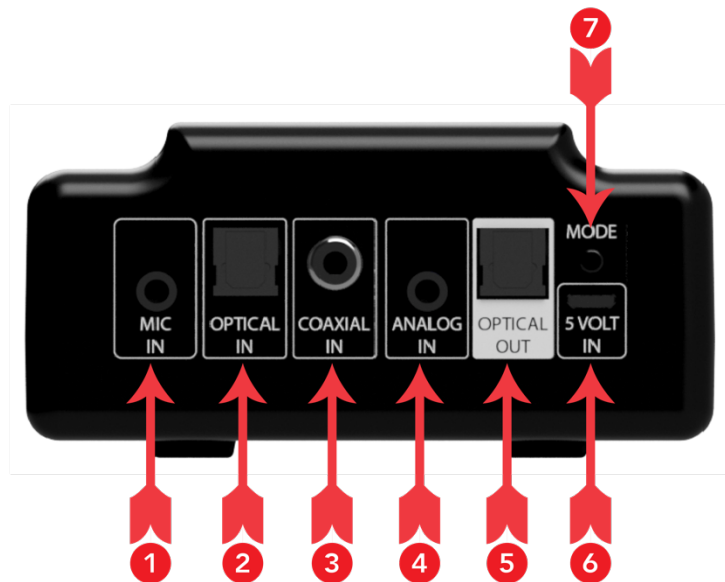
1 Microphone Input   **5** Optical Output

2 Optical Input   **6** 5 Volt In

3 Coaxial Input   **7** Mode Button

4 Analog Input

Powering the Transmitter

Use the included micro-USB cable (RFA1-PC) to power to the transmitter. Audio is not input on this port. In some cases, the USB port on the back of your TV or audio device can provide power. If you have "buzzing or hissing" on an audio channel, use the included wall adapter (RFA1-PS).

Connecting Signal

Choosing the input signal is critical to getting the most enjoyable experience.

First, identify what outputs are available on your TV. If no outputs are on your TV, you can use a cable or satellite box. Connecting to different devices may have other features or create an undesirable sound echo.

Digital Optical, RCA analog, and 3.5mm analog cables are included in the box. You only need one of the provided cables. We have kits for installing other ways; if you need a specialty kit, please call us at 1-888-277-7941 or visit KAREAudio.com.

Ports on the front of your tv or other devices are generally AUDIO IN and will not send audio to the transmitter. Connect only to an AUDIO OUT.

Ports

❶ Microphone Input

Use microphone (RFA-MP1) sold separately. This port is used when no other connection method is possible. The microphone will pick up the sound from your TV and for the transmitter. Feedback is a common issue when used with a ChairSpeaker, so fine-tuning the placement of the microphone is required. Microphone placement and speaker volume will need to be adjusted to keep feedback minimum. If you need help, don't hesitate to contact us.

❷ Optical Input

Digital optical input is the most common and most straightforward method for setting up your system. Plug your device into this port using the provided optical cable (610-36). Remove plastic covers from the end of the optical cable before inserting them into the TV and transmitter. This type of connection snaps in place when securely inserted.

❸ Coaxial Input

Use cable (RFA-COAX) sold separately. This single RCA coaxial cable is often color-coded orange or black. You might find some that are not colored correctly, so it's always best to double-check the labeling of the connection. The output on your TV may be labeled as SPDIF or digital out.

❹ Analog Input

Use either RCA to 3.5mm cable (811) or 3.5mm (RFA1-HP-C) to plug the desired device into analog in.

When using analog inputs, do not use USB power on your device. Using USB power from your TV may create a ground loop buzz on the analog channel. It would be best to use a wall outlet to power the transmitter when using this input. If you are using RCA jacks from your TV, make sure they are labeled output. Red and White inputs on the back of your device will not provide an audio signal.
When using the analog output on your device, your TV may control the volume. Check your TV manual for details.

If you are using the headphone jack on your TV, it may turn off your TV speakers. Check your TV manual for details.

❺ Optical Output

The digital optical output is the easiest method for setting up your system with a soundbar. After setting up your optical input, plug your soundbar or other device using

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a 2nd optical cable (610-36) into the optical output. Remove plastic covers from the end of the optical cable before inserting them into the soundbar or transmitter. This type of connection snaps in place when securely inserted. The Optical Output port is only an optical passthrough. This output does not have sound processing or decoding on this audio stream.

DSP (Digital Signal Processing)

The digital signal processing in SonicCast RFA1 is designed to improve your audio experience and simplify setup. The DSP decodes audio, including 5.1 sound, and can provide the sound enhancements described below.

DSP Modes

Direct Sound

The Direct Sound mode will decode audio and, if required, downmix to 2 channels. No equalizers, virtualizations, or enhancements are applied to the audio stream.

Voice Priority SS

Voice Priority Surround Sound is a virtual surround sound technique that produces an airy and spatial sound that mimics a surround sound system while increasing voices so you can understand the voices. Voice Priority Surround Sound is most effective when using a digital 5.1 or higher audio source.

Voiceify AI

Voiceify AI is an AI voice quality enhancement using various algorithms together to maximize speech enhancement with the focus on intelligibility. Voiceify has three different settings Narrow, Wide, and Full.

Narrow Voiceify AI

Narrow Voiceify AI focuses its intelligibility algorithms on sounds in the 1kHz to 6kHz range. Narrow Voiceify AI also enables Voice Priority Surround Sound and Calm Commercial Technology.

Wide Voiceify AI

Wide Voiceify AI applies AI algorithms to voices in the 0.5kHz to 8kHz range. Wide Voiceify AI also enables Voice Priority SS and Calm Commercial Technology.

Full Voiceify AI

Full Voiceify AI applies AI algorithms to voices in the entire audio range. Full Voiceify AI also enables Voice Priority SS and Calm Commercial Technology.
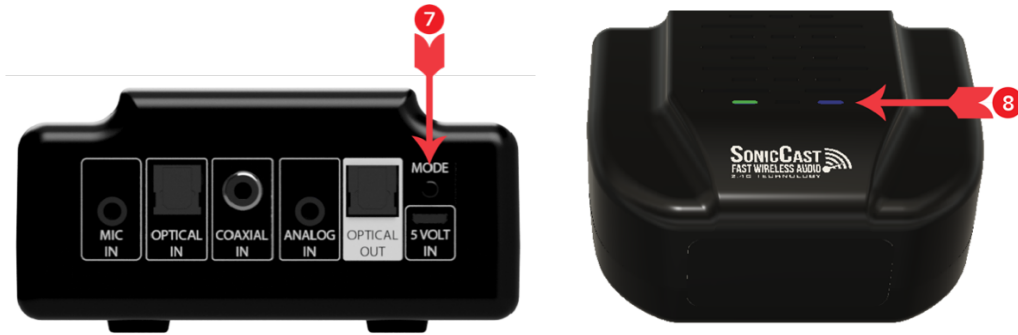
Calm Commercials

Calm Commercials is designed to reduce the sudden increase in volumes seen in commercials and action scenes. Calm Commercial technology digitally modifies the input signal volume to a standard full-scale audio level so that you can choose the best level for you using the volume controls on the receiver, independent of the audio source.

Calm Commercials uses automatic gain control and dynamic range compressor functions to improve listening quality. Automatic gain control dynamically adjusts the volume of the entire input stream so that during loud portions of audio (such as commercials) the volume is lowered automatically to match other parts of the audio. Dynamic range compression further enhances voice quality by decreasing the amplitude range of the audio signal to a smaller scope, making soft bits of the audio louder which improves your ability to understand speech in the audio stream.

Calm Commercials supports mono, stereo, and multichannel audio. Calm Commercials is optimized for digital volume variations.

Selecting DSP Modes

The mode button ❼ allows you to set DSP and adjust the delay. The Mode LED indicates these settings on the top of the transmitter ❽. A short press of the mode button cycles through the DSP modes.

DSP Mode Table

Mode	Voiceify	Calm Commercials	Voice Priority SS	Mode LED Color
Direct Sound	Off	Off	Off	White
Voice Priority SS	Off	Off	On	Fade Blue
Narrow Voiceify	On	On	On	Solid Blue
Wide Voiceify	On	On	On	Fade Green
Full Voiceify	On	On	On	Solid Green

Audio Delay

If the sound is out of sync, you can add delay to the SonicCast system. Hold the Mode button for 5-10 seconds until the Mode LED is Solid Purple to enter the delay setting. While in delay adjustment mode, the Mode LED is solid purple, and a short press of the button cycles through delay modes. Each time the button is pressed, the Mode LED blinks a pattern to indicate the current delay mode:

Mode	Mode LED
No Delay	White, 1 Blink
20 ms	White, 2 Blink
40 ms	White, 3 Blink
60 ms	White, 4 Blink
80 ms	White, 5 Blink

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Network & Audio Status

The Status LED **9** indicates the status of both the audio input and if a receiver is connected.

Audio Input Status	Device Connected	Status LED
Not Connected	No status until Audio Connected	Fade Red
Connected	No Receiver Connected	Fade Yellow
Connected	Receiver Paired	Solid Green

Pairing

RFA1 broadcasts a pairing beacon when you can add additional receivers. To pair another receiver, please see the specific receiver guide. Pairing is proximity-based; if more than one RFA1 is in a location, the receiver should connect to the closest RFA1. If you have an issue pairing to the correct RFA1, turn one-off. Pair, then you can repower the second RFA1.

Placement and Mounting

Careful consideration should be used when choosing placement for the RFA1. While the RFA1 should work behind the TV, some TVs contain large metal plates that interfere with radio waves. Locate the transmitter away from WIFI base stations.

Plasma TVs generate large amounts of RF that may interfere with RF signals.

The transmitter can be wall-mounted with screw holes on the transmitter's bottom or with the hook and loop.

Another option for mounting is a transmitter shelf. You can order from KAREAudio.com or call us.

Customer Support

If you encounter some unresolvable issue or have any questions, suggestions, or concerns, please contact KARE's customer service department for further assistance.

Website: kareaudio.com   Customer Support: 1-888-277-7941
Email support@kareaudio.com