

IR T1

Small Area Infrared Transmitter

USER MANUAL



Important Safety Instructions

Please read and keep these instructions.

WARNING! To reduce the risk of fire or electric shock, do not expose the system to rain or moisture. Do not use this apparatus near water. The system should not be exposed to dripping or splashing, and objects filled with liquids such as beverages should not be placed on the transmitter or receivers. Clean only with a dry cloth.



Attempting to service this device will void the warranty

- Refer servicing to qualified personnel. Servicing is required when the system has been damaged in any way: if liquid has been spilled or objects have fallen into the unit, if the unit has been exposed to moisture, if the unit does not operate normally, or if the unit has been dropped.
- Do not block any ventilation openings. Install in accordance with manufacturer's instructions.
- Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus that produces heat.
- Use only attachments/accessories specified by the manufacturer.
- Unplug the transmitter during lightning storms or when unused for long periods of time.
- Be advised that different operating voltages require the use of different attachment plugs. Check the voltage in your area and use the correct type.
- Use only the power supply provided by Williams Sound. Other power supplies may have similar specifications, but may not be equivalent in emissions ratings, in-rush current, etc. Use of an unapproved power supply may leave the device partially or completely inoperable, and will void the warranty.
- Protect the power cord from being walked on or pinched, particularly at plugs, receptacles, and near the power jack on the transmitter.
- This apparatus must be grounded.
- The AC Power plug or an appliance coupler is used as the disconnect device, so the disconnect device should remain readily operable.

For Customers in The United States

This equipment has been tested and found to comply with the limits for Class B digital device, pursuant to part 15 of the FCC rules.

For Customers in Canada

This Class B digital device meets all requirements of the Canadian Interference-causing Equipment Regulations. Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

Recycling Instructions

Please help Williams Sound protect the environment. Please take the time to dispose of your equipment properly.



Product Recycling for Customers in the European Union:



Please do NOT dispose of your Williams Sound equipment in the household trash. Take the equipment to a electronics recycling center, or return the product to the factory for proper disposal.

System Overview

The IR T1 is a two-channel infrared transmitter combining infrared modulator and emitter technology into a single mountable enclosure—which reduces operating costs, eliminates the need for rack space and eases set-up.

The IR T1 is ideal for high quality audio programs such as music, television audio, and audio description. The IR T1 will accept any line level stereo audio input. Infrared receivers detect the transmission and convert the light signals back into audio signals. The IR T1 operating frequencies (2.3/2.8 MHz) minimize high efficiency lighting interference.

No FCC license or radio approval is required with this equipment. It can be used anywhere in the world.

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 when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area may cause interference, in which case the user will be required to correct the interference at his own expense.

NOTE: A PLASMA MONITOR OR TELEVISION CAN DEGRADE THE AUDIO QUALITY OF THE IR T1 TRANSMITTER. FOR BEST PERFORMANCE, THE TRANSMITTER SHOULD BE POSITIONED AS FAR AWAY AS POSSIBLE FROM ANY PLASMA MONITOR, TELEVISION OR OTHER INTERFERING DEVICES.

Installation Procedures

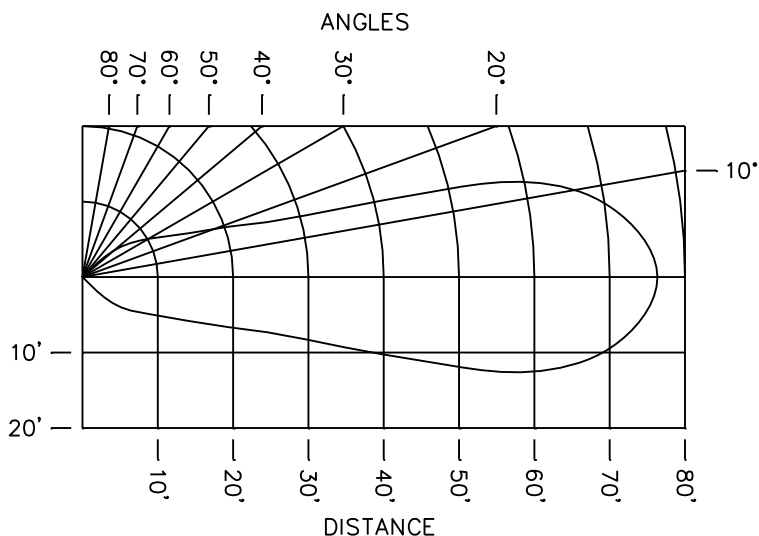
Determine Coverage Area

When using the IR T1 transmitter with the RX22-4 receiver, the system coverage area will exceed 1000 sq. ft. (93 sq. m.). Figure 1 illustrates typical coverage pattern for the IR T1. This can be affected by direct/indirect sunlight, reflections on walls, objects in the room and room construction. The patterns illustrated are the direct radiation pattern. Most objects block infrared light, so the transmitter cannot be concealed behind walls, glass, curtains, etc. The infrared radiation does not drop to zero outside the illustrated patterns; it decreases. It still may be useable at a greater distance, depending on the receiver sensitivity and the reflective characteristics of the room.

Important: Remember to point the transmitter towards the listening audience. The front is the surface with the Williams Sound logo as shown on the cover of this manual.

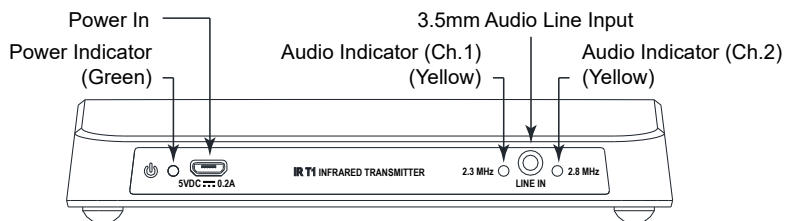
See Figure 1.

Figure 1 - IR T1 Coverage Pattern



Connections & Indicators

Figure 2 - IR T1 Rear View



Connecting Power

1. Snap in the correct adapter for your region into the TFP 055 power supply.
2. Plug the USB end of the "USB to micro USB cord" into the power supply.
3. Plug the micro USB end of the "USB to micro USB cable" into the IR T1.
4. Plug the power supply into an AC outlet.

Alternatively, you may plug the USB end of the cord into a direct USB power source, such as the USB port on a television, etc. to power the IR T1.

On power up, the IR T1 performs a self-test to detect damage due to shipping, handling, tampering or incorrect operation. If any failure is present, the green power LED will blink rapidly. If this occurs, contact Williams Sound Customer Service.

This system is designed for class 2, low-voltage wiring. Always follow local electrical codes when using low-voltage wiring.

Audio Indicators (Ch. 1,2)

The audio indicator LEDs (see Figure 2) will light up yellow when an adequate level of input audio is sensed on that channel. If audio is present, but not high enough to produce acceptable audio quality, the LED will not light. Once an adequate level of audio is fed to the unit, the LED will stay on. If the audio level falls below the acceptable threshold, the LED will go out, and the sleep timer will start to turn off that channel after approximately 12 minutes (See “Sleep Mode” below).

Sleep Mode

The IR T1 is equipped with a sleep mode/power save feature. If a minimum acceptable audio level is not present on a channel (both channels are independent), a timer begins, and after approximately 12 minutes that channel will automatically go into sleep/power save mode. *The timer begins when the yellow channel LED goes out.* Both channels are independent; one can be broadcasting while the other goes to sleep (shuts off infrared output).

This mode decreases power consumption by 80 percent. Audio will automatically begin broadcasting again when the audio input threshold is triggered.

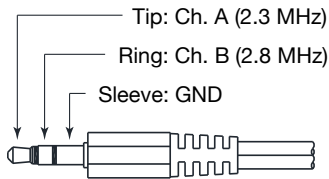
Connecting the Audio Source

The IR T1 detects the presence of audio on the Audio Line Input jack, lights up the LED for the channel(s) where an adequate level of incoming audio is present, and transmits on either/both channels.

The IR T1 will accept line level mono or stereo audio inputs. See figure 3 for audio input cable configuration.

The IR T1 uses a limiter circuit to control the gain of line level audio for optimum transmission. The yellow Audio Indicator LED should stay on when when an adequate level of input audio is present. If the audio indicators do not stay on, the audio level is too low. Adjust the gain of the audio source up until they stay on.

Figure 3 - 3.5mm plug/input jack wiring



Optional Receiver(s)

WIR RX22-4 4-Channel, Body Pack Receiver (requires earphones, headphones, or neckloop)

WIR RX18 2-Channel, Under-the-Chin Receiver

Troubleshooting

The IR T1 is equipped with a series of self-tests. If the power indicator on the unit is blinking rapidly, an error has occurred which requires returning the unit for service.

The IR T1 "Power Indicator" is not lit:

- Make sure the power supply is plugged into the transmitter and any remote power switch is on.
- Make sure the electrical outlet is on.
- Make sure the 5 VDC USB power supply is working.

The IR T1's Ch1 or Ch2 "Audio Indicator" does not light:

- Make sure the IR T1 is plugged in.
- Make sure the audio input is connected properly. Refer to figure 3.
- Make sure an active and adequate level of audio signal is being sent to the IR T1 transmitter.

No Sound through Receivers:

- Check to make sure the receiver is operating on the same frequency as the transmitter.
- If some of the receivers work but others don't, check for bad batteries or earphones.
- If none of the receivers work, check to see if the power and audio input cables are connected to the transmitter. Verify that the "Power Indicator" LED is on, and Ch1 or Ch2 "audio indicator" LED(s) are on.
- Make certain the transmitter is not covered by objects which would block infrared light.

Sound Through the Receivers is Weak and Noisy:

- Make certain the user is facing towards the transmitter. Move the user closer to the transmitter, or reposition the transmitter closer to the user as appropriate.
- Try adjusting the audio input level on the source.
- Reposition the transmitter beam, making certain the front (curved) face of the transmitter is pointed directly towards the listener.

Buzzing or Humming Noise in Sound System:

- Check for ground loops or noise on the input signal.

If these instructions do not address your problem or the issue persists, please call your authorized Williams Sound dealer or representative.

Mounting Options

- STD 008 – TV Top Shelf (optional)
- BKT 024 - Universal wall / ceiling mount (optional)
- The IR T1 can be mounted on any camera tripod stands with a 1/4" - 20 threaded connector

Infrared Transmitter Specifications

Model IR T1

Dimensions:	Width: 5.65"(14.4 cm), Depth: 3.65"(9.3 cm), Height: 1.15"(2.9 cm)
Weight:	8.3 oz (235 g)
Color:	Black
Power Supply:	TFP 055 – 100-240VAC 50/60Hz Input, 5VDC, 0.2A USB Output, Universal Supply with international adapters Other USB Power Supply (must be at least 5VDC, 0.2A)
Power Cable:	USB to micro USB cable
DC Power Input:	Micro USB connector, 5VDC, 0.2A
Power Indicator:	Green LED
Sleep/Power Save Mode:	Shuts off carrier when no audio present for 12 minutes
Modulation:	FM Wideband, ± 50 kHz deviation max, 50 μ S pre-emphasis
Carrier Frequencies:	2.3MHz (Ch 1) and 2.8MHz (Ch 2) Default at power on = carriers off. Carriers are automatically enabled upon presence of audio.
Coverage Area:	1,000 sq. ft (93 sq. m.)
Audio Inputs:	3.5mm stereo line level input jack, Ch 1 connected to tip, Ch 2 connected to ring, GND connected to sleeve
Audio Indicators:	One Yellow LED per channel, lights up and stays on steady with minimum audio level.
Signal-to-Noise Ratio:	70 dB at onset of limiting
Frequency Response:	100 - 12,000 Hz
Operating Requirements:	32°-122°F (0-50°C)
Mounting Kit:	Optional: STD 008 TV Top Shelf Mounting Kit Optional: BKT 024 Omnidirectional mount for wall or ceiling mounting
Compatible Receivers:	WIR RX22-4, WIR RX18
Warranty:	2 years
Approvals/Regulatory Compliance:	CE, RCM, FCC, Industry Canada, PSE, CUL, WEEE, RoHS, CB Scheme

NOTE: Specifications are subject to change without notice.

Visit our website for the latest specifications and publications: www.williamssound.com

Limited Warranty

Williams Sound products are engineered, designed, and manufactured under carefully controlled conditions to provide many years of reliable service. Williams Sound warrants the IR T1 infrared listening system against defects in materials and workmanship for two (2) years. During the first two years from the purchase date, we will promptly repair or replace the IR T1 infrared listening system. Microphones, earphones, headphones, batteries, chargers, cables, carry cases, and all other accessory products carry a 90-day warranty. WILLIAMS SOUND HAS NO CONTROL OVER THE CONDITIONS UNDER WHICH THIS PRODUCT IS USED. WILLIAMS SOUND, THEREFORE, DISCLAIMS ALL WARRANTIES NOT SET FORTH ABOVE, BOTH EXPRESS AND IMPLIED, WITH RESPECT TO THE IR T1 INFRARED LISTENING SYSTEM, INCLUDING BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. WILLIAMS SOUND SHALL NOT BE LIABLE TO ANY PERSON OR ENTITY FOR ANY MEDICAL EXPENSES OR ANY DIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES CAUSED BY ANY USE, DEFECT, FAILURE OR MALFUNCTIONING OF THE PRODUCT, WHETHER A CLAIM FOR SUCH DAMAGES IS BASED UPON WARRANTY, CONTRACT, TORT OR OTHERWISE, THE SOLE REMEDY FOR ANY DEFECT, FAILURE OR MALFUNCTION OF THE PRODUCTS REPLACEMENT OF THE PRODUCT. NO PERSON HAS ANY AUTHORITY TO BIND WILLIAMS SOUND TO ANY REPRESENTATION OR WARRANTY WITH RESPECT TO THE IR T INFRARED LISTENING SYSTEM. UNAUTHORIZED REPAIRS OR MODIFICATIONS WILL VOID THE WARRANTY.

The exclusions and limitations set out above are not intended to, and should not be construed so as to contravene mandatory provisions of applicable law. If any part or term of this Disclaimer of Warranty is held to be illegal, unenforceable, or in conflict with applicable law by a court of competent jurisdiction, the validity of the remaining portions of this Disclaimer of Warranty shall not be affected, and all rights and obligations shall be construed and enforced as if this Limited Warranty did not contain the particular part or term held to be invalid.

If you experience difficulty with your system, call toll-free for customer assistance: 1-800-843-3544 (U.S.A.) or +1 952 943 2252 (outside the U.S.A.)

If it is necessary to return the system for service, your Customer Service Representative will give you a Return Authorization Number (RA) and shipping instructions.

Pack the system carefully and send it to:

Williams Sound
Attn: Repair Dept.
10300 Valley View Road
Eden Prairie, MN 55344 USA

Your warranty becomes effective the date you purchase your system. If your sales receipt is not available, the date code on the product will determine your warranty status.



10300 Valley View Rd • Eden Prairie, MN 55344
800-328-6190 / 952-943-2252 • FAX: 952-943-2174

www.williamssound.com

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