



OPERATION MANUAL

I-CAPTION® T4 TRANSMITTER/COORDINATOR
I-CAPTION® T4R REPEATER
TRANSMITTER / REPEATER FOR THE AUDIEN® SUITE OF PRODUCTS:
I-CAPTION®, D-SCRIPTIVE™ AND AUDIEN® TRANSLATOR



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IMPORTANT SAFETY INFORMATION



**CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK,
DO NOT REMOVE COVER (OR BACK).
NO USER-SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.
DO NOT EXPOSE TO RAIN OR MOISTURE.**



The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure. It may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

Warnings

- Connect this unit's power supply to an AC outlet of the type stated in this Owner's Manual or as marked on the unit. Failure to do so is a fire and electrical shock hazard.
- Do not allow water to enter this unit or allow the unit to become wet. Fire or electrical shock may result.
- Do not place a container with liquid or small metal objects on top of this unit. Liquid or metal objects inside this unit are a fire and electrical shock hazard.
- Do not remove the unit's cover. You could receive an electrical shock. If you think internal inspection, maintenance, or repair is necessary, contact your dealer.
- Do not modify the unit. Doing so is a fire and electrical shock hazard.
- If the power supply cord is damaged (i.e., cut or a bare wire is exposed), ask your dealer for a replacement. Using the unit with a damaged power cord is a fire and electrical shock hazard.
- If you notice any abnormality, such as smoke, odor, or noise, or if a foreign object or liquid gets inside the unit, turn it off immediately. Remove the power supply from the AC outlet. Consult your dealer for repair. Using the unit in this condition is a fire and electrical shock hazard.
- The antennas should be mounted at least 20cm or 8 inches from a nearby person.

Cautions

- Keep this unit away from the following locations:
 - Locations exposed to oil splashes or steam.
 - Unstable surfaces, such as a wobbly table or slope.
 - Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus that produce large quantities of heat.
 - Locations subject to excessive humidity or dust accumulation.
 - Metal objects that can interfere with its radio transmission.
- Do not touch the power plug with wet hands. Doing so is a potential electrical shock hazard.

Certifications

FCC ID: MCQ-XBEEPRO2

The enclosed device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (i.) this device may not cause harmful interference and (ii.) this device must accept any interference received, including interference that may cause undesired operation.

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: Re-orient or relocate the receiving antenna, Increase the separation between the equipment and transmitter, or connect equipment and transmitter to outlets on different circuits.

INTRODUCTION

Thank you for choosing a Sound Associates, Inc. manufactured product. All Sound Associates' products are carefully designed and engineered for cutting edge performance and world class reliability.

I-Caption® is a state-of-the-art, wireless visual aid that provides verbatim closed captions and subtitling on an individual hand-held receiver. Originally designed for live theatrical productions, this fully automated system displays dialogue, lyrics, and sound effects with the efficiency of real-time captioning at a fraction of the cost.

The T4 is designed to serve as both the transmitter and repeaters for the I-Caption®, D-Scriptive™ and Audien® Translation systems. It transmits cue information from the control station to R6 audio and video hand-held receivers. The fully automated system is designed to display captions, audio description or multilingual commentary to wireless receivers.

The T4 Transmitter when coupled with the R6 Receiver and the CS-6 Control Unit will display I-Caption® slides of verbatim closed captions or subtitling. The T4 can also trigger playback of prerecorded audio files in mp3 format on the R6 for audio description for the blind or multi-lingual audio commentary.

FEATURES

- Utilizes an innovative 900 MHz (2.4 GHz for international use) mesh network specifically designed to work in high traffic radio transmission areas.
- Wireless repeaters can be added as needed. Covers approximately 300 ft (200 ft at 2.4GHz) radius in ideal situations.
- Strong metal case with EtherCon Connectors makes it extremely durable in harsh environments.
- Universal mount allows it to attach to wall, ceiling, or microphone stand.
- Hardwired transmit and receive RS-485 data and power down a standard CAT5E / CAT6 cable terminated in an EtherCon connector.

UNIT TYPES

I-Caption® T4 – The Main Coordinator.

- This unit must be hardwired to the Control Station directly. The T4 is the main unit and will communicate with all additional repeaters.
- T4 must be locally powered to ensure proper transmission.
- The EtherCon connector is terminated in standard ethernet format.

I-Caption® T4R – Wireless Repeaters.

- This unit will repeat the main signal transmitted from the T4 Coordinator. The repeater can be hardwired out of the T4 Coordinator or repeat wirelessly if within range of the T4 Coordinator or another repeater.
- Wired and wireless repeaters must be powered locally with 5-7 VDC.
- Note: If hardwired, the repeater should not be in range of the T4 Coordinator or other hardwired T4R repeaters. Cue fires can be interfered with when two hardwired units on the same network are in range of each other.

UNPACKING UNIT

As soon as the shipment is received, inspect the unit and all components for damage incurred by shipping. Also, check to see if all components are enclosed.

Equipment enclosed:

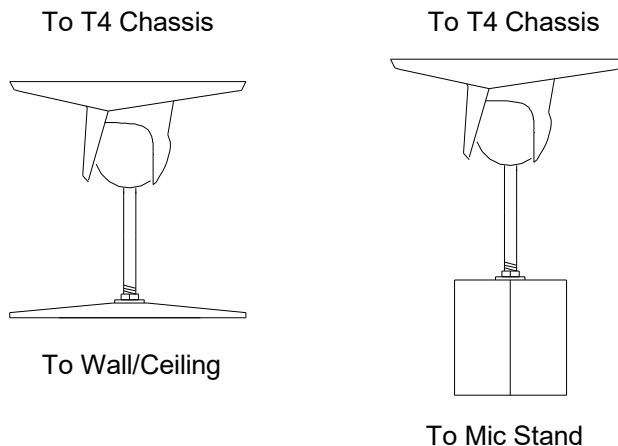
- 1 T4 / T4R: I-Caption® Transmitter / Repeater
- 1 6V DC power Supply.
- 1 ¼ wave antenna 900 MHz (2.4GHz for international units)
- 1 Instruction manual

If the unit is damaged due to shipping, please keep all packing material and contact the shipping company as soon as possible. Only the consignee may institute a claim against a carrier if damage has occurred in shipping; however, Sound Associates will assist in any such event.

MOUNTING

The T4 can mount to a wall or microphone stand with a MB10 mounting bracket.

The T4 utilizes a small speaker mount to secure units to ceiling, walls or microphone stands. Sound Associates offers the MB-10 that includes hardware to attach to a T4 chassis to wood or sheetrock walls and / or microphone stand. See diagram below.



Each mount attaches to the emitter via two 3/8" 8/32 screws (Note: The mounting screw can not exceed 3/8" because the screw will damage the PC board).

After deciding on the location of the transmitter / repeater, fix the mounting plate of the MB10 to a secure flat surface with two screws or bolts with a maximum diameter of 1/4 inch. To allow for proper transmission coverage, the T4 antenna should be mounted 12 inches from all major metal objects. Metal will interfere with wireless transmission. Use safety wires where necessary when mounting above seated areas.

BOTTOM PANEL CONNECTIONS / CONTROLS



1 – Signal / Power Input: EtherCon Connector inputs RS-485 signal from Control Station or Computer. Use a standard Ethernet cable terminated with an EtherCon or standard Cat 5E connector.

2 – Signal / Power Output: EtherCon Connector outputs the RS-485 signal to hardwired remote T4R Repeaters. Use a standard Ethernet cable terminated with an EtherCon or standard Cat 5E connector.

3 – Power Jack: 2.5mm power jack connects to outboard 5-7 VDC power supply.

4 – Data Indicator: Green LED lights solid when connected to wired network. LED will flash when data is being Sent.

5 – Power Indicator: Red LED indicators when unit is powered "on". Note: T4 Coordinator and T4R Repeaters must be powered by the external power supply to operate properly.

TOP PANEL CONNECTIONS



6 – Antenna Connection: Screw ¼ wave swivel antenna to RP-SMA threaded connector on top of unit. Make sure Antenna does not touch or is blocked by and metal objects.

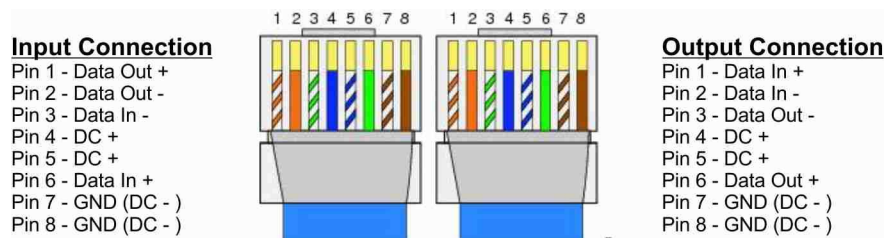
POWER CONNECTION

The transmitter is shipped with a 5-7 VDC power supply. The power supply is wired with the inside +DC and the outer shield as -DC. The DC power supply is equipped with a screw type power plug, make sure it is fully inserted before tightening the casing screw clamp.

INPUT & OUTPUT CONNECTION

The T4 Coordinator and T4R Repeater have one input and output. It receives power and RS485 data via a standard CAT 5E cable terminated in standard RJ45 module connector or a rugged lockable Neutrik EtherCon Connector.

The units use the same wiring configuration as a standard (Straight Thru) CAT 5E cable.



THEORY OF OPERATION

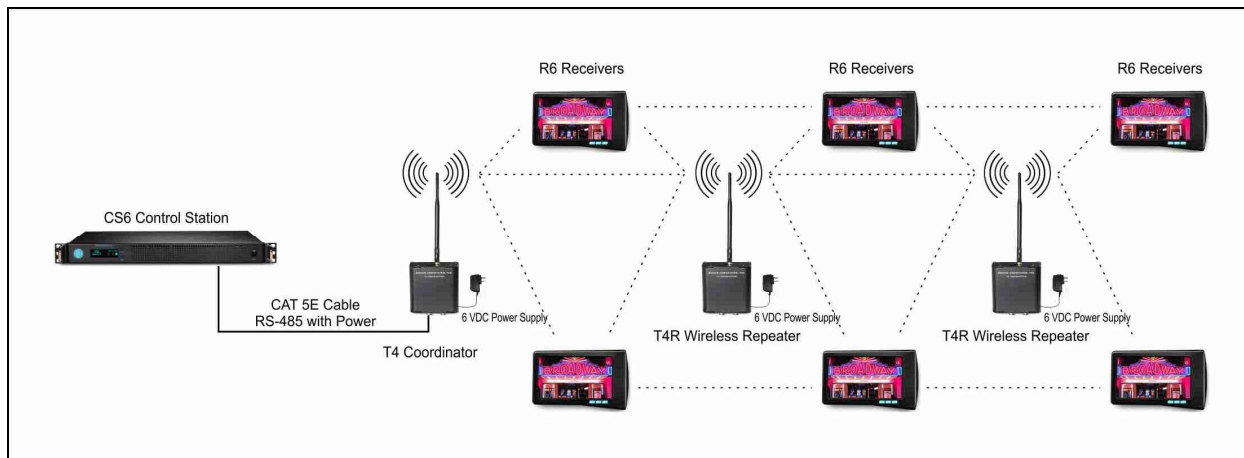
The primary T4 Transmitter / Coordinator is hardwired to the control unit and broadcasts cue information to the receivers via a wireless mesh network in the 900 MHz or 2.4 GHz range. Additional T4 Repeaters can be added to the network to increase coverage. Repeaters can be either wireless or hardwired with CAT5E / CAT6 cable terminated in an EtherCon connector. Voltage is supplied to the T4 via the CAT5E cable for cable runs under 50 ft, otherwise local 5-7 VDC is required.

The T4 Coordinator and T4R Repeater unit incorporates a sensitive RF transceiver utilizing a peer-to-peer protocol 900 MHz North America and in 2.4 GHz range for operation in global markets. This innovative mesh protocol offers added network stability through self-healing, self-discovery, and dense network operation.

STANDARD DESIGNS AND INSTALLATIONS

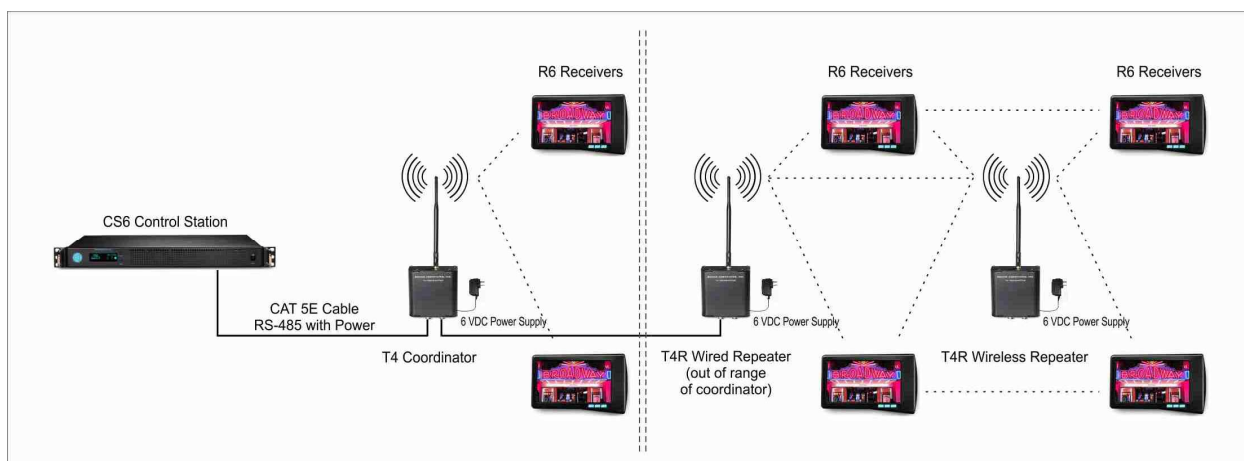
Standard Wireless Repeater Installation:

- T4 Coordinator connects directly to the Control Station via CAT5E cable and powered locally with 5-7 VDC power supply.
- T4 Coordinator connects wirelessly to R6 Receivers and T4R Repeaters that are powered locally with 5-7 VDC power supplies.
- R6 Receivers and T4R Repeaters receive the data and pass it on to other units as needed.
- The power indicator LED on bottom of unit will light red when T4 or T4R are powered on.
- The data indicator on bottom of wired T4 Coordinator will light green when connected to the network and will flash when data is being sent.



Standard Wired & Wireless Repeater Installation (wired T4R in remote location such as outer lobby):

- T4 Coordinator connects directly to the Control Station via CAT5E / CAT6 cable and is powered locally with 5-7 VDC power supply.
- Hardwired T4R Repeater out of the T4 Coordinator that is out of range of the T4 Coordinator.
- Additional T4R Repeaters connect to the hardwired T4R Repeater and are powered locally with 5-7 VDC power supplies.
- R6 Receivers and T4R Repeaters receive the data and pass it on to other units as needed.
- The power indicator on the bottom of T4 units will light red when they are powered on.
- Data indicator on bottom of the wired T4 & T4R units will light green when connected to the network and will flash when data is being sent.



SERVICE OR REPAIRS

For technical support or to obtain a Repair Authorization (RA) number, please contact Sound Associates' Customer Service Department Monday – Friday 10:00 am - 5:30 pm EST at (888) 772-SOUND (7686) or newyork@soundassociates.com. Please note, equipment cannot be accepted without an RA number.

TECHNICAL SPECIFICATIONS

I/O Connections/Indicators

Input	EtherCon connection - RS-485 with power
Output/Link	EtherCon connection - RS-485 with power
External Power Jack	2.5 mm DC power jack with locking thread
Antenna Connector	RP-SMA threaded connector
Power Indicator	Solid red LED
Data Indicator	Flashing red LED while data is transmitting.

RF Characteristics

Operating Frequency	900 MHz (ISM 2.4 GHz)
Output Power.....	250 mW (24dBm) – 900 MHz 50 mW (10dBm) – 2.4 GHz
Range	300 ft. from receiver to closest T4 or T4R 200 ft. 2.4 GHz
Receiver Sensitivity	-101 dBm (1% packet error rate)
RF Data Response	200 kb/s
Agency Approvals	900 MHz - U.S. (FCC Part 15, Canada (ISED), Australia (RCM)) 2.4 GHz - U.S. (FCC Part 15, Canada (IC), Europe - CE (ETSI), Japan (Telec), Australia (C-Tick)

Power

Operation	5 to 7 VDC
Current Draw	Nominal 100 mAh
Supply Line	CAT5E cable terminated in EtherCon connector.
Operation Temperature	0 to 50 degrees C

Mechanical

Mechanical Dimensions	4.25" x 3.75" x 1.5" 12" x 3.75" x 1.5" (antenna fully extended straight out)
Weight.....	8 oz.
Finish/Material (Front)	Textured black powder-coat aluminum chassis.

ACCESSORIES

To order accessories or equipment related to the T4 or T4R I-Caption® Transmitter / Repeater, please contact Sound Associates' Customer Service Department Monday – Friday 10:00 am - 5:30 pm EST at (888) 772-SOUND (7686) or newyork@soundassociates.com. For your convenience, we have included the following part numbers for easy reference:

Accessories:

- MB10 – Wall, Ceiling or Microphone Stand Mount

Related Equipment:

- I-Caption® R6 Wireless Handheld Receiver.
- I-Caption® CS6 – Automation Control Unit
- I-Caption® SC10 Charger / carrying case for 10 R6 receivers.

WARRANTY

We, Sound Associates, Inc., warrant to you the original owner or any subsequent owner of each new **I-Caption® T4 / T4R Transmitter / Repeater** that the unit is free of defects in workmanship and materials for a period of three years from the date of original purchase. **(Excluding the external power supply accessory which carries a 90-day warranty.)** If the product fails due to defects in craftsmanship or materials or does not meet specifications enclosed with the product, Sound Associates will repair or replace the unit, whichever Sound Associates chooses, free of charge. All repairs will be conducted by trained personnel at Sound Associates' facility in a reasonable time. All expenses on remedying the defect, including return shipping will be borne by Sound Associates. All shipping fees, taxes, duties, and other customs fees incurred by shipping between foreign countries will be borne by the owner.

Sound Associates is not responsible for the following under this warranty:

- malfunctions due to misuse, accident, or neglect.
- damage to other products resulting from product failure.
- defects or damage caused by unauthorized modifications or service.

Sound Associates, Inc. reserves the right to change the design of any product without notice and with no obligation to make corresponding changes in products previously manufactured.