

# INSTALLATION AND MOUNTING MANUAL

## HyperSpike® TCPA-10



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## 1.0 INTRODUCTION

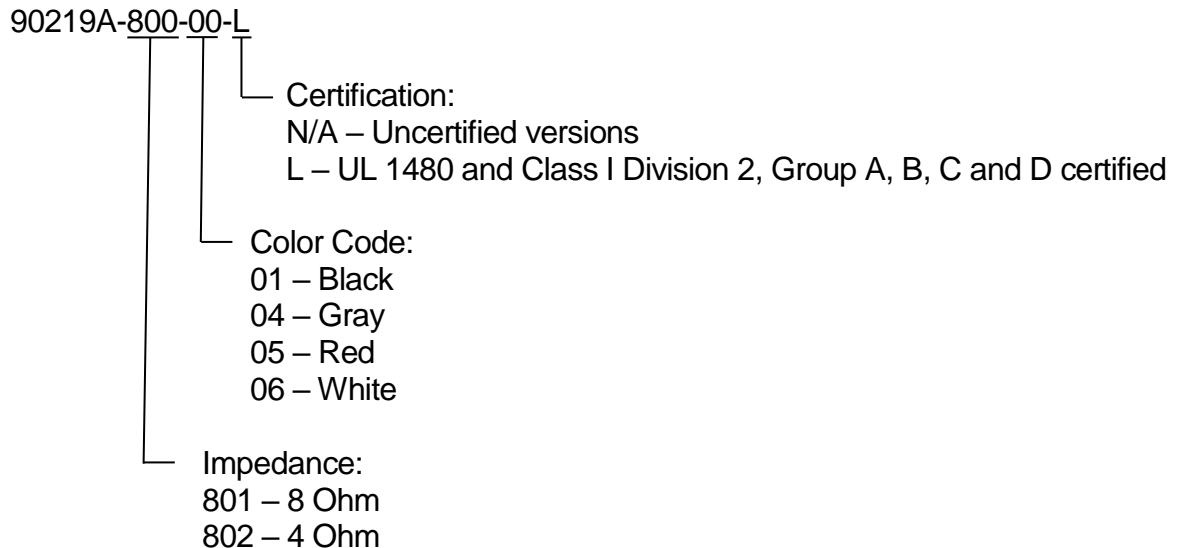
The TCPA-10 family consists of the TCPA-10 4 Ohm, TCPA-10 8 Ohm, and the TCPA-10 Distributed Audio. The TCPA-10 4 Ohm and TCPA-10 8 Ohm are Direct Drive systems, useful for public address applications. The TCPA-10 Distributed Audio system is meant for use with fire alarm systems.

All TCPA-10 series speaker systems are designed for indoor or outdoor wet applications. The TCPA-10 produces 90 degrees of acoustic energy and excels in high ambient noise environments. It has an operating temperature range of -40°C to 60°C.

### 1.1. TCPA-10 Direct Drive Speaker

The TCPA-10 can be configured as an 8 ohm or 4 ohm nominal speaker.

Models:



TCPA Direct Drive Specifications:

Input Voltage	Impedance	dB SPL (Peak @ 1m)	dB SPL (Max @ 1m)	* dB SPL (Reverb @ 10ft)	Usable Range (Feet @ 80dB)
22	8 Ohm	139	134	112	1,640
22	4 Ohm	142	137	114	2,320

\* UL Standard SPL Measurement

Frequency Response: 400 Hz – 4000 Hz

Directionality: See Figure 1

Weight: 9 lb

Dimensions: 10.1" H X 10.1" W X 11.3" L

Suitable for Outdoor Use (Adapté à l'utilisation externe)

## 1.2. TCPA-10 Distributed Audio Speaker

The TCPA-10 Distributed Audio speaker has five field-selectable power taps that run off of 25 V, 70 V, and 100 VRMS audio systems. The taps can easily be set by turning a slotted selector switch. The speaker has an integrated DC blocking capacitor that allows the fire alarm control panel to conduct circuit supervision.

Models:

90215A-801-00-L

Certification:

N/A – Uncertified versions

L – UL 1480 and Class I Division 2, Group A, B, C and D certified

Color Code:

01 – Black

04 – Gray

05 – Red

06 – White

TCPA-10 Distributed Audio Specifications:

Input Voltage	Watts	dB SPL (Peak @ 1 m)	dB SPL (Max @ 1 m)	* dB SPL (Reverb @ 10 ft)	Usable Range (Feet @ 80 dB)
25	0.5	119	114	90	160
25	1	122	117	96	230
25	1.5	124	119	98	290
25	2	126	121	99	360
25	3	128	123	100	460
70	4	129	124	102	520
70/100	8	131	126	104	650
70	12	133	128	107	820
70/100	16	134	129	107	920
70/100	24	136	131	109	1,160
100	32	137	132	110	1,300
100	45	139	134	112	1,640

\* UL Standard SPL Measurement

Frequency Response: 400 Hz – 4000 Hz

Directionality: See Figure 1

Max Supervisory Voltage: 50 VDC

Weight: 9 lb

Dimensions: 10.1" H X 10.1" W X 11.3" L

Suitable for Outdoor Use (Adapté à l'utilisation externe)

**⚠ CAUTION: EXCEEDING THE MAXIMUM RATINGS OF THE SPEAKER WILL CAUSE EXCESSIVE DISTORTION AND MAY CAUSE PERMANENT DAMAGE TO THE SPEAKER AND ITS INTERNAL COMPONENTS.**

**⚠ MISE EN GARDE: TOUT DÉPASSEMENT DES VALEURS NOMINALES MAXIMALES DU HAUT-PARLEUR ENTRAÎNERA UNE DISTORSION EXCESSIVE ET PEUT PROVOQUER DES DOMMAGES IRRÉVERSIBLES SUR LE HAUT-PARLEUR ET SES COMPOSANTS INTERNES.**

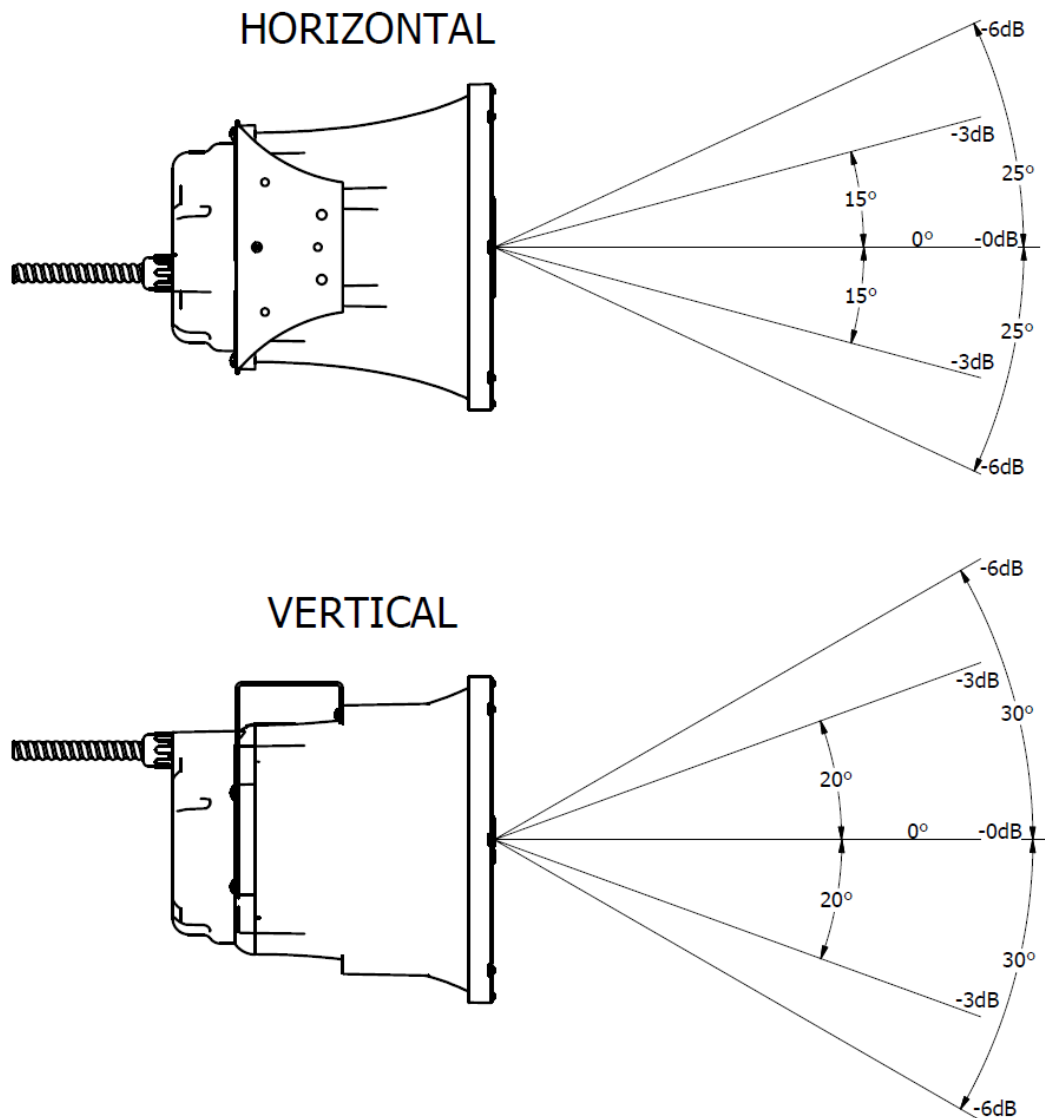


Figure 1: Dispersion Characteristics at 3 meters as measured by UL Labs

### 1.3. Optional Accessories

OPTIONAL ACCESSORY LIST		
ITEM	PART NUMBER	DESCRIPTION
1	72377B-801	WALL MOUNT BRACKET
2	72378B-801	DUAL UNIT MOUNTING ADAPTER
3	72379B-801	POLE MOUNT ADAPTER
4	90172A-807	AMPLIFIER KIT (Direct Drive)

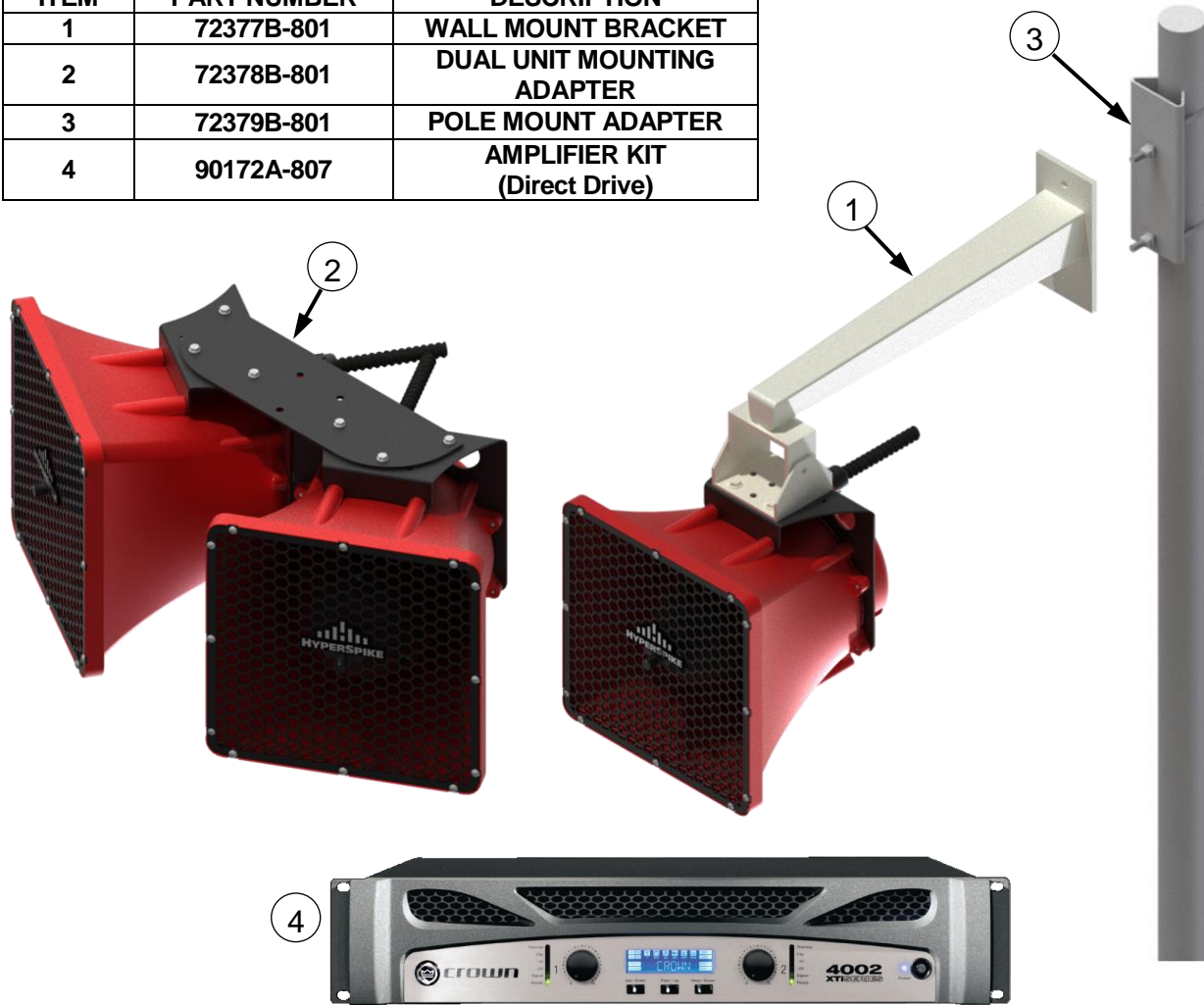


Figure 2: Optional Accessory Kits

## 2.0 TCPA-10 MOUNTING

**⚠ WARNING: WHEN MOUNTING OUTSIDE MAKE SURE THAT THE SUPPORT SYSTEM USED HAS THE PROPER WIND LOAD RATING AND COMPLIES WITH LOCAL STANDARDS AND CODES.**

**⚠ AVERTISSEMENT : EN CAS DE MONTAGE EXTERNE, ASSUREZ-VOUS QUE LE SYSTÈME DE SUPPORT UTILISÉ A UNE CHARGE DE VENT NOMINALE APPROPRIÉE ET QU'IL EST CONFORME AUX NORMES ET CODES LOCAUX.**

This equipment is suitable for indoor or outdoor wet location use in Class I Division 2, Groups A, B, C, D; or Non-Hazardous locations only.

Temperature Code: T5

The TCPA-10 comes standard with a mounting bracket from which to mount the unit. The TCPA-10 is provided with three feet of electrical leads in a ¼ Trade Size flexible conduit exiting the back of the unit (¼ Trade Size Conduit has a nominal Ø.39" ID / Ø.57" OD).

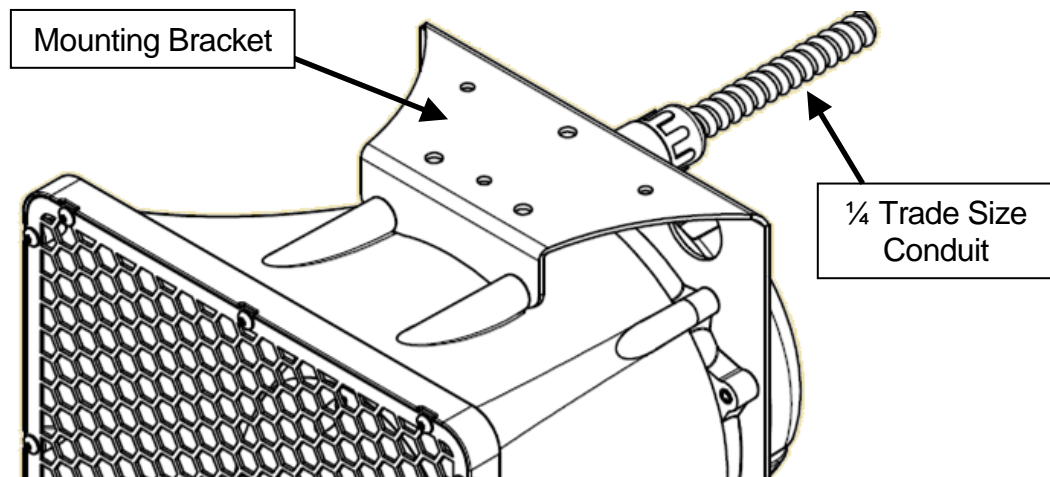


Figure 3: Mounting Bracket

## 2.1. Single Mount

The TCPA-10 is intended to be hung from the mounting bracket. A typical mount will use a wall bracket. A double mounting bracket is available for hanging two speakers together for 180° of broadcast coverage (see section 2.2).

- 1) To mount a single TCPA-10, attach the mounting bracket to the wall bracket (optional accessory or customer supplied) with three ¼-20 bolts (Figure 4).

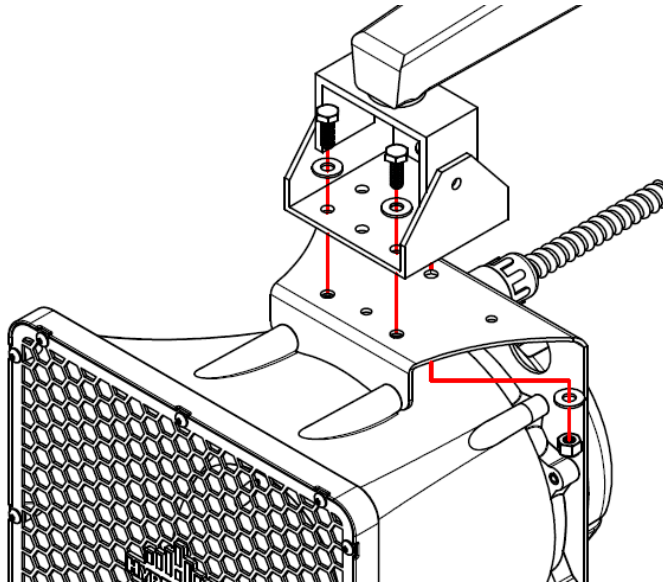


Figure 4: Attaching Wall Mounting Bracket

- 2) Attach the mounting bracket to the wall or pole with appropriate hardware according to local codes and safety practices.



## 2.2. Dual Mount

- 1) To mount two TCPA-10 systems to the same wall mounting bracket, use an optional Dual Unit Mounting Adapter. Attach the dual mount plate to the TCPA-10 mounting brackets with the hardware provided in the kit (Figure 5).

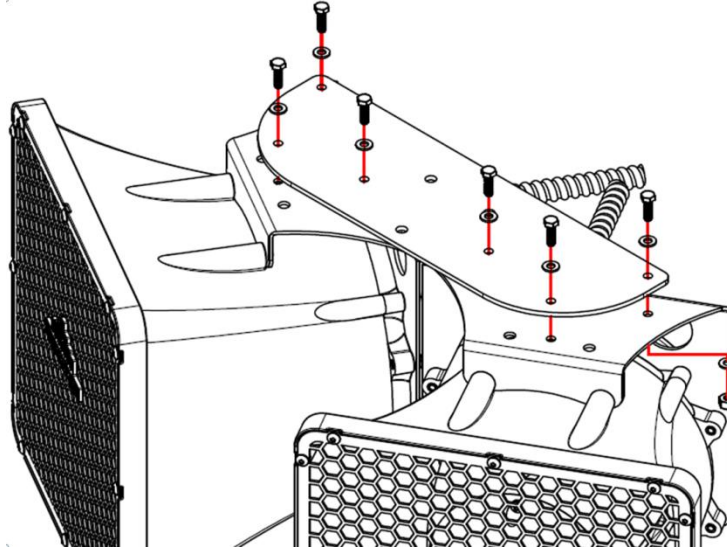


Figure 5: Attaching a Dual Mount Plate

- 2) Attach the wall mount bracket to the middle holes of the dual mount plate with three ¼-20 bolts (Figure 6).

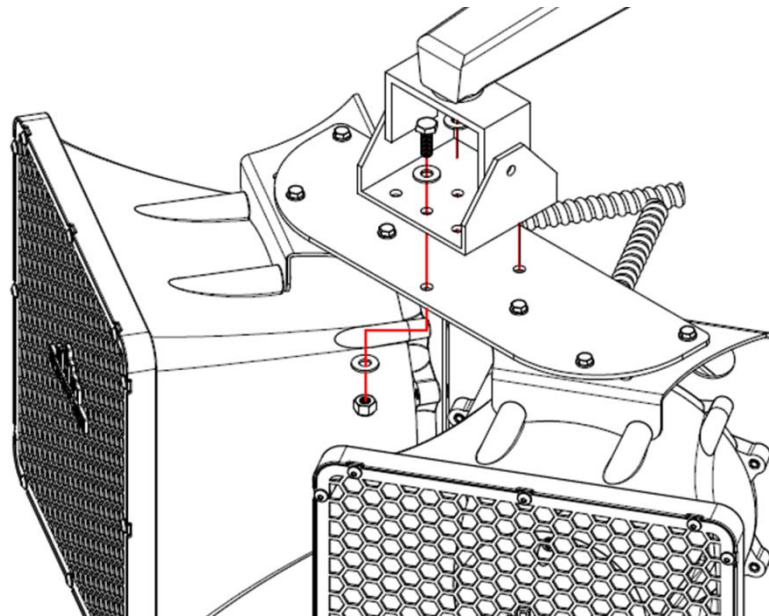


Figure 6: Attaching Dual Speaker System to a Wall Mounting Bracket

- 3) Attach the mounting bracket to the wall or pole with appropriate hardware according to local codes and safety practices.

### 2.3. Tether Attachment

- 1) A tether cable may be attached to all speakers by looping the cable through the large hole in the TCPA-10 mounting bracket (Figure 7).

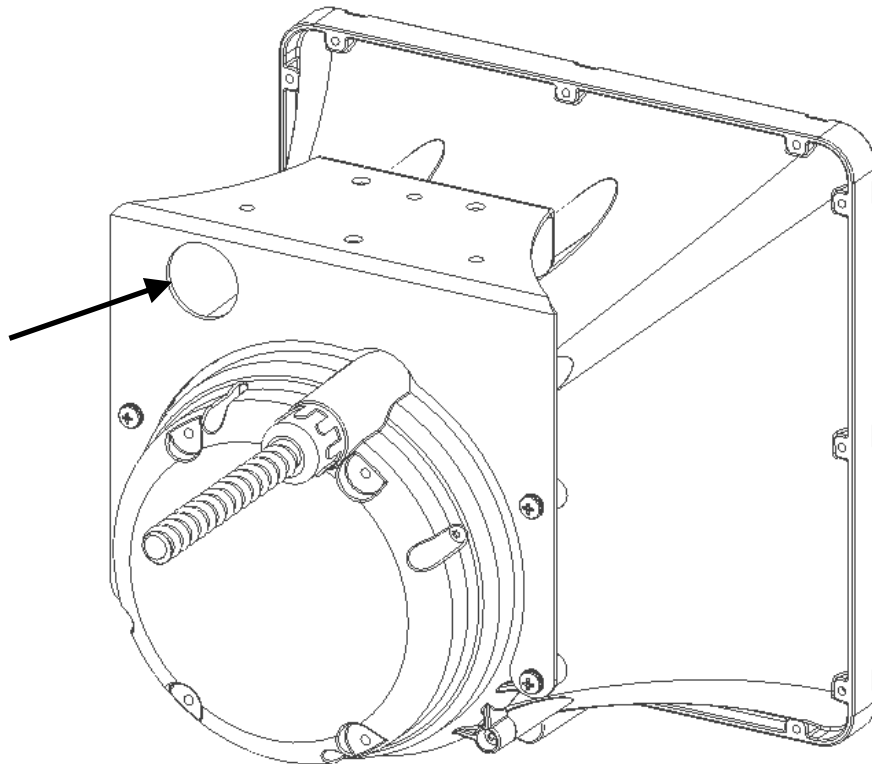


Figure 7: Tether Attachment Point

### 3.0 SETTING THE POWER LEVEL – Distributed Audio version only

- 1) To set the power level, use a slotted screwdriver.
- 2) Turn the selector switch clockwise to the stop. This is the .5/4/8 Watt setting.
- 3) To change to a higher setting, count clicks as you turn the switch counter-clockwise to 1/8/16 W, 1.5/12/24 W, 2/16/32 W or 3/24/45 W (Figure 8).
- 4) Note that the slot direction does not indicate the setting.



Figure 8: Power Selection Switch

**!** **WARNING: AFTER INSTALLATION, VERIFY THAT THE SPL AT THE MINIMUM HEARING DISTANCE OF 10 FEET IS LESS THAN 120 DECIBELS (A).**

**!** **AVERTISSEMENT : APRÈS L'INSTALLATION, VÉRIFIEZ QUE LE SPL À LA DISTANCE D'ÉCOUTE MINIMALE DE 3,3 MÈTRES (10 PIEDS) EST INFÉRIEUR À 120 DÉCIBELS (A).**

## 4.0 FIELD WIRING

**⚠ WARNING: EXPLOSION HAZARD. DO NOT DISCONNECT THE EQUIPMENT UNLESS POWER HAS BEEN SWITCHED OFF OR UNLESS THE AREA IS KNOWN TO BE NON-HAZARDOUS.**

**⚠ AVERTISSEMENT : RISQUE D'EXPLOSION. NE DÉBRANCHEZ PAS L'ÉQUIPEMENT AVANT DE L'AVOIR MIS HORS TENSION OU SAUF SI LA ZONE EST CONNUE POUR ÊTRE NON DANGEREUSE.**

### 4.1. Cable Routing

All TCPA-10 systems come with a three-foot long weather-proof ¼ Trade Size flexible conduit and 42" leads.

Route the conduit to a junction box approved by local electrical codes and standards.

Follow your integrator's instructions for installing into an appropriate junction system.

### 4.2. Wiring Diagrams

The 4 ohm (Direct Drive) and Distributed Audio systems have four lead wires. The 4 and 8 ohm should be wired as shown below. The duplicate wires on the Distributed Audio is for placing multiple units in series (i.e. multiple TCPA-10s on the same Distributed Audio line).

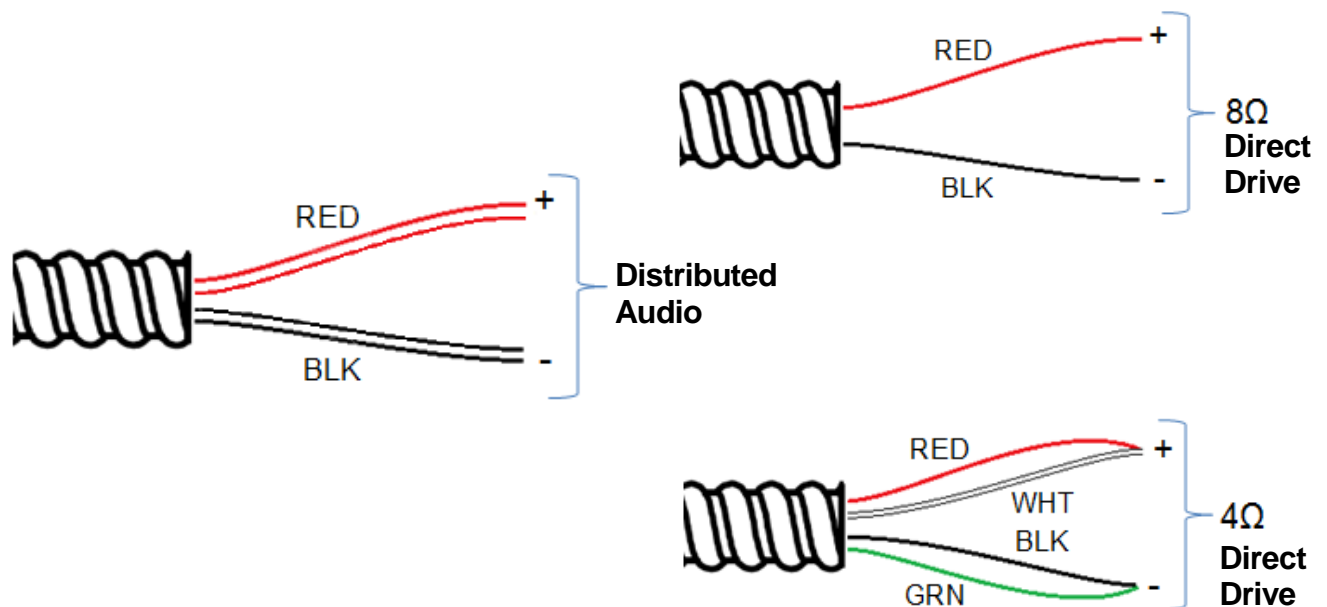


Figure 9: TCPA-10 Wiring Diagrams

## 5.0 WARRANTY

Ultra Electronics – USSI warrants its products to be free from defects in material and workmanship for a period of one (1) year from the date of shipment from USSI’s facility. This warranty is extended to the original purchaser and all subsequent owners, provided a copy of the original dated bill of sale is presented when service is requested under warranty.

If your product should require service, write, phone, fax or e-mail Ultra Electronics – USSI at:

**Ultra Electronics – USSI**  
**4868 East Park 30 Drive**  
**Columbia City, IN 46725**  
**Phone: 260-248-3665**  
**Fax: 260-248-3510**  
**E-mail: [ServiceDepartment@ultra-ussi.com](mailto:ServiceDepartment@ultra-ussi.com)**  
**URL: [www.ultra-HyperSpike.com](http://www.ultra-HyperSpike.com)**

We will either direct you to a local service agency or provide you with a Return Material Authorization (RMA) number so that you can ship the product to our factory. Do not ship the product to us without first obtaining an RMA number. Place the RMA number on all boxes returned to the factory to prevent equipment from being lost or mishandled. Merchandise returned to us for service under warranty must be accompanied by a copy of the original bill of sale, and shipped prepaid. You are responsible for transporting your product to our factory. We will pay the return shipping charges on all products repaired under warranty.

### 5.1. Failures Not Covered by This Warranty

This warranty covers manufacturing defects. The warranty **DOES NOT** cover:

- 1) Damage caused by accident, misuse, abuse, product modification or neglect.
- 2) Damage incurred during shipment (you must claim these damages from the carrier).
- 3) Damage resulting from failure to operate the product in accordance with the instruction manual.
- 4) Damage resulting from attempted repairs by unauthorized personnel.
- 5) Claims based on any perceived agreement not explicitly stated in this warranty such as conversations with service personnel or sales representatives.

### 5.2. Limitation of Implied Warranties

All implied warranties, including warranties of merchantability, are limited in duration to a period of one (1) year from the date of shipment from Ultra Electronics – USSI.

### 5.3. Exclusion of Certain Damages

Ultra’s liability is limited to the repair or replacement, at our option, of any defective product, and shall in no event include incidental or consequential commercial damages of any kind. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the preceding limitation or exclusion may not apply to you.

For further information regarding this warranty, parts, or service, please contact Ultra Electronics – USSI through one of the methods listed at the beginning of this warranty section.



Ultra Electronics – USSI  
4868 East Park 30 Drive  
Columbia City, IN 46725 USA  
+1-260-248-3666