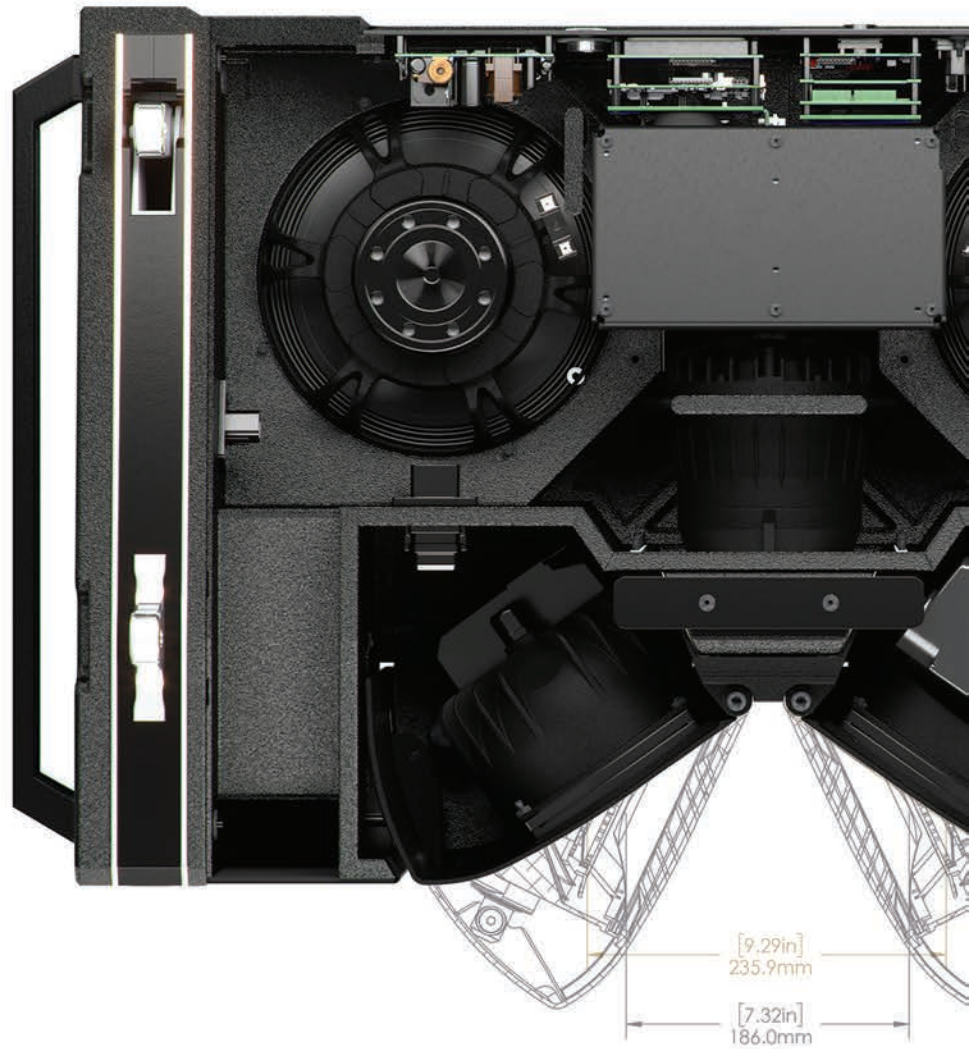


PKSOUND™
T10
Robotic Line Source Element



USER MANUAL
v2.0

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1. Important Safety Instructions

1. Read all instructions thoroughly and keep this manual close at hand.
2. Do not use this module near water.
3. Clean only with dry cloth.
4. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions and local authority having jurisdiction.
5. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
6. Use a proper polarized or grounding-type plug. If the provided plug does not fit into your outlet, consult an electrician.
7. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
8. Only use attachments/accessories specified by the manufacturer.
9. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the module. When a cart is used, use caution when moving the cart/module combination to avoid injury from tip-over.
10. Unplug this module during lightning storms or when unused for long periods of time.
11. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as: power-supply cord or plug is damaged; liquid has been spilled or objects have fallen into the apparatus; the apparatus has been exposed to rain or moisture; does not operate normally; or has been dropped.
12. The means of disconnection from the live power source is the chassis power connector or main plug. One of these devices must remain accessible when the apparatus is in use.



CAUTION: To reduce the risk of fire or electric shock, do not open or expose this apparatus to rain or moisture.



CAUTION: Failure to follow the instructions in their entirety could result in serious injury or death. Follow all local safety practices and due diligence in ensuring safe working conditions while using T10.



CAUTION: Do not remove the amplifier or actuator assemblies. No user-serviceable parts inside. Refer servicing to qualified service personnel. Email support@pksound.ca for service.

2. Additional Power Safety Instructions

1. The unit must be powered exclusively by an earth connected mains socket in an electrical network compliant to IEC 364 or similar local rules. It is absolutely vital that the user verifies this fundamental safety requirement. If you are in any doubt, get the installation checked by qualified personnel before use.
2. The means of disconnection from the mains is the mains plug. We strongly recommend that you power the unit from a professionally installed mains supply with an easily accessible on/off switch or circuit breaker.
3. Before powering the unit via the Neutrik® powerCON TRUE1 connector, make sure that the unit is supplied with the correct mains operating voltage :
 - 100-240 V~, 50/60 Hz
4. The power section is protected by two non-user serviceable fuses:
 - Type 3AB 10A 250V Slow Blow
5. Do not use this unit if the electrical power cord is frayed or broken.
6. Do not block or restrict air flow from the front or rear of the module; doing so will negatively impact performance of the unit. Do not energize this unit if the electrical power cord is frayed or broken, or the mains plug has exposed inner connectors.
7. Do not block or restrict air flow from the front or rear of the module; doing so will negatively impact performance of the unit.



WARNING: To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.



WARNING: Never spray water directly into the front of the module; doing so will expose electronic components to moisture and damage the internal equipment.

3. Approvals

3.1 Safety:

Electrical Safety & Compliance:

- Intertec - cETLus-62368-1 (CAN/CSA C22.2-62368-1 Equivalent)

Mechanical Strength:

- BGV-C1(DGUV V17)
- European Machinery Directive 2006/42/EC
- DIN EN 1993-1 Eurocode 3
- DIN EN 1999-1 Eurocode 9

Risk Assessment

- DIN EN 12100

3.2 Environmental:

- IP43: when suspended ≤ 0 degrees inclination (level or downward angle)
- IP42: when suspended ≥ 0 degrees inclination (any upward angle)
- FCC: CFR47 Part 15B-2010 / FCC/ICES-003
- Country of Origin: Canada
- This is a Class A product: In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures

NOTE: This equipment has been tested and found to comply with the limits for a Class A 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 is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

3.3 EU Declaration of Conformity & CE Marking:

This declaration applies to the following products manufactured by PK Sound Corp. and includes all types listed below.

Product Name:

- T10 (901-0002)

We herewith declare that said products are in conformity with the provisions of the following EU directives, including all applicable amendments:

2014/35/EU, LVD Directive

- EN 62368-1 2014

2014/30/EU, EMC Directive

- EN 55103-1:2009 +A1:2012
- EN 55103-2:2009

2011/65/EU, RoHS Directive

- EN 63000:2018

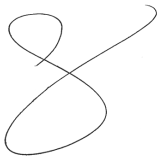
2006/42/EC, European Machinery Directive

- T10 Suspension Frame (921-0005)
- T10 Downfill Adapter (921-0004)
- Delta Plate (922-0001)

Manufacturer:

PK Sound Corp.
235075 Ryan Rd.
Rocky View, Alberta, Canada
T1X 0K3
www.pksound.live

All production versions of these types are included, provided they correspond to the original technical version and have not been subject to any later design or electromechanical modifications. PK Sound Corp. accepts responsibility for this declaration.



Jeremy Bridge P.Eng
CEO / Engineering Manager
Signed Oct. 1, 2022, in Rocky View, Canada

4. Power Requirements

4.1 Voltage & Current Requirements

- T10 is equipped with a universal power supply and operates safely and continuously when its AC voltage stays within 100-240 VAC at 50 or 60 Hz. The loud-speaker allows any combination of voltage to ground (neutral-line-ground or line-line-ground). If the voltage rises above 275 V, the power supply could become damaged.
- When T10 modules are powered from a three-phase power source, it is very important to keep a good balance in the load of each phase of the AC power. It is very important to include subwoofers and satellites in power distribution calculation: both subwoofers and satellites shall be distributed between the three phases.
- In an under-voltage condition (brown-out), the loudspeaker's robotics power supply may not have sufficient power to articulate the robotic actuators. In this scenario, attempt to perform robotic articulations when audio is muted and there is less draw on available power, or only articulate the robotics of one module at a time.

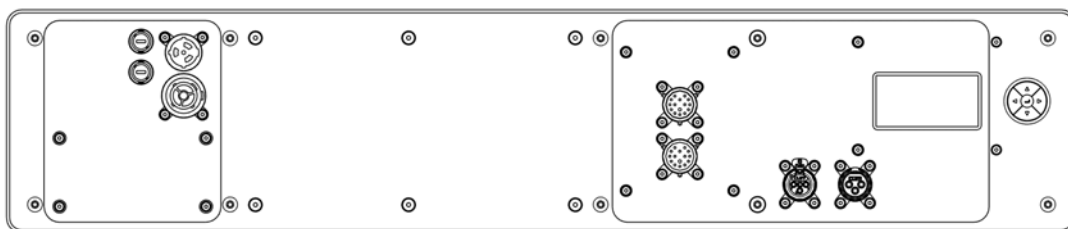


CAUTION: To ensure that T10 performs as specified, without interruption, and without damage to its power supply ensure that: The power source is operating within the required voltage window (100-240 VAC). Use the proper length and gauge power cables and ensure system voltage drop does not exceed 5% of the originally supplied voltage.

4.2 AC Input Connector

- Each T10 module is provided with a Neutrik powerCON TRUE1 NAC3PX inlet-outlet to supply power and daisychain over to other modules. The NAC3PX is rated for 16A. The maximum number of modules possible to daisy chain is:
 - 230-240V: 4 Modules
 - 208V: 4 Modules
 - 120V: 2 Modules

The Neutrik powerCON TRUE1 connector is rated at IP65 when mated. Unmated connections should be considered not rated. Measures should be taken in wet environments to cover open connections of any type.



T10 Rear Panel

5. Electrical Safety

Pay close attention to these important electrical and safety guidelines.

1. T10 requires a grounded outlet. Always use a grounded outlet and plug.
2. Do not use a ground-lifting adapter or cut the AC cable ground pin.
3. Make sure the AC power cable for the module has the appropriate power plug (on the other end) for the area in which you will operate the loudspeaker.
4. Do not operate the module if the power cable is frayed, broken or has exposed inner conductors.
5. Keep all liquids away from T10 modules and exposed, unrated connections to avoid hazards from electrical shock

6. Environmental Constraints

1. Never spray water directly into the front of the module; doing so will expose electronic components to moisture and damage the internal equipment.
2. Never disconnect, attach, or interconnect cables when the cable or module is wet. In the event that the module becomes wet, the user must ensure all power has been removed prior to disconnecting or reconnecting.



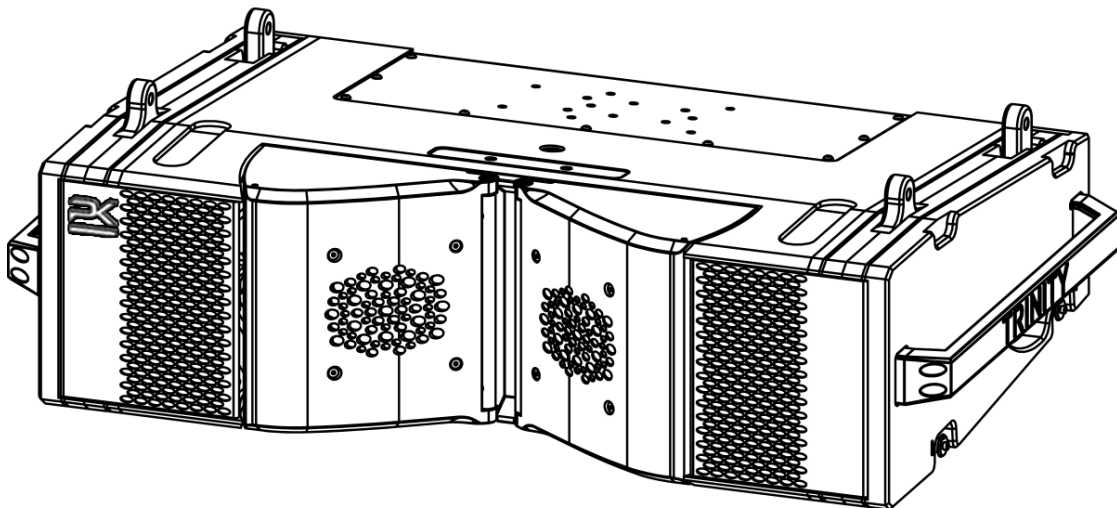
NOTE: For any permanent installation, the user must consult the manufacturer at:
support@pksound.ca

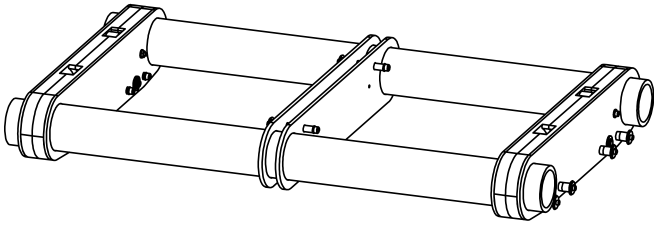
7. Rigging

7.1 Rigging Overview

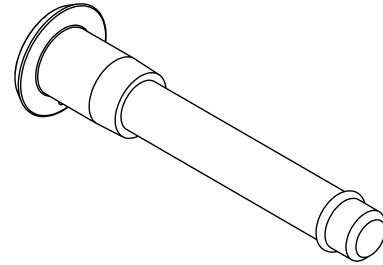
T10's Auto-Align rigging is very simple and designed specifically to reduce setup time and improve safety of deployment. T10 modules are flown straight and only curved after the array has been suspended. T10's rigging system consists of the following elements:

7.2 T10 Rigging Components

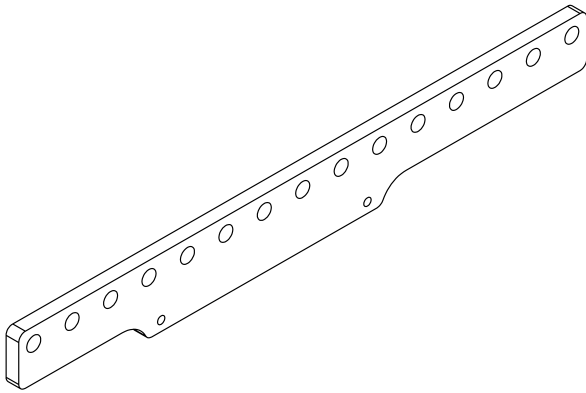




T10 Suspension Frame



10mm Quick Release Pins [QRP]



T10 Suspension Frame Arm



CAUTION: Use only the quick release pins supplied with T10 or the exact replacement part from PK Sound. Failure to do so will compromise the integrity of the system.
CAUTION: Use only mounting and rigging hardware that has been rated to meet or exceed the total weight of the system being hung, and meets local laws/regulations.

7.3 Mechanical Limits

The T10 rigging system complies with CSA C22.2#62368-1:2014Ed.2 and has been designed following the guidelines of BGV-C1. Refer to **.dynamics** for the safety factor of a specific deployment.

The safe limit gives the maximum number of elements for which the safety factor is always compliant with CSA C22.2#62368-1:2014Ed.2, regardless of the other deployment parameters (Suspension Frame angles, inter-module spacing, etc.)

The “Maximum Limit” and “Limited Position” columns in the table below detail the maximum number of modules for which the safety factor can be compliant with CSA C22.2#62368-1:2014Ed.2. The “Safe Limit” and “Any Configuration” columns detail the deployment parameters that provide the best mechanical conditions. The maximum limit is not based around **.dynamics**. All configurations must be verified by safety calculations within **.dynamics**. It is the responsibility of the user to ensure safe rigging conditions.

Ground Stacked	Safe Limit	Maximum Limit
T10 Suspension Frame Groundstack Mode*	4	4
Flown	Any Configuration	Limited Position
T10 Suspension Frame Dual-Point	8	24
T10 Downfill Adapter	0	6

*Ensure Suspension Frame is securely affixed to stacking surface.

7.4 Assessing Mechanical Safety

Rated Working Load Limit (WLL) Alone Is Insufficient

The rated WLL is an indication of the module resistance to tensile stress. For complex mechanical systems such as loudspeaker arrays, WLLs cannot necessarily be used to determine the maximum number of enclosures within an array or to assess the safety of a specific array configuration.

7.5 .dynamics & Mechanical Safety

Mechanical Modeling with .dynamics

The working load applied to each linking point, along with the corresponding safety factor, will depend on numerous variables linked to the composition of the array (type and number of enclosures, splay angles, etc.) and the implementation of the flying or stacking structure (number and location of flying points, site angle, etc.). This cannot be determined without the complex mechanical modeling and calculation offered by **.dynamics**.

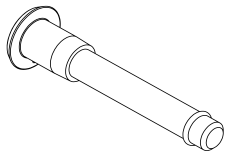
Assessing Safety with .dynamics

The overall safety factor of a specific mechanical configuration always corresponds to the lowest safety factor among all linking points. Always model the system configuration with the **.dynamics** software and check the Mechanical Data section to identify the weakest link and its corresponding working load. By default, a safety Alarm will appear when the mechanical parameters go beyond the recommended safety level.

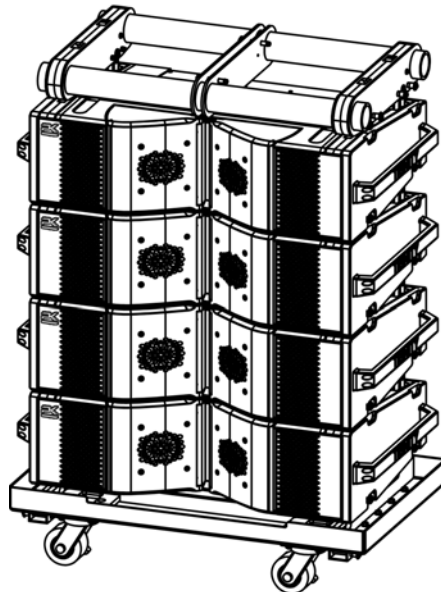
Consideration of Unusual Deployment Conditions

.dynamics calculations are based on typical environmental conditions. A higher safety factor is recommended with conditions such as extreme high or low temperatures, strong wind, prolonged exposure to salt water, etc. Always consult a rigging specialist or local authority having jurisdiction to implement safety practices adapted to such situations. Deployments in unusual conditions should always be approved by a PK Sound representative in each specific instance.

7.6 Mounting & Storing the T10 Suspension Frame

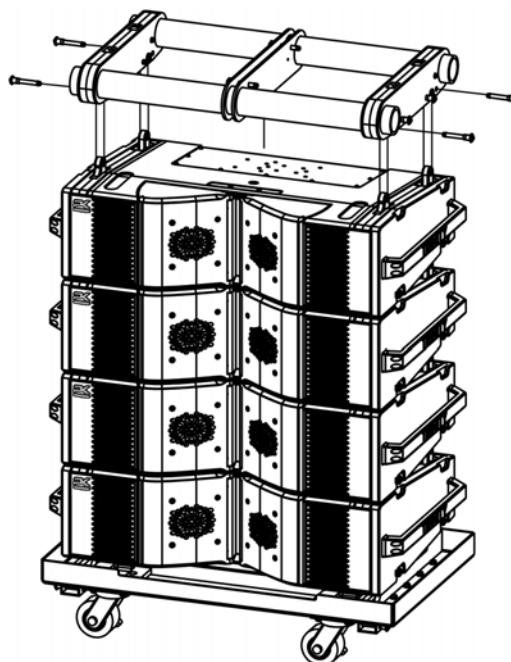


10mm Quick Release Pins [QRP]

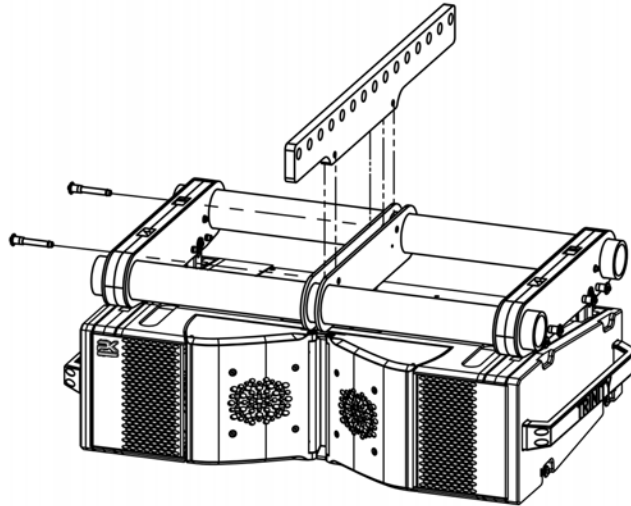


To mount the T10 Suspension Frame, remove the 4 x 10mm QRPs from the top module and simply place the Suspension Frame atop the module and reinsert the 4 x 10mm QRPs.

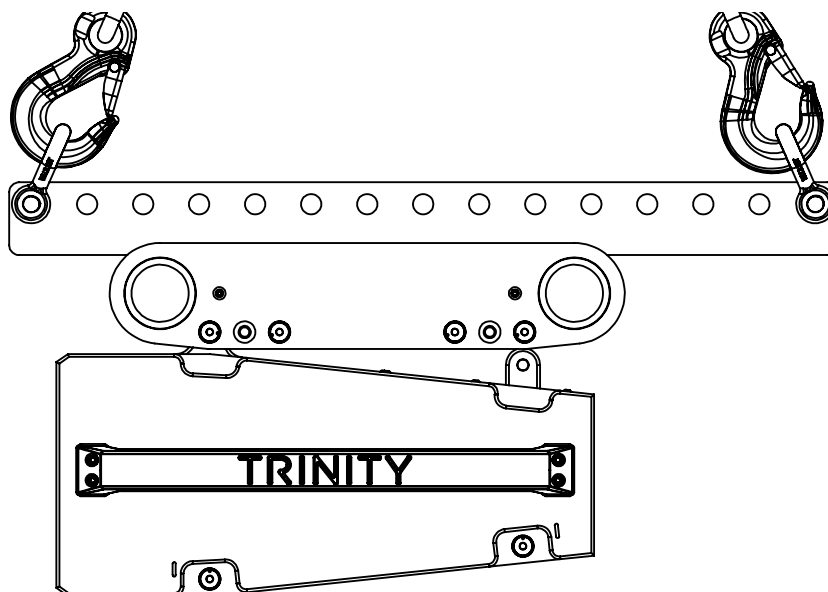
The symmetrical design of the T10 Suspension Frame and the Auto-Align rigging system ensures that the Suspension Frame will fit regardless of orientation. ALWAYS double check the QRPs for a positive lock by doing a pull test with no button decompression on the QRP.



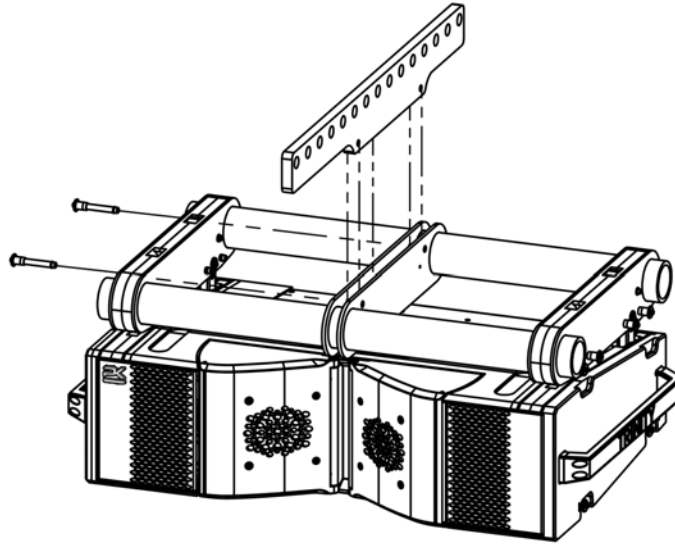
7.7 Forward Mounting Instructions



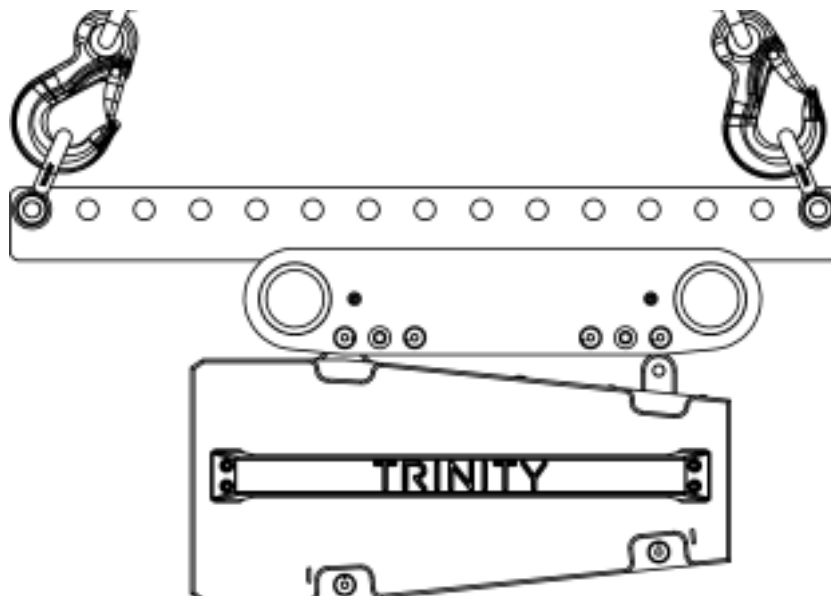
1. Remove the 2 x 10mm QRPs from the T10 Suspension Frame.
2. Place the Suspension Frame Arm between the 2 centre plates of the Suspension Frame with the Arm overhanging the REAR of the top T10 module.
3. Reinsert the 2 x 10mm QRPs through the Suspension Frame Tabs and the Arm.
4. ALWAYS double check the QRPs for a positive lock with no button compression.



7.8 Reverse Mounting Instructions



1. To mount the T10 Suspension Frame Arm in "reverse," remove the 2 x 10mm QRPs from the T10 Suspension Frame.
2. Place the Suspension Frame Arm between the 2 centre plates of the Suspension Frame with the Arm overhanging the FRONT of the top T10 module.
3. Reinsert the 2 x 10mm QRPs through the Suspension Frame Tabs and the Arm.
4. ALWAYS double check the QRPs for a positive lock with no button compression.



7.9 Storing the T10 Suspension Frame Arm

The T10 Suspension Frame Arm can be stored and transported in the pocket of the T10 Cover Top.

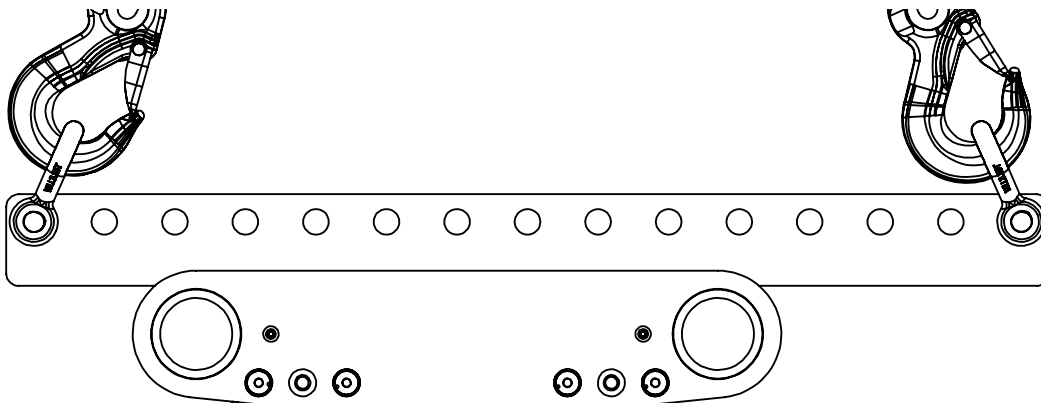
7.10 Connecting Hoists, Safety Lines & Dead Hangs:

The T10 Suspension Frame Arm is equipped with holes for 5/8" shackles. (Shackles not provided.)

- When chain hoists are used as the primary supporting means, connect the hoists to the permanent shackles and connect the shackles to the outermost holes.
- When situations require a "Dead Hang" or secondary safety, connect the supporting lines from the "Dead Hang" to the outermost 5/8" shackle holes and connect the chain hoists to be used for lifting to the next inner-most available 5/8" shackle hole. (Shackles not provided.) DO NOT set/change inter-module spacings while the array is supported by the secondary shackles.
- The secondary shackles can also be used as connection points for safety lines.

Single-Point Hangs: For added flexibility in hanging T10, the T10 Suspension Frame is supplied with 5/8" shackle holes equally spaced along the length of the Suspension Frame Arm.

- NEVER bridle front and rear 5/8" shackles mounted to the Suspension Frame Arm to a single point to create a single-point hang.

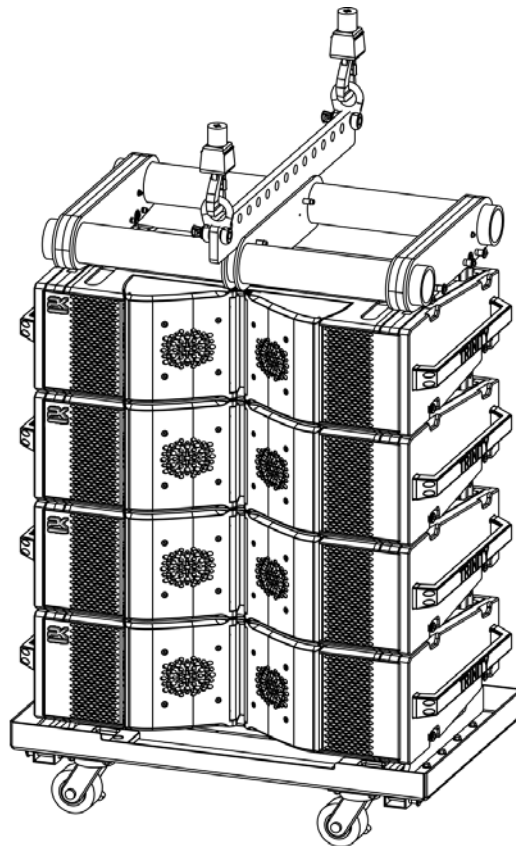


NOTE: Appropriate rigging hardware should be used to provide strain relief for flown array cables.

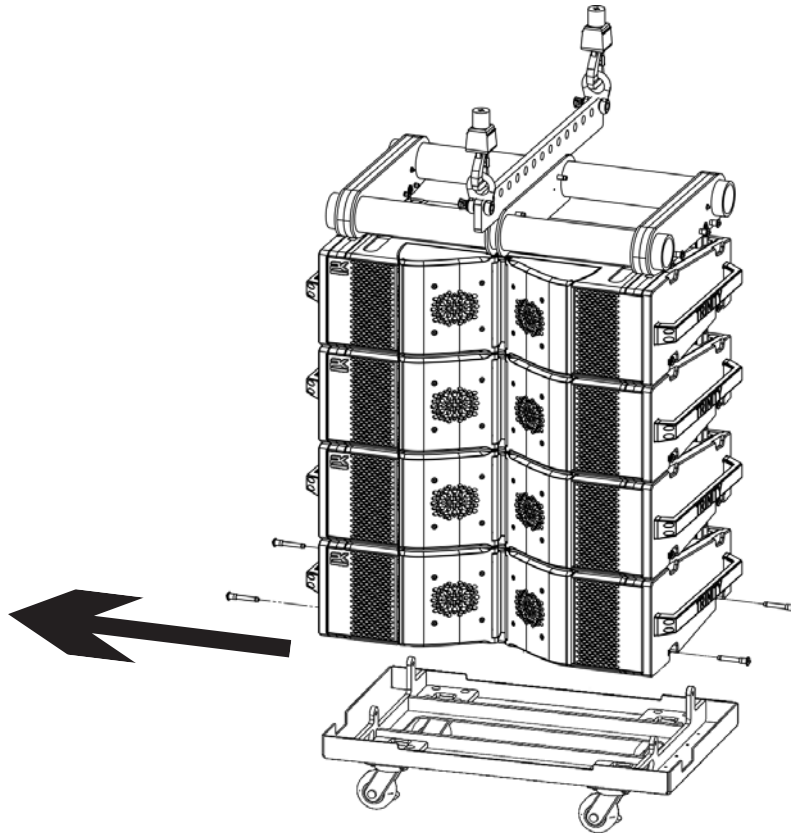
7.11 Hanging T10 Arrays

Although it is possible to safely hang up to 8 modules in virtually any configuration using the T10 Suspension Frame and up to 24 in limited configurations, not all arrangements are physically or safely possible to achieve. When hanging more than 8 modules, it is ALWAYS necessary to verify the desired configuration of the line array hang within **.dynamics** before flying the array.

1. Rigging connections above an array should ALWAYS be made by a qualified, competent person in accordance with the local AHJ.
2. Mount the T10 Suspension Frame and Suspension Frame Arm in the desired configuration according to the instructions above.
3. ALWAYS double-check the QRPs for a positive lock.
4. Connect the hoist(s) to the appropriate shackle(s) on the Suspension Frame Arm. (Refer to Section 7.10 regarding Safety Lines & Dead Hangs.)



CAUTION: When using a chain climbing hoist, ensure that the slack chain and/or chain bag does not come into contact with any part of the T10 Suspension Frame, or any of the T10 modules.

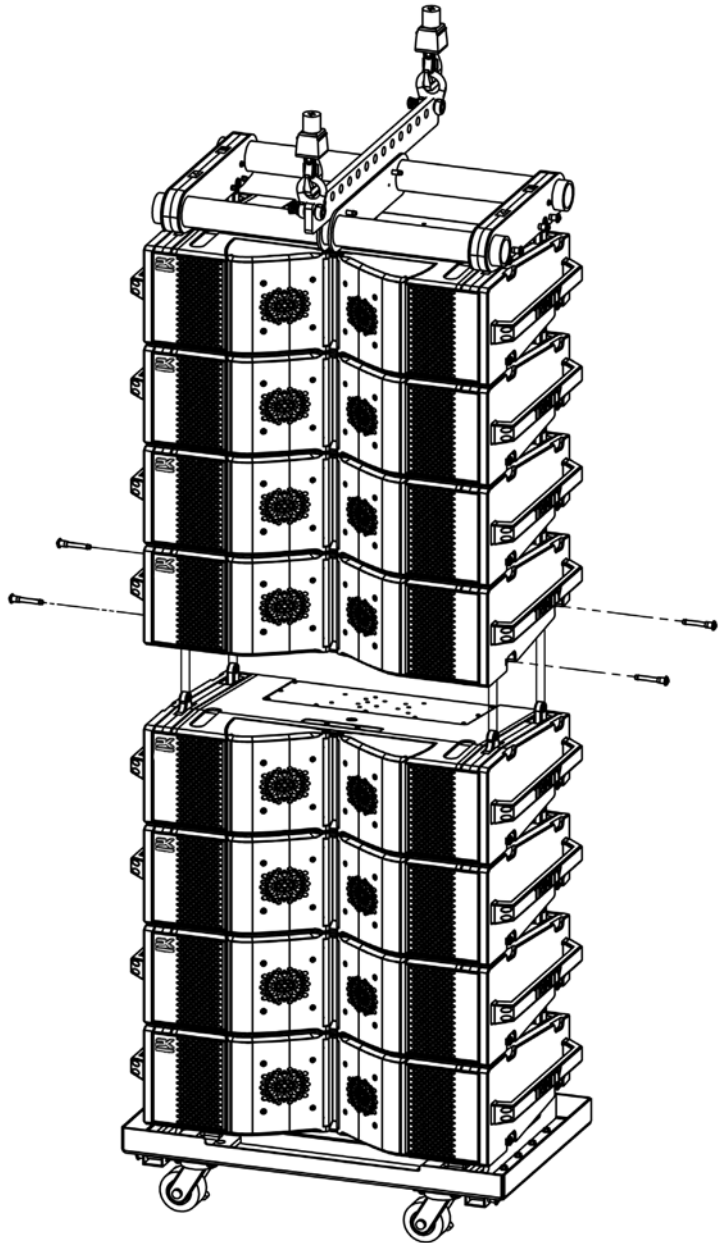


5. Remove the 4 x 10 mm QRPs connecting the T10 Cart to the bottom T10 module in the stack.
6. Raise the modules until they are free of the T10 Cart.
7. Replace the 4 x QRPs in the T10 Cart.
8. Store the empty T10 Cart appropriately.



CAUTION: Ensure the area behind the speaker stack is clear of persons and obstructions in order to avoid damage or injury. Do not lift the array until said areas are clear.

9. Raise the modules until they are just high enough to allow another Cart loaded with T10 modules to be placed directly underneath.
10. Remove the 4 x 10mm QRPs from the top T10 module of the next stack to be flown.
11. Lower the flown T10 array onto the next stack of modules to be flown. To prevent the stack of modules from tipping over or the T10 cart from collapsing, some weight/tension should remain on the lifting hoist. Do not allow the hoisting lines to go slack.
12. Reinsert the 4 x 10mm QRPs to connect the two stacks.
13. ALWAYS double check the QRPs for a positive lock.
14. Return to Steps 5-8 to remove the Cart.
15. Repeat Steps 10-14 until all modules being flown are connected.
16. Raise the array to trim height and set the desired angle of the T10 Suspension Frame.
17. Only once the array is at trim height should the inter-module spacing be adjusted. Follow instructions in the **.dynamics** manual to set the inter-module spacing.
18. When disassembling an array and returning stacks of T10 modules to the T10 Cart, lift the T10 Cart and pin to the bottom module of th next stack before lowering the stack and cart to the ground.



WARNING: Keep fingers and hands clear all possible pinch hazards when stacking and unstacking clusters of T10 modules.

8. .dynamics Software

8.1 Prerequisites

.dynamics software is used to remotely manage your T10 modules and access the full range of their functionality.

8.2 Installation Procedure

The latest **.dynamics** release can be downloaded at: <http://software.pksound.live>.

8.3 Updates

.dynamics will automatically prompt the user to update to the latest released version if there is an internet connection available. Follow the in-app prompts to complete the update. The new version will be available upon relaunching the software.

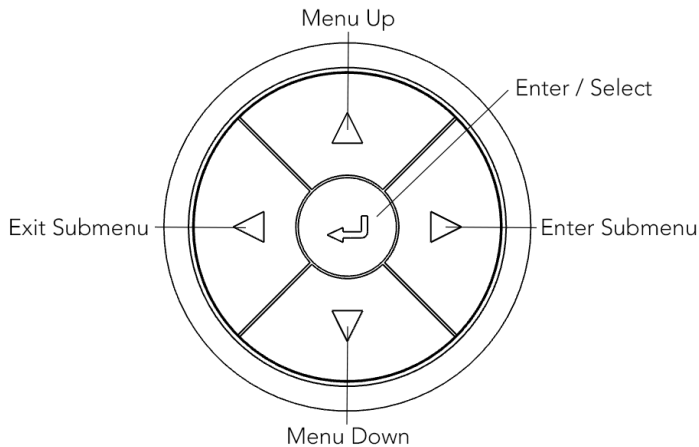
8.4 User Guide

The **.dynamics** User Guide is included in every release of the software. To access it, download and install **.dynamics**, then select File > User Guide.

9. Local Control

If a computer running **.dynamics** is not available, or in case of a network error, it is possible to operate each T10 through the LCD and button user interface on the rear of each module. There are four directional buttons and an “Enter/Select” button to navigate the menu system. The Select and right buttons perform the same action, and the left button navigates back.

9.1 T10 Menu Map



LCD Screen Colour Code

- **Purple:** Starting default
- **Blue:** Loudspeaker discovered
- **Green:** Audio signal discovered
- **Yellow:** Temperature warning
- **Red (Flashing):** Limiter hitting
- **Red (Solid):** Thermal Protect mode (Operation)
- **Red (Solid):** Service note in module (Upon start-up)

Manual Recovery Menu

- Sync to Furthest Out
- Run Both to Zero Deg
- Run Both to 12 Deg
- Move Left +0.05°
- Move Left -0.05°
- Move Right +0.05°
- Move Right +0.05°
- Try to Exit Recovery
 - If all motors are successfully reset
- COMMUNICATION DOWN (Not an option)
- DISCONNECT RIGGING (Not an option)
- Error Statuses (Not an option)

Vertical Box Angle

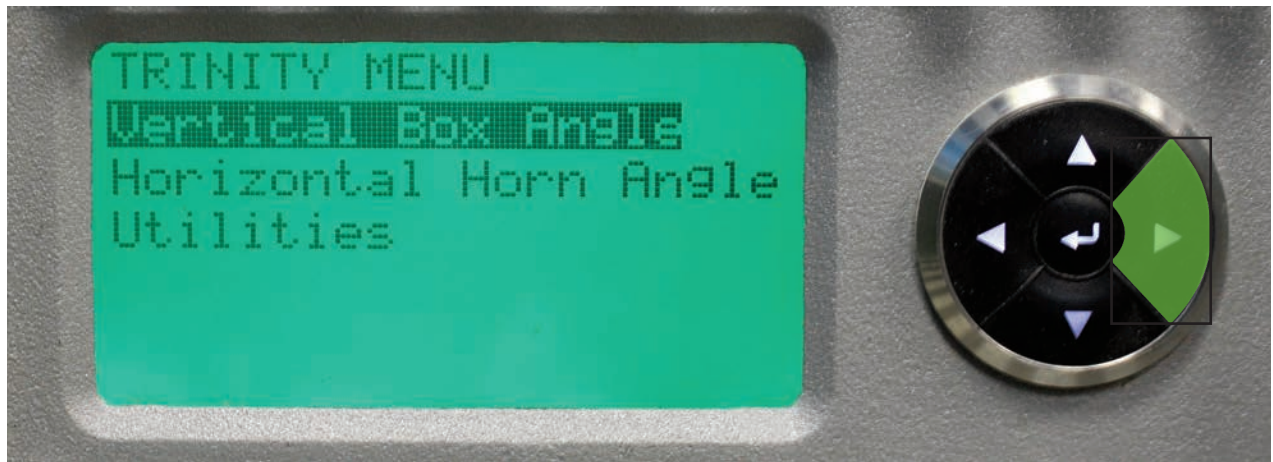
- 0-12° (0.5° increments)

Horizontal Horn Angle

- 60-120° (10° increments, symmetrical only)
- Service Mode

Utilities

- Show Box Angles
- PK Logo
 - Off
 - On
 - Blink
 - Colour (Choose from available)
- LCD Backlight
 - Off
 - On
 - Audio Status
- Service Menu
 - No
 - Yes
 - View Note
 - Clear Note
- Firmware Version
- Display IP Info
- Display MAC Address
- Auto-IP Configuration
- Vert. Actuator Status
- Horiz. Actuator Status
- IR Test
- LCD Test
- Buzzer Test
- Inclinator Test



Main T10 Menu

9.2 Adjusting Module Angles

Module angles can be adjusted by selecting "Vertical Box Angle" or "Horizontal Horn Angle" as seen in Fig. 1. Once selected, the user will be presented with a range of options for the angle to set.



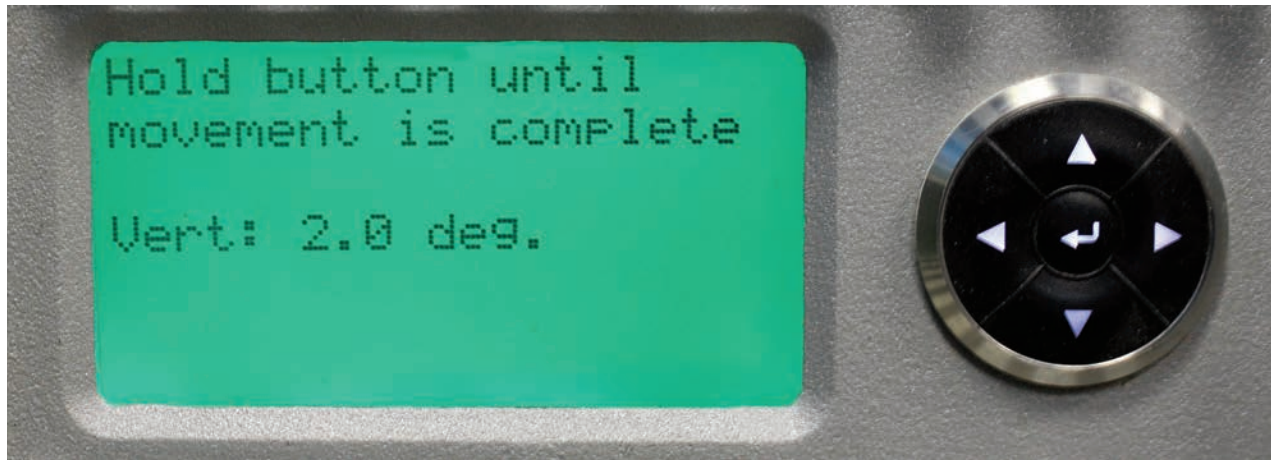
Vertical Box Angles

To select one of these angles and change the angle of the module, the user must press and hold the center or right button for the full duration of the movement until a confirmation screen is displayed.

As a safety feature, the module will immediately cease moving if the user releases the button and a failure message will be displayed on the LCD.



WARNING: Never adjust the actuation system while playing music or with any person or object within 2m of the loudspeaker array.



Hold the button while this message is displayed.



Once this message is displayed, release the button.

9.3 Utilities Menu

The Utilities Menu contains additional actions unrelated to the movement of the module, including:

Show Box Angles

Shows the module's current Vertical and Horizontal angles as well as its actual inclination.

PK Logo

Configure the state of the PK Logo between "Off," "On," "Blink," and "Colour," which presents a submenu to configure the colour of the front RGB logo.

LCD Backlight

Configure the state of the rear LCD screen backlight between "Off," "On," and "Audio Status."

When in the "On" state, the LCD screen backlight will be BLUE when actively communicating with **.dynamics** and PURPLE when first initializing or when no communication with the software is present for 30 seconds.

When in the "Audio Status" state, the backlight will behave as if in the "On" state; however, the backlight will turn GREEN whenever audio is actively being sent through the device. This takes precedence over the BLUE and PURPLE colours.

If there is an actuator error on robotic variants and the backlight is not set to "Off," the backlight will be RED. This error state will take precedence over all other colour states.

Service Menu

Displays the current "Service State" of the device. A user can also view and clear the currently input Service Note (if any); however, a Service Note can only be edited or input via **.dynamics**. A user is only able to set the state without a text component from the device back panel.

Firmware Version

Displays the device's current firmware version.

Display IP Info

Displays the device's current network configuration. This includes the current IP, Netmask, and Gateway IP information.

Display MAC Addr

Displays the device's MAC address and the MAC of the paired DSP.

Auto-IP Configuration

Displays the current status of the Auto-IP configuration. The user can change the Auto-IP configuration via this menu; however, the change will not take effect until the next reboot of the device.

Vert & Horiz Actuator Status

Displays the current status codes from the corresponding actuators.

IR Test

Turns on the IR transmitter and receiver to test their operation. When a signal is received via the receiver, the screen will notify the user. Hit the Back button to end the test.

Buzzer Test

Activates the buzzer to ensure correct operation.

Inclinometer Test

Constantly queries the inclinometer and displays the calculated angle to ensure correct operation of the inclinometer.

LCD Test

Performs a test to ensure that all pixels of the rear LCD screen are operating correctly. All pixels are set to black and a moving white bar will traverse the screen. This ensures that all pixels can change colour correctly.

10. Amplification & Audio.

Powerful signal processing tools are employed to optimize acoustic performance, including high-quality equalizers, limiters, delays, and FIR filters. The amplifier is also equipped with extensive protection circuitry: power limiters, thermal shutdown, short circuit and overload protection and a clip limiter.

10.1 Amplification

T10 is powered by a four channel, Class-D amplifier specifically designed for multi-way loudspeakers and asymmetric loads. It is capable of delivering up to 2000 W on a single 4-ohm load and granting the highest power available for drivers. A single-stage Power Factor Correction design allows the amplifier to achieve optimal, consistent performance in all operating conditions worldwide. Smart Rails Management technology maximizes the efficiency of the system and drastically reduces power consumption at any load condition.

10.2 .dynamics Audio Functions

Please refer to the **.dynamics** User Manual to review these functions.

10.3 T10 State Indicators

Please refer to the **.dynamics** User Manual to review these functions.

10.4 Temperature Warning

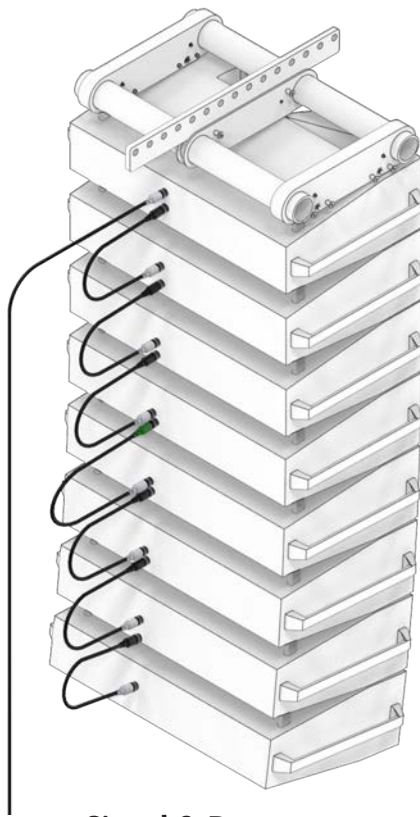
Temperature Warning – If the T10 module heats up to 65° C, a YELLOW warning light will flash on that module's visual representation in the **.dynamics** workspace to indicate that the module is 5° C away from a Thermal Protect scenario.

Thermal Protect – If the T10 module heats up to 70° C +, the amplifier will engage in thermal protection to protect its components. The YELLOW warning indicator will be replaced with a RED indicator in the **.dynamics** workspace. While in Thermal Protect mode, the effected module will remain on but will not pass audio; the audio will resume as soon as the module cools to below 70° C.

11. Back Panel

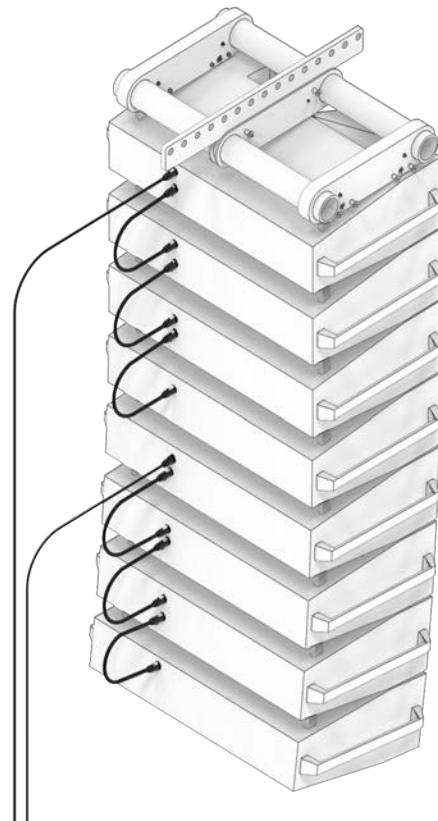


T10 Robotic Line Source Element - Rear panel



Signal & Data

T10 Array Multipin cabling

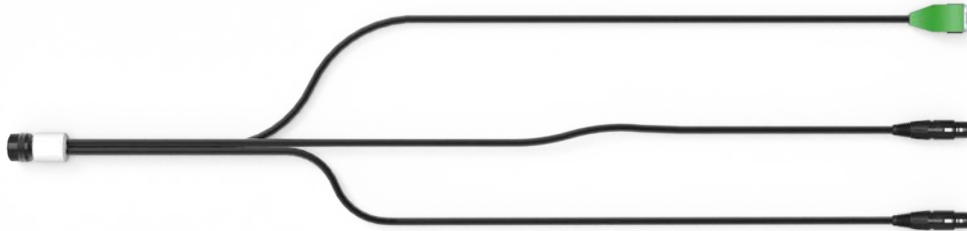


Power

T10 Array powerCON TRUE1 cabling

11.1 Connectors

MG.9-BI (36 IN) - This PK Sound proprietary break-in cable accommodates analog and digital inputs into a T10 element via standard AES and XLR cables. It also allows for a standard Cat-5 ethernet cable to connect to the **.dynamics** network. All Multipin cables share the same technical wiring pin-out. A screw-on cap protects the Multipin ends from damage when not in use.



C1 - Ethernet Input (Locking etherCON)

C2 - AES Digital Audio Input

C3 - Analog Audio Input

Amphenol 15-pin male Input

Ethernet Input - Requires a minimum of a Cat 5 Ethernet cable for carrying signals.

Digital Input (AES 3-Pin Female) – The digital audio input is a 3-pin XLR female which accepts digital AES data. AES uses 110Ohm shielded twisted pair (STP) cable with XLR connectors up to a distance of 100 m. It uses the following wiring:

- Pin 1 – Chassis and earth ground
- Pin 2 – Positive polarity signal (+)
- Pin 3 – Negative polarity signal (-)

Analog Input (XLR 3-Pin Female) – The analog audio input is a 3-pin XLR female connector which accepts balanced audio signals with an input impedance of 10 kOhm. It uses the following wiring:

- Pin 1 – Chassis and earth ground
- Pin 2 – Positive polarity signal (+)
- Pin 3 – Negative polarity signal (-)
- Case – Earth (AC) ground and chassis

Multipin Drive Cables / Home Runs (Assorted lengths) – T10 Multipin cable is available in 15, 30, and 45 m (50, 100, and 150 ft.) lengths to run from a stage box or snakehead to the first T10 module in an array.



M-Barrel – The M-Barrel male-to-female connector piece is used to join a breakout to a cable length as the twist collar of the Multipin connector is not compatible to join with another collar.



NOTE: For easy identification, the male connector of every Multipin cable is WHITE.



MBK.5 (20 IN) – The 0.5 m / 20 in. Multipin jumpers are used to connect stacks of 4 x T10 modules, which can then travel pre-cabled within the T10 Covers.



MG1 (40 IN) – The 1 m / 40 in. Multipin jumper is designed to connect the bottom module of a 4 x T10 stack to the top module of the next stack in an array. When disassembling arrays into stacks of 4, there is an inherent risk that a worker could accidentally separate the modules without unplugging the cables; this cable is designed to prevent damage to the cable or the internal circuitry of the T10 module in such a case.



PT.5 (20 IN) – The 0.5 m / 20 in. powerCON TRUE1 jumper is used to daisychain T10 modules via the parallel AC port. Four modules can be daisy-chained on a single 15-amp circuit at 208 V, while two modules can be daisychained on a single 15-amp circuit at 120 V.



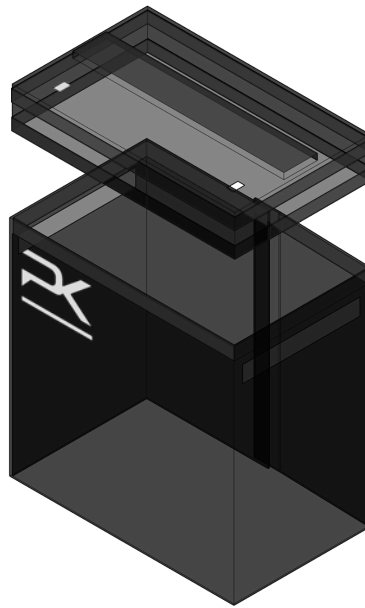
powerCON TRUE1 Drive Cables / Home Runs (Assorted lengths) – T10s are powered via the ubiquitous Neutrik powerCON TRUE1, available in 15, 30, and 45 m (50, 100, and 150 ft.) lengths.



12. Transportation

12.1 Covers

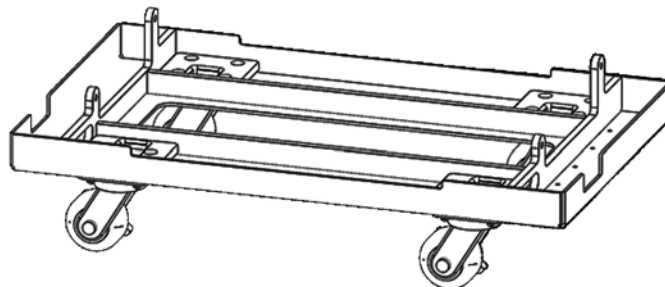
T10 Covers come in 2 pieces: the T10 Cover Top, which caps the top of the stack, and the T10 Wrap, which wraps around the remainder of the modules. Covers are designed to fit on 4 modules stacked on a Cart with or without a T10 Suspension Frame stowed on top. The Cover Top is equipped with 2 strips of velcro to attach the Wrap. The lower strip is for use with the Suspension Frame and the upper strip is for use without.



12.2 Carts

T10 Carts are designed to transport a maximum of 4 modules with or without a Suspension Frame on top.

- Ensure that modules stacked on carts are secured together using the supplied QRPs.
- ALWAYS double check the QRPs for a positive lock.



13. Care & Cleaning

T10 loudspeakers are coated with a resilient, tour-grade high-impact EXL polyurea coating. It may be cleaned with a mild soapy damp microfibre cloth and wiped down finally with a dry cloth. To reduce the risk of electrical shock, ensure the system is unplugged from AC power before cleaning. To clean dust off the speaker cone, use a can of compressed air such as commercial air dusters. Do not blow dust into the horn flare; it may damage the high frequency compression driver.

14. Specifications

14.1 General Specifications



T10 is a member of the industry's first robotically controlled line source series. Stunning SPL and clarity can be precisely controlled in both the vertical and horizontal planes, offering system operators maximum flexibility in making coverage adjustments after the array is flown. Onboard inclinometers and network-based Auto-Array within the .dynamics platform enable each module to recognize its position and angle within a system, improving accuracy, efficiency of deployment, and safety.

Dual bandpass-loaded 10" transducers manage low-frequency response. The mid-frequency band is supported by two 6.5" midrange transducers affixed to the patented Coherent Midrange Integrator (CMI). A dual-diaphragm high-frequency transducer, coupled directly to an integrated planar waveguide, significantly reduces distortion across the high-frequency band. A 3,000 W Class-D amplifier maximizes headroom while maintaining crystal clear audio and exceptional output.

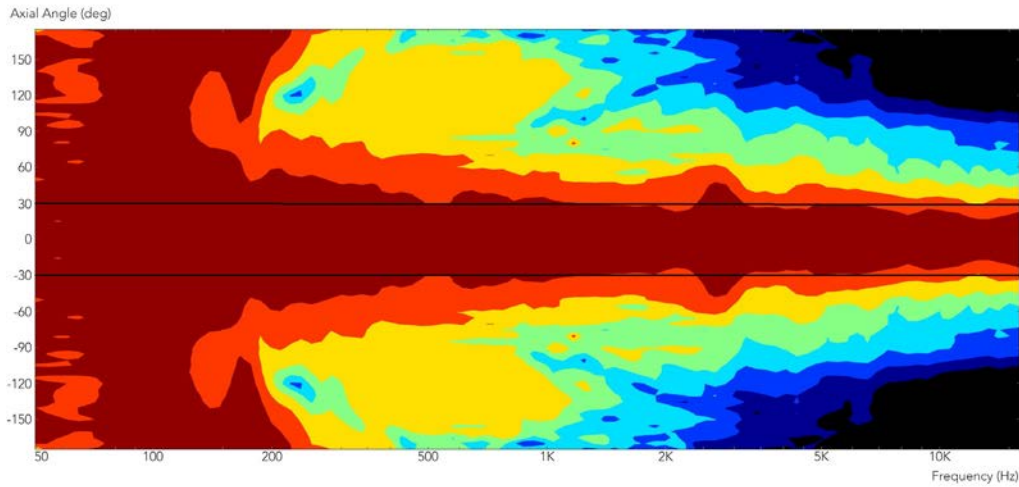
The CMI Waveguide seamlessly combines mid and high frequencies, working in tandem with precisely spaced low-frequency apertures for smooth and controlled directivity. It allows for variable adjustability from 60°-120° both symmetrically and asymmetrically so that system designers and technicians can remotely shape the radial directivity of the array relative to the coverage requirements of any event or venue.

Flown straight, the array's directivity is then configured remotely using industrial linear actuators with a duty cycle of up to 109 years. Horizontal angles can be set to one of 25 variable symmetric or asymmetric positions, allowing for mechanical optimization prior to the application of any DSP. Vertical angles are variable with 0.1° accuracy. Finally, a combination of FIR and IIR filters is applied to ensure smooth frequency response throughout the listening area.

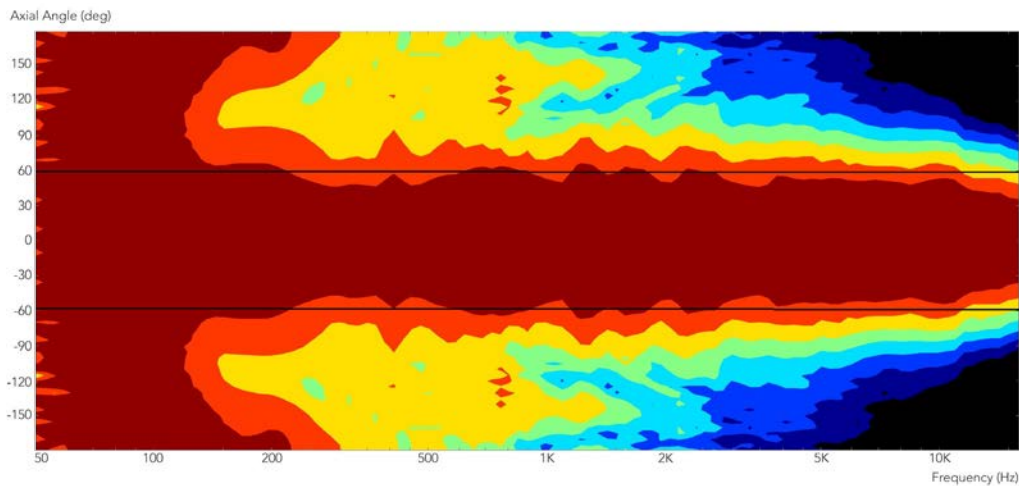
14.2 Technical Specifications

Acoustic Properties	
Horizontal Dispersion	60-120° Robotic Directivity
Horizontal Resolution	5° Symmetric & Asymmetric
Vertical Adjustment	0-12° Robotic Directivity
Vertical Resolution	0.1°
Transducers	
HF Drivers	1 x 4" Dual Diaphragm Planar Wave
MF Drivers	2 x 6.5" Coherent Midrange Integrator Loaded
LF Drivers	2 x 10" Bandpass Loaded
Output Capability	
Peak SPL	146 dB
Amplification	
Amplifier	3 Channel Class D
Amplifier Power (4)	3000 Watts RMS
Operating Voltage	Auto-Switching 100-240V, 50/60 Hz
Power Consumption (5)	700W
Input Impedance	10k OHM Balanced
Nominal Input Sensitivity	0dBu
Network	Proprietary
Input / Output Connections	
Input Selection	Analog/AES
Audio / Network	Amphenol Multipin – IP65
Power	Neutrik powerCON® TRUE1 – IP65
Module Properties	
Weight	47.6 kg / 105 lb.
Environmental (6)	IP42 (front) / IP43 (rear)
Dimensions (W x H x D)	980 x 250 x 561 mm / 38.58 x 9.84 x 22.09 in.
Max. Line Length	24 Modules
Rain Protection	Weather-resistant amplifier plate & IP65 input connectors
Module Construction	High-grade, void-free Baltic birch
Rigging Construction	6061-T6 Aluminum
External Coating	EXL Polyurea
Grill	Powder Coated Aluminum

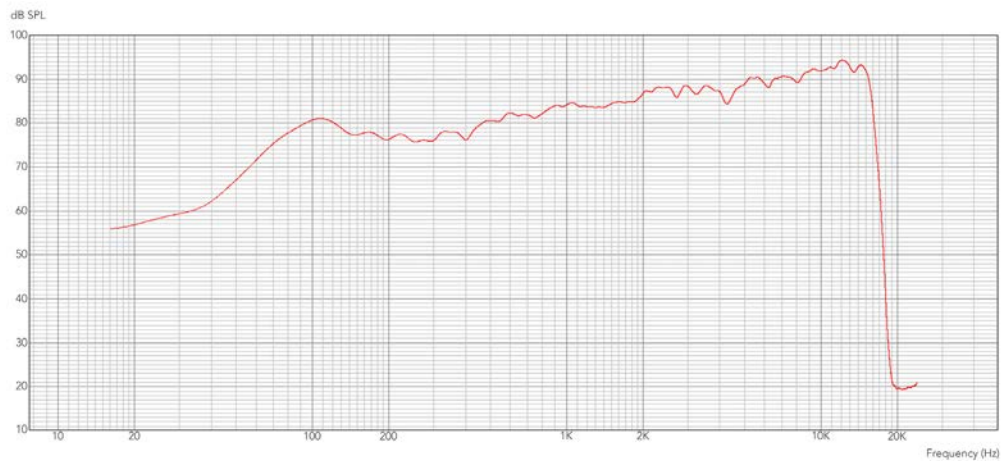
14.3 Technical Data



T10 Isobar Diagram (Horizontal) - 60° Symmetrical



T10 Isobar Diagram (Horizontal) - 120° Symmetrical



T10 Frequency Response - 120° Symmetrical

14.4 Dimensions

