



# Turbosound TBV123-AN Arrayable 2 Way 12 Inch Constant Curvature Loudspeaker User Guide

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# Turbosound

**Turbosound TBV123-AN Arrayable 2 Way 12 Inch Constant Curvature Loudspeaker**



## Important Safety Instructions

- Terminals marked with this symbol carry electrical current of sufficient magnitude to constitute risk of electric shock.
- Use only high-quality professional speaker cables with ¼" TS or twist-locking plugs pre-installed. All other installation or modification should be performed only by qualified personnel.
- This symbol, wherever it appears, alerts you to the presence of uninsulated dangerous voltage inside the enclosure – voltage that may be sufficient to constitute a risk of shock.
- This symbol, wherever it appears, alerts you to important operating and maintenance instructions in the accompanying literature. Please read the manual.

### Caution

To reduce the risk of electric shock, do not remove the top cover (or the rear section). No user serviceable parts inside. Refer servicing to qualified personnel.

### Caution

To reduce the risk of fire or electric shock, do not expose this appliance to rain and moisture. The apparatus shall not be exposed to dripping or splashing liquids and no objects filled with liquids, such as vases, shall be placed on the apparatus.

### Caution

These service instructions are for use by qualified service personnel only. To reduce the risk of electric shock do not perform any servicing other than that contained in the operation instructions. Repairs have to be performed by qualified service personnel.

- Read these instructions.
- Keep these instructions.

- Heed all warnings.
- Follow all instructions.
- Do not use this apparatus near water.
- Clean only with dry cloth.
- Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
- Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat
- Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
- Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
- Use only attachments/accessories specified by the manufacturer.
- Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
- Unplug this apparatus during lightning storms or when unused for long periods of time.
- 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.
- The apparatus shall be connected to a MAINS socket outlet with a protective earthing connection.
- Where the MAINS plug or an appliance coupler is used as the disconnect device, the disconnect device shall remain readily operable
- Correct disposal of this product: This symbol indicates that this product must not be disposed of with household waste, according to the WEEE Directive (2012/19/EU) and your national law. This product should be taken to a collection center licensed for the recycling of waste electrical and electronic equipment (EEE). The mishandling of this type of waste could have a possible negative impact on the environment and human health due to potentially hazardous substances that are generally associated with EEE. At the same time, your cooperation in the correct disposal of this product will contribute to the efficient use of natural resources. For more information about where you can take your waste equipment for recycling, please contact your local city office, or your household waste collection service.
- Do not install in a confined space, such as a book case or similar unit.
- Do not place naked flame sources, such as lighted candles, on the apparatus.
- Please keep the environmental aspects of battery disposal in mind. Batteries must be disposed-of at a battery collection point.
- This apparatus may be used in tropical and moderate climates up to 45°C.

## **LEGAL DISCLAIMER**

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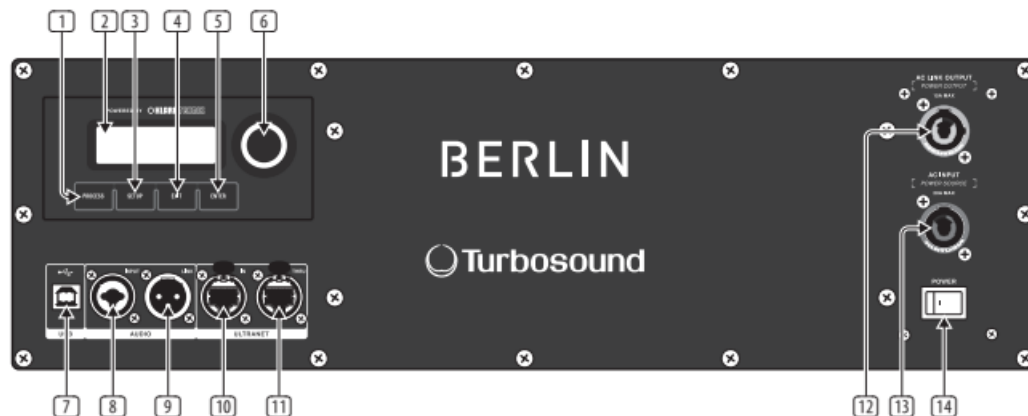
## LIMITED WARRANTY

For the applicable warranty terms and conditions and additional information regarding Music Tribe's Limited Warranty, please see complete details online at [community.musictribe.com/pages/support#warranty](https://community.musictribe.com/pages/support#warranty)

## Thank you

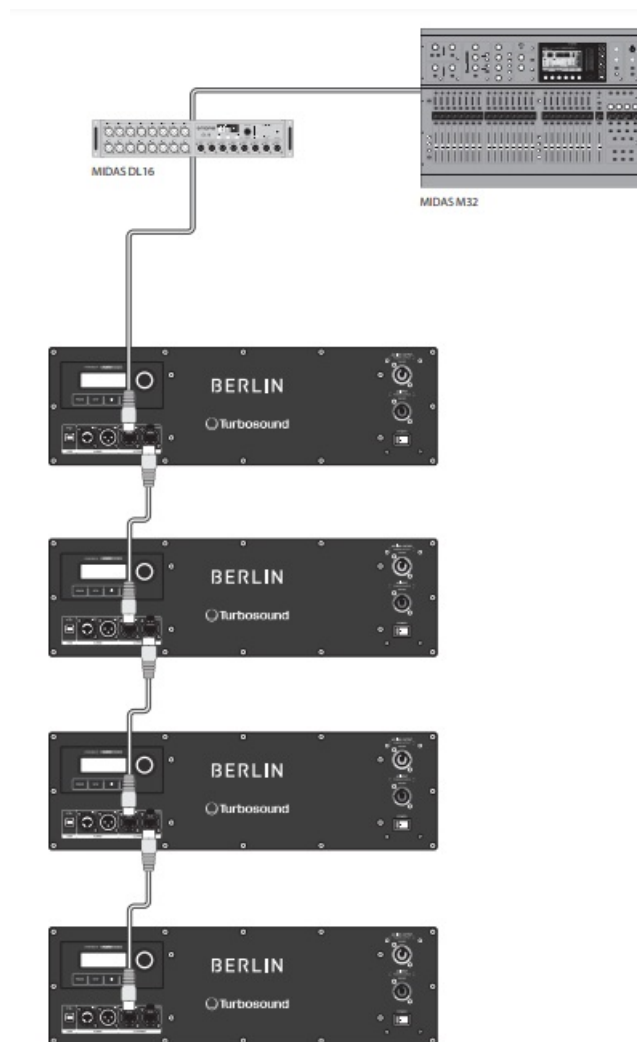
Thank you for choosing a Turbosound loudspeaker product for your application. If you would like further information about this or any other product, please visit our website at [turbosound.com](https://turbosound.com).

## Controls



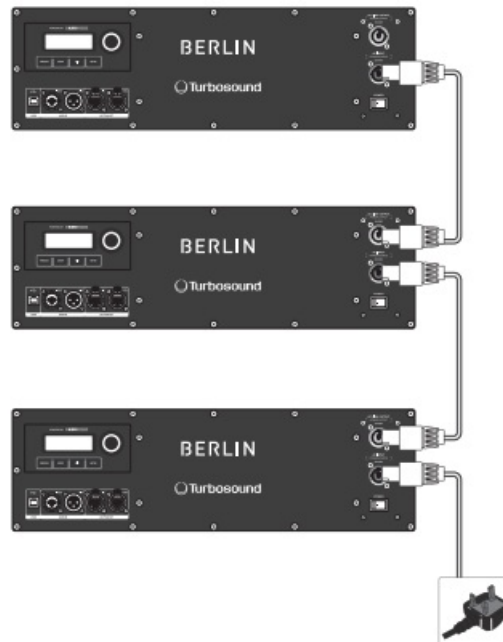
1. PROCESS button steps through the DSP processing modules.
2. LCD SCREEN displays the current DSP module and parameter settings.
3. SETUP button steps through parameters within DSP processing modules.
4. EXIT button returns to the top-level DSP screen when pressed.
5. ENTER button saves changes and deactivates Edit mode when pressed.
6. ENCODER KNOB toggles between Graphic and Edit modes (when pressed) and changes parameter values (when rotated).
7. USB connection enables firmware updates and remote control over parameters via computer.
  - Please visit [turbosound.com](https://turbosound.com) to download DSP control software for your computer.
8. AUDIO INPUT combo jack accepts input signals using XLR, balanced 1/4" TRS or unbalanced 1/4" TS connectors.
9. AUDIO LINK XLR connector provides an unprocessed copy of the AUDIO INPUT signal.
10. ULTRANET IN RJ45/Neutrik etherCON jack for connection to additional ULTRANET-equipped devices.
11. ULTRANET THRU sends out unprocessed digital audio from the ULTRANET IN connector to additional ULTRANET-equipped devices.
12. AC LINK OUTPUT provides power link connections to other TBV123-AN or TBV118L-AN loudspeakers.
13. AC INPUT accepts power connections from power cables fitted with Neutrik powerCON twist-locking connectors.
14. POWER switch turns the unit on and off.

## Networking capability







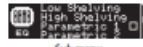




- The TBV123-AN powered loudspeaker and TBV118L-AN subwoofer offer remote control via USB. The USB connection allows the user to configure and monitor all DSP parameters using dedicated software for PC.
- The DSP firmware can also be updated via the USB connection. Visit [turbosound.com](http://turbosound.com) for the latest firmware version.
- The TBV123-AN powered loudspeaker and TBV118L-AN subwoofer also offer proprietary ULTRANET networking capabilities through the ULTRANET IN and ULTRANET
- THRU connections using CAT5 cables with RJ45/Neutrik etherCON connectors. ULTRANET allows the user to transmit unidirectionally up to 16 independent channels of 24-bit audio throughout the TBV-AN system, as well as other ULTRANET-equipped devices such as digital mixers and personal monitor systems.
- Up to 7 devices can be connected in series on a single ULTRANET cable.















### Mains power connection



- The TBV123-AN loudspeaker and the TBV118L-AN subwoofer also facilitate mains power connection using power cables with Neutrik power CON locking power connectors.
- To set up mains power between TBV-AN loudspeakers, first run a power cable terminating in a power CON connector to the AC INPUT connector on the rear panel of the first unit. To power additional speakers downline, run power cables equipped with power CON connectors at both ends from the first speaker's AC LINK OUTPUT to the AC INPUT of the next TBV-AN loudspeaker in series.
- The maximum number of linked systems depends on the AC supply voltage as well as the maximum current draw of the individual systems in the power chain. Linking a power chain, make sure that the integrated connectors, as well as the supplied AC mains cable, are never overloaded.
- If you are uncertain how to calculate the total current draw, please contact your dealer.
- Always turn off the power to the units before making connections.

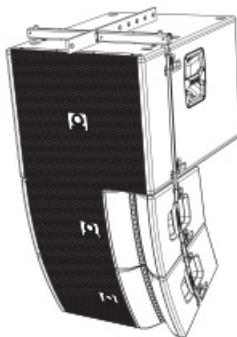
## **TBV-AN DSP Menu Structure**

	Fullrange	Subwoofer	Function	
 PROCESS	 EQ	1-Box	None	For single TBV123-AN enclosure. Can be used in LONG or SHORT THROW mode, depending on the application.
	 EQ	2-Box	—	Includes equalization to compensate for low frequency coupling of 2 x TBV123-AN enclosures. Provides matched sensitivity with nominal flat frequency response under freefield conditions in SHORT THROW mode. Can also be used in LONG THROW mode depending on the application.
	 EQ	3-Box	—	Includes equalization to compensate for low frequency coupling of 3 x TBV123-AN enclosures. Provides matched sensitivity with nominal flat frequency response under freefield conditions in SHORT THROW mode. Can also be used in LONG THROW mode depending on the application.
		User	User	Lets you define your own frequency response setting by entering the corresponding sub-menu.
 Sub menu	Low/ High Shelving	Low/ High Shelving		Lets you define a low and high shelving filter.
	Parametric 1 & 2	Parametric 1 & 2		Lets you define a parametric bell-type EQ (Frequency, Qual. and Gain).
 XOVER	FULL	—		Unit is set for default full-range reproduction.
	HP 80	—		Preset with 80 Hz 24 dB / octave high pass filter. For use with TBV118L-AN in LP 80 mode.
	HP 120 Hz	—		Preset with 120 Hz 24 dB / octave high pass filter. For use with TBV118L-AN in LP 120 mode.
	User	—		User crossover sub menu for combination with other subwoofer speaker systems
 XOVER	—	LP 80		Preset with 80 Hz 24 dB / octave low pass filter for TBV118L-AN (front-firing). For use with TBV123-AN in HP 80 mode.
		CARDIO		Cardioid preset with 80 Hz 24 dB / octave low pass filter for TBV118L-AN (rear-firing). For use with TBV118L-AN (front-firing) in LP 80 mode with 2:1 cabinet ratio (front-firing : rear-firing)
		LP 120		Preset with 120 Hz 24 dB / octave low pass filter for TBV118L-AN (front-firing). For use with TBV123-AN in HP 120 mode.
		CARDIO		Cardioid preset with 120 Hz 24 dB / octave low pass filter for TBV118L-AN (rear-firing). For use with TBV118L-AN (front-firing) in LP 120 mode with 2:1 cabinet ratio (front-firing : rear-firing)
 Sub Menu	Freq	Freq		Select the desired crossover frequency: • For Fullrange Systems: 55 Hz to 400 Hz. • For Subwoofer Systems: 50 Hz to 150 Hz.
	Phase	Phase		Adjust the absolute polarity (0° or 180°).
 FBQ	Auto	Auto		Automatically sets as many filters as required. Whenever a new feedback frequency is discovered, the first filter will be released to attenuate the new frequency, and so forth.
	Single	Single		Activates the FBQ (feedback detection) functionality, up to 8 feedback filters.
	Learn	Learn		Automatic procedure which searches for feedback frequencies and locks settings after all 8 filters have been set. <b>WARNING!</b> Please use ear protection during this procedure. The feedback signal may approach the system's maximum level, which may cause hearing damage!
	Reset	Reset		Resets all filters.

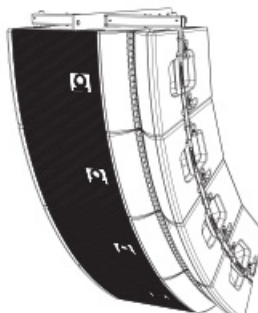
	Fullrange	Subwoofer	Function
			
	Input	Input	Lets you choose the audio input source. Choose between Local (analogue input) or ULTRANET (e.g., P16 monitoring system or M32 audio via ULTRANET).
	Volume	Volume	Adjusts the input gain. With ULTRANET digital inputs over a range from +10 dB to -30 dB. With analogue input from 0 dB to -∞ dB.
	Sensitivity	Sensitivity	Adjusts input sensitivity for maximum output. When using an analogue source +4 dBu for normal operation, +14 dBu for high level input.
	Short Throw	—	Nominal-flat low and high frequency response under freefield conditions. Suitable for 1-3 TBV123-AN enclosures when used for short throw applications including: distributed front fill, stereo infill, under-balcony fill and stacked, tripod-mounted or pole-mounted systems for short throw front-of-house or sidefill stage monitoring.
	Long Throw	—	For medium- to long-throw applications. Suitable for suspended arrays consisting of 1-3 TBV123-AN enclosures. High-frequency shelving pre-emphasis compensates for air absorption over typical throw distances and is combined with low frequency shelving to provide an enhanced LF contour.
	Delay	Delay	Adjusts the amount of delay (max 300msec = 103 m or 338 feet).
	Unit	Unit	Selects between msec, meters and feet.
	Limit	Limit	Adjust the limiter threshold for the input signal (from OFF up to -30 dB). This threshold adjustment allows you to set a max output power which is below the loudspeaker system's rated max output.
	Version	Version	Displays the installed firmware version.
	1. - 20.	1. - 20.	To load a specific preset, turn the encoder to select the desired preset's number, and then press either the ENTER button or the encoder. When asked to confirm press the encoder again or EXIT to abort.
	1. - 20.	1. - 20.	To save a preset choose the respective preset slot and press ENTER or the encoder.
	Save Preset	Save Preset	Name the preset by choosing the characters with the encoder and pressing to confirm each character. When finished, press the ENTER button to save the preset.
	Contrast	Contrast	Adjust LCD panel contrast. The default contrast value is 15.
	Screen	Screen	ON: LCD screen saver (default) turns on automatically after approx. 2 minutes. OFF: LCD turns off automatically after approx. 5 minutes.
	Lock	Lock	Lock the device and create a password by choosing the password characters with the encoder and pressing to confirm each character. When finished press the ENTER button. Unlock the device by entering the password or connecting the unit via USB to a PC running proprietary remote software. The software does not require a password.
	Warning	Warning	In case of overheating, an alert appears on the LCD screen, and the amplifier will shut down until the unit cools

## Rigging and acoustic simulation software

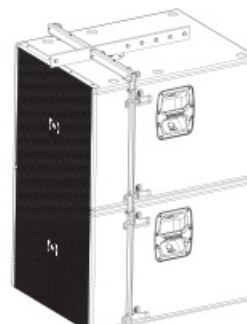
Only authorised and certified personnel shall design and install suspended configurations, following the instructions and procedures in the rigging manual supplied with the TBV123-FB flybar or downloaded from [turbosound.com](http://turbosound.com). Failure to follow these instructions may lead to death or permanent injury



Mixed Array with 1 TBV118L-AN subwoofer, 2 TBV123-AN cabinets, and a TBV123-FB flybar



4 TBV123-AN cabinets and a TBV123-FB flybar

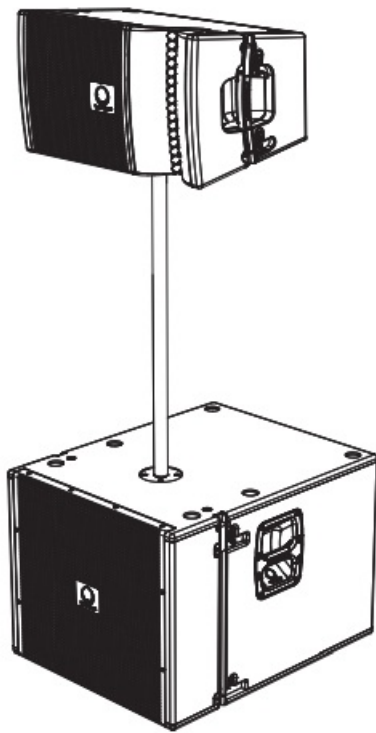


2 TBV118L-AN subwoofers and a TBV123-FB flybar

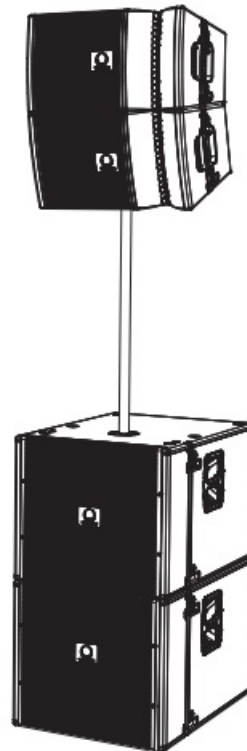




A maximum of two TBV123-AN loudspeakers may be pole mounted on up to two TBV118L-AN subwoofers provided that the stacked system is physically secured to the stacking platform.



*TBV123-AN and TBV118L-AN Pole Mount*



*2 TBV123-AN and TBV118L-AN Pole Mount*

## Technical Specifications

TBV123-AN		TBV118L-AN
<b>System</b>		
Frequency response	65 Hz – 20 kHz $\pm 3$ dB 53 Hz – 20 kHz -10 dB	45 Hz – 200 Hz $\pm 3$ dB 31 Hz – 300 Hz -10 dB
Nominal dispersion	100° H x 15° V @ -6 dB points	Half Space
Maximum SPL	131 dB peak	133 dB peak
Crossover type	Active	Active
Transducers	1 x 12" (316 mm) LF driver 2 x 1" (25.4 mm) HF compression driver	1 x 18" (460 mm) LF driver
Limiter	Independent HF, LF, peak and rms	Peak and rms
<b>Amplifier</b>		
Maximum output power*	2500 W	3000 W
Type	Class-D	Class-D
Protection	Short circuit, thermal	Short circuit, thermal
<b>Connectors</b>		
Input A / B	1 x combo jack/XLR, 1 x XLR	1 x combo jack/XLR, 1 x XLR
Sensitivity	-2 dBu	+1 dBu
Input impedance	40 k $\Omega$ balanced	40 k $\Omega$ balanced
Maximum input level	+18 dBu	+18 dBu
Ultraset input/link	2 x RJ45/Neutrik etherCON	2 x RJ45/Neutrik etherCON
Mains Supply	Neutrik powerCON+ 20A and Link 15A	Neutrik powerCON+ 20A and Link 15A
<b>Controls</b>		
DSP	Rotary push-encoder and level control Buttons for Process, Setup, Exit, Enter	Rotary push-encoder and level control Buttons for Process, Setup, Exit, Enter
<b>User DSP Functions</b>		
Factory EQ Presets	Positioning, Array mode, FBQ	Positioning, FBQ
Display	LCD 128 x 32, blue, backlit	LCD 128 x 32, blue, backlit
Delay	0 - 300 ms	0 - 300 ms
Equalisation	High and low shelving EQ 2 x parametric EQ	High and low shelving EQ 2 x parametric EQ
Limiter	Zero attack input limiter	Zero attack input limiter
Presets	20 total presets, 19 user-definable	20 total presets, 19 user-definable
Crossover	High pass L-R 24 dB/oct	Low pass L-R 24 dB/oct
Protection	Lock-out function for all settings	Lock-out function for all settings
<b>Ultraset Digital Network</b>		
Digital processing		
A/D conversion	24-bit, 44.1 / 48 kHz sample rate	24-bit, 44.1 / 48 kHz sample rate
System		
Signal, Latency	16 channels < 0.9 ms	16 channels < 0.9 ms
Cabling		
Cables	Shielded CAT5	Shielded CAT5
Cable length	max. 246 ft / 75 m recommended	max. 246 ft / 75 m recommended
TBV123-AN		TBV118L-AN
<b>Power Supply</b>		
Current consumption	Input: 20A Max, Link output: 15A Max	Input: 20A Max, Link output: 15A Max
Power consumption	200 W @ 1/8 max power for individual product	180 W @ 1/8 max power for individual product
Voltage		
USA / Canada / Japan	100 – 120 V~, 50/60 Hz	100 – 120 V~, 50/60 Hz
UK / Australia / Europe / Korea / China	220 – 240 V~, 50/60 Hz	220 – 240 V~, 50/60 Hz
<b>Enclosure</b>		
Dimensions (H x W x D)	344 x 598 x 398 mm (13.6 x 23.5 x 15.7)	513 x 598 x 751 mm (20.2 x 23.5 x 29.6")
Net weight	23.0 kg (50.7 lbs)	38.5 kg (84.9 lbs)
Construction	18 mm (¾") plywood	18 mm (¾") plywood
Finish	Semi matt black paint	Semi matt black paint
Grille	Powder coated perforated steel	Powder coated perforated steel
Suspension hardware	Integral Suspension System and M10 x 4 points	Integral Suspension System and M10 x 4 points
<b>Accessories</b>		
	TBV123-FB Fly Bar	TBV123-FB Fly Bar
	TBV123-RC2 Road case for 2x TBV123-AN	TBV118L-RC1 Road case for 1x TBV118L-AN
	TS-PC12-3 Protective cover for 1x TBV123-AN	TS-PC18B-3 Protective cover for 1x TBV118L-AN
TPOLE 60-20	60 cm Lightweight Steel Pole with M20 Screw Attachment	
TPOLE 90-20	90 cm Lightweight Steel Pole with M20 Screw Attachment	
TPOLE 120-20	120 cm Lightweight Steel Pole with M20 Screw Attachment	

## Important information

- Register online. Please register your new MusicTribe equipment right after you purchase it by visiting [musictribe.com](https://musictribe.com). Registering your purchase using our simple online form helps us to process your repair claims more quickly and efficiently. Also, read the terms and conditions of our warranty, if applicable.
- Malfunction. Should your MusicTribe Authorized Reseller not be located in your vicinity, you may contact the MusicTribe Authorized Fulfiller for your country listed under "Support" at [musictribe.com](https://musictribe.com). Should your country not be listed, please check if your problem can be dealt with by our "Online Support" which may also be found under "Support" at [musictribe.com](https://musictribe.com). Alternatively, please submit an online warranty claim at [musictribe.com](https://musictribe.com) BEFORE returning the product.
- Power Connections. Before plugging the unit into a power socket, please make sure you are using the correct mains voltage for your particular model. Faulty fuses must be replaced with fuses of the same type and rating without exception.

## FCC

- Responsible Party Name: Music Tribe Commercial NV Inc. Address: 122 E. 42nd St.1, 8th Floor NY, NY 10168, United States
- Email Address: [legal@musictribe.com](mailto:legal@musictribe.com)

## TVB-AN BERLIN SERIES

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. This equipment complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:

- this device may not cause harmful interference, and
- this device must accept any interference received, including interference that may cause undesired operation.


Warning: Operation of this equipment in a residential environment could cause radio interference.

## Important information:

Changes or modifications to the equipment not expressly approved by Music Tribe can void the user's authority to use the equipment. Hereby, Music Tribe declares that this product is in compliance with Directive 2014/35/EU, Directive 2014/30/EU, Directive 2011/65/EU and Amendment 2015/863/ EU, Directive 2012/19/EU, Regulation 519/2012 REACH SVHC and Directive 1907/2006/EC. Full text of EU DoC is available at <https://community.musictribe.com/>

- EU Representative: Music Tribe Brands DK A/S
- Address: Gammel Strand 44, DK-1202 København K, Denmark
- UK Representative: Music Tribe Brands UK Ltd.
- Address: 6 Lloyds Avenue, Unit 4CL London EC3N 3AX, United Kingdom


Quick Start Guide



TBV-AN BERLIN SERIES

TBV123-AN  
Arrayable 2 Way 12 Inch Constant Curvature Loudspeaker

TBV118L-AN  
Arrayable 2 Way 12 Inch Constant Curvature Loudspeaker









[Turbosound TBV123-AN Arrayable 2 Way 12 Inch Constant Curvature Loudspeaker](#) [pdf]

User Guide

TBV-AN BERLIN SERIES, TBV118L-AN, TBV123-AN, Arrayable 2 Way 12 Inch Constant Curvature Loudspeaker, TBV123-AN Arrayable 2 Way 12 Inch Constant Curvature Loudspeaker

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