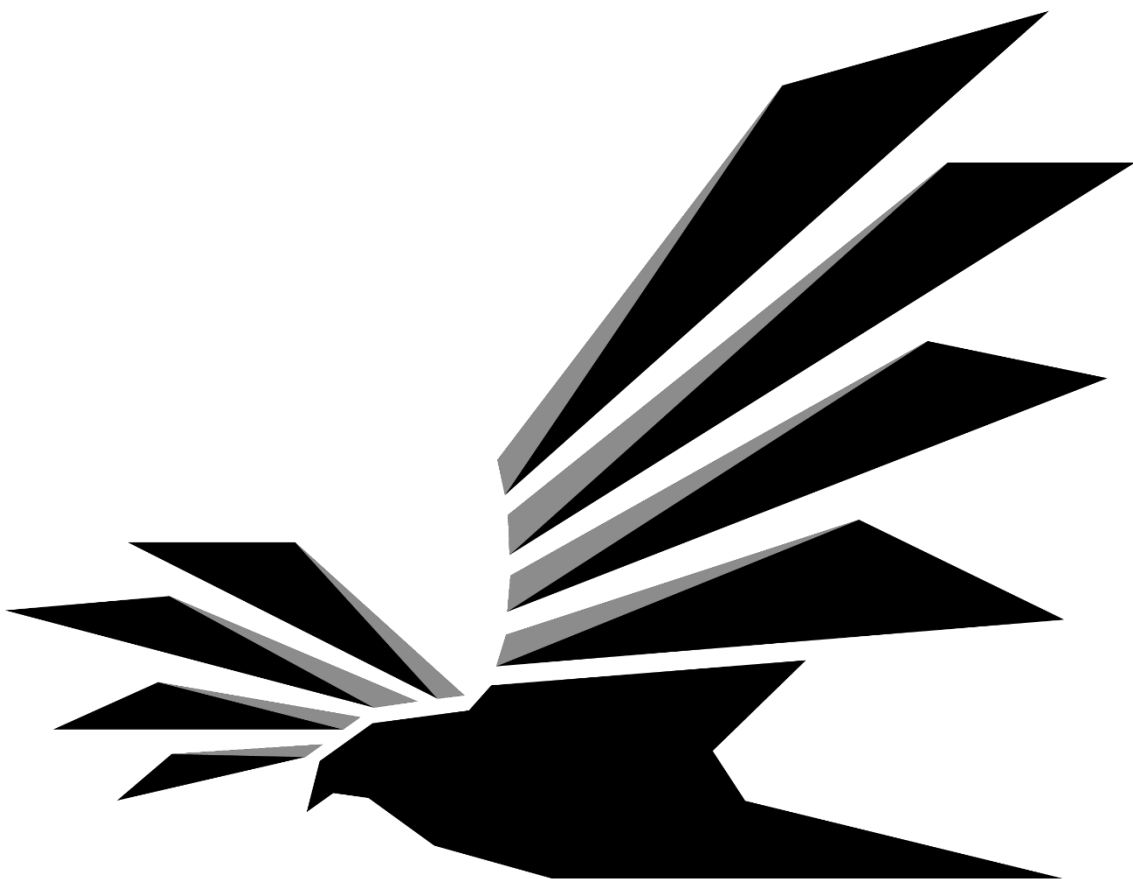




Harrier SW218 User Guide

Revision 2



Manufacturer's Declarations

1.1 Declaration of Conformity

This declaration applies to:

- Traction Sound - Harrier SW218

Manufactured by Scicooustic LLC.

This includes production versions of these passive loudspeakers. They must correspond with the original technical version and not subject to modification.

These passive loudspeakers comply with the Essential Requirements of the following EU Directives:

- Low Voltage Directive 2014/35/EU
- EMC Directive 2014/30/EU
- RoHS 2 Directive 2011/65/EU

These passive loudspeakers further conform with the following EU Harmonized Standards:

- EN 55032:2015
- EN 55035:2017
- EN 60065:2014+A11:2017

1.2 WEEE Declaration (Recycling)

The WEEE directive applies to this product and it's packaging.

At the end of this products useful life please dispose of it responsibly. This should according to local and national recycling regulations. The packaging supplied with this product is recyclable.

2.0 User Guide

2.1 Product Description

The Harrier SW218 is a dual 18" subwoofer designed specifically for use with the rest of the Harrier product line, enabling the system response to extend to 30Hz, with unparalleled clarity and effortlessness. The state of the art 18" transducers have excellent power handling and sensitivity properties, as well as a low power compression figure at full power meaning headroom is always maintained. Both sides of each driver have a weatherproof coating which stands up to the rigors of constant outdoor usage in challenging conditions. The SW218 has a skid system for secure vertical stacking, whilst also having fixing points for feet enabling secure upright positioning. Two M20 threaded adapters allow for pole mounting in either orientation. In addition to this, fixings are provided on the rear for optional castors to be fitted meaning the subwoofer is easy to transport as well as easy to integrate into installations without taking up a large footprint.

2.2 Directions for use

As an omnidirectional reflex subwoofer, the SW218 is very flexible and can be deployed in a variety of different ways, including stereo ground stacks, horizontal bass arrays, and cardioid or end fire arrays. SW218s can be stacked vertically, with up to 8 units in a vertical column, or they can be stood on end and either lined up or placed in separate locations, depending on what the situation calls for. However they are arranged, they must always be stable and secure on a firm surface or platform.

Two M20 pole mounts are provided on the SW218, one on the top and one on the side, which allows the user to mount another Traction Sound product on a 35mm threaded speaker pole. We recommend pairing with a Harrier 50-X or 80-X, which have been developed alongside the SW218 to work perfectly together and form a well-balanced, impactful and accurate system. Whilst not capable of being flown, the SW218 is also well positioned to be used with Traction Sound's Osprey product line to augment larger systems as part of a ground stack or horizontal array.

Whilst a minimum of one SW218 per side can be used with great results, it is important to scale up the number of subwoofers used when coverage area, audience size and number of speaker positions is increased. The sensitivity of human hearing demands that bass frequencies be considerably louder than midrange and high frequencies, and as such the best way to achieve this greater SPL is to add more subwoofers to the system. By doubling the number of identical SW218s in a system, we increase the maximum theoretical SPL by +6dB. Broadly speaking, at high average SPL levels a system may be required to produce bass with up to 15dB more output than it does high frequencies, so it is clear to see how quickly available headroom in a single subwoofer is eaten into when high average levels are required.

When increasing the number of subwoofers driven by a single amplifier channel, it is important to consider the impedance “seen” by the amplifier. A SW218 has a nominal impedance of 4 Ohms, and when two are wired in parallel the nominal impedance drops to 2 Ohms. This is the lower allowable limit for Traction Engine amplifiers, which have been designed to be able to provide sustained power at this impedance. Below this almost all amplifiers become unstable, and the required current delivery becomes too much for cables, power supplies and connectors to handle. For these reasons, a maximum of two SW218 should be driven by a single amplifier channel. We recommend that when wiring two SW218 in parallel, 4mm² OFC cable be used to connect the amplifier to the loudspeakers, as this will minimise energy lost through heat due to the low impedance of the speaker system.

2.2.1 DSP Presets

For optimal results, the SW218 should only be driven by an approved power amplifier fed by a Traction Control DSP system, loaded with the correct DSP output channel preset. Failure to use the correct DSP settings provided by Traction Sound can result in damage or complete failure of the loudspeaker and/or the amplifier. Traction products are carefully designed to operate as part of a whole system, and as such should not be subjected to modification, be it physical or operational. Traction DSP presets do not allow for modification of high or low pass filters, active parametric filters or pre-delay.

The SW218 DSP output presets are optimised for use with other Traction products running the “S” presets. Whilst this combination of presets guarantees phase alignment between sub and top with the speakers physically aligned, the user should measure any extra difference in acoustic path length once installed and compensate by applying delay to the signal appropriately.

3.0 Connections

3.1 Connection on Harrier SW218.

The cabinets have a pair of Neutrik[®] NL4 SpeakOn[™] connectors. The wiring for both connectors is in parallel. Pins 2+/- are connected to the two drivers which are wired in parallel. Pins 1+/- are not connected to anything inside the box other than to act as a pass-through.

4.0 Safety Instructions

4.1 Beware of sound levels

Do not stay near loudspeakers in operation. Loudspeaker systems can produce a very high sound pressure level. This can cause permanent hearing damage. It can happen at moderate levels with exposure over a long time.

4.2 Intended use

Trained personnel must operate these loudspeakers in professional applications.

4.3 Associated Equipment

Always use these loudspeakers with the correct amplifier and signal processing. Only use equipment or accessories approved by Scicooustic LLC.

4.4 Safety Checks

Perform a safety check before each use of these loudspeakers. Check the product and accessories for visible signs of wear and tear. This includes load bearing bolts and accessories. Replace parts that look damaged.

4.5 Intended Environment

Do not expose these loudspeakers to rain or sea spray. Do not expose these loudspeakers to dripping or splashing liquids. Do not place objects filled with liquid such as vases or drinks on the loudspeaker. Do not expose these loudspeakers to moisture. This includes mist, steam, condensation and humidity. Do not expose these loudspeakers to excessive heat including direct sunlight. Do not place naked flame sources such as lit candles on the loudspeakers. Do not allow dust, sand or other particulates to enter this loudspeaker.

4.6 Fall Risk

If loudspeakers fall they can cause injury and damage. Do not use, store or transport loudspeakers where they are unstable. Secure against accidental movement. Place stands and tripods on a firm surface and test that they are stable.

4.7 Maintenance

There are no user serviceable parts inside. There are no periodical internal maintenance procedures for this product. All maintenance must be undertaken by a qualified and competent individual.

External cleaning of your loudspeakers should be carried out periodically and immediately after being exposed to dirt, dust, moisture or other contaminants to avoid component damage and ensure long life of the product. Cleaning should be carried out using a damp microfiber cloth, antistatic foam cleaner and if necessary, a soft brush. Never use running water to clean a loudspeaker.

We also recommend that after periods of continuous use in high SPL conditions, some lower-level signal is played through the system before shutting it down completely. This is to

give the moving components of transducers a more gradual cool-down period, preserving the life of the adhesives and more sensitive components used in their construction.

4.8 Warranty conditions

A 5-year manufacturer warranty applies to this product from the point of sale. If any of these safety instructions are not followed, the product warranty will be void.

5.0 Product Specification

5.1 Harrier 218

Type	Dual 18" Reflex Subwoofer
Frequency Response (1)	32Hz - 150Hz (-3dB)
HF Driver	N/A
LF Driver	2x 18" transducers with 4" voice coils and weatherproof
Power Handling HF (2)	N/A
Power Handling LF (2)	4000W Program
Recommended Amplifier	Traction Engine 4 2700-DSP
Sensitivity (2)	102dB
Maximum SPL (4)	142dB Peak
Nominal Impedance	4 Ohms
Crossover	Manufacturer provided preset only
Connectors	2x Neutrik® NL4 SpeakOn™ with pins linked
Input Connections	Input on pins 2 +/-
Nominal Dispersion (-6dB)	Omni
Primary Construction Material	15mm Birch Plywood
Available finish	Black PU Coating
Dimensions	1100mm x 508mm x 700mm
Fittings	2x M20 speaker pole bases Fittings for 100mm x 36mm Casters 4x M10 threads for Osprey HBI
Weight	76kg

Notes

(1) Measured on axis in half (2pi) space at two meters and referred to 1 meter, with DSP preset applied.

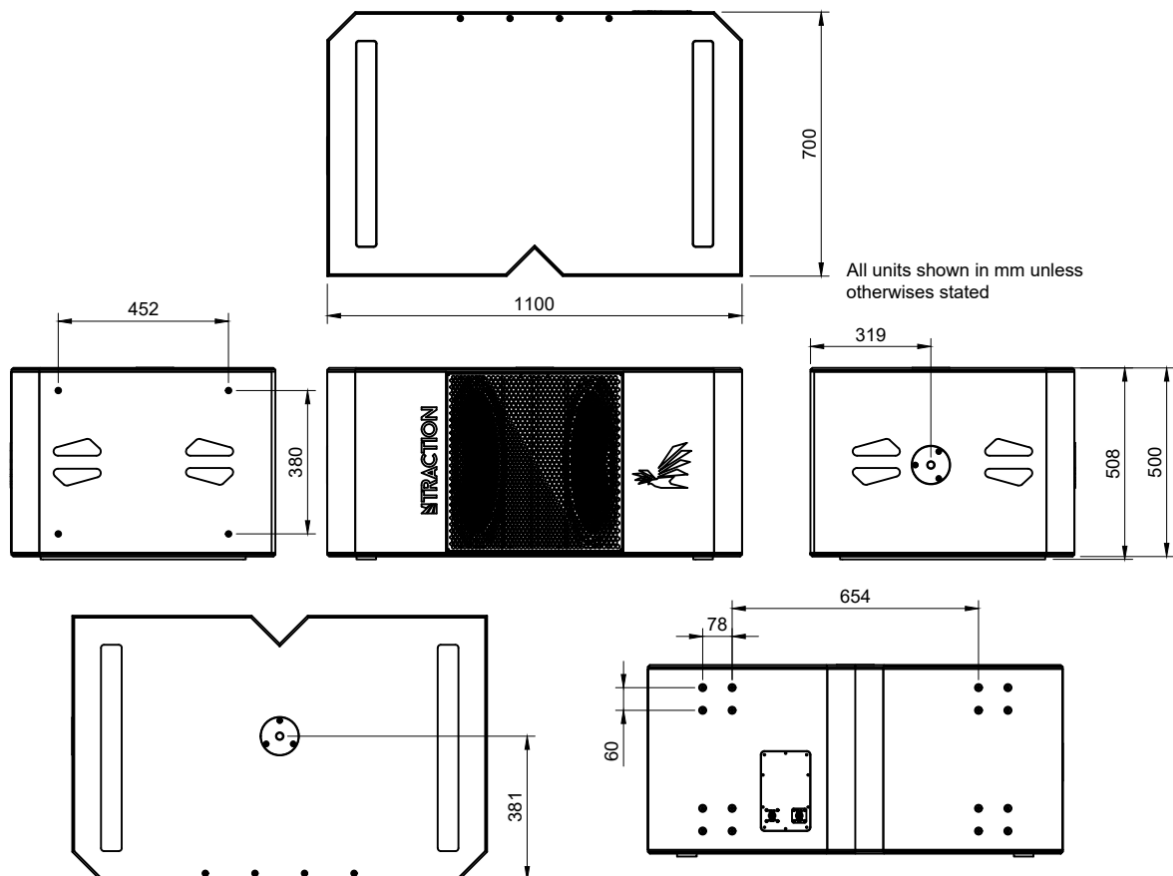
(2) Tested to AES 2-1984 Rev. 2003.

(3) Measured in half (2pi) space at 2 meters with 2.83V input, using band limited pink noise, then referred to 1 meter.

(4) Calculated at 1 meter.

6.0 Technical Drawings

6.1 Harrier SW218



8.0 Contact Details

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