

AX2065A

Dual 6.5" (165mm), High Output, Powered, CORE Processed, Vertical Array Element



KEY FEATURES

- ▲ High output Line Array element
- ▲ Compact size, very good output-to-weight ratio
- ▲ High quality, low compression, low distortion HF driver with Titanium Diaphragm and new suspension design
- ▲ Very stable horizontal coverage
- ▲ Transmission Line back loading for clean mid-bass reproduction and natural cardioid behavior
- ▲ Natural sound Transmission Line HF projection wave-forming device
- ▲ 96kHz / 40 bit floating point CORE processing with PRONET remote control
- ▲ Digitally controlled Class D amplifier module with SMPS

APPLICATIONS

The AX2065A Vertical Line Array element is designed for a wide range of sound reinforcement applications where a flexible and easy to use vertical array systems is needed.

THE AX2065A LINE ARRAY MODULE

The AX2065A is a new powered line array element that combines superior sound quality with easiness and flexibility in a simple system with a very convenient price-to-performance ratio.

The AX2065A has been designed both for rental live sound applications and for fixed installations and has been engineered for the simplest use possible but without sacrificing anything in sound quality and performance.

SYSTEM SPECIFICATIONS

SYSTEM

| | |
|----------------------------------|--|
| System's Acoustic Principle | Line Array Element Short Transmission Line LF Back Loading Acoustic Transmission Line HF Waveguide |
| Frequency Response (± 3 dB) | 80 Hz – 18kHz (Processed) |
| Horizontal Coverage Angle | 110° (-6dB) |
| Vertical Coverage Angle | 12° (-6dB) |
| Maximum Peak SPL @ 1m | 129 dB |

TRANSDUCERS

| | |
|----|---|
| LF | Two 6.5" (165mm), 1.5" (38mm) aluminum voice coil, 16 Ω each, paralleled |
| HF | One 1.4" driver, 2.5" (64mm) edgewound voice coil, titanium diaphragm, 8 Ω |

ELECTRICAL

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|-----------------------------|---|
| Input Impedance | 20 k Ω balanced, 10 k Ω unbalanced |
| Input Sensitivity | +4dBu / 1.25 V |
| Signal Processing | CORE processing, 96kHz / 40bit floating point SHARC DSP, 24 bit AD/DA converters |
| Direct access Controls | 4 Presets (Standard/Long Throw/Down Fill-Single Box, User), Network Termination, GND Link |
| Remote Controls | PRONET control software |
| Network protocol | CANBUS |
| Amplifier Type | Class D with SMPS, Variable Switching Frequency |
| Output Power | 1000W + 1000W |
| Mains Voltage Range (Vac) | 230V $\pm 15\%$ - 115 $\pm 15\%$ 50/60Hz (internally selectable) |
| IN / OUT Connectors | Neutrik XLR-M / XLR-F |
| IN / OUT Network Connectors | ETHERCON® (NE8FAV) |
| Mains Connector | PowerCon® (NAC3MPA) |
| Mains Link Connector | PowerCon® (NAC3MPB) |
| Cooling | Variable speed DC fan |

ENCLOSURE & CONSTRUCTION

| | |
|---------------------|---------------------------------------|
| Physical Dimensions | |
| Width | 583 mm (22.95") |
| Height | 244 mm (9.60") |
| Depth | 481 mm (18.93") |
| Enclosure Material | 15mm, reinforced Phenolic Birch |
| Paint | High resistance, water based paint |
| Suspension system | |
| Front Suspension | Aluminum Fast Link structure |
| Back Suspension | High Strength Steel with 1/4 Fast Pin |
| Net Weight | 22.5 Kg (49.60 lbs.) |



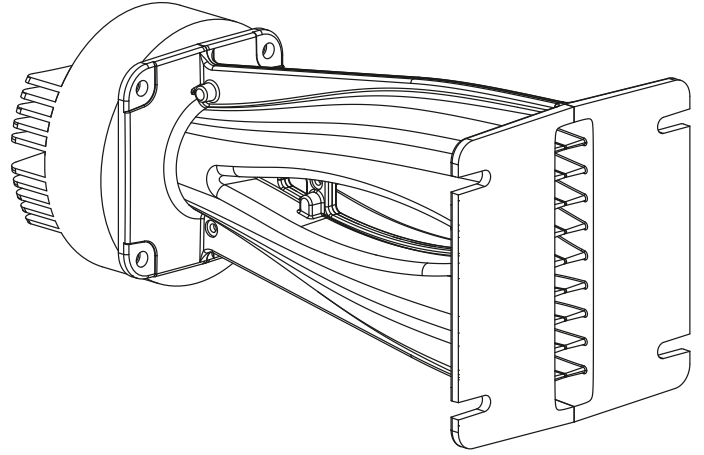
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TRANSDUCERS

The high frequency range is reproduced by a low-distortion compression drive, equipped with very lightweight Titanium diaphragm and a special new suspension design for very natural sound. A transmission line wave-forming waveguide have been used to load the HF driver, in order to provide a detailed and natural sound and to achieve a long-distance HF projecting capacity.

The two 6.5" woofers employed in the reproduction of the mid-bass range are equipped with very lightweight cones and rubber suspension to extend the low frequency response. The lightness of the diaphragm is furthermore improved by the use of aluminum voice coil instead of conventional copper. This ensure a fast reproduction of the mid range and mid-bass musical passages, improving also the thermal capacity of the voice coil and, consequently, controlling the overall power compression. The two 6.5" woofers are back loaded by a short hybrid transmission line that minimizes the effect of the box resonances and eliminates the "boxy" mid-bass sound commonly obtained from regular bass-reflex enclosures, giving to this module a natural cardioid directivity dispersion at the upper bass and mid low region.

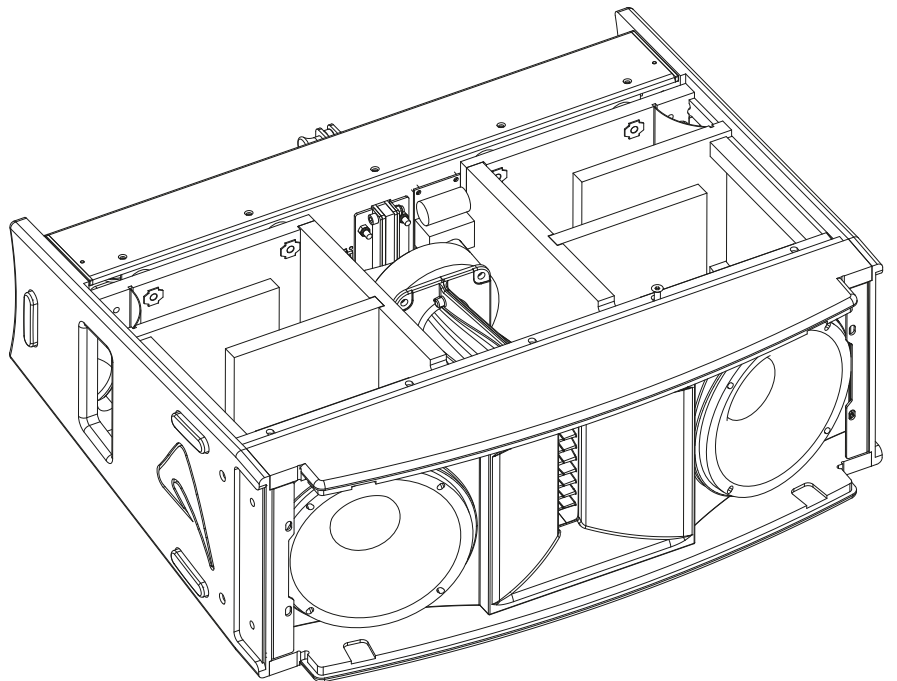


SYSTEM CONCEPT AND SONIC PERFORMANCES

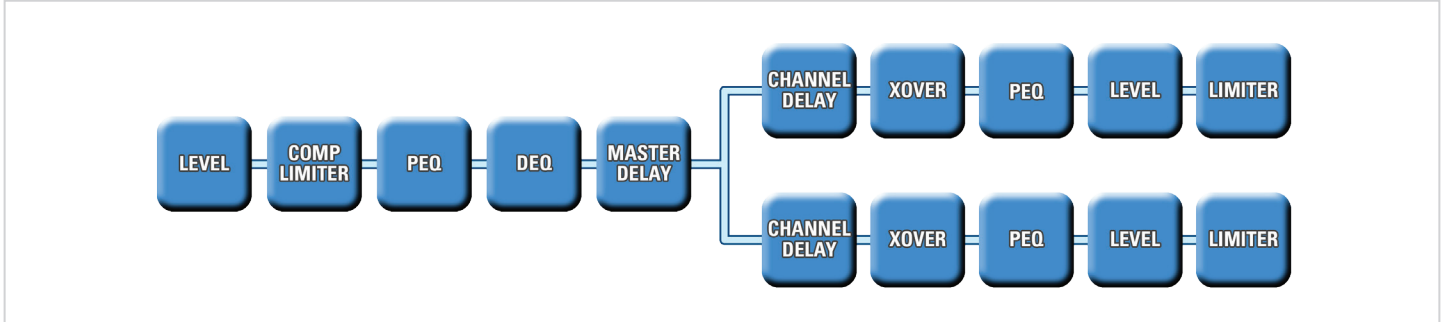
The AX2065A offers a simple but innovative design in line array elements. The simple concept of the WTW symmetrical design is implemented in an effective way in order to minimize the effects of potential beaming phenomena around the crossover frequency. In order to minimize these effects, many different details have been carefully engineered, the first of them being the choice of the HF driver unit. The special light-weight diaphragm used in this driver features a very low mechanical resonance, thus allowing a relatively low crossover frequency point that is placed in the 900Hz range.

Moreover, the orientation of the two woofers allows to minimize the interference effect between them, while the use of a mechanical-acoustic polyurethane filter represents a further help in minimizing the midrange beaming.

The crossover filter approach is based on a "Constant Power" technique. Thanks to a particular phase combination between the two ways around the crossover frequency, this approach is able to provide a very stable horizontal coverage and a very stable off-axis sound image, also minimizing unwanted effects around the crossover frequency. The further application of phase linearization techniques, combined to constant power crossover, yield a linear phase response and a coherent time response. This allows for a natural perception of acoustic instruments and voices and for an improved depth of the sound image.



SIGNAL PROCESSING and POWER AMPLIFIERS



The system processing is based on the **CORE DSP platform** designed by the PROEL R&D Laboratories using one of the most advanced SHARC DSP for audio application. It features 40bit, 96kHz floating point resolution and top-quality 24bit AD/DA converters, for a perfect signal integrity, a dynamic range in excess of 110dB and a superior sonic performance. Thanks to its massive processing power, the CORE platform is capable of providing the most sophisticated algorithms for speaker processing, together with remote control and networking capability.

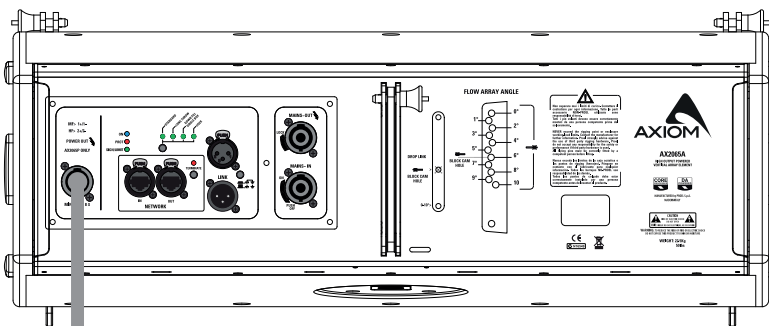


The PRONET control software, working on a solid and reliable CANBUS based network protocol, provides an intuitive interface for the remote control of the whole system, with the possibility of eqing, delaying, increasing the protections and monitoring the status of the amplifier.

The AX2065A is powered by **DA SERIES** digital power modules, a new generation of CLASS D power amplifier with digitally-controlled SMPS. The innovative technology used for these amplifiers (including also the use of a variable switching frequency) offers performances at the top of the range, such as a superior sound definition at any audio frequency, very high dynamics also for low level signals and very low distortion even at the maximum power. The superior sound quality can be compared with top-of-the-range AB-class analog systems, while the DA modules feature a higher dynamics, very compact size and light weight and efficiency above 90%.



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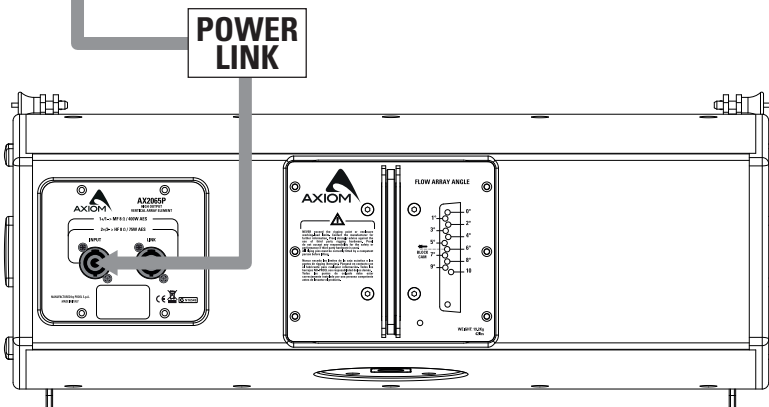


The DA module employed for powering the AX2065A delivers in an ultra-compact package a maximum power of 2000W. Moreover, each AX2065A is able to power an additional passive AX2065P module through the available power output on the back panel. This feature will allow to assemble very competitive system solutions both for rental and installation applications.

HARDWARE

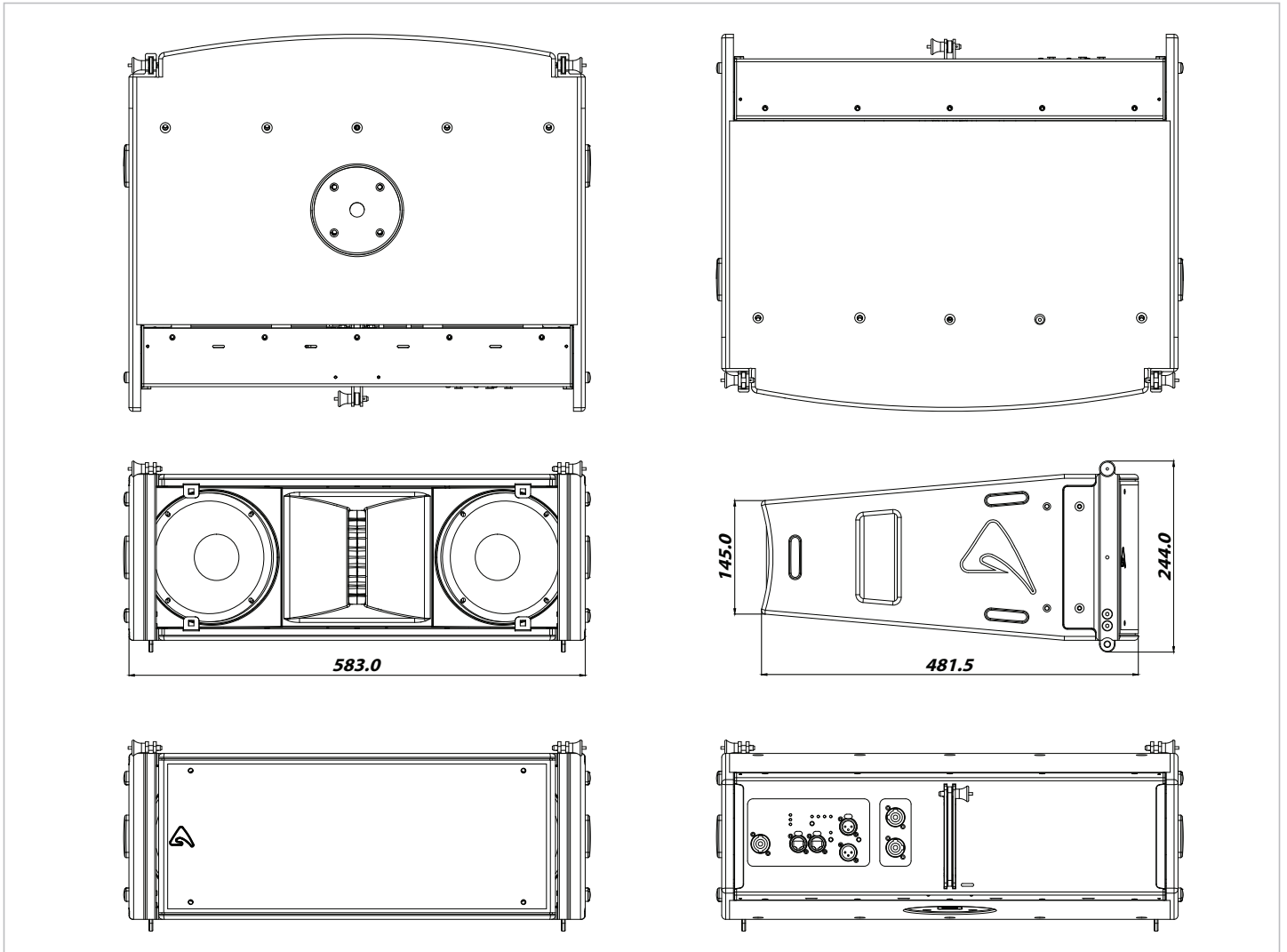
The AX2065A includes as an integral part of the cabinet a built-in **FLYING HARDWARE** that provides an easy and fast installation together with an excellent load-bearing capacity.

In addition, each module features on the bottom panel a metal plate with a M20 thread for installing one or more modules on standard speaker stand.



AX2065P

PHYSICAL DIMENSIONS



POWER MODULE CONTROL & CONNECTION PANEL

