

ST-215

Sound Touring series



FEATURES

- » 2-way active high efficiency mid-high unit
- » Long throw
- » 45° x 40° nominal coverage
- » 2 x 15" speaker
- » 2" exit compression driver
- » 800 W mid-bass
- » 200 W highs
- » Trapezoidal enclosure
- » Dual Antra Track/eyebolt based flying hardware

SPECIFICATIONS

RMS (Average) Power Handling^R:	800 W ^{RL} mid frequency section 200 W ^{RH} high frequency section
Program Power Handling^P:	1600 W mid frequency section 400 W high frequency section
Peak Power Handling^K:	3200 W mid frequency section 800 W high frequency section
On-axis Frequency Range^F:	MF: 70 Hz - 1500 Hz HF: 1100 Hz - 18 kHz
Nominal Impedance^M:	MF: 4 Ω HF: 8 Ω
Minimum Impedance^M:	MF: 3.2 Ω (at 43 Hz) HF: 10.4 Ω (at 2.9 kHz)
On-axis Sensitivity 1W / 1 m^S:	MF: 108 dB SPL HF: 108 dB SPL
Rated Peak SPL at Full Power:	MF: 143 dB at 1 m HF: 137 dB at 1 m
-6 dB Beamwidths^Q: (average, 500 Hz to 8 kHz)	Active (24 dB/oct at 1.25 kHz xover): 55° Horizontal 50° Vertical
Speech Coverage Angles^C:	Active (24 dB/oct at 1.25 kHz xover): 65° Horizontal 60° Vertical
Enclosure Material:	Wisa® Birch Plywood
Finish:	Catalyzed Polyurethane Paint
Transducers/Replacement Parts:	MF: B-30/GM B-30 HF: ND-8/GM K-8
Input Connection:	2 x NL8 Speakon, wired to ±2 MF ±3 HF
Dimensions (H x W x D):	102 x 70.4 x 84.6 cm (40.8 x 28.2 x 33.9 in)
Weight:	75 kg (165.4 lbs)
Shipping Weight:	83 kg (183 lbs)
Accessories:	ANL-3, track connector w/ring+carbnr. set ANL-2, 4-piece M10 eyebolt+carabiner set

INTRODUCTION

The D.A.S. ST-215 is a 2-way mid-high unit designed for high efficiency and long throw.

APPLICATIONS

The ST-215 system is intended for applications where very high sound pressure levels are in order, such as indoor or outdoor live sound reinforcement in fixed installations, touring bands and hire companies.

DESCRIPTION

The system comprises two separate frequency sections that are easily accessed through NL8 Neutrik Speakon connectors.

Low-mid frequency reproduction is handled by two B-30 15" cone loudspeakers. This arrangement develops the high sensitivity required from a unit such as the ST-215. The B-30 utilizes a 4" edgewound coil, massive magnetic structure and carefully designed cooling schemes resulting in high power handling and low power compression. Exclusive D.A.S. voice coil assembly technology assures accurate transient response.

High frequency response has been optimized

^R Based on a 2 hour test using a 6 dB crest factor pink noise signal bandlimited according to IEC 268-1 (1985). All power ratings are referred to the nominal impedance.

^{RH} 24 dB/octave bandpass filtered at 125 Hz - 1.25 kHz. ^{RL} 24 dB/octave highpass filtered at 1.25 kHz.

^P Conventionally 3 dB higher than the RMS measure, although this already utilizes a program signal.

^K Corresponds to the signal crests for the test described in ^R.

^F As per IEC 268-5 (1989), re. a one octave band centred at 500 Hz and 4 kHz. Half space anechoic. A CT-2000 Processor was used. MF low frequency limit with no highpass (LF limit is 100 Hz with controller).

^M A rating that complied with IEC 268-5 would be 12 ohms for the HF. ^M In practice cable and connector impedance has to be added to all impedance values.

^S For the 500 Hz and 8 kHz one octave bands. A CT-2000 processor was used.

^Q Average of one-third octave band measures. A CT-2000 processor was used.

^C There is currently no standard method of averaging the beamwidth with frequency characteristics into a single meaningful figure, which impedes comparisons across manufacturers and very often even product lines. Our own criterion weighs the -6 dB coverage angles from one-octave bands according to their contribution to speech intelligibility.

One and one-third octave bands comply to ANSI S1.11-1986.



by using the D.A.S. ND-8 compression driver. The ND-8 driver utilizes a neodymium magnet structure, 2" exit and a 4" titanium diaphragm. The elliptical horn provides a precise coverage pattern and high SPL over long distances.

The compact enclosure is manufactured from Wisa® Birch plywood and is finished with a catalyzed polyurethane paint that provides protection against the elements and abrasion. The trapezoidal enclosure has 10 degree side angles for easier arraying.

The ST-215 has a fabric covered steel grille to protect the loudspeaker components. The fabric covering is resistant to wear and tear, provides protection from dust and dirt, and is both acoustically transparent and flame retardant.

Ancra Track flying hardware provides a suspension option that is flexible, safe and simple to use. The hardware provides support for two types of suspension. First, an aircraft type track-based suspension system permits vertical angle variation and fast rigging. The second option is to use the standard 16 suspension points for M10 eyebolts, which allow for horizontal as well as vertical suspension. The ANL-3, an optional set of a double stud track connector with lifting ring and a carabiner, is available. The ANL-2, an optional set of

four forged steel M10 eyebolts and four carabiners, is also available.

Only experienced installers should fly speaker boxes. When flying enclosures from ceiling support structures, extreme care should be taken to assure the load bearing capabilities of the structures so that the installation is absolutely safe.

Hanging hardware should be regularly inspected and suspect units replaced if in doubt. This is important to avoid injury and absolutely no risks should be taken on this respect. Only rated hardware should be used.

USE

Use of the CT-2000 monophonic controller is required for system operation, since it provides complex signal processing and signal limiting, thus assuring plug and play accuracy and transducer protection.

An amplifier delivering 800 to 1200 watts into 4 ohms is recommended for the mid frequency section. An amplifier delivering 500 to 700 watts into 4 ohms is recommended for the high frequency section.

CONNECTION

Note that the two Speakon connectors are wired in parallel to provide a convenient loop-through capability.

Switch off the amplifier before making any connections.

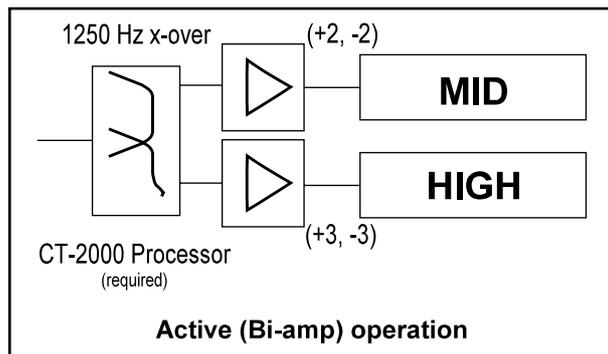
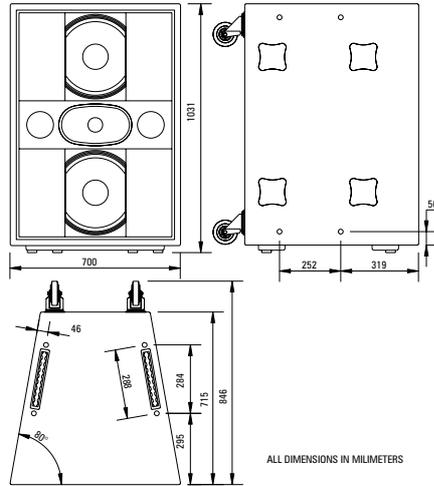
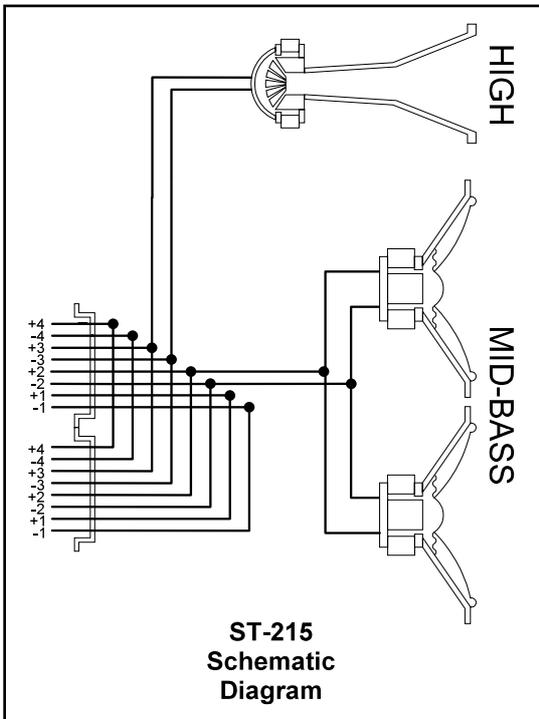
Connect one channel of the amplifier's output carrying mid frequency signal to pins (+2, -2) to any one of the enclosure's two input connectors using speaker cable and one Speakon connector. Repeat for the high frequency amplifier and pins (+3, -3).

A block diagram showing the connection can be found on the bottom of this page.

ARCHITECTURAL SPECS

Can be found at D.A.S.'s web page:

<http://www.dasaudio.com>.



ST-215. BI-AMP USE

FREQUENCY RESPONSE

Figure 1 shows the HF section, MF section, and combined system frequency responses at 1 m radiating to a half space anechoic environment and driven by a 1 W sinusoidal signal.

IMPEDANCE

Figure 2 shows impedance with frequency for the mid and high frequency sections.

DISTORTION

Figure 3 shows the Second Harmonic Distortion (grey) and Third Harmonic Distortion (dotted) curves for a unit driven at 10% of its nominal power handling rating.

BEAMWIDTH

Figure 4 shows the -3, -6 and -10 dB horizontal (solid) and vertical (dashed) beamwidth with frequency curves. -6 dB ones are shown with thicker traces for clarity.

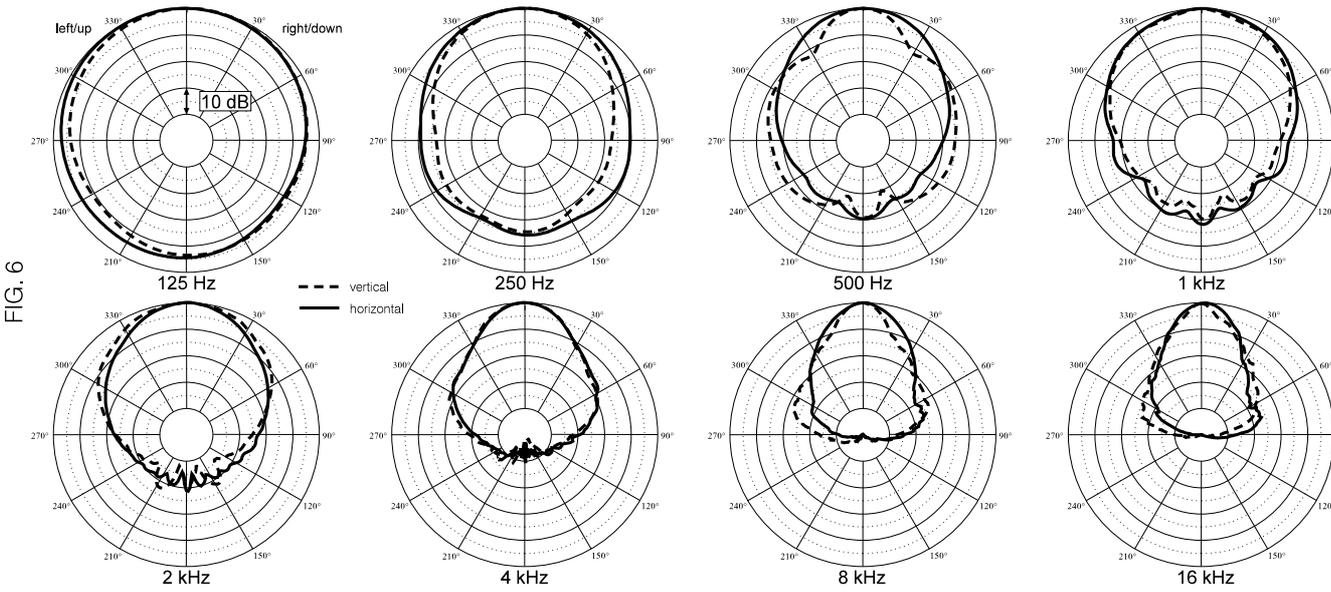
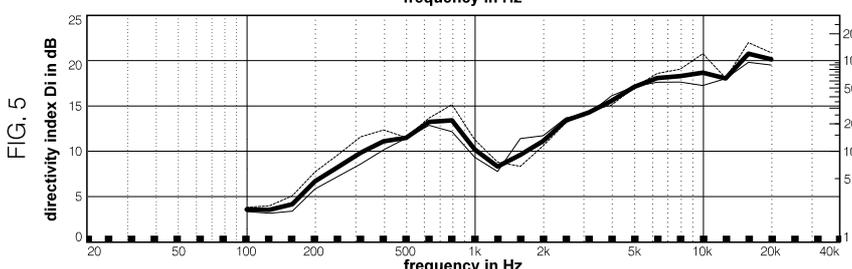
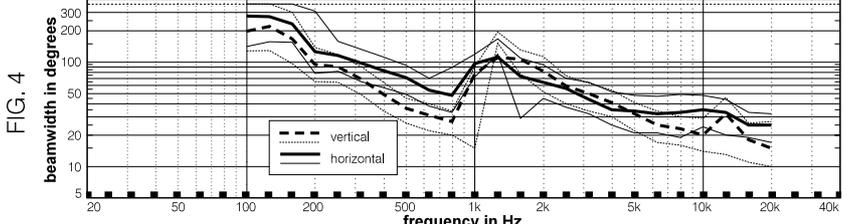
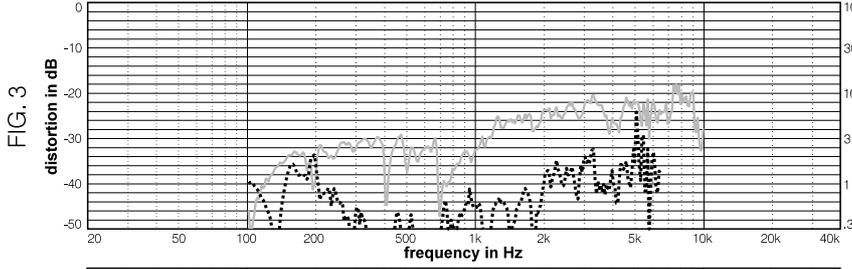
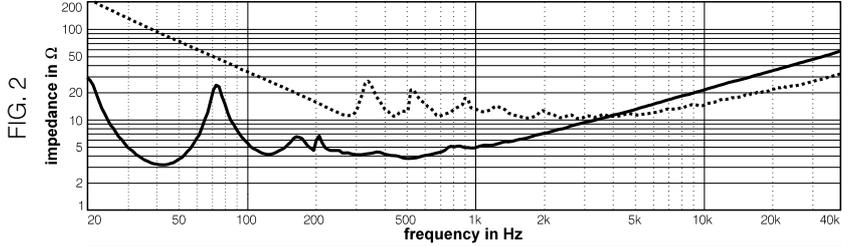
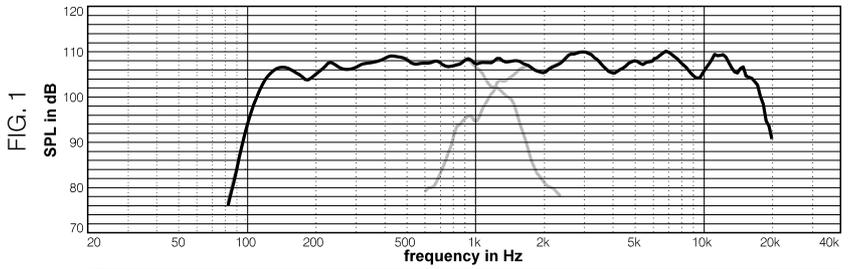
AXIAL DIRECTIVITY $Q(R_0)$ AND DI

Figure 5 shows the above characteristics with frequency. Thin continuous and dashed lines show partial horizontal and vertical, respectively, characteristics.

POLAR RESPONSE

Figure 6 shows the one octave band horizontal (solid) and vertical (dashed) polars for the indicated frequencies. Full scale is 50 dB, 5 dB per division.

NOTES. 1.Frequency response: referred to 1 m; one-third octave smoothed for correlation with human hearing. 2.In practice, cable and connector impedance need to be added. 3.Harmonic distortion components are not plotted beyond 20 kHz; near-field techniques used. 4.Directivity characteristics plotted with respect to frequency are the average within the one-third octave bands of center frequencies noted by the marks at the bottom of the graphs, but are joined up for display purposes. All other characteristics plotted vs. frequency use 1/24th octave resolution. Regions of less than 1 dB below goal level and sharp notches may be ignored when calculating beamwidths. 5.Directivity factor and index were computed from two degree resolution vertical and horizontal polars using sinusoidal weighting. 6.Polars were acquired by placing the unit on a computer controlled turntable inside our anechoic chamber. Measurement distance was 4 m. 7.For response, distortion and directivity measurements, a CF-2000 Processor was used. Product improvement through research and development is a continuous process at D.A.S. Audio. All specifications subject to change without notice.





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