

The sound of focus.
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**NT POWERED LOUDSPEAKERS
WITH GUNNESS FOCUSING™**

BEAW

The Accuracy of Studio Monitors
The Accuracy of Studio Monitors

The Accuracy of Studio Monitors *with the* Power for Live Sound

In the world of sound reinforcement, conventional wisdom has always accepted that compromise is inevitable. To reach large audiences with sufficient power and impact, sound quality must suffer. PA loudspeakers will never sound as good as studio monitors.

No more.

Presenting the EAW NT Series: powerful reinforcement loudspeakers with sonic performance to rival the best direct-radiating recording monitors.

More than three years in development, the NT Series features the world's first implementation of EAW's exclusive Guinness Focusing™ technology (patent pending). Employing sophisticated, custom DSP algorithms designed specifically to correct loudspeaker response anomalies, Guinness Focusing substantially eliminates the time smear, horn "honk" and low-frequency cone resonances that plague conventional reinforcement system designs.

At last, front-of-house and monitor engineers have tools to equal those of their studio-industry colleagues. Response so flat, and distortion so low, that even the subtlest EQ adjustments are immediately audible. Extraordinarily high gain-before-feedback, with prodigious peak output capability to convey all the power of a live performance. Precise imaging, startling sonic detail and crisp transient reproduction.

The NT Series offers all this in a suite of products that are the culmination of EAW's decades-long experience with the practical challenges of live sound. Innovative joinery techniques and thoroughgoing attention to every detail have produced enclosures with the highest output-to-weight ratio in their class. Field-proven, built-in switching amplifiers eliminate the need for heavy external amp racks and complex cabling while assuring ease of service and long-term reliability. Two different HF horn configurations with exceptionally consistent arraying characteristics, together with a comprehensive set of mounting and rigging options, provide flexibility to handle every venue with ease.

The EAW NT Series: the new standard by which all portable reinforcement loudspeakers will be judged.

FEATURES

- Guinness Focusing™ digital correction
- Unrivalled clarity and accuracy
- Extremely low distortion
- Pinpoint imaging
- Ultra-smooth arraying performance
- Powered for “plug-and-play” simplicity
- Exceptionally lightweight, high-strength enclosures
- Versatile mounting and rigging options



NT SERIES POWERED LOUDSPEAKERS



APPLICATIONS

- Theatrical sound reinforcement
- Concert halls
- Live music clubs
- Houses of worship
- Portable music playback systems
- Surround sound presentations
- Stage monitoring
- Corporate A/V and multimedia
- Downfill and front-fill in touring systems
- Distributed paging and music for stadiums and arenas

NT26 & NT29



LF 12 in cone driver, sealed
HF 1.4 in exit 3 in compression driver, horn-loaded
Operating range — 60 Hz to 20 kHz

Nominal Beamwidth

	NT26	NT29
Horiz.	60°	90°
Vert.	45°	45°

Axial Output Limit

Avg.	127 dB SPL
Peak	133 dB SPL

Dimensions (HxWxD) 22.6 x 15.2 x 14.9 in
(574 x 386 x 378 mm)

Weight 53 lb (24 kg)

NT56 & NT59

LF 15 in cone driver, sealed
HF 1.4 in exit 3 in compression driver, horn-loaded

Operating range — 50 Hz to 20 kHz

Nominal Beamwidth

	NT56	NT59
Horiz.	60°	90°
Vert.	45°	45°

Axial Output Limit

Avg.	127 dB SPL
Peak	133 dB SPL

Dimensions (HxWxD) 25.9 x 17.6 x 17.1 in (658 x 447 x 434 mm)

Weight 65 lb (29.5 kg)



NTS22

SUB 2x 12 in cone driver, vented, push-pull

Operating range — 34 Hz to 135 Hz

Axial Output Limit

Avg.	126 dB SPL
Peak	132 dB SPL

Dimensions (HxWxD) 17.6 x 25.9 x 30.2 in
(447 x 658 x 767 mm)

Weight 98 lb (44.5 kg)

5 versatile models

The EAW NT Series comprises four two-way, biamplified, full-range loudspeakers in 12-inch and 15-inch LF configurations, and a matching dual 12-inch subwoofer. Full-range units feature compact enclosures with angled sides to facilitate arraying, and double as low-profile stage monitors when placed on their side. The companion NTS22 subwoofer, which uses a push-pull design to minimize distortion, extends system power bandwidth in the low frequencies.

The NT29 and NT59, featuring 90-degree HF horns, provide a broad horizontal pattern to cover main audience areas and maximize freedom of movement in keyboard, drum or sidefill monitoring. The NT26 and NT56, with 60-degree HF horns, offer precise pattern control to minimize reverberation, manage

coverage in stage monitoring, and provide longer throw for balcony shots.

All NT Series models are powered using a reliable, field-proven amplifier module. Rear-panel LEDs indicate signal presence, amplifier status, limiting and clipping. Full-range amplifiers incorporate a high-pass filter switch for crossover to the subwoofer or to minimize proximity effect in voice reinforcement, and a mode switch to compensate for half-space loading.

The subwoofer amplifier module includes a fixed low-pass filter and separate gain and polarity switches to optimize crossover to the full-range units.



Guinness Focusing

Guinness Focusing

A Dramatic New Development in Reinforcement Technology

To achieve the fundamental goals of sound reinforcement, speaker designers invariably turn to HF horns for their significant practical advantages. Horns project energy into a defined coverage area, and so help to control reverberation and interference. They are much more efficient than direct radiators, making it easier to achieve high peak SPLs. Properly designed, horns also add well in arrays, providing smooth, predictable coverage.

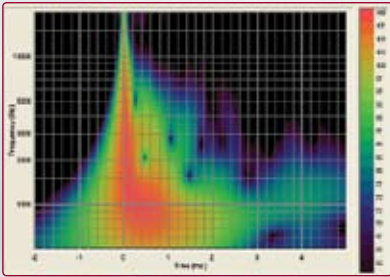
But horns also have limitations, notably in their sonic characteristics. Every audio professional is all too familiar with the “horn sound” — a megaphone-like “honkiness” with smearing of

transients. When horns combine with cone LF drivers in a full-range system, the disparity between low and high frequencies can destroy natural timbres, creating a false, “amplified” quality with an obvious break at crossover.

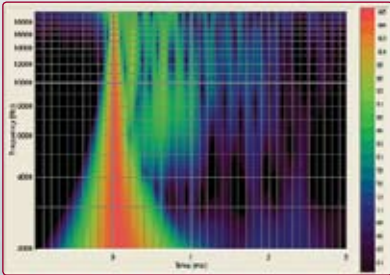
Can a PA loudspeaker ever sound as good as a studio monitor? This is the challenge that EAW’s Director of R&D, David Guinness, posed when developing the NT Series. The first step was to make high-resolution measurements of a proposed two-way system, with the goal of identifying problems that would yield to correction — that is, that did not vary with signal level or measurement axis. The process revealed distinct, correctable anomalies that were traceable to basic loudspeaker physics.

GUNNESS

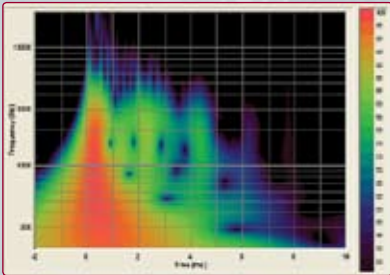
FOCUSING



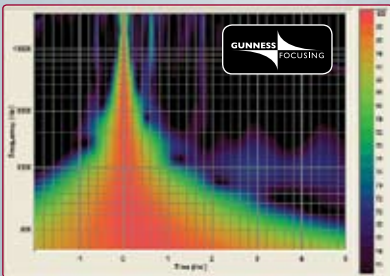
Horn Mouth Reflections (“Honk”) This spectrogram shows the on-axis measurement data filtered to isolate the 1 kHz to 10 kHz region. Notable in the display is a series of energy peaks at intervals of less than 0.5 ms. This prominent resonance, caused by reflections between the compression driver diaphragm and the horn mouth, is responsible for the characteristic horn “honk.”



Multiple Arrivals (“Splashiness”) This spectrogram shows the data filtered to isolate the octave from 10 kHz to 20 kHz. Here, we see multiple arrivals along different propagation paths through the phase plug, appearing as a series of very high-frequency peaks occurring primarily within the first millisecond. This energy causes transient “smearing” that affects the quality of impulsive sounds and degrades imaging. Universally ignored in PA loudspeaker designs, problems in this octave contribute substantially to the artificial sound quality.



Woofer Cone Resonances Turning to the critical midrange, filtering to isolate the response below 10 kHz reveals delayed energy in the region between 300 Hz and 3 kHz that extends as late as 8 ms. These resonances, caused by reflections across the LF driver cone surface, introduce midrange coloration — especially in systems with a 15-inch LF driver.



NT Series System with Guinness Focusing Dave Guinness knew he needed very precise signal preconditioning to correct these problems. Turning to digital signal processing, he worked with EAW partner Acuma Labs to develop a proprietary matched Z transform that produces a stable filter while properly preserving the resonant frequencies of decay trails — and is thus optimally suited for speaker correction. This spectrogram shows the result as implemented in the NT Series: a near-perfect impulse response. Named **Guinness Focusing** in recognition of its creator, this sophisticated DSP correction gives the NT Series its phenomenal accuracy and clarity.



Versatile Rigging & Mounting

NT Series full-range models incorporate structural aluminum fly tracks that run the length of the enclosure on each side. Doubling as carrying handles, the fly tracks convey load stresses directly, isolating the wood enclosure from excess forces. A fully engineered complement of couplers, fittings and rigging brackets provides versatility to accommodate a wide variety of applications with ease while maintaining proper array angles for smooth, consistent coverage. Built-in fittings permit stand-alone pole mounting with the NTS22 subwoofer as the base, forming an extremely compact, portable music system that is quick and easy to set up or tear down.

Uncompromising Construction for the Real World

NT Series products are not just magnificent-sounding loudspeakers. At every step in the system design and with unstinting attention to detail, EAW engineers have made sure that the NT Series stands up to the challenges of sound reinforcement with rigorous integrity.

Ultra-Lightweight Construction

Leveraging EAW's comprehensive in-house production facility and computer-controlled woodworking equipment, NT Series enclosures employ complex, innovative joinery. In concert with carefully controlled enclosure geometry, these joints offer superior strength while eliminating the heavy internal bracing and reinforcing cleats that simpler joints require. Fly-cutting excess wood where the full

thickness is not needed, and removing unnecessary grill railings, further reduces weight while preserving strength. As a result, the NT Series features remarkably lightweight enclosures even though the construction employs high-quality, sonically inert Baltic birch plywood throughout. The unbeatable power-to-weight performance of the NT Series means lower shipping costs, easier load-in and load-out, reduced strain on venue fly points, and greater flexibility when it comes to hanging enclosures where they need to be — not just where they have to be.

Orbital Magnet Arrays™

NT Series drivers feature EAW's Orbital Magnet Array technology. Trading on the many advantages

of neodymium magnets, this driver construction technique employs a number of small individual magnets distributed around the voice coil gap. This produces a magnet structure that works as well as, or better than, conventional designs but with an added bonus: gaps that provide for cooling air circulation around the voice coil. The result is vastly improved continuous power handling and extended long-term reliability, with far greater efficiency than ferrous magnets.

Powered for Performance

All NT Series loudspeakers incorporate highly efficient, field-replaceable amplifier modules with digital signal processing for response correction. Excursion limiters protect the system and assure maximum output capability while maintaining sound quality. Onboard DIP switches configure the DSP for specific NT models, minimizing replacement parts inventory and simplifying service. Intelligent power supply control affords optimum efficiency with superior immunity from AC line variations, and self-resetting protection circuitry guards against output overload, overheating, power supply faults and excess output current. Convection cooling eliminates the need for noisy fans. The electronic design is so efficient that the 1500W amplifier package (2000W for the NT522 subwoofer) weighs only 9 lb. (4.1 kg).



The Natural Choice
The Natural Choice
The Natural Choice
The Natural Choice

The Natural Choice

Combining impeccable sound quality, extraordinary power, eminently practical design and a six-year warranty (two years for electronics), the EAW NT Series is the obvious alternative for reinforcement professionals who demand only the best. Night after night, in venues large or small, on the road or permanently installed, the NT Series delivers as no other system can. NT's revolutionary Gunness Focusing vaults it to the technological forefront of sound reinforcement, making it the natural choice — now, and for the future.



WARNING
DO NOT TOUCH THE SPEAKER
DRIVERS OR THE SPEAKER
CONE. TOUCHING THESE PARTS
CAN CAUSE INJURY OR DEATH.
EAW P/N: 1000-1000-0000-0000
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ELECTRICAL SPECIFICATIONS

Input

Type	Electronically balanced, XLR (A3) connector
Sensitivity	2.5 Vrms/+10 dBu at Limit
Impedance	4.4 Vrms/+15 dBu at Clip 20k ohm balanced to chassis, 10k ohm unbalanced
Pin Assignment	1 – chassis; 2 – signal +; 3 – signal –

DSP (50 Mflop, 32-bit SHARC)

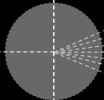
Encoding	24-bit/48 kHz
Filters	Proprietary matched Z transform
Latency	2.15 ms

Amplifier

	SUB	LF	HF
Type	Modified class D	Modified class D	Modified class D
Maximum Output	2 x 63 V, 1000 W @ 4 ohm	63 V, 1000 W @ 4 ohm	45 V, 500 W @ 4 ohm
THD + Noise	<.03 %	<.03 %	<.01 %
Dynamic Range	>105 dB	>105 dB	>102 dB
Driver Protection	Integral DSP limiting	Integral DSP limiting	Integral DSP limiting

AC Mains (Nominal)

Input	115 V	230 V
Frequency	90 V to 125 V	200 V TO 250 V
Current:		
Idle	0.25 A	0.15 A
Inrush	0.9 A	0.6 A
Output Limit	1.6 A	1.0 A
Fuse Rating	10 A	6.3 A
Connector	Neutrik PowerCon®	Neutrik PowerCon®



EAW

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