H||H

PRODUCT GUIDE

A Brief History of Sound

Britain, 1968. While television and live music events were rapidly expanding in scale and investment, professional audio technology was still way behind the times. An electronic engineer named Mike Harrison identified this gap in the market and utilised his skills to develop solid state power amplifier designs for professional applications.

"Harrison established the HH Electronics factory on the outskirts of Cambridge, UK."

This small, unknown company sold their famous 'TPA Series' amplifier to nearly every TV studio in Britain, in addition to some good recording studios and numerous industrial users. Harrison's next step however was even more audacious: The world's biggest and most respected broadcasting company, the BBC, had published stringent specifications for a new amplifier. HH Electronics took up the challenge and eighteen months later finally won this prestigious and coveted contract with their AM8/12 amplifier.

" Thousands were sold to the BBC and almost every other major broadcasting corporation throughout the world. "

HH were hungry for growth and identified that the live performance market could provide this opportunity. At that time the booming Hi-Fi market was already well established, fickle, and flooded, but the field of live music held much greater possibilities for innovation. Pop fans of the early 70s had become accustomed to proper studio sound but heard their live concerts through amplifiers and loudspeakers which were basically no better than railway station public address sets. These were vast, heavy, unreliable, and so outdated that man had set foot on the moon before the music industry had caught on to the miracles of solid-state electronics!

HH decided to start from a clean drawing board; to design high-performance solid-state instrument amplifiers and PA systems that were portable, reliable and capable of withstanding life on the road. Musicians and sound engineers soon recognised HH as a company that set new standards for their market as their range of products grew to create light, low-cost, expandable systems that were every bit as good as the tailor-made rigs previously only available to superstars.

"HH advanced its product offering further to produce some of the most highly desirable sound equipment on the planet."

HH soon had a list of high-profile artists on their roster, such as T-REX, Pink Floyd, The Sweet, 10CC and many more…

"HH innovation was widely recognised for its use of MOS FET technology making it a leader in high-grade power amplifier design."
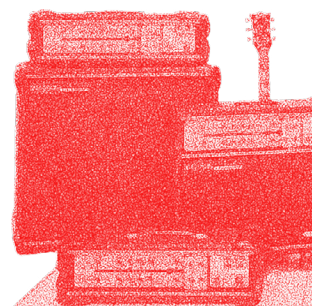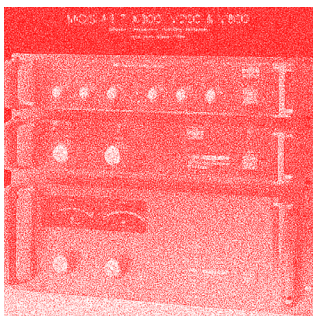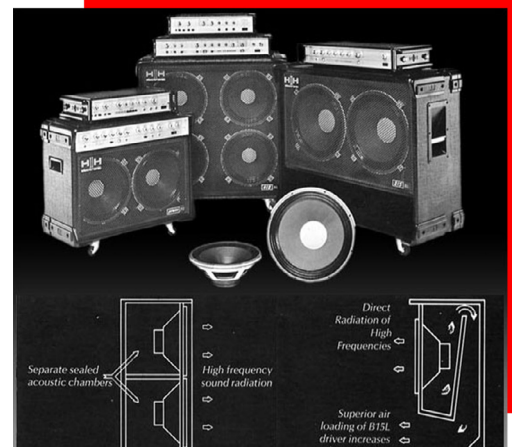
HH developed a wide variety of professional products for broadcast, recording and live performance, but also built its own speaker components such as the famous CD400 compression driver.

In 1989, HH was acquired by Headstock Group, one of the UK's leading manufacturers and distributors of Music Industry products and owner of the iconic Laney Amplification brand. The merger of HH with Headstock Group provided extra investment, engineering, and design resources to HH. From its new home near Birmingham, in the centre of the UK, HH found strong success with both HH loudspeaker components and a new wave of HH professional audio product innovations.

Following strong growth, Headstock Group relocated to its new headquarters in Halesowen, UK in 2005. This UK facility is the home of the HH Product Development team where all product design work is undertaken.

HH remains a family-owned, family-run business led by CEO James Laney

STAGE LIGHTING
Controller unit synchronises your lighting and music together

MIX 1   MIX 2

MIX 3   **HH** electronic
STAGELIGHT CONTROLLER

HH electronic

MICRO-30

Separate sealed acoustic chambers

High frequency sound radiation

Direct Radiation of High Frequencies

Superior air loading of B15L driver increases

"Natural sound reproduction is the studio quality I insist on. Naturally I choose HH".

HH

S500-D
Professional
Two Channel
Power Amplifier

S500-D

T. Rex
Soft Machine
Groundhogs
Blue Mink
Wishbone Ash
Wizzard
Roger Morris
Henry Cow
Design
Fairport
Convention

have all got class & something else .
HH amplifiers

CD 400
Compression Driver

The CD 400 features —

Nylon Phasing Plug
Cost effective, space-age material — glass reinforced nylon moulded phasing plug, which is rear loaded to deliver smooth extended frequency response at high efficiency. Concentric acoustic slots maintain correct phasing relationship over a wide frequency range.

Fluid Cooled Voice - Coil
Fluid cooled 1⅜" diameter, low mass voice coil design delivers high efficiency performance with good power handling ability and extended frequency response. In the unlikely event of failure, the diaphragm/voice coil assembly is field replaceable without soldering.

CD 400 Technical Specification

Frequency Range	800 to 15kHz
Rated power handling	50 Watts r.m.s.
	100 Watts programme
Rated impedance	8 ohms nominal
Voice coil	1⅜" diameter fluid cooled
Moving system	Elastomer suspended
	aluminium dome
Phase correction	Concentric slot loaded by
	inside face of dome.
Sensitivity	0.06 Watts DIN
	50dB EIA

In the past, the soundman's choice of H.F. driver was limited to al commercial grade units with heavy phenolic diaphragms front loaded and with limited performance, or bi over-priced individually machined American made units.
By applying new materials technology, HH Acoustics have broken through a price/performance barrier with the introduction of the CD-400 high technology H.F. driver.
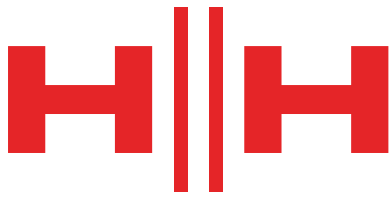
RH 450
Radial Horn

The RH 450 is a professional wide-angle radial horn specially designed to achieve maximum sound coverage with exceptionally smooth frequency response. Moulded in high density structural polyurethane, the RH 450 produces a quality of sound distinctly superior to the cast aluminium horns which have remained largely unchanged in design for forty years. Use of structural polyurethane, an acoustically dead material, results in freedom from the resonances found in aluminium horns and allows starting realism of reproduction. The RH 450 has a cut-off frequency of 800Hz and exhibits a well-defined 100° horizontal dispersion pattern over the whole frequency range of the horn. In the vertical plane, the tighter pattern control of 40° avoids floor and ceiling reflections. The throat region of the RH 450 is designed to allow the wavefront to expand more rapidly than conventional single flare horns to minimise air-overload distortion at high power levels. The RH 450 is fitted with a strong flange with 20mm entry diameter to accommodate the CD 400 Compression Driver.
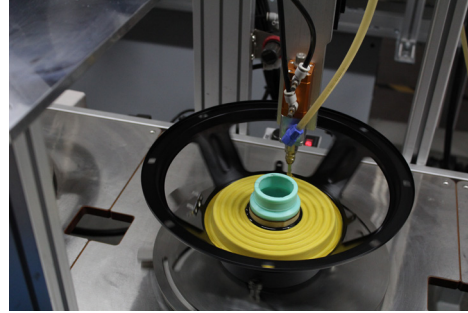
PRO SERIES II   PRO SERIES II

INNOVATION

HH electronic

2

Designed and Engineered with Head and Heart

Each product created meets the highest standards of specification, quality and reliability supported with rigorous product testing before reaching the market.

The HH product development team works to a straightforward design philosophy that we call 'Head and Heart': 'Head' is technical specifications, engineering solutions, manufacturing techniques and competitive pricing. 'Heart' is passion for our industry, desire to make compelling products, and enthusiasm as experienced product users. Creating a harmony of 'Head' and 'Heart' elements is what makes HH special.

HEAD

All products are designed and engineered by the HH UK engineering team. This team is organised into the following sections: Electronics, Acoustics, Mechanical, Digital, Compliance, and Quality Assurance. Together these teams ensure that each product created meets the highest standards of specification, quality and reliability supported with rigorous product testing before reaching the market.

We use a broad range of specialised equipment and facilities to conduct tests. For example, anechoic chambers to measure frequency response, sensitivity and directional characteristics, giving a detailed understanding of performance in a variety of acoustic environments; Power testing to ensure that products can deliver the power levels they claim in accordance with AES (Audio Engineering Society) specifications; Life testing to simulate years of use to confirm that each product can stand up to the demands of professional use; EMC testing to meet stringent regulatory compliance requirements.
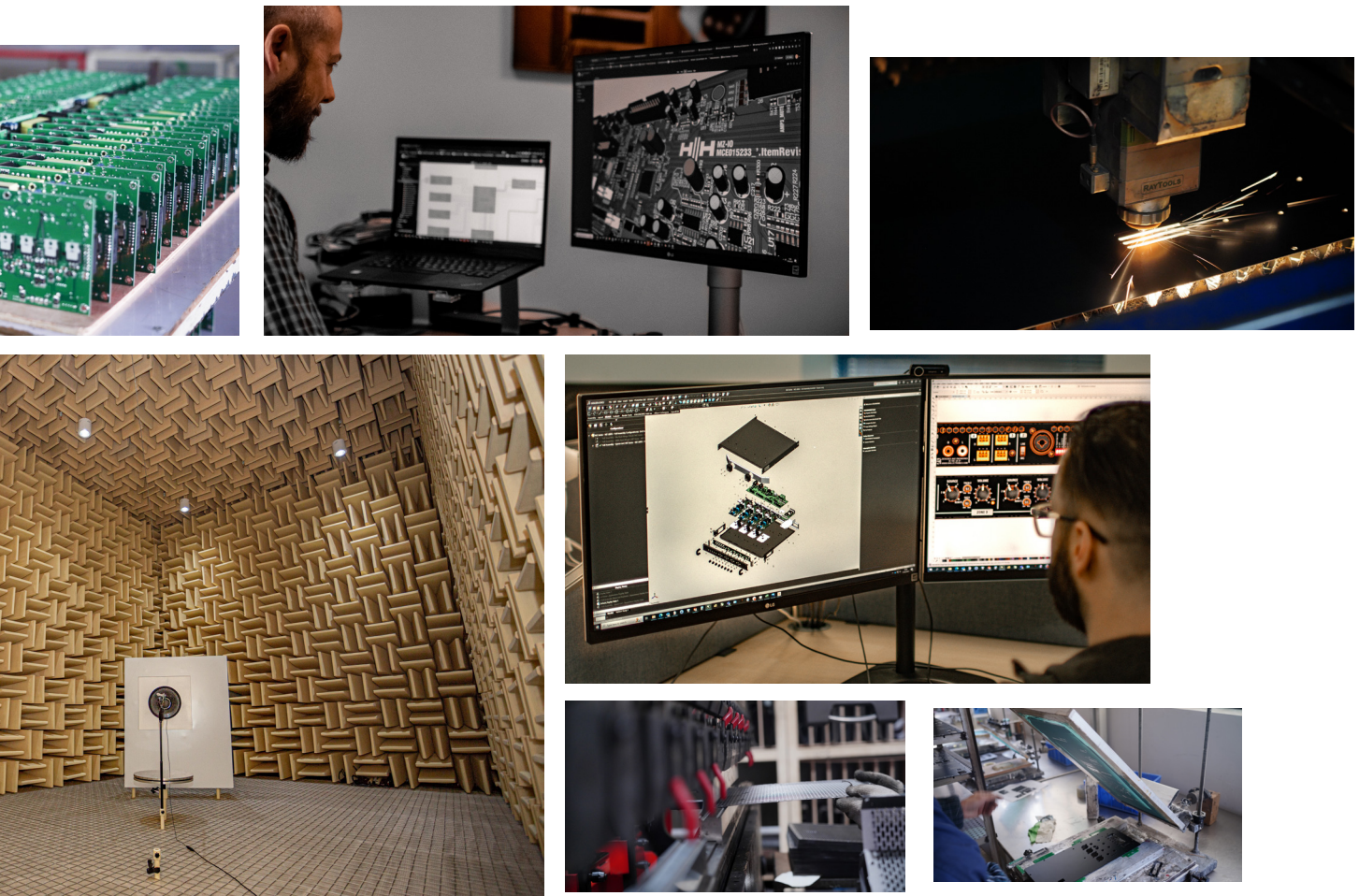
Robust quality control (QC) processes ensure that every product that leaves one of our factories meets our high standards for performance and reliability.

We place great emphasis on quality assurance (QA) throughout the entire production process. All materials and components are carefully tested and verified before they are used ensuring that they meet strict quality standards. Our HH loudspeakers undergo extensive production tests and controls to ensure that they deliver the highest possible audio performance. All production is underpinned with robust quality control (QC) processes to ensure that every product that leaves any one of our factories meets our high standards for performance and reliability.

HEART

"HH business culture is one that sets high performance standards every day but measures true performance in decades."

The HH business culture is one that sets high performance standards every day but measures true performance in decades. We form long-standing business partnerships, hold an exceptional staff-retention record and value each team member and brand representative as a part of the extended Company family.

CONTENTS

LIVE SOUND

TESSEN | LINE ARRAY

LIVE SOUND & INSTALLATION

SP | SPEAKER PROCESSORS

M-SERIES | POWER AMPLIFIERS

INSTALLATION

MZ-SERIES | ZONE AMPLIFIERS & PRE AMP

TESSEN INSTALL | LOUDSPEAKERS

PORTABLE PA

T E S S E N

ARRAY

The **HH** TNA line array series has been engineered to provide professional audio performance with compact dimensions to suit a wide range of applications.

Designed not only for dedicated installations but also mobile, high power FOH applications. The TNA line array series is ideal for venue installation, hotels, gyms and also as portable, professional PA system for live use.

Flexible configurations allow the system to be customised to the venue or application at hand, either as a long throw system or as a standalone, full range line array system.

TNA-2051

KEY FEATURES

- Dual 5-inch HH designed high mid frequency drivers
- 1.33-inch Celestion Compression Driver with Custom Celestion Designed waveguide & horn
- 200W AES, 800W peak
- Max SPL 123 dB
- Frequency response 65Hz-20Hz
- 16 ohm impedance

FRONT

NO GRILLE

TNA-1200S-G2

KEY FEATURES

- Single 12-inch HH designed lower mid frequency driver
- 300W AES, 1200W PEAK
- Max SPL 126 dB
- Frequency response 35Hz-2KHz
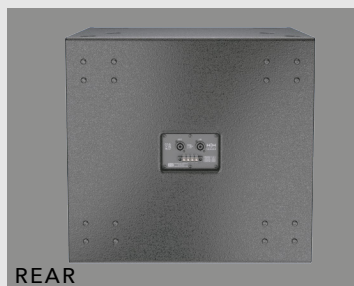- 8 ohm impedance

NO GRILLE

FRONT

REAR

TNA-1800S-G2

KEY FEATURES

- Single 18-inch HH designed low frequency driver
- 500W AES, 2000W peak
- Max SPL 126 dB
- Frequency response 30Hz-300Hz
- 4 ohm impedance

NO GRILLE

FRONT

REAR

TESSEN ARRAY

PASSIVE LINE ARRAY

One of the greatest advantages of Line Array systems is the precise control of the audio field produced, ensuring clarity and even coverage over the entire audience, whilst minimising overspill and interference. This can only be achieved using advanced acoustic design, enabling the outputs of multiple drivers and cabinets to coalesce into a coherent, aligned wavefront.
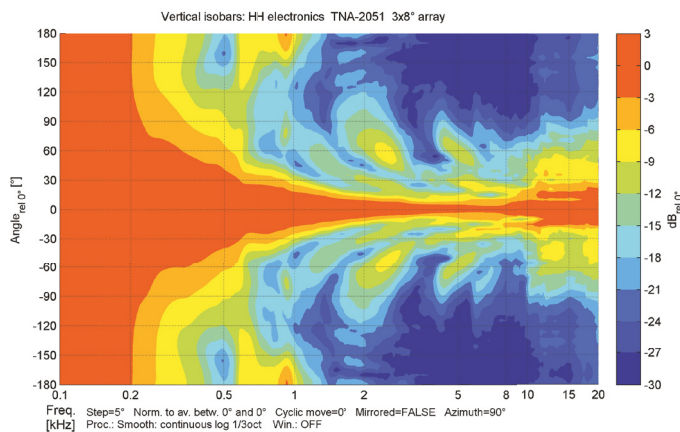
To guarantee the dispersion and projection the HH TNA series was designed to provide, we worked with the highly experienced acoustic engineers at Celestion, utilising their state-of-the-art Finite Element Analysis vibro-acoustics software to develop an entirely new, bespoke compression driver, waveguide and horn assembly.

With a nominal dispersion of 120° across a wide frequency band, with minimal lobing and exceptionally low distortion, this ensures the HH TNA series deliver clear, dynamic sound exactly where you need it.

CELESTION

TNA-2051 & TNA-1200S SOUND TEST IN ANECHOIC CHAMBER

Horizontal isobars: HH electronics TNA-2051 3x8° array

Vertical isobars: HH electronics TNA-2051 3x8° array
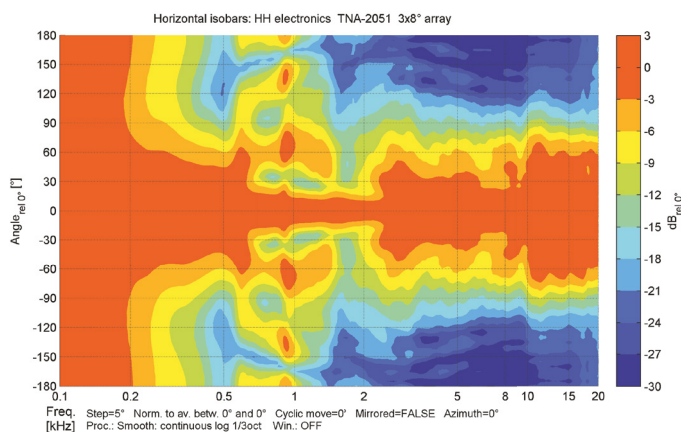
TNA-2120SA

KEY FEATURES

- Ultra-compact High Power Class-D Active subwoofer
- HH designed dual 12-inch low frequency drivers
- 6 Internal DSP presets optimally voiced for multiple configurations
- Drives up to 6 TNA-2051 Line Array satellite cabinets
- Universal SMPSU with Power Factor Correction for global mains voltage operation
- Max system power of 1200W RMS, 4800W Peak
- Max SPL 137dB
- Frequency response 52Hz-200Hz (Subwoofer only)

FRONT

REAR

NO GRILLE

FRONT RIGHT

TNA-1800SA

KEY FEATURES

- HH designed High Performance 18-inch woofer
- High power Class-D amplifier with universal voltage power supply
- Adjustable input sensitivity, crossover, and delay settings
- Balanced XLR output with switchable full-range and crossover modes
- Power rating of 1000W RMS, 4000W Peak
- Max SPL 138dB
- Frequency response 32Hz – 100Hz

FRONT

FRONT LEFT

REAR

FRONT RIGHT

T E S S E N
ARRAY

ACTIVE LINE ARRAY

GROUND STACK SYSTEM

6X TNA-2051
1X TNA-2120SA
1X TNA-1800SA

TNA-2051

162.5

30
104.2
100

TNA-2120SA

726
475   457
FRONT

TNA-1800SA

FRONT - NO GRILLE

HH DESIGNED DUAL 18" WOOFERS

TNA-2800SA SPL 70Hz
TNA-2800SA SPL 95Hz
TNA-2800SA SPL 120Hz

FRONT

REAR

320

349
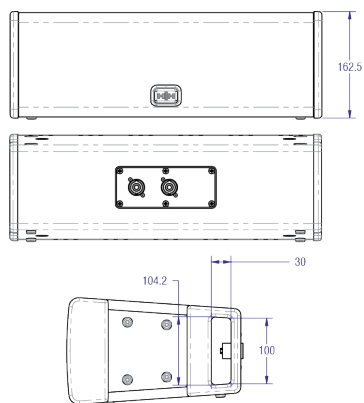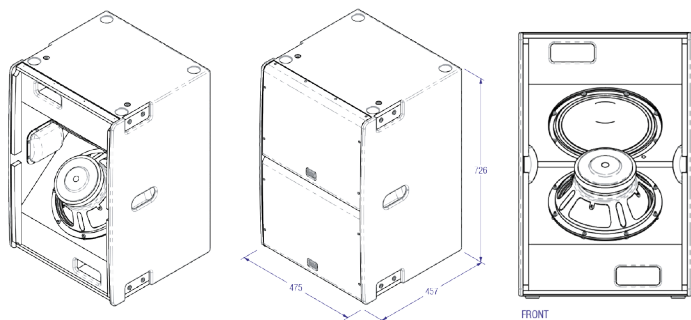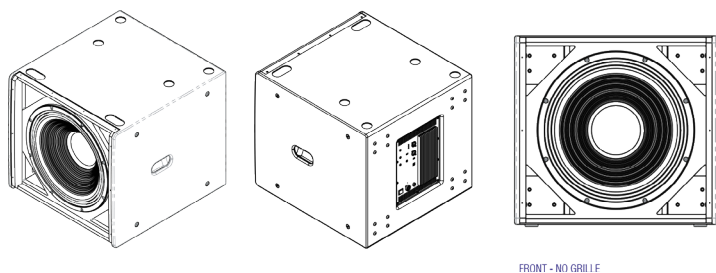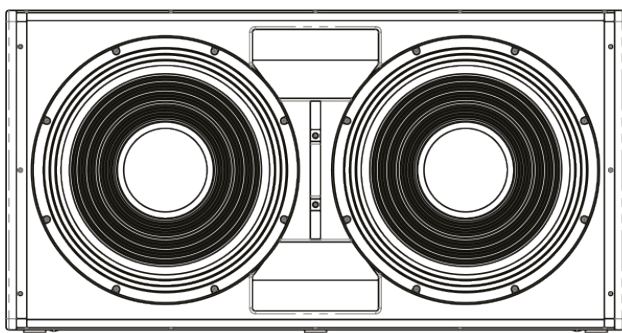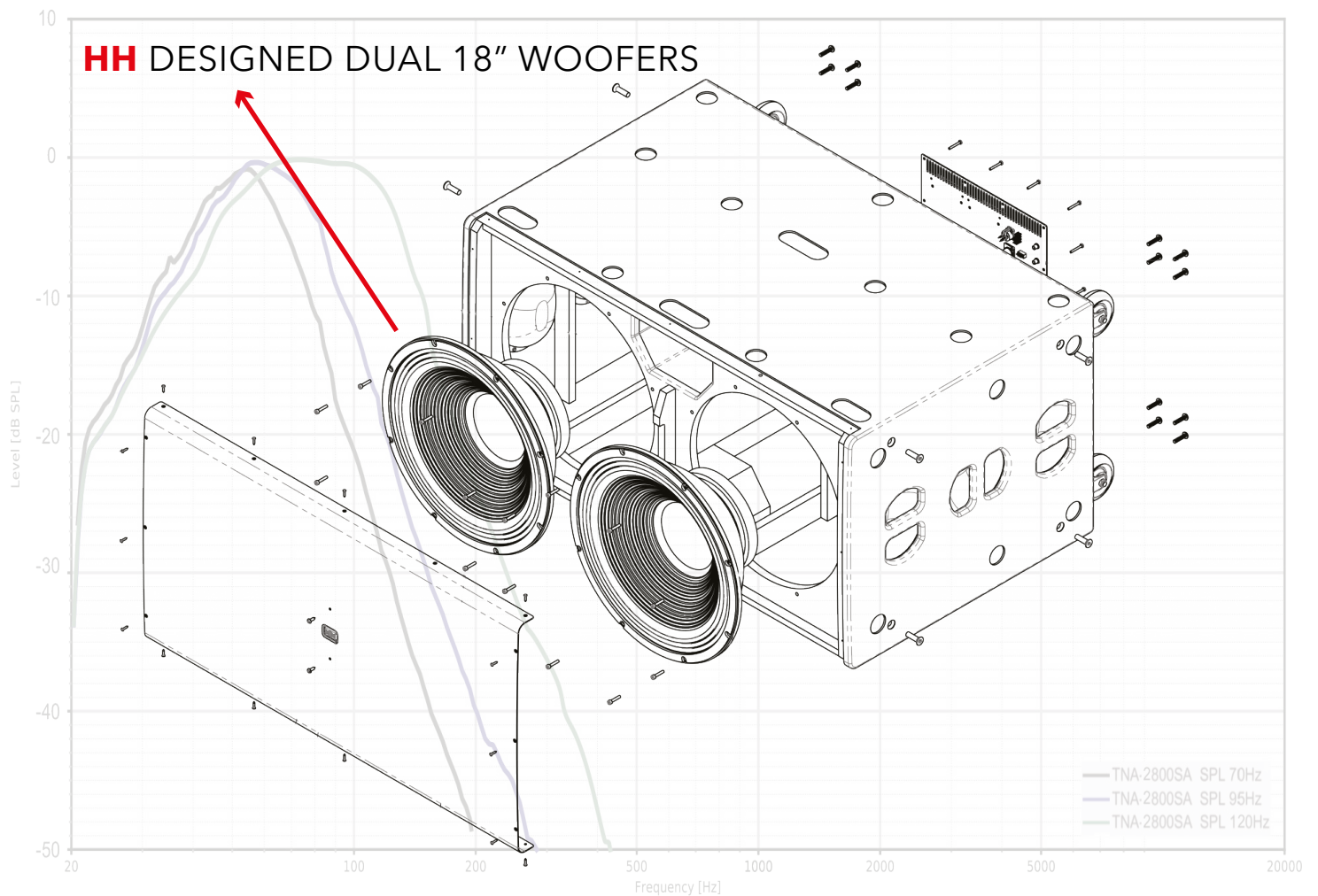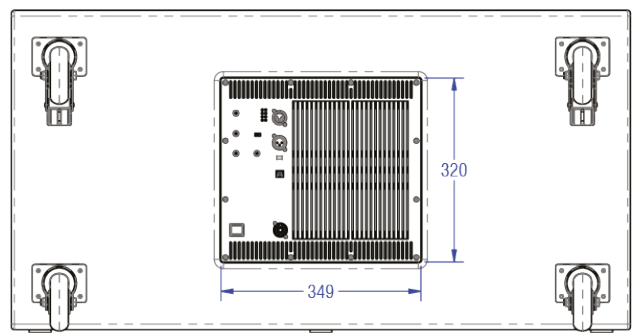
The TNA-2800SA Active subwoofer features two HH designed 18" woofers with exceptionally high output. Equipped with integrated rigging hardware, the TNA-2800SA can be installed quickly and easily. The TNA-2800SA offers a max SPL of 144 dB and a frequency response as low as 32Hz. The TNA-2800-SA is an ideal venue installation or point source solution. Ideal for bars, clubs, venues, and more.

T E S S E N
ARRAY

ACTIVE LINE ARRAY

TNA-2800SA

KEY FEATURES

- High power Class-D amplifier with universal power supply
- Adjustable input sensitivity, crossover, and delay settings
- Balanced XLR output with switchable full-range and crossover modes
- 4 x Heavy duty 100mm PU castors included
- Power rating of 2000W RMS, 8000W Peak
- Max SPL 144dB
- Frequency response 32Hz – 100Hz

FRONT

NO GRILLE

REAR WITH CASTORS

FRONT RIGHT

TNA-BRK1

The TNA-BRK1 solid steel bracket attaches securely to the the TNS-1200s or TNA-2051 to allow secure flying suspension of the TNA system.

TNA-DF1

The TNA-DF1 solid steel dolly frame attaches securely to the TNS-1200s passive sub woofer to transform the TNA system into a transportable line array.

TYPICAL SYSTEM CONFIGURATIONS

SUSPENDED SYSTEM

1X TNA-BRK1 SUSPENSION
FRAME
1X TNA-2120SA ACTIVE 3CH
SUBWOOFER
4-6X TNA-2051 PASSIVE FULL
RANGE SATELLITES

SYSTEM SET FOR TWO WAY OPERATION
TNA-2121SA OPERATING AS LO-PASS SUBWOOFER

LINE INPUT

FULL RANGE A

LINK

FULL RANGE B

LINK
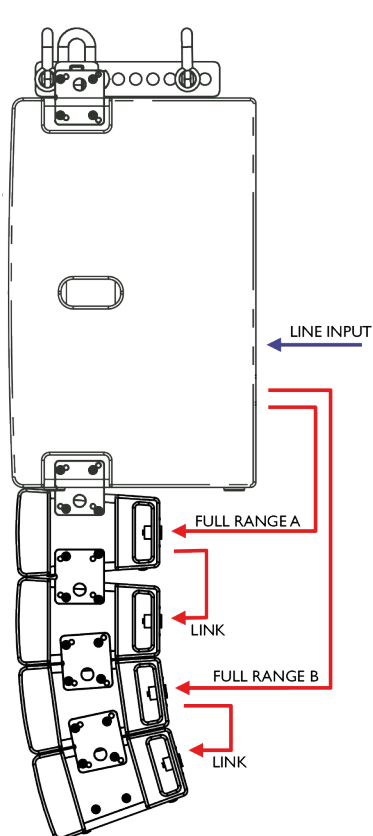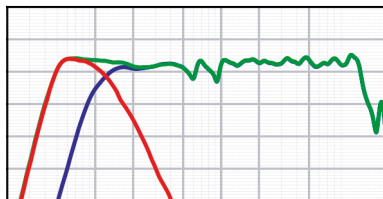
FLOOR SYSTEM

1X TNA-BRK1 DOLLY FRAME
1X TNA-2120SA ACTIVE 3CH
SUBWOOFER
4-6X TNA-2051 PASSIVE FULL
RANGE SATELLITES

SYSTEM SET FOR TWO WAY OPERATION
TNA-2121SA OPERATING AS LO-PASS SUBWOOFER

LINK

FULL RANGE B

LINK

FULL RANGE A

LINE INPUT
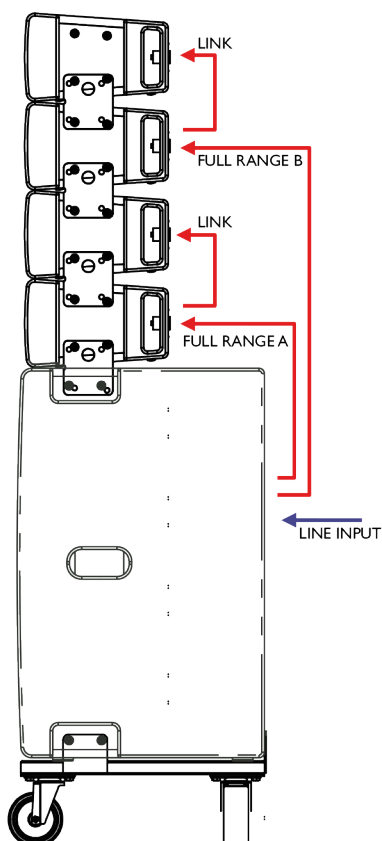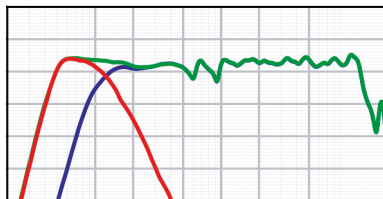
SP SERIES

LOUDSPEAKER PROCESSORS

Featuring two models, the SP26 and SP48, these speaker management systems are designed to deliver unparalleled performance, flexibility, and ease of use.

Equipped with high-quality 24bit AD/DA audio converters and a 96bit DSP, the **HH** SP Series Processors ensure that your sound is crystal-clear, accurate, and perfectly balanced. With independent input and output channel EQ, delays, and limiters, you have complete control over every aspect of your sound.

Both the SP26 and SP48 feature USB ports for remote programming and simple setup, making it easy to customize your settings and manage your speaker system from a distance. Continue connectivity by using the RS-485 connections for daisy-chaining larger systems, the **HH** SP Series Processors are the perfect solution for any venue or event, no matter how big or small.

If you're looking for a powerful, versatile, and easy-to-use speaker management system, look no further than the **HH** SP Series Processors.

SP26

KEY FEATURES

- High performance 2 input, 6 output loudspeaker processor
- High quality 24bit AD/DA audio converters and 96bit DSP processor precision
- Max input delay of 900ms and max output delay of 340ms
- USB port for simple programming and setup
- Linkable inputs and outputs for easy stereo configuration
- Switched mode power supply with 100-240V worldwide operation
- 1U rack height

SP48

KEY FEATURES

- High performance 4 input, 8 output loudspeaker processor
- High quality 24bit AD/DA audio converters 96bit DSP processor precision
- Max input delay of 420ms and max output delay of 129ms
- USB port for simple programming and setup.
- Linkable inputs and outputs for easy stereo configuration
- Switched mode power supply with 100-240V worldwide operation
- 1U rack height

SP SERIES

SIGNAL PROCESSORS
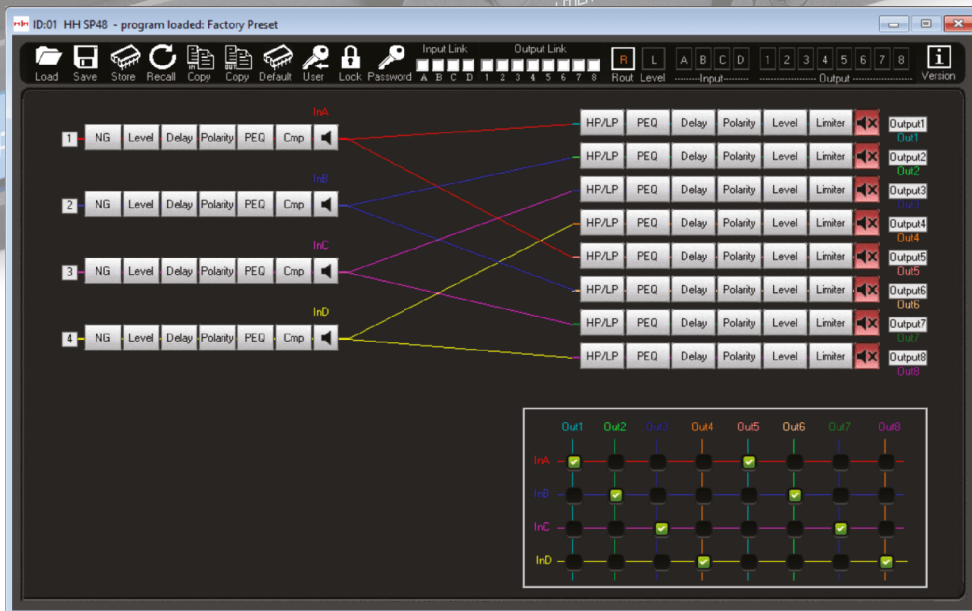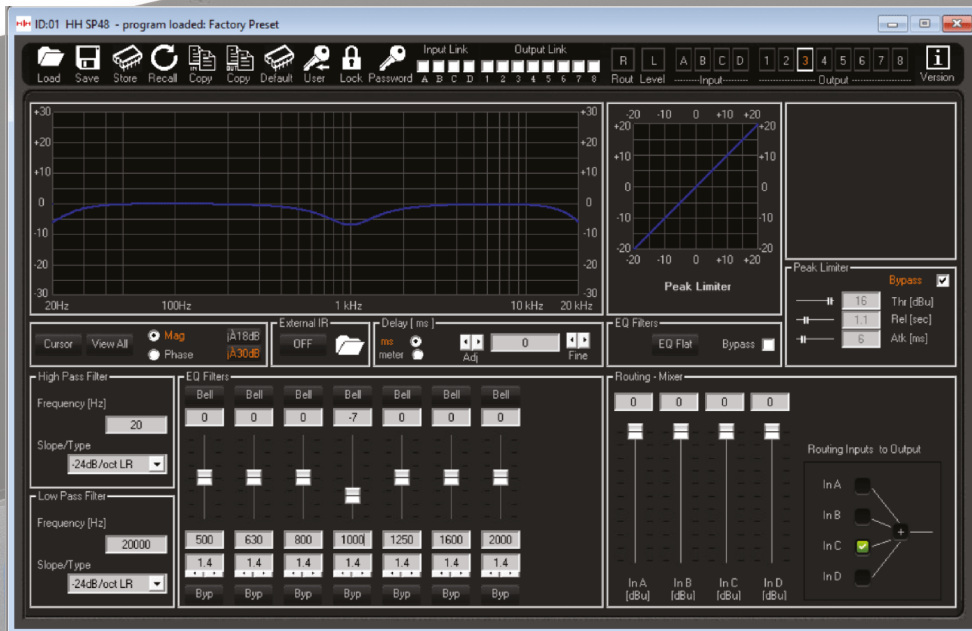
The SP-Series can be remotely setup via USB using our Windows® Control App.

| HPF | LPF | PEQ | Delay | Phase | Gain | Limiter | Dynamic Loudness Filter |
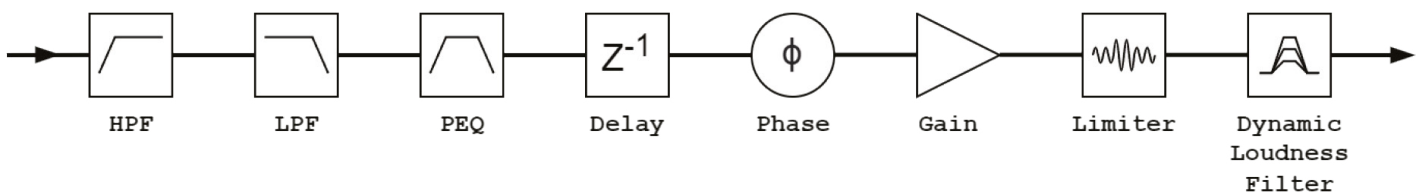
M-SERIES
PROFESSIONAL POWER AMPLIFIER

HH M-Series power amplifiers are high power, 2U rack amplifers designed to provide maximum performance for demanding applications. Three models are available all featuring heavy duty low noise toroidal power supplies and rugged construction.

Suitable for bars, pubs, clubs, houses of worship, musicians, or indeed anywhere you need high power amplification. HH has over five decades of experience designing quality power amplifiers, and indeed was one of the pioneers in this area.

M-SERIES
PROFESSIONAL POWER AMPLIFIER

POWER AMPLIFIERS

M-750D

KEY FEATURES

- Two Channel Audio Power Amplifier
- 2x 750W into 4 ohms
- 2x 500W into 8 ohms
- Direct Drive Hi-Z 70V (100V in bridged)
- Heavy Gauge 2U chassis
- Ultra-reliable Toroidal Linear Power Supply
- Comprehensive Protection System

M-1500D

KEY FEATURES

- 2x 1500W into 4 ohms
- 2x 1250W into 8 ohms
- Direct Drive Hi-Z 70V / 100V
- Heavy Gauge 2U chassis
- Ultra-reliable Toroidal Linear Power Supply
- Comprehensive Protection System

M-2600D

KEY FEATURES

- Two Channel Audio Power Amplifier
- 2x 2600W into 4 ohms
- 2x 1500W into 8 ohms
- Direct Drive Hi-Z 70V / 100V
- Heavy Gauge 2U chassis
- Ultra-reliable Toroidal Linear Power Supply
- Comprehensive Protection System

MZ-SERIES

HH MZ Series Install Zone Amplifiers & Controllers

The **HH** MZ Series is a range of high-performance professional install zone amplifiers, pre-amplifier, and wall controllers. Powered by our ORIGIN multi core platform, developed by the **HH** Electronics team in the UK. Offering industry leading audio performance and features, the **HH** MZ Series are the perfect tools for commercial system integrators in a wide variety of use cases.

BEST IN CLASS

ORiGiN

ADVANCED MULTI-CORE PLATFORM

The **HH** ORIGIN, advanced multi-core platform - developed by the **HH** Electronics team in the UK – is at the heart of the **HH** MZ Series.

The advanced multi-core processor uses 56-bit floating point precision to ensure input routing, level controls and EQ settings introduce no digital artefacts and have enhanced headroom. Configurable limiting per zone allows for mixing and matching both Hi Z and Low Z speakers, gives flexibility for multiple situations.

Including ECO power saving mode on the amplifier versions, allowing for less than half a watt power consumption in standby mode. Perfect for continuous usage whilst keeping energy consumption down.

Over 50 years of professional audio electronic knowledge has been applied to produce incredible audio performance. Ultra-low noise, huge dynamic range, and astonishingly low distortion. The new standard for high quality audio installations.

Put simply, we believe the **HH** MZ series is BEST IN CLASS.

MZ-SERIES

MULTI-ZONE AMPLIFIERS & PREAMP

REMOTE CONTROL **ORiGiN** ADVANCED MULTI-CORE PLATFORM

SHARED FEATURES

- Euro block input and output connectors, dual mic inputs
- Class leading performance
- Ultra-reliable, High performance amp modules designed by PASCAL
- Microphone priority for automatic ducking on speech and paging inputs for page microphones
- Independent Bass and Treble EQ adjustment per zone
- Universal power supply for worldwide operation (100 – 240V~)
- Remote volume and source control capability
- Compact space saving 1U 19" rack mountable design
- Switchable emergency input override

MZ-64P

- 4 Zone Distribution Pre-Amplifier
- 4 Line level outputs with +21dBv max output
- >110dB signal to noise
- <0.008% THD+N
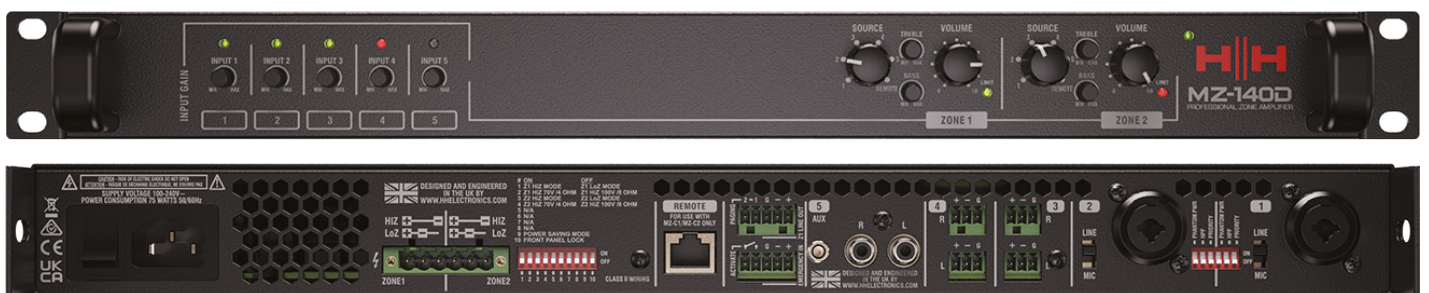
MZ-140D

- 2 Zone Amplifier with assignable speaker outputs
- 140 Watts RMS Power output per zone
- >106dB signal to noise
- <0.009% THD+N

MZ-140Q — KEY FEATURES

- 4 Zone Amplifier with assignable speaker outputs
- 140 Watts RMS Power output per zone
- >106dB signal to noise
- <0.009% THD+N

MZ-280Q — KEY FEATURES

- 4 Zone Amplifier with assignable speaker outputs
- 280 Watts RMS Power output per zone
- >106dB signal to noise
- <0.009% THD+N
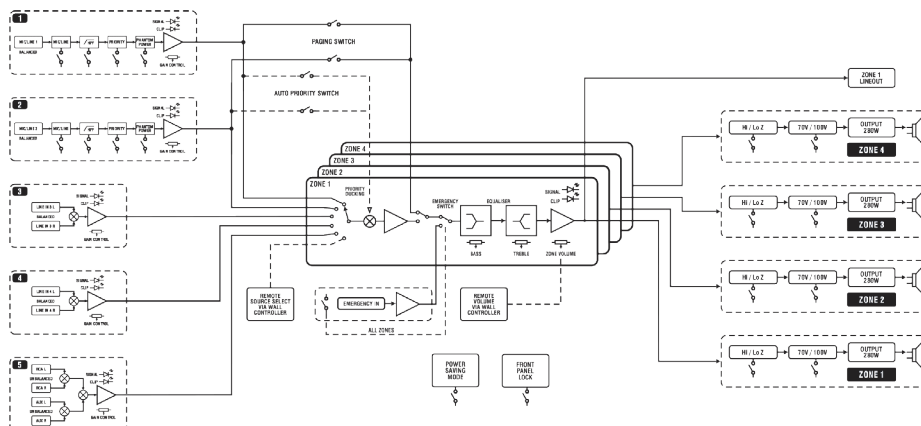
SYSTEM DIAGRAM FOR 280Q

MZ-SERIES

MULTI-ZONE AMPLIFIERS & PREAMP

MZ-SERIES
WALL CONTROLLERS

MZ-C2

KEY FEATURES

- Single or multiple zones can be selected for volume control with an illuminated mute button
- A front mounted source selector control allows the user to select which input is routed to the active zone/s
- Control and Power via Cat5 cable, with daisy chain link connectors
- Standard UK/EU or US sized wall plates
- Available in white or satin black

UK/EU PLATE
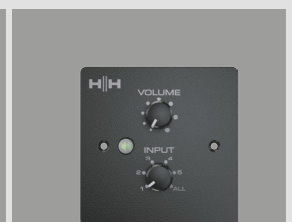
UK/EU PLATE
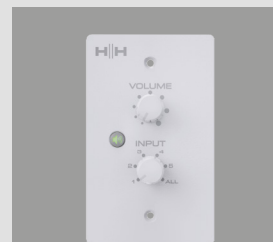
US PLATE

US PLATE

RESTAURANTS

The perfect dining experience is about more than just great food, it's also about the atmosphere and sound. The HH MZ Series audio system is the ideal solution for restaurants that want to create a truly immersive experience for their customers. With up to four zones, the MZ Series is perfect for restaurants with multiple areas, from bars with higher sound pressure levels to cozy seating areas with a lower level of ambiance. Ensuring every area of your restaurant is covered with exceptional sound quality, making sure that your customers can fully enjoy the complete dining experience.

RETAIL STORES

The MZ Series provides a solution to the challenge of catering to a diverse range of sound demands in retail stores. With priority input ducking and paging system, announcements are made seamlessly, and fire system integration ensures safety and security. This ensures that you can tailor your sound profile to your store's specific demographic, creating an engaging and captivating atmosphere that keeps your customers excited and immersed.

FITNESS CENTRES

Fitness centres require an audio system that delivers ultimate flexibility and excellent sound quality. The MZ Series offers a sophisticated audio solution that ensures your gym, yoga studio, and spin classes are equipped with the best possible sound quality. Whether you need soothing sounds for yoga, pumping high-intensity music for spin classes, or background tracks for your gym and workout areas, the MZ Series has got you covered.

HOTEL & EDUCATIONAL

The MZ Series is the ideal audio solution for hotels and educational sites, with its powerful and flexible technology that caters to large dining spaces, auditoriums, meeting rooms, and theatres. Its versatile sound zoning and signal processing ensure unmatched clarity and power for any type of event, from intimate meetings to large gatherings.

CORPORATE

Corporate spaces require an audio system that caters to a variety of needs, from boardrooms and conference rooms to communal areas, warehouses, and office spaces. The MZ Series provides crystal clear sound quality across all areas, including cafeterias and break rooms, with its versatile sound zoning and cutting-edge signal processing.

BARS

Bars, cafes, and restaurants demand a powerful audio system that delivers exceptional sound quality without taking up valuable space. The MZ Series is the perfect solution, with its compact enclosure and unparalleled channel flexibility that allows for easy mixing and matching of 100V ceiling speakers and low impedance subwoofers. The system's ability to configure each zone to run Hi-Z or Lo-Z ensures that all areas of your establishment are covered with crystal clear sound quality, no matter the size of the room.

HOUSES OF WORSHIP

When it comes to audio in houses of worship, it's important to have a system that delivers crystal clear sound with maximum impact. The MZ Series provides just that, with cutting-edge audio technology that offers unmatched clarity and power. Whether you're hosting a small congregation or a large gathering, the MZ Series has you covered. With versatile sound zoning and state-of-the-art signal processing, you can create a dynamic soundscape that immerses your audience in the worship experience.

PICTURED : TNi-W6-WH

T E S S E N

iNSTALL

Introducing the **HH** TNi range - The ultimate audio solution for any installation project.

Engineered in the UK by the brilliant minds of the **HH** Acoustics department, the TNi range combines compact dimensions and flexible mounting options with exceptional audio performance. The TNi range includes a variety of models to suit different space sizes and power requirements, with options for on-wall and in-ceiling installations. All models feature wide frequency responses, controlled directivity, and superb vocal clarity to suit a wide range of settings from music venues to retail stores.

The TNi-W series is specifically designed for wall mounting, while the TNi-C series is perfect for ceiling installation. With application specific **HH** woofers equipped with transformer taps for 100V/70V line usage and low Z modes, providing maximum flexibility and compatibility with a wide range of professional audio systems.

The TNi-W-Pro series takes audio performance further with **HH** designed woofers, paired with a rotatable horn and compression driver designed in conjunction with Celestion. Regardless of the shape or size of the room, you can be confident that your audio will be delivered with optimal coverage and clarity.

For the complete system solution these speakers work great when combined with **HH** M series amplifiers and MZ series zone controllers. The TNi range is available in white or black finishes to match any decor and aesthetic. Upgrade your sound experience with the **HH** TNi range, the ideal solution for any professional audio setting.

WALL MOUNTED SPEAKERS

TNi-W8PRO-WH

| HORIZONTAL 45° | DOWN | FRONT | REAR | TNI-BRK-W |

TNi-W12PRO-WH

| HORIZONTAL 45° | DOWN | FRONT | REAR | TNI-BRK-W |
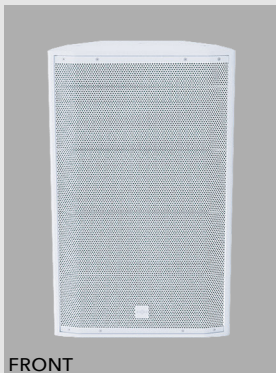
OPTIONAL MOUNTING BRACKET

120°   180°

TNI-BRK30-B   TNI-BRK30-W

TESSEN
iNSTALL
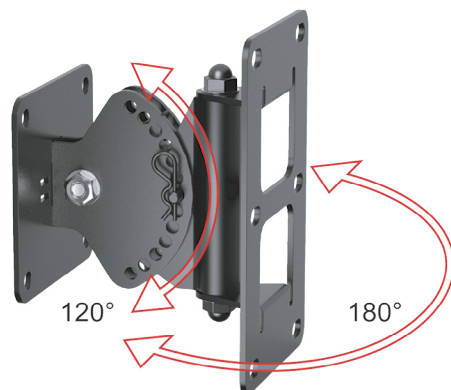
WALL MOUNTED SPEAKERS

SHARED FEATURES

- Celestion Designed Rotatable horn for Vertical or Horizontal Orientation
- Euroblock and M4 terminals for input and link
- 7 x M10 Penn-Elcom fly points
- 90° x 60° Coverage
- Rotatable Logo
- Available in White and Black

TNi-W8PRO-BK

KEY FEATURES

- 8-inch High Power HH Low Frequency Driver with 2-inch Voice Coil
- 1-inch Celestion High Frequency Compression Driver

FRONT

HORIZONTAL 45°

REAR

ROTATABLE HORN

TNi-W12PRO-BK

KEY FEATURES

- 12-inch High Power HH Low Frequency Driver with 2.5-inch Voice Coil
- 1.4-inch Celestion High Frequency Compression Driver

FRONT

HORIZONTAL 45°

REAR

ROTATABLE HORN

T E S S E N
iNSTALL

WALL MOUNTED SPEAKERS

SHARED FEATURES

- Euroblock and M4 terminals for input and link
- Lightweight durable ABS plastic construction
- Adjustable steel wall bracket included
- Built In Transformer for 70V/100V line Hi Z installs
- 8 ohm Low Impedance option setting
- Available both in White and Black finishes

TNi-W4-WH

| EXPLODED | DOWN | REAR | FRONT | TNI-BRK-WH |

TNi-W6-WH

| EXPLODED | DOWN | REAR | FRONT | TNI-BRK-W |

TNi-W8-WH

| EXPLODED | DOWN | REAR | FRONT | TNI-BRK-W |

TESSEN
iNSTALL
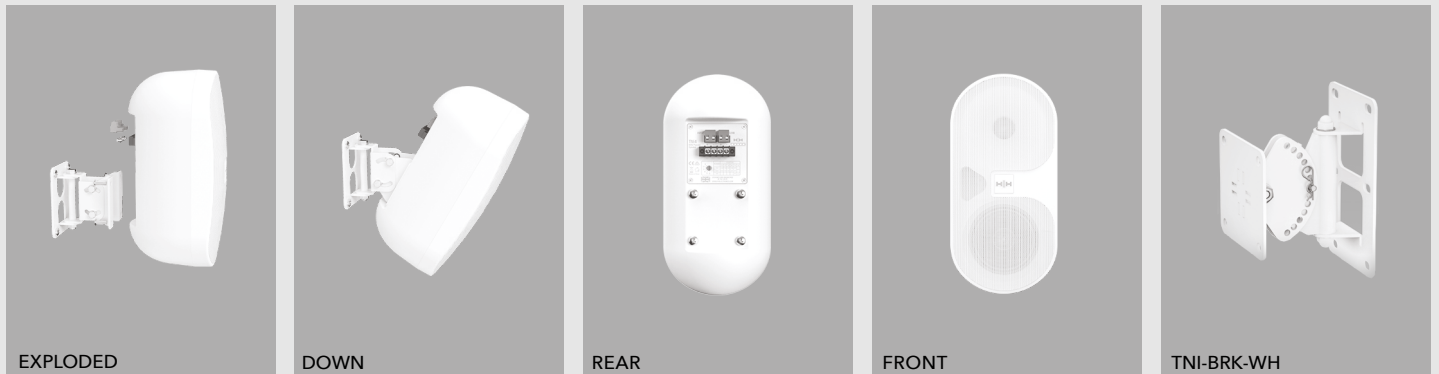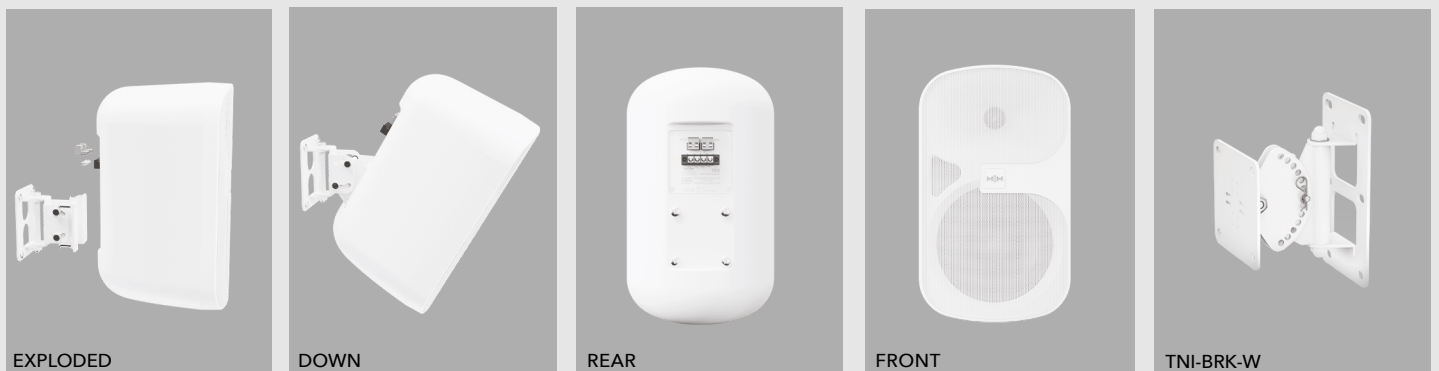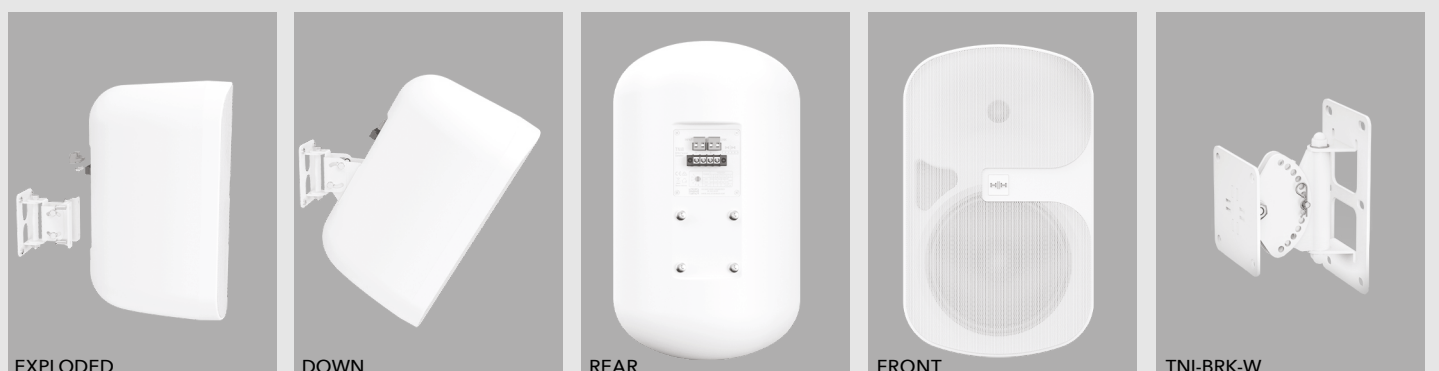
WALL MOUNTED SPEAKERS

TNi-W4-BK

KEY FEATURES

- HH designed 4-inch woofer & 1-inch dome tweeter
- 100V power options 30W, 15W, 6W, 3W
- 70V power options 15W, 7.5W, 3W, 1.5W
- Low Impedance Power Rating 180W Peak, 45W AES
- Max SPL 110 dB
- Frequency response 80Hz – 20KHz
- 90° x 80° dispersion angle

FRONT

REAR

DOWN

TNi-W6-BK

KEY FEATURES

- HH designed 6.5-inch woofer & 1-inch dome tweeter
- 100V power options: 40W, 20W, 10W, 5W
- 70V power options: 20W, 10W, 5W, 2.5W
- Low Impedance Power Rating 220W Peak, 55W AES
- Max SPL 113 dB
- Frequency response 65Hz – 20KHz
- 90° x 80° dispersion angle

FRONT

REAR

DOWN

TNi-W8-BK

KEY FEATURES

- HH designed 8-inch woofer & 1-inch dome tweeter
- 100V power options: 40W, 20W, 10W, 5W
- 70V power options: 20W, 10W, 5W, 2.5W
- Low Impedance Power Rating 260W Peak, 65W AES
- Max SPL 114 dB
- Frequency response 55Hz – 20KHz
- 90° x 80° dispersion angle

FRONT

REAR

DOWN

TESSEN
iNSTALL

CEILING SPEAKERS

The Tessen TNi-C range delivers premium audio reinforcement.

Designed with the audio installer in mind, the TNi-C range features high grade coaxial drivers and 4 position power tap selector located under the front steel grille; providing swift output adjustment once the ceiling speaker is installed.

With connectivity for 70V/100V and 8 ohm low impedance lines, the TNi-C range delivers a highly flexible solution. The spring connection terminals ensure cables are secure once fitted and the dog ear mounts are a simple yet effective mounting method.

ADJUSTABLE POWER MODES
Can be adjusted after fitting with the quick switch options
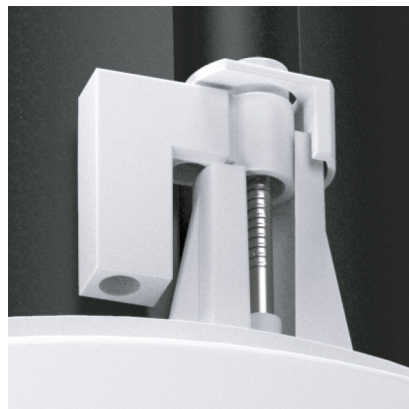
QUICK LOCK MOUNTING
Rotating locking lugs for secure rattle free mounting

TESSEN iNSTALL

CEILING SPEAKERS

TNi-C4

FRONT

UNDERSIDE

DOG EAR UNDERSIDE NO GRILLE

TOP CONNECTORS

KEY FEATURES

- 4-inch HH designed coaxial woofer with 1.5-inch neodymium tweeter
- 100V power options: 30W, 15W, 6W
- 70V power options: 15W, 7.5W, 3W
- Low Impedance Power Rating 180W Peak, 45W AES
- Max SPL 111 dB
- Frequency response 85Hz – 20KHz

TNi-C6

KEY FEATURES

- 6.5-inch HH designed coaxial woofer with 1.5-inch neodymium tweeter
- 100V power options: 40W, 20W, 10W
- 70V power options: 20W, 10W, 5W
- Low Impedance Power Rating 220W Peak, 55W AES
- Max SPL 113 dB
- Frequency response 75Hz – 20KHz
- 120° conical dispersion angle

FRONT

UNDERSIDE

DOG EAR UNDERSIDE NO GRILLE

TOP CONNECTORS

TNi-C8

FRONT

UNDERSIDE

DOG EAR UNDERSIDE NO GRILLE

TOP CONNECTORS

KEY FEATURES

- 8-inch HH designed coaxial woofer with 1.5-inch neodymium tweeter
- 100V power options: 40W, 20W, 10W
- 70V power options: 20W, 10W, 5W
- Low Impedance Power Rating 260W Peak, 65W AES
- Max SPL 115 dB
- Frequency response 65Hz – 20KHz
- 100° conical dispersion angle

A single MZ-140D powers both the main bar area, plus other public areas and restrooms using a mix of TNi-C and TNi-W 100V loudspeakers. The zone 1 balanced line out is fed into a pair of TNA-2800SA active subwoofers, which in turn feed additional **HH** M-Series amplifiers with TNi-W8/12PRO loudspeakers for high quality music.
MZ-C2 wall panels control everything easily.

- Two 100V Zones of 140W each, with additional external amplifiers for Lo-Z loudspeakers and additional subs
- Independent wall controllers in each zone with source select
- Mix of Hi-Z and Lo-Z Loudspeakers

APPLICATION GUIDE
OFFICE

A single MZ-280Q is configured to run two zones for a meeting room and the entrance foyer. A mixture of TNi-C and TNi-W 100V loudspeakers and TNA-1200S-G2 passive subwoofers to fill in the bottom end are included. MZ-C2 wall panels control levels and source select. A single MZ-140D could be used if passive subwoofers are not required.

- Two 100V Zones of upto 280W each
- Two 8 ohm Lo-Z Zones running passive subwoofers
- Independent wall controllers in each zone with source select
- Mic with Priority for announcements Fire system integration
- Full selection of audio inputs

FOYER TV

AUDIO SERVER

LAPTOP   PROJECTOR   FIRE ALARM

MICROPHONE WITH PRIORITY

AUDIO

100V HI-Z

TNi-W6   TNi-C6

TNi-W6

MZ-C2 CONTROLS ZONE 1 AND ZONE 2 TO CREATE A SINGLE LARGER ZONE

IN
OUT
IN

8 OHM LO-Z

TNA-1200S-G2

ZONE 1
MEETING ROOM

ZONE 2
MEETING ROOM

100V HI-Z

TNi-C4   TNi-C4

TNi-C6

MZ-C2 CONTROLS ZONE 3 AND ZONE 4 TO CREATE A SINGLE LARGER ZONE

8 OHM LO-Z

TNA-1200S-G2

ZONE 3
FOYER

ZONE 4
FOYER

42

MZ Series high performance commercial install amplifiers are ideal for restaurants and bars. Here, a single MZ-280Q powers the entire venue with a mix of HiZ, LoZ and paging.

- Four Zones of 280W each
- Independent wall controllers in each zone with source select
- Mix of Hi-Z and Lo-Z Loudspeakers Fire System Integration
- Paging Mic

AUDIO SERVER

BAR TV

FIRE SYSTEM

JUKE BOX

MICROPHONE WITH PAGING

ALARM INPUT

CAT5

| 70/100V | HI-Z | 70/100V | HI-Z | MIN 4 OHM | LO-Z | 70/100V | HI-Z |

TNi-C4/6/8

TNi-C4/6/8

TNi-W8/12PRO

TNi-W4/6/8

IN

MZ-C2 SET TO CONTROL ZONE 1

OUT

IN

MZ-C2 SET TO CONTROL ZONE 2 AND ZONE 3

ZONE 1
RESTAURANT

ZONE 2
BAR

ZONE 3
BAR

ZONE 4
REST ROOMS
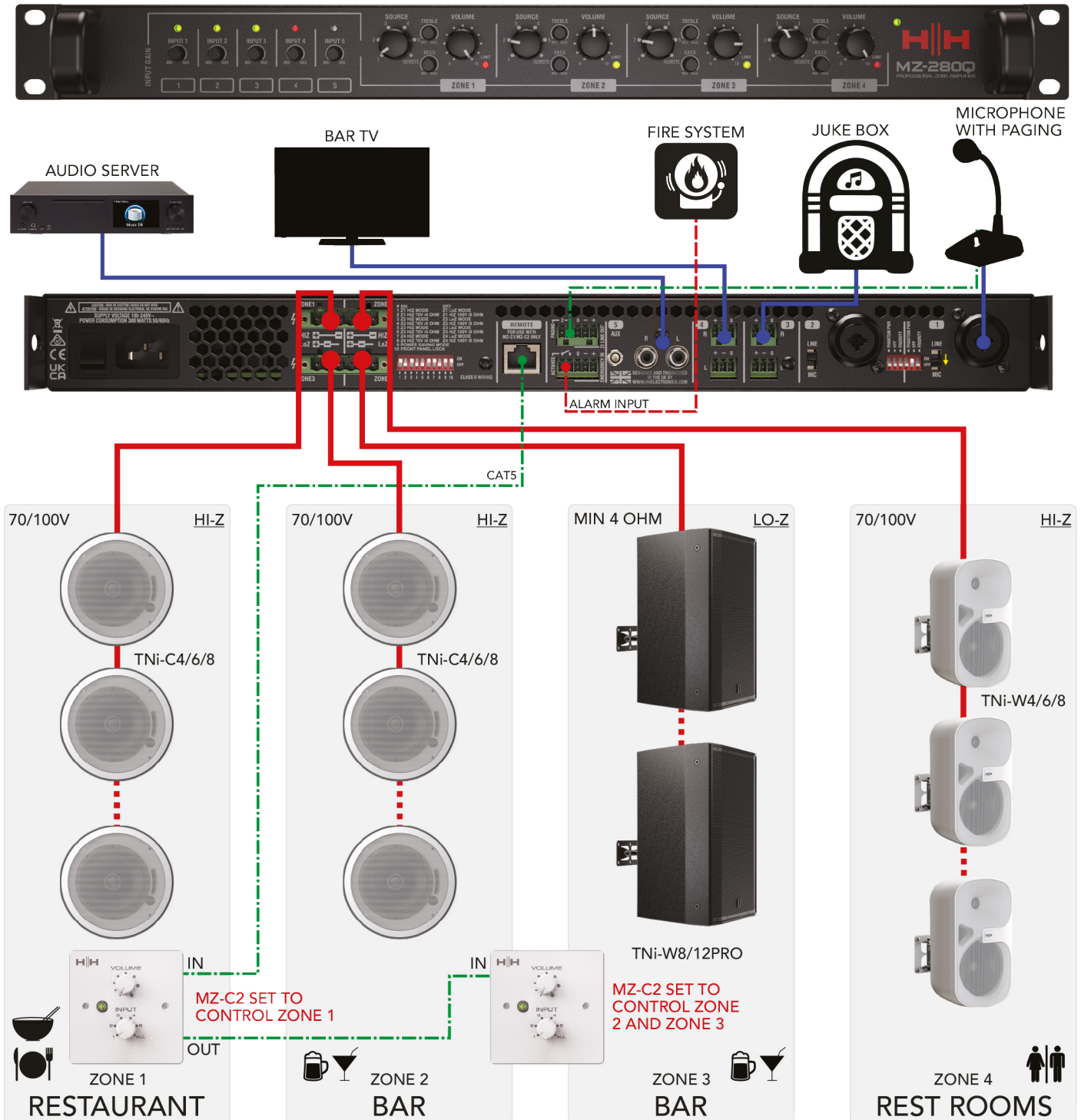
ZONE 1, RESTAURANT, 100V
Ceiling mounted TNi-C8 loudspeakers in the
restaurant offer full coverage ambience. The MZ-C2 wall
controller allows easy volume control.

ZONE 2, BAR, 200V, **ZONE 3**, BAR, 4 OHM

The bar area uses a mixture of TNi-C8 ceiling
speakers and TNiW12-PRO full range wall mounted speakers
for high quality music playback. The MZ-C2 wall controller
allows easy source selection and volume control of both
zones.

ZONE 4, REST ROOMS, 100V
Ceiling mounted TNi-C8 loudspeakers cover
the rest rooms and other public areas for background music
and announcements

ZONE 1

ZONE 2 / 3

ZONE 4
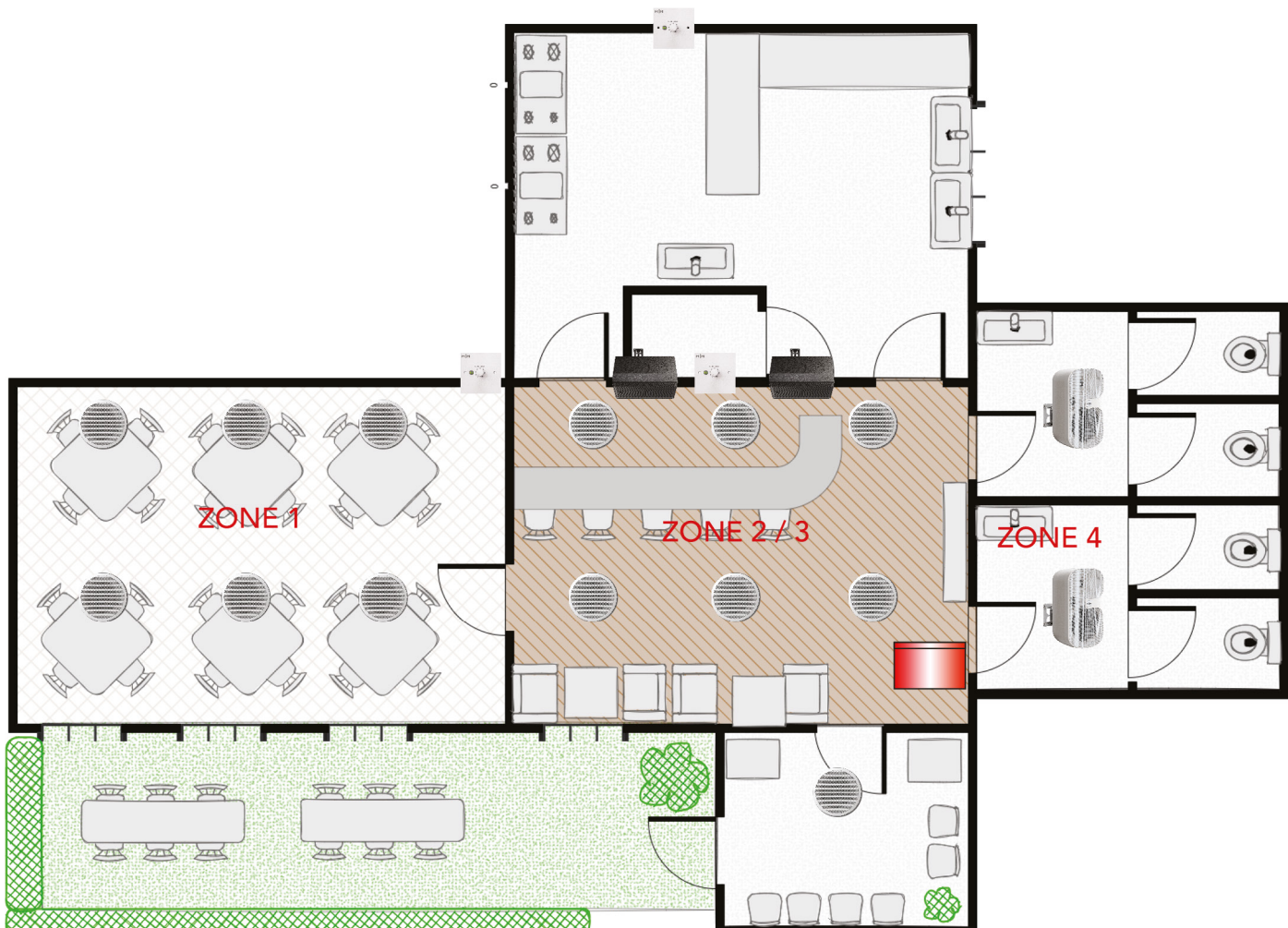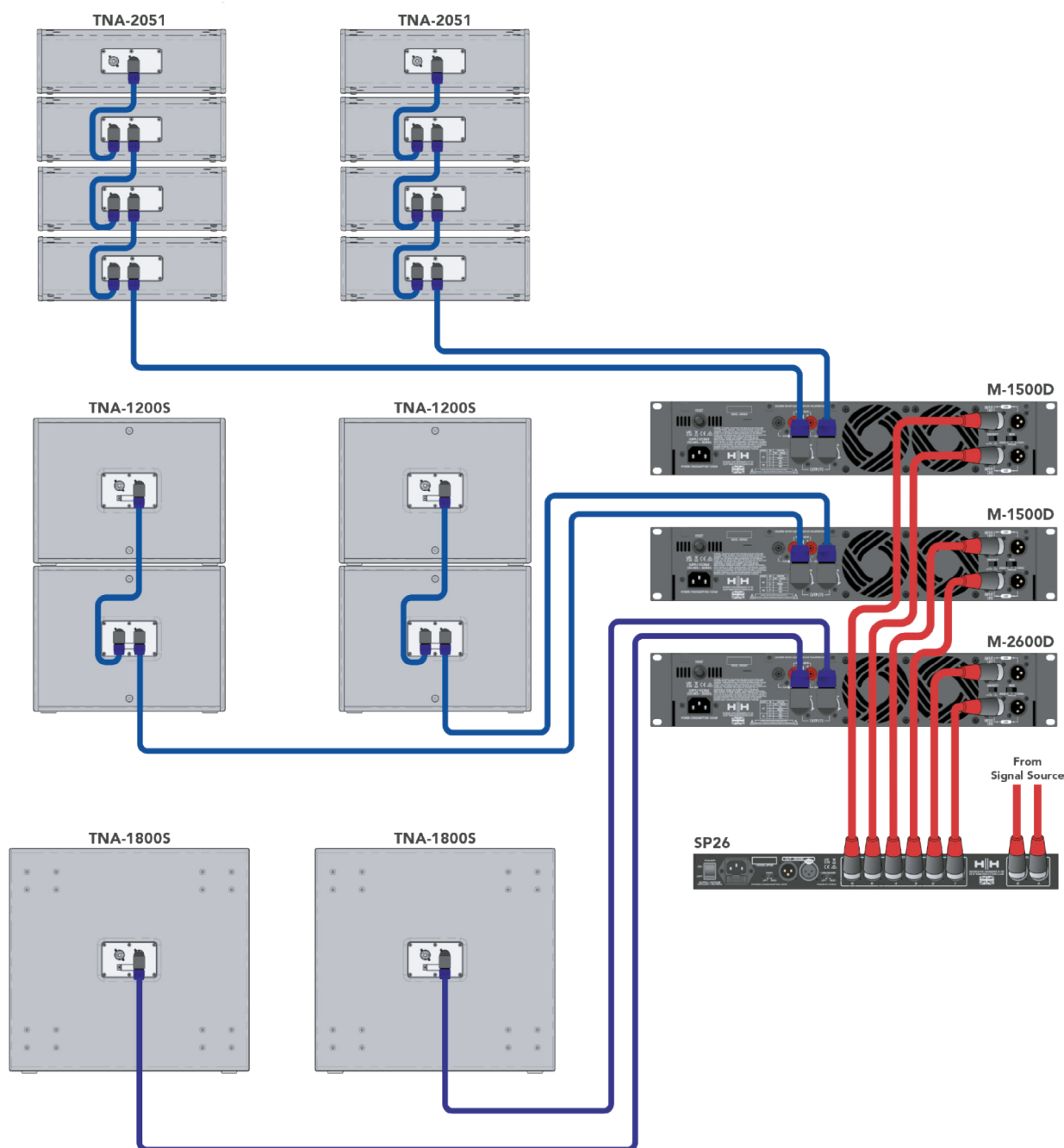
PASSIVE TNA SYSTEM

In this example, the SP26 is setup to drive a passive TNA system using **HH** M-Series amplifiers. The two inputs come from a signal source such as a mixer or media stream. The first two outputs are driving the two TNA-1800S-G2 subs with a LF crossover. The next feed is driving four TNA-1200S-G2 with two per channel for the mid band frequencies. The last two feeds are supplying the eight HF TNA-2051 with four a channel. This setup is commonly used in stereo with the two input channels accept the left and right signals.
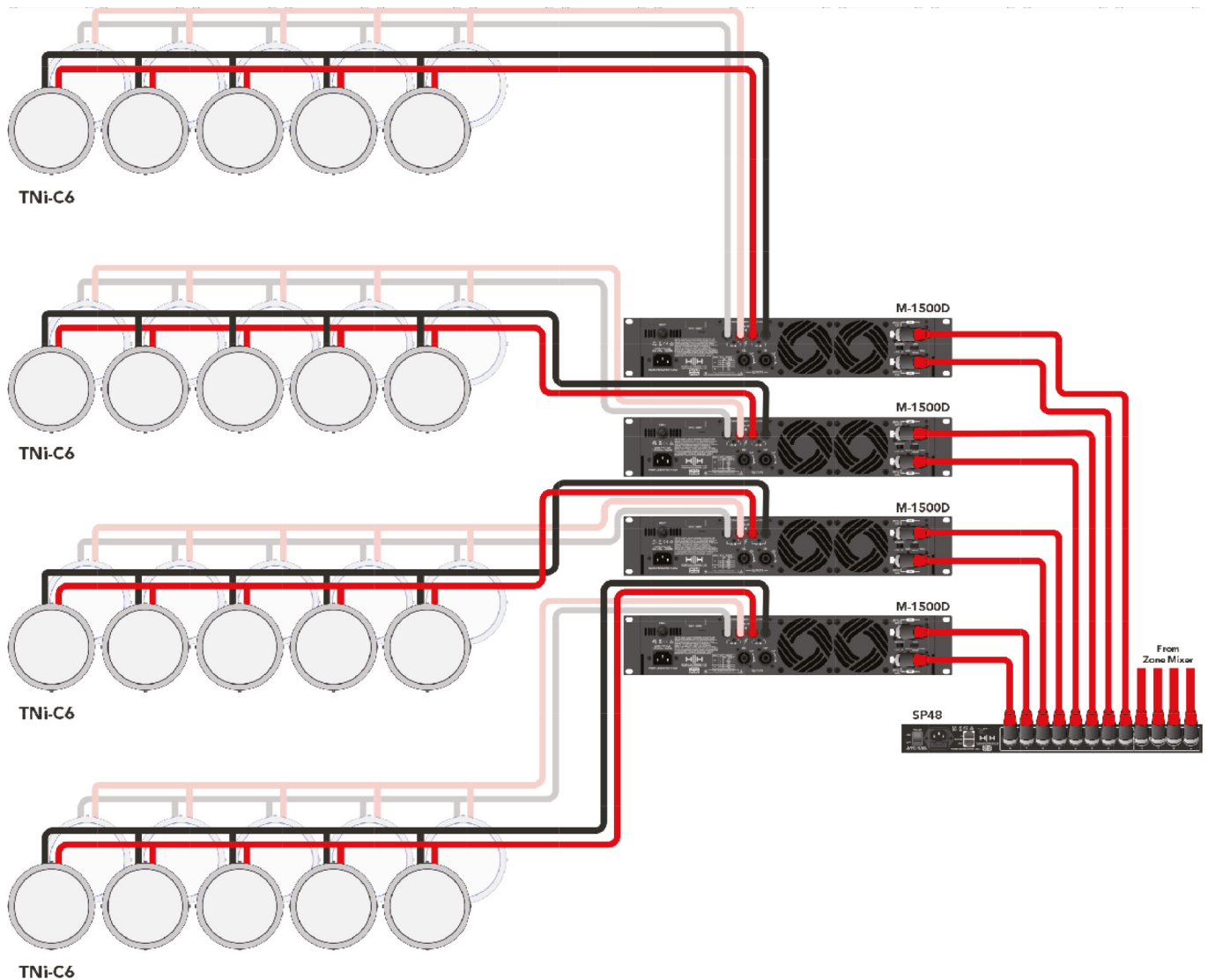
PASSIVE TNI-C6 SYSTEM

This setup shows the SP48 connected to 4 M-series amplifiers, which in turn are each connected to TNi-C6s. The system shown here has various uses such as bars, cafes or offices and can be spread over multiple rooms

TENSOR

HH Electronics Tensor series presents the TRE-1001, TRE-1201 and TRE-1501 portable active PA speakers, designed to deliver great performance and flexibility in a variety of settings.

The Tensor TRE speakers are equipped with powerful Class D amplifiers and **HH** designed woofers and compression drivers, enabling them to reach high SPL, making them suitable for live sound reinforcement and professional audio applications.

The Tensor TRS active subwoofers, the TRS-1500 and TRS-1800, are designed to complement the TRE speakers, providing an extended low-frequency response and more power to the overall sound system. Both TRS subwoofers are constructed with a lightweight wood enclosure and designed with optimal bass porting for enhanced low-frequency response.

The Tensor TRM-1201 active stage monitor comes with an **HH** designed high performance 12-inch driver & 1-inch compression driver. And with an ultra efficient 1400-Watt Class D amplifier, this stage monitor delivers optimal power output, ensuring your sound is heard loud and clear, even in demanding applications.

Together, the Tensor Series speakers create a complete, portable, and powerful sound system, capable of delivering clear and impactful audio in a wide range of professional audio applications.tions

TENSOR

SHARED FEATURES

- Two-way high-performance Class D amplifier for impressive output performance delivering 1400W Peak and 700W Continuous power
- HH designed on-board DSP to optimize performance and in-built limiters protect the system from failure
- 4 specially tuned pre-set audio modes for easy customization in different environments
- Integrated 2 channel mixer for easy connection to a wide array of devices.
- Ultra-lightweight Polypropylene multi-angle enclosure with heavy gauge black steel grille
- 2 moulded carry handles, 35mm pole socket and 4 M8 suspension points
- Suitable for DJ's, live bands, monitoring or announcements

A: Tripod/pole mounting - via the 35mm pole socket.
B: Pole on sub.
C: Flown vertically.
D: Flown horizontally.
E: Freestanding - on the ground.
F: Monitor mode - the cabinets shape allows for horizontal/angled position on stage.

(Stand not included)
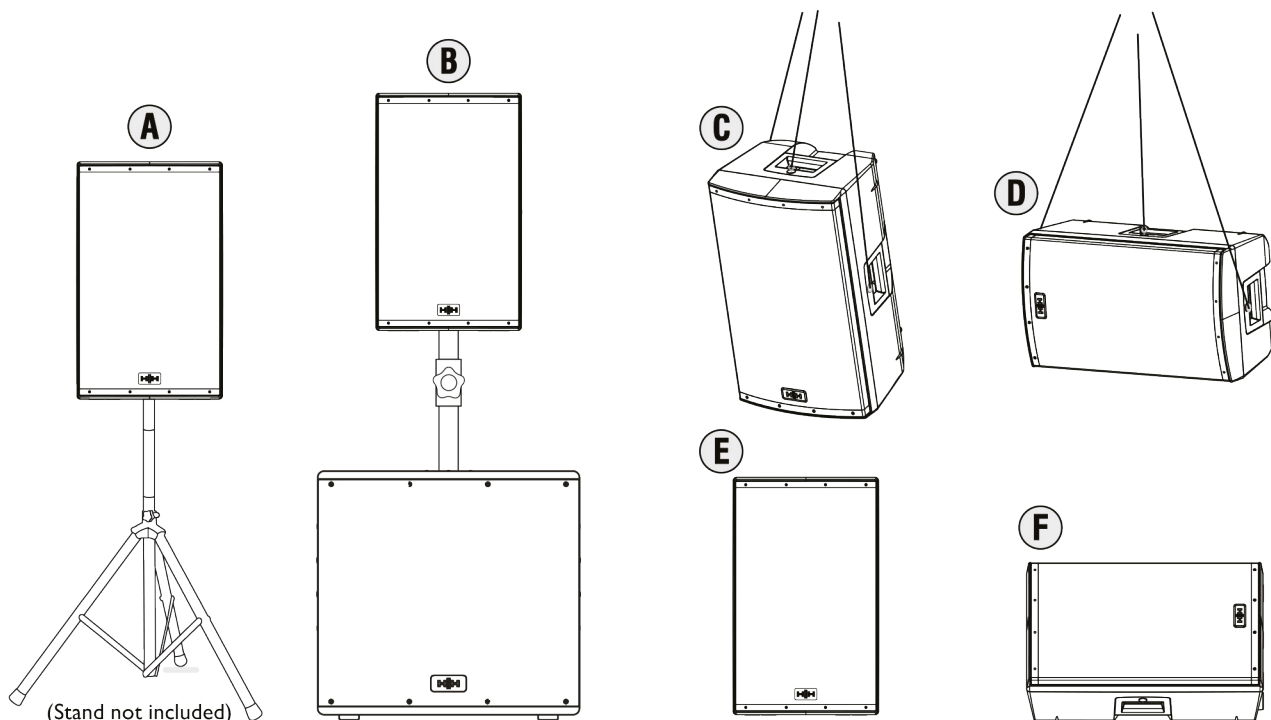
OPTIONAL SLIP COVERS
SC-TRE-15 SUITABLE FOR USE WITH TRE-1501
SC-TRE-12 SUITABLE FOR USE WITH TRE-1201

TENSOR

ACTIVE SPEAKERS

TRE-1001

KEY FEATURES

- 10-inch HH designed woofer
- 1-inch compression driver
- Max SPL 129 dB
- Frequency response 48Hz – 20KHz

REAR

FRONT

FRONT LEFT
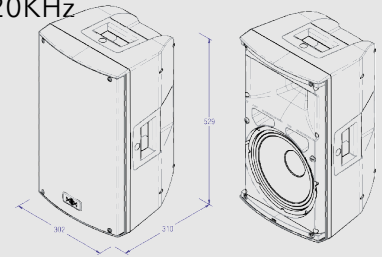
TRE-1201

KEY FEATURES

- 12-inch HH designed woofer
- 1-inch compression driver
- Max SPL 130 dB
- Frequency response 45Hz – 20KHz

45°

FRONT

FRONT RIGHT

REAR
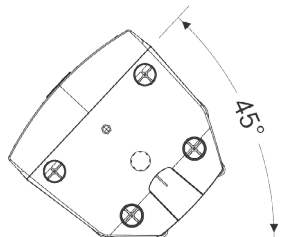
TRE-1501

KEY FEATURES

- 15-inch HH designed woofer
- 1-inch compression driver
- Max SPL 131 dB
- Frequency response 41Hz – 20KHz
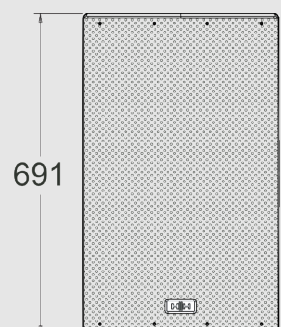
691

REAR

FRONT

FRONT LEFT

TENSOR -GO

TENSOR-GO

BATTERY POWERED COLUMN ARRAY SYSTEM

Introducing the **HH** Tensor-GO - the ultimate portable speaker that delivers superior sound quality and maximum performance on the go!

Equipped with a powerful Class D amplifier and a wide frequency response, the Tensor-GO produces crisp, clear sound that will impress even the most discerning. With a maximum SPL of 121dB, this speaker is perfect for outdoor events, parties, and other occasions where high-quality sound is a must.

Featuring in built **HH** designed DSP that optimizes the sound performance in any environment, the Tensor-GO provides plenty of power to keep the party going all night long. And with an integrated lithium-ion battery, you can enjoy up to 8 hours of non-stop entertainment, without any need for power outlets.

In addition, the Tensor-GO comes with Bluetooth audio including TWS, allowing you to easily connect multiple speakers and play your favourite tunes from any compatible device.

Compact, portable, and powerful, the **HH** Tensor-GO is the perfect choice for anyone looking for an easy-to-use, high-quality speaker that can be used anywhere, anytime. Take your music to the next level!

PARTS

KEY FEATURES

- 8-inch HH designed low throw woofer
- 6x 2.75-inch HH column high frequency drivers
- Max SPL 121 dB
- Power rating 200W RMS, 800W Peak
- Frequency response 50Hz – 20KHz
- Carry bag and padded slip-cover included

REAR

CARRY BAG AND SLIP COVER INCLUDED

TENSOR

The **HH** Tensor TRS Active Subwoofers have been engineered to deliver unparalleled performance to meet your requirements. The high-grade class D amplifier combined with the long throw **HH** designed woofers delivers the ultimate in low-end performance. The stereo input and high-pass output connections provide optimal crossover separation between your full-range and sub frequencies; creating a flawless front-of-house mix.

Need more bass? No problem. The shape preset boosts sub harmonic frequencies delivering a deeper bass response. All enclosed in a solid, lightweight enclosure with optimal bass porting.

TRS-1500

REAR

FRONT LEFT

FRONT

KEY FEATURES

- 15-inch HH designed low frequency driver
- High Power Class D amplifier.
- 350W RMS, 1400W Peak
- Max SPL 127 dB
- Frequency response 37Hz – 200Hz
- 15mm Plywood cabinet with heavy gauge steel grille.

TRS-1800

REAR

FRONT LEFT

FRONT

KEY FEATURES

- 18-inch HH designed low frequency subwoofer
- High Power Class D amplifier.
- 350W RMS, 1400W Peak
- Max SPL 130 dB
- Frequency response 35Hz – 200Hz
- 15mm Plywood cabinet with heavy gauge steel grille.
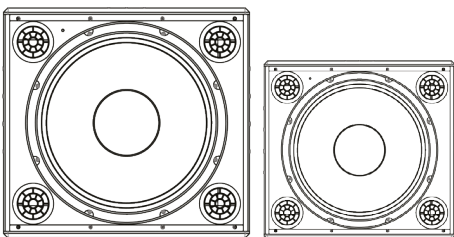
TENSOR

ACTIVE MONITOR

TRM-1201

FRONT NO GRILLE

KEY FEATURES

- 12-inch HH designed woofer
- 1-inch HH compression driver
- Dual switchable audio modes
- Power rating 350W RMS, 1400W Peak
- Max SPL 130 dB
- Frequency response 50Hz – 20KHz
- Acoustically optimised plywood cabinet with heavy gauge steel grille.

FRONT

FRONT LEFT

RIGHT | CONTROL PANEL

- On stage performance monitoring
- Conference or public address
- Venue installation
- Live music
- DJ's

54
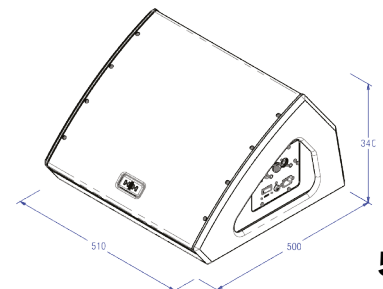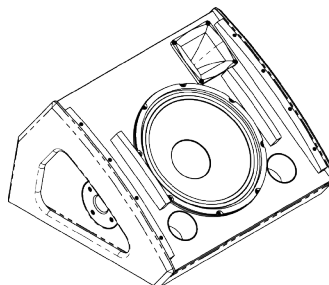
VECTOR

Transform your audio experience with the **HH** Vector range of active enclosures. Whether you're hosting a business seminar, worship meets, party, barbeque, musical performance, or just need a top-notch sound system for your classroom, these enclosures have you covered.

Featuring a flexible on-board mixer and a Bluetooth® equipped media player, each Vector model delivers unmatched versatility and convenience. No more struggling with multiple components and complicated wiring just plug in your device and enjoy powerful, clear audio.

Compact and lightweight, these full-range, moulded enclosures are perfect for any setting. You can choose from floor-standing, pole-mounted or wedge-monitor configurations, making them a perfect fit for any room size or layout. With the 35mm pole socket, mounting the enclosure is easy, and the sleek, stylish design is sure to complement any decor.

Elevate your audio experience to the next level with the **HH** Vector range of active enclosures. Get ready for outstanding sound reinforcement that meets your every need.

VECTOR

ACTIVE SPEAKER SYSTEM

SHARED FEATURES

- Ideal for bands, conferences, fitness, education, audio playback, DJ's and more
- Integrated 3 channel mixer for direct microphone connection
- On-board media player with USB, SD card and Bluetooth connectivity
- True wireless speaker pairing technology for connecting two speakers without cables
- User-friendly interface for effortless audio setup and control

VRE-8AG

REAR
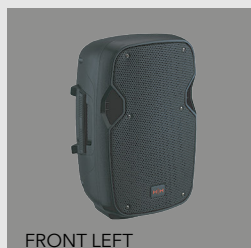
FRONT LEFT

FRONT

KEY FEATURES

- 8-inch HH designed woofer
- 1-inch HH compression driver
- Power rating 300W Peak
- Frequency response 70Hz – 20KHz
- Polypropylene cabinet in black finish

VRE-12AG

KEY FEATURES

- 12-inch HH designed woofer
- 1-inch HH compression driver
- Power rating 800W Peak
- Frequency response 55Hz – 20KHz
- Polypropylene cabinet in black finish
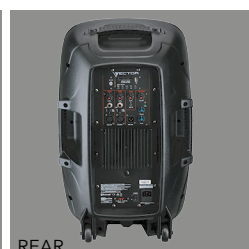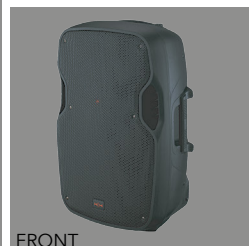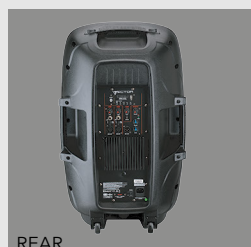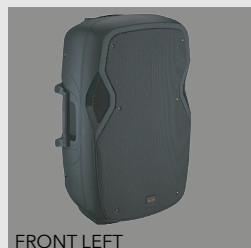
REAR

FRONT RIGHT

FRONT

VRE-15AG

REAR

FRONT LEFT

FRONT

KEY FEATURES

- 15-inch HH designed woofer
- 1-inch HH compression driver
- Power rating 800W Peak
- Frequency response 50Hz – 20KHz
- Polypropylene cabinet in black finish

VECTOR

ACTIVE SPEAKER SYSTEM

The VRC-210 portable PA system offers an ideal solution for bands, conferences, DJs, fitness, education and more. With its lightweight 10" enclosures, the VRC-210 allows for easy transportation and quick and simple setup. The integrated 6 channel mixer enables multiple instruments and microphones to be connected and mixed simultaneously. The integrated 16 digital effects ensure that your vocals or instruments have depth to their sound. The on-board media player includes USB, SD card and Bluetooth inputs, ensuring that music or backing tracks can be easily played through the system.

VRC-210

KEY FEATURES

- 10-inch HH designed woofer.
- 1-inch HH compression driver.
- Power rating 2x 500W Peak.
- Frequency response 60Hz – 20KHz.
- Robust polypropylene cabinet with carry handle.

FRONT

FRONT

REAR

LEFT | RIGHT

| MODEL	TNA-2051	TNA-1200S-G2	TNA-2120SA
System type	2-way passive HF line array speaker	12" Passive Subwoofer, Bass Reflex	2x12" Active Subwoofer, Bass Reflex, with Three channel internal amplifier (Two HF Amplifier Channels for external satellites)
Frequency response	65Hz - 20KHz (-10dB)	35Hz - 2KHz (-10dB)	52Hz - 200Hz (-10dB)
	100Hz - 18KHz (-3dB)	40Hz - 500Hz (-3dB)	52Hz - 150Hz (-3dB) * Tuned with internal DSP Presets
Woofer Size	2 x 5'' HH designed driver	1x12'' HH designed high performance driver	2x 12" HH designed high performance driver
Tweeter Size	1 x 1.33'' Celestion Compression Driver		
Power Rating	200W AES, 800W Peak	300W AES, 1200W Peak	4800W Peak, 2400W Continuous, 1200W RMS
			Subwoofer 2400W Peak, 1200W Continuous, 600W RMS
			Satellite Two Channels of 1200W Peak, 600W Continuous, 300W RMS
Max SPL 1m	123dB	126dB	137dB
Nominal System Impedance	16 ohms	8 ohms	
Connections	NL4 ±1 Twist Lock Connector Input & Link	NL4 ±1 Twist Lock Connector Input & Link & M4 Barrier Terminal	Balanced XLR Connector Input Balanced XLR Link Out, Balanced XLR Sub Out / Line Out 2x Twist Lock NL2 for TNA-2051
AMPLIFIER			
Processing			DSP Crossover, EQ, phase and time optimisation for array cabinets. Six built in DSP presets for typical use cases
Protection			Comprehensive protection and clip free limiting + clip indicator
Signal Indicators			Power, Mute/Protect, Clip Indicator, Preset Mode
Controls			Master Volume, Preset Switch
AC Power			~100V-240V 50/60Hz
AC Power Consumption			250W Typical
AC Power Inlet			Twist Lock Power Socket
ENCLOSURE			
Main Construction Material	15mm plywood cabinet	15mm plywood cabinet	15mm plywood cabinet
Grille	1.5mm Thick Steel, Hexagonal mesh lined with Acoustic foam.	1.5mm Thick Steel, Hexagonal mesh lined with Acoustic foam.	1.5mm Thick Steel, Hexagonal mesh lined with Acoustic foam.
Finish	Painted Black (White finish optional, subject to MOQ)	Painted Black (White finish optional, subject to MOQ)	Painted Black (White finish optional, subject to MOQ)
Mounting Brackets & Wheels	Optional TNA-BRK1 & TNA-DF1	Optional TNA-BRK1 & TNA-DF1	Optional TNA-BRK1 & TNA-DF1
Mounting Points	M8 side mounting for included brackets	M8 fixings for included side brackets & optional brackets	M8 fixings for included side brackets & optional brackets
Unit dimensions (HWD)	158 x 460 x 265mm, 6.2" x 18.1" x 10.4"	365 x 460 x 470mm, 14.4" x 18.1" x 18.5"	730 x 475 x 460mm, 28.7" x 18.7" x 18.1"
Unit weight	8.4Kg, 18.5 lbs (each)	18.8Kg, 41.4 lbs	36.7Kg, 80.9 lbs
Carton dimensions (HWD)	410 x 330 x 530mm, 16.1" x 13" x 20.9"	535 x 430 x 530mm, 21.1" x 16.9" x 20.9" , 0.122 M3	910 x 610 x 580mm, 35.8" x 24" x 22.8" , 0.322 M3
Packed weight	18.4Kg, 40.6 lbs (2pcs per carton)	22.5Kg, 49.6 lbs	42.8Kg, 94.4 lbs
EAN Code	5060109456851	5060109457810	5060109457674

TNA-1800S-G2	TNA-1800SA	TNA-2800SA
18" Passive Subwoofer, Bass Reflex	18" Active Subwoofer, Direct Radiating, Bass Reflex	Dual 18" Active Subwoofer, Direct Radiating, Bass Reflex
30Hz - 1KHz (-10dB)	32Hz - 100Hz (-10dB)	32Hz - 100Hz (-10dB)
40Hz - 500Hz (-3dB)	37Hz - 100Hz (-3dB)	37Hz - 100Hz (-3dB)
1x18'' HH designed driver	1x18'' High sensitivity HH designed driver.	2x18'' High sensitivity HH designed driver.
500W AES, 2000W Peak	4000W Peak, 2000W Continuous, 1000W RMS	8000W Peak, 4000W Continuous, 2000W RMS
135dB	138 dB SPL	144 dB SPL
4 ohms		
	Balanced Female XLR	Balanced Female XLR
NL4 ±1 Twist Lock Connector Input & Link & M4 Barrier Terminal	Balanced Male XLR (Switchable Full Range/Xover)	Balanced Male XLR (Switchable Full Range/Xover)
	DSP Crossover - 70Hz to 120Hz, including time alignment delay and phase switch.	
	Comprehensive protection and clip free limiting + clip indicator	
	Power, Signal Present, Clip Indicator, Protect	Power, Signal Present, Clip Indicator, Protect
	Input sensitivity, Crossover frequency, Phase Switch, Variable Delay (0>9.9mS)	Input sensitivity, Crossover frequency, Phase Switch, Variable Delay (0>9.9mS)
	~100V-240V 50/60Hz	~100V-240V 50/60Hz
	350W Typical	700W Typical
	Twist Lock Power Socket	Twist Lock Power Socket
18mm plywood cabinet with extensive internal bracing	18mm plywood cabinet with extensive internal bracing	18mm plywood cabinet with extensive internal bracing
1.5mm Thick Steel, Hexagonal mesh lined with Acoustic foam.	1.5mm Thick Steel, Hexagonal mesh lined with Acoustic foam.	1.5mm Thick Steel, Hexagonal mesh lined with Acoustic foam.
Painted Black (White finish optional, subject to MOQ)	Painted Black (White finish optional, subject to MOQ)	Painted Black (White finish optional, subject to MOQ)
		4pcs Heavy duty PU castors included in the box
8x M10 flying points,16x M8 inserts of optional transport wheels	8x M10 flying points. 16x M8 inserts for optional transport wheels	8x M10 flying points. 16x M8 inserts for optional transport wheels
556 x 600 x 641mm, 21.9" x 23.6" x 25.2"	563 x 600 x 640mm, 22.1" x 23.6" x 25.2"	562 x 1080 x 685mm, 22.1" x 42.5" x 27"
34.38Kg, 75.8 lbs	43.5Kg, 95.9 lbs	77.7Kg, 171.3 lbs
660 x 695 x 730mm, 26" x 27.4" x 28.7" , 0.335 M3	740 x 730 x 765mm, 29.1" x 28.7" x 30.1" , 0.413 M3	700 x 1280 x 815mm, 27.6" x 50.4" x 32.1" , 0.73 M3
42Kg, 92.6 lbs	51.3Kg, 113.1 lbs	91Kg, 200.6 lbs
5060109457803	5060109457711	5060109458350

MODEL	SP48
Inputs	*Four Electronically Balanced XLR Inputs*
Outputs	*Eight Electronically Balanced XLR Outputs*
Minimum Load	*150 Ohms*
THD%N	*0.001% at 1kHz 0dBu*
S/N	*>106dBA*
Frequency Response	*20Hz-20kHz; -0.5dBy at 20Hz and 20kHz*
AD/DA Converters	*24bit, 48kHz*
GENERAL	
Presets	*24 user presets*
Other	*Audio Ground Lift switch, USB/RS485 ground lift switch*
Remote	*USB remote control and RS485 in/out RJ45 connectors for control and monitoring of upto 32 units*
DSP	
DSP Engine	*24bit DSP*
DSP Resolution	*24bit (data) x 24 bit (coeff.), 54 bit accregisters. 96 bit precision on intermediate processing data*
Parametric Equalisation	*30 filters per input,7 filters per output*
Filter Type	*Bell, Hi/Lo Shelving, HP/LP Bandpass, Notch, All Pass*
Filter Gain	*From -15dBu up to +15dBu by 0.5dBu resolution steps*
Centre Frequency	*from 20Hz up to 20kHz with 1Hz resolution steps*
Filter Q/BW	*Bell Q: 0.4~128, Shelving/HP/LP Q:0.1~5.1, BP/Notch/All Pass Q:4~104*
Input Gain	*From -18dB to +12dB by 0.1dBu resolution steps;*
Output Gain	*From -18dB to +12dB by 0.1dBu resolution steps;*
Crossover Section HPF/LPF	*Butterworth 6/12/18/24/36/48 dB per octave. Bessel 12/24 dB per octave. Linkwitz-Riley 12/24/36/48 dB per octave*
Internal Noise Generator	
Input Noise Gate	*Threshold from -80dBu up to -50dBu. Attack time from 1ms up to 1000ms;Release time from 10ms up to 1000ms*
Input RMS Compressor	*Threshold from -14dBu up to +16dBu and Bypass. Ratio 2:1~32:1; Knee: 0% ~ 100%. Makeup from -12dB to +12dB. Attack time from 5ms up to 200ms;Release time from 0.1 sec up to 3 sec*
Output Peak/RMS Limiter	*Threshold from -14dBu up to +16dBu and Bypass. Attack time from 1ms up to 900ms;Release time from 0.1 sec up to 5 sec.*
Delay	*420ms per input channel. 129ms per output channel*
Residual Noise	*<-90dBu*
POWER	
AC Power	*Universal voltage 100V-240V~ 50/60Hz, three pin IEC socket*
AC Power Consumption	*<30W*
DIMENSIONS	
Unit dimensions (HWD)	*44 x 482 x 225mm, 1.7" x 19" x 11.8.9"*
Unit weight	*3.5Kg, 7.7lbs*
Carton dimensions (HWD)	*9 x 53 x 30CM, 3.5" x 20.9" x11.8" , 0.014 M3*
Packed weight	*4.5Kg, 9.9lbs*
EAN	*5060109458305*

SP26
Two Electronically Balanced XLR Inputs
Six Electronically Balanced XLR Outputs
150 Ohms
0.001% at 1kHz 0dBu
>106dBA
20Hz-20kHz; -0.5dBy at 20Hz and 20kHz
24bit, 48kHz
48 user presets (16 pre-loaded TNA examples, may be erased)
Audio Ground Lift switch, USB/RS485 ground lift switch
RS485 in/out XLR connectors for remote monitoring
DSP, 24bit (data) x 96 bit (coeff.)
24bit (data) x 24 bit (coeff.), 54 bit accregisters. 96 bit precision on intermediate processing data
11 filters per input, 7 filters per output
Bell, Shelving
From -12dBu up to +12dBu by 0.5dBu resolution steps
from 20Hz up to 20kHz with 1Hz resolution steps
Q from 0.4 up to 128
From -12dB to +12dB by 0.1dBu resolution steps;
From -18dB to +12dB by 0.1dBu resolution steps;
Butterworth 6/12/18/24/36/48 dB per octave. Bessel 12/24 dB per octave. Linkwitz-Riley 12/24/36/48 dB per octave
White/ Pink Noise; Level from -30dBu to 0dBu
Threshold from -90dBu up to -60dBu. Attack time from 1ms up to 1000ms;Release time from 10ms up to 1000ms
Threshold from -14dBu up to +16dBu and Bypass. Ratio 2:1~100:1; Knee: 0% ~ 100%. Attack time from 5ms up to 200ms;Release time from 0.1 sec up to 3 sec
Threshold from -14dBu up to +16dBu and Bypass. Attack time from 5ms up to 200ms;Release time from 0.1 sec up to 3 sec.
900 ms 10.4us increment/decrement steps per input channel. 340 ms 10.4us increment/decrement steps per output channel
<-90dBu
Universal voltage 100V-240V~ 50/60Hz, three pin IEC socket
<30W
44 x 483 x 229mm, 1.7" x 19" x 9
3.5Kg, 7.7lbs
9 x 53 x 30CM, 3.5" x 20.9" x11.8", 0.014 M3
4.5Kg, 9.9lbs
5060109457957

Model	M-750
Output Power RMS : 8 Ohm Stereo	2x500W
Output Power RMS : 4 Ohm Stereo	2x750W
Output Power Bridge RMS : 8 Ohm Mono	1500W
Direct Drive High Impedance	70V (100V in Bridge)
Frequency response	20Hz - 20KHz (+0, -1dB)
THD%	≤0.5% 20Hz-20kHz
IMD	=/<0.35%
S/N	≥100dB
Damping Factor	>200 (8 ohms, 10Hz-400Hz)
Slew Rate	≥20V/µS
Crosstalk (1kHz/20kHz)	-75dB/-58dB
Input Sensitivity	0.775V/1.4V
Input Impedance (Bal/Unbal)	20KΩ/10KΩ
Voltage Gain (8Ω)	36dB
Cooling	Variable Speed Fan, Air flow from front to rear
Protection	Soft start, VHF, RF, short circuit, over load, clip limit, over heat
PSU Type	Low Noise Toroidal Transformer, fixed voltage (Factory Set)
Amplifier Type	Class H High Performance Professional linear design
REAR PANEL	
Input Connector	Balanced XLR-F
Output Connector	NL4 SpeakON® per channel, 4mm Binding posts with safety cover, Balanced XLR-M link out
Power Connector	220-240V~ 10A Removeable IEC Power Cord C14 (3x1.5mm^2) 100-130V~ 15A Removeable IEC Power Cord C20 (3x14AWG / 2mm^2)
Power Consumption	500W Typical, 2700W Maximum
Other	Input Sensitivity Switch, Bridge/Routing Mode Switch
FRONT PANEL	
Controls	Volume Control, Power switch
Indicators	Signal,Clip,Protection,Power
Unit dimensions (HWD)	88 x 482 x 239mm, 3.5 x 19 x 9.4"
Unit weight	12.5Kg/pc, 27.6 lbs/pc
Carton dimensions (HWD)	160 x 580 x 540mm, 6.3 x 22.8 x 21.3"
Gross Weight	14.8Kg/pc , 32.6 lbs/pc
EAN Code	5060109457926

M-1500D	M-2600D
2x1250W	2x1500W
2x1500W	2x2600W
2900W	5150W
70/100V	70/100V
20Hz - 20KHz (+0, -1dB)	20Hz - 20KHz (+0, -1dB)
≤0.5% 20Hz-20kHz	≤0.5% 20Hz-20kHz
=/<0.35%	=/<0.35%
≥100dB	≥100dB
>200 (8 ohms, 10Hz-400Hz)	>200 (8 ohms, 10Hz-400Hz)
≥20V/μS	≥20V/μS
-75dB/-58dB	-75dB/-58dB
0.775V/1.4V	0.775V/1.4V
20KΩ/10KΩ	20KΩ/10KΩ
37dB	37dB
Variable Speed Fan, Air flow from front to rear	Variable Speed Fan, Air flow from front to rear
Soft start, VHF, RF, short circuit, over load, clip limit, over heat	Soft start, VHF, RF, short circuit, over load, clip limit, over heat
Low Noise Toroidal Transformer, fixed voltage (Factory Set)	Low Noise Toroidal Transformer, fixed voltage (Factory Set)
Class H High Performance Professional linear design	Class H High Performance Professional linear design
Balanced XLR-F	Balanced XLR-F
NL4 SpeakON® per channel, 4mm Binding posts with safety cover, Balanced XLR-M link out	NL4 SpeakON® per channel, 4mm Binding posts with safety cover, Balanced XLR-M link out
220-240V~ 10A Removeable IEC Power Cord C14 (3x1.5mm^2) 100-130V~ 15A Removeable IEC Power Cord C20 (3x14AWG / 2mm^2)	220-240V~ 10A Removeable IEC Power Cord C14 (3x1.5mm^2) 100-130V~ 15A Removeable IEC Power Cord C20 (3x14AWG / 2mm^2)
1250W Typical, 5700W Maximum	1500W Typical, 6700W Maximum
88 x 482 x 297mm, 3.5 x 3.5 x 11.7"	88 x 482 x 297mm, 3.5 x 19 x 11.7
19.2Kg/pc, 42.3 lbs/pc	24.2Kg/pc, 53.4 lbs/pc
160 x 580 x 540mm, 6.3 x 22.8 x 21.3"	160 x 580 x 540mm, 6.3 x 22.8 x 21.3"
21.5Kg/pc , 47.4 lbs/pcs	26.6Kg/pc, 58.6 lbs/pc
5060109457933	5060109457940

MODEL	MZ-140D	MZ-140Q
System type	*Zone Power Amplifier with Input Routing*	*Zone Power Amplifier with Input Routing*
Input channels	*5*	*5*
Output channels	*2*	*4*
Power Rating	*2x 140W*	*4x 140W*
Output Limiter	*Yes*	*Yes*
Frequency response		*20-20KHz ±0.1dBu (LoZ Mode) 80-20KHz ±0.1dBu (HiZ Mode)*
Configurable Routing	*Yes*	*Yes*
Priority Muting	*Yes (Auto and Manual CH1/2)*	*Yes (Auto and Manual CH1/2)*
Fire System Inegratrion	*Yes*	*Yes*
THD+N	*< 0.008%*	*< 0.009%*
SNR (A-weighted)	*>106dB*	*>106dB*
Controls	*All inputs feature front panel mounted input sensitivity gain controls with signal detect and peak level indicators. Each input contains gain level controls, each zone contains Source select, Bass, Treble and master volume controls. Rear panel includes front panel lock and zone amplifier mode options*	
EQ	*Bass 250Hz Shelving Control, ±12dB per zone. Treble 2kHz Shelving Control, ±12dB per zone*	*Bass 250Hz Shelving Control, ±12dB per zone. Treble 2kHz Shelving Control, ±12dB per zone*
AC Power	*Universal AC 100-240V~ 50/60HZ*	*Universal AC 100-240V~ 50/60HZ*
Power Consumption	*25W Idle, 150W Typical, 200W Max, 0.5W Standby*	*30W Idle, 300W Typical, 450W Max, 0.5W Standby*
Standby Modes		*Auto standby mode, with override*
DIMENSIONS		
Unit dimensions (HWD)		*44 x 483 x 417 mm, (1.7" x 19" x 16.4")*
Net Weight	*3.9Kg, 8.6 lbs*	*4.5Kg, 9.9 lbs*
Carton dimensions (HWD)		*150 x 630 x 510 mm, (5.9" x 24.8" x 20.1")*
Gross Weight	*6.6Kg, 14.6 lbs*	*7.1Kg, 15.7 lbs*
ACCESSORIES	*Rack Mounting Kit included. 4x 3.5mm 3 way, 2x 3.5mm 5 way, 1x 5.08mm 6 way Euro Plugs included*	*Rack Mounting Kit included. 4x 3.5mm 3 way, 2x 3.5mm 5 way, 1x 5.08mm 6 way Euro Plugs included*
	Optional MZ-C2 wall controllers	*Optional MZ-C2 wall controllers*
EAN13	*5060109458237*	*5060109458343*

MODEL	MZ-C2-EU-WH	MZ-C2-EU-BK	MZ-C2-US-WH	MZ-C2-US-BK
System type		*Wall volume controller with source select*		
Colour	*White*	*Black*	*White*	*Black*
FEATURES				
Controls		*Rotary Volume Control, Rotary Source Select, Mute Switch. Zone Select DIP Switch*		
Input connectors	*1 x RJ45 LAN Connector*	*2 x RJ45 LAN Connector*	*3 x RJ45 LAN Connector*	*4 x RJ45 LAN Connector*
Output connectors				
Wiring	*Standard CAT5e shielded cable, in a daisy chain configuration*	*Standard CAT5e shielded cable, in a daisy chain configuration*	*Standard CAT5e shielded cable, in a daisy chain configuration*	*Standard CAT5e shielded cable, in a daisy chain configuration*
DIMENSIONS				
Unit dimensions	*86 x 86 x 44mm, 3.4" x 3.4" x 1.7"*	*86 x 86 x 44mm, 3.4" x 3.4" x 1.7"*	*114 x 70 x 44mm, 4.5" x 2.8" x 1.7"*	*114 x 70 x 44mm, 4.5" x 2.8" x 1.7"*
Net weight	*0.147Kg, 0.3 lbs*	*0.147Kg, 0.3 lbs*	*0.147Kg, 0.3 lbs*	*0.147Kg, 0.3 lbs*
Carton dimensions	*135 x 115 x 75mm, (5.2" x 4.4" x 3")*	*135 x 115 x 75mm, (5.2" x 4.4" x 3")*	*135 x 115 x 75mm, (5.2" x 4.4" x 3")*	*135 x 115 x 75mm, (5.2" x 4.4" x 3")*
Gross weight	*0.205Kg, 0.5 lbs*	*0.205Kg, 0.5 lbs*	*0.205Kg, 0.5 lbs*	*0.205Kg, 0.5 lbs*
EAN13	*5060109458299*	*5060109458404*	*5060109458268*	*5060109458435*
EAN13 MP (12pcs)		*5060109458411*	*5060109458282*	*5060109458435*

MZ-280Q	MZ-64P
Zone Power Amplifier with Input Routing	Zone Pre-Amplifier with Input Routing
5	5
4	4
4x 280W	N/A
Yes	Yes (0dBu/+4dBu/Off)
	20-20KHz ±0.1dBu
Yes	Yes
Yes (Auto and Manual CH1/2)	Yes (Auto and Manual CH1/2)
Yes	Yes
< 0.009%	< 0.009%
>106dB	>110dB
All inputs feature front panel mounted input sensitivity gain controls with signal detect and peak level indicators. Each input contains gain level controls, each zone contains Source select, Bass, Treble and master volume controls. Rear panel includes front panel lock and zone amplifier mode options	
Bass 250Hz Shelving Control, ±12dB per zone. Treble 2kHz Shelving Control, ±12dB per zone	Bass 250Hz Shelving Control, ±12dB per zone. Treble 2kHz Shelving Control, ±12dB per zone
Universal AC 100-240V~ 50/60HZ	Universal AC 100-240V~ 50/60HZ
35W Idle, 300W Typical, 650W Max, 0.5W Standby	Typical <8W, Maximum < 30W
	N/A
	44 x 483 x 198 mm (1.7" x 19" x 7.8")
4.9Kg, 10.8 lbs	2.3Kg, 5.1lbs
	150 x 630 x 290 mm, (5.9" x 24.8" x 11.4")
7.6Kg, 16.8 lbs	3.9Kg, 8.6 lbs
Rack Mounting Kit included. 4x 3.5mm 3 way, 2x 3.5mm 5 way, 1x 5.08mm 6 way Euro Plugs included	Rack Mounting Kit included. 4x 3.5mm 3 way, 2x 3.5mm 5 way, 1x 5.08mm 6 way Euro Plugs included
Optional MZ-C2 wall controllers	Optional MZ-C2 wall controllers
5060109458244	5060109458251

MODEL	TNi-W4-BK	TNi-W6-BK	TNi-W8-BK	TNi-W4-WH	TNi-W6-WH	TNi-W8-WH
System type	2-Way Passive Speaker	2-Way Passive Speaker	2-Way Passive Speaker	2-Way Passive Speaker	2-Way Passive Speaker	2-Way Passive Speaker
Woofer Size	4"	6.5"	8"	4"	6.5"	8"
Tweeter Size	1" Dome Tweeter	1" Dome Tweeter	1" Dome Tweeter	1" Dome Tweeter	1" Dome Tweeter	1" Dome Tweeter
100V Power Options	30W, 15W, 6W, 3W	40W, 20W, 10W, 5W	40W, 20W, 10W, 5W	30W, 15W, 6W, 3W	40W, 20W, 10W, 5W	40W, 20W, 10W, 5W
70V Power Options	15W, 7.5W, 3W, 1.5W	20W, 10W, 5W, 2.5W	20W, 10W, 5W, 2.5W	15W, 7.5W, 3W, 1.5W	20W, 10W, 5W, 2.5W	20W, 10W, 5W, 2.5W
Low Nominal System Impedance		8 Ohm			8 Ohm	
Power Rating	45W AES, 180W Peak	55W AES, 220W Peak	65W AES, 260W Peak	45W AES, 180W Peak	55W AES, 220W Peak	65W AES, 260W Peak
Recommended Amplifier	80-160W @ 8 Ohms	100-200W @ 8 Ohms	100-200W @ 8 Ohms	80-160W @ 8 Ohms	100-200W @ 8 Ohms	100-200W @ 8 Ohms
Sensitivity 1W/1m	88 dB SPL	90dB SPL	90dB SPL	88 dB SPL	90dB SPL	90dB SPL
Max SPL 1m	111 dB SPL	113 dB SPL	115 dB SPL	111 dB SPL	113 dB SPL	115 dB SPL
Frequency response	80Hz - 20KHz (-10dB)	65Hz - 20KHz (-10dB)	55Hz - 20KHz (-10dB)	80Hz - 20KHz (-10dB)	65Hz - 20KHz (-10dB)	55Hz - 20KHz (-10dB)
	125Hz - 18KHz (-3dB)	80Hz - 18KHz (-3dB)	75Hz - 18KHz (-3dB)	125Hz - 18KHz (-3dB)	80Hz - 18KHz (-3dB)	75Hz - 18KHz (-3dB)
Input / Link Connector	Euroblock and M4 terminals	Euroblock and M4 terminals	Euroblock and M4 terminals	Euroblock and M4 terminals	Euroblock and M4 terminals	Euroblock and M4 terminals
Dispersion Angle	90° x 80°	90° x 80°	90° x 80°	90° x 80°	90° x 80°	90° x 80°
ENCLOSURE						
Main Construction Material	ABS Plastic	ABS Plastic	ABS Plastic	ABS Plastic	ABS Plastic	ABS Plastic
Grille	Powdercoated Steel Mesh	Powdercoated Steel Mesh	Powdercoated Steel Mesh	Powdercoated Steel Mesh	Powdercoated Steel Mesh	Powdercoated Steel Mesh
Finish	Black	White	White	White	White	White
Mounting Points	Adjustable Steel Bracket included	Adjustable Steel Bracket included	Adjustable Steel Bracket included	Adjustable Steel Bracket included	Adjustable Steel Bracket included	Adjustable Steel Bracket included
Unit dimensions	295 x 145 x 222mm (HWD)	330 x 196 x 281mm (HWD)	390 x 240 x 319mm (HWD)	295 x 145 x 222mm (HWD)	330 x 196 x 281mm (HWD)	390 x 240 x 319mm (HWD)
Unit dimensions	11.6" x 5.7" x 8.7"	13" x 7.7" x 11.1"	5.4" x 9.4" x 12.6"	11.6" x 5.7" x 8.7"	13" x 7.7" x 11.1"	5.4" x 9.4" x 12.6"
Unit weight	2.8Kg, 6.2lbs	3.5Kg, 7.7lbs	4.2Kg, 9.3lbs	2.8Kg, 6.2lbs	3.5Kg, 7.7lbs	4.2Kg, 9.3lbs
Single Carton dimensions (HWD)	430 x 185 x 175mm, 16.9" x 7.3" x 6.9", 0.014	455 x 240 x 240mm, 17.9" x 9.4" x 9.4", 0.026m≥	515 x 280 x 270mm, 20.3" x 11" x 10.6", 0.039	430 x 185 x 175mm, 16.9" x 7.3" x 6.9", 0.014	455 x 240 x 240mm, 17.9" x 9.4" x 9.4", 0.026m≥	515 x 280 x 270mm, 20.3" x 11" x 10.6", 0.039
Packed weight	3.3Kg, 7.3 lbs	4.1Kg, 9 lbs	5Kg, 11lbs	3.3Kg, 7.3 lbs	4.1Kg, 9 lbs	5Kg, 11lbs
EAN Code	5060109456974	5060109456998	5060109457018	5060109457285	5060109457308	5060109457322
Master Carton dimensions (HWD)	445 x 405 x 385mm, 17.5" x 15.9" x 15.2" 4pcs	470 x 515 x 515mm, 18.5" x 20.3" x 20.3" 4pcs	530 x 595 x 575mm, 20.9" x 23.4" x 22.6" 4pcs	445 x 405 x 385mm, 17.5" x 15.9" x 15.2" 4pcs	470 x 515 x 515mm, 18.5" x 20.3" x 20.3" 4pcs	530 x 595 x 575mm, 20.9" x 23.4" x 22.6" 4pcs
Master Packed weight	14.2Kg, 31.2 lbs	17.4Kg, 38.4lbs	21.3Kg, 47lbs	14.2Kg, 31.2 lbs	17.4Kg, 38.4lbs	21.3Kg, 47lbs
Master EAN Code	5060109456981	5060109457001	5060109457025	5060109457292	5060109457315	5060109457339

TNi-C4	TNi-C6	TNi-C8	TNi-W8PRO-BK	TNi-W12PRO-BK	TNi-W8PRO-WH	TNi-W12PRO-WH
2-Way Passive Coaxial Ceiling Speaker	2-Way Passive Coaxial Ceiling Speaker	2-Way Passive Coaxial Ceiling Speaker	2-Way Passive Speaker with Celestion rotatable horn	2-Way Passive Speaker with Celestion rotatable horn	2-Way Passive Speaker with Celestion rotatable horn	2-Way Passive Speaker with Celestion rotatable horn
4"	6.5"	8"	8" HH Designed High Performance Driver	12" HH Designed High Performance Driver	8" HH Designed High Performance Driver	12" HH Designed High Performance Driver
1.5 inch Neodymium	1.5 inch Neodymium	1.5 inch Neodymium	1.0" Celestion CDX1-1070	1.4" Celestion CDX1-1445	1.0" Celestion CDX1-1070	1.4" Celestion CDX1-1445
30W, 15W, 6W	40W, 20W, 10W	40W, 20W, 10W				
15W, 7.5W, 3W	20W, 10W, 5W	20W, 10W, 5W				
	8 ohm		8 ohm		8 ohm	
45W AES, 180W Peak	55W AES, 220W Peak	65W AES, 260W Peak	200W AES, 400W Continuous, 800W Peak	300W AES, 600W Continuous, 1200W Peak	200W AES, 400W Continuous, 800W Peak	300W AES, 600W Continuous, 1200W Peak
80-160W @ 8 Ohms	100-200W @ 8 Ohms	100-200W @ 8 Ohms	400-800W @ 8 Ohms	600-1200W @ 8 Ohms	400-800W @ 8 Ohms	600-1200W @ 8 Ohms
88 dB SPL	90 dB SPL	91 db SPL	96 dB SPL	98 dB SPL	96 dB SPL	98 dB SPL
111 dB SPL	113 dB SPL	115 dB SPL	119 dB SPL, 125 dB SPL (Peak)	123 dB SPL, 129 dB SPL (Peak)	119 dB SPL, 125 dB SPL (Peak)	123 dB SPL, 129 dB SPL (Peak)
85Hz - 20KHz (-10dB)	75Hz - 20KHz (-10dB)	65Hz - 20KHz (-10dB)	52 - 20kHz (-10dB)	36 - 20kHz (-10dB)	52 - 20kHz (-10dB)	36 - 20kHz (-10dB)
100Hz - 16KHz (-3dB)	85Hz - 16KHz (-3dB)	80Hz - 16KHz (-3dB)	63 - 18kHz (-3dB)	42 - 18kHz (-3dB)	63 - 18kHz (-3dB)	42 - 18kHz (-3dB)
	Push Spring Connectors		Euro Block Connector and M4 Barrier Strip Terminal (7.62mm Pitch)		Euro Block Connector and M4 Barrier Strip Terminal (7.62mm Pitch)	
130° conical	120° conical	100° conical	90°x60° with rotatable horn.		90°x60° with rotatable horn.	
ABS Plastic	ABS Plastic	ABS Plastic	Robust all wood construction (15mm plywood)		Robust all wood construction (15mm plywood)	
1.5mm Powdercoated Circular Steel Mesh	1.5mm Powdercoated Circular Steel Mesh	1.5mm Powdercoated Circular Steel Mesh	Powdercoated steel with acoustic foam backing		Powdercoated steel with acoustic foam backing	
White	White	White	Hard wearing spatter finish in Black		Hard wearing spatter finish in White	
3x Dog Ear Brackets (4-20mm grip range)	3x Dog Ear Brackets (4-20mm grip range)	3x Dog Ear Brackets (4-20mm grip range)	4x M8 mounting points for optional HH-BRK30-BK 7x M10 Penn-Elcom fly points (3 on top face, 2 on side face, 1 on rear, 1 on bottom)		4x M8 mounting points for optional HH-BRK30-WH 7x M10 Penn-Elcom fly points (3 on top face, 2 on side face, 1 on rear, 1 on bottom)	
204 x 156 x 180mm (Diameter, Depth, Cutout)	260 x 176 x 235mm	300 x 195 x 275mm	474 x 270 x 257mm (HWD)	575 x 345 x 337mm (HWD)	474 x 270 x 257mm (HWD)	575 x 345 x 337mm (HWD)
8" x 6.1" x 7.1"	10.2" x 6.9" x 9.3"	11.8" x 7.7" x 10.8"	18.7" x 10.6" x 10.1"	22.6" x 13.6" x 13.3"	18.7" x 10.6" x 10.1"	22.6" x 13.6" x 13.3"
1.4Kg, 3.1 lbs	2.1Kg, 4.6 lbs	2.6Kg, 5.7 lbs	9.6Kg, 21.2 lbs	16.2Kg, 35.7 lbs	9.6Kg, 21.2 lbs	16.2Kg, 35.7 lbs
180 x 205 x 205mm, 7.1" x 8.1" x 8.1"	200 x 260 x 260mm, 7.9" x 10.2" x 10.2"	220 x 300 x 300mm, 8.7" x 11.8" x 11.8"	605 x 370 x 365mm, 23.8" x 14.6" x 14.4", 0.082 M3	700 x 455 x 445mm, 27.6" x 17.9" x 17.5", 0.142 M3	605 x 370 x 365mm, 23.8" x 14.6" x 14.4", 0.082 M3	700 x 455 x 445mm, 27.6" x 17.9" x 17.5", 0.142 M3
1.9Kg, 4.2 lbs	2.7Kg, 6 lbs	3.3Kg, 7.3 lbs	11.9Kg, 26.2 lbs	19.6Kg, 43.2 lbs	11.9Kg, 26.2 lbs	19.6Kg, 43.2 lbs
5060109457032	5060109457032	5060109457070	5060109457728	5060109457742	5060109457735	5060109457759
400 x 450 x 450mm, 5.7" x 17.7" x 17.7" 8pcs	440 x 560 x 560mm, 27.3" x 22" x 22" 8pcs	480 x 640 x 640mm 18.9" x 25.2" x 25.2" 8pcs				
16.2Kg, 35.7 lbs	23Kg, 50.7 lbs	28Kg, 61.7 lbs				
5060109457049	5060109457049	5060109457087				

MODEL	TRE-1501	TRE-1201	TRE-1001	TRS-1500
System type	Active 2-Way Loudspeaker			Active Subwoofer
Power Rating	1400W Peak, 700W Continuous			350W RMS, 700W Continuous, 1400W Peak
Frequency response	41Hz-20kHz	45Hz-20KHz	48Hz-20KHz	37Hz-200Hz
Max SPL (1M) Peak	131 dB SPL	130 dB SPL	129 dB SPL	128 dB SPL
SPEAKER				
LF Driver	1x15" HH designed high performance driver	1x12" HH designed high performance driver	1x10" HH designed high performance driver	15" HH designed professional bass driver
HF Driver	1" HH Compression Driver			
Coverage	90°H X 60°V			
Crossover Frequency	2.5kHz			60Hz - 200Hz Variable
AMPLIFIER				
Type				
Input Connectors	2x Balanced Combi XLR/1/4" Jack connectors			2x Balanced XLR
Output Connectors	1x Balanced XLR Mix Output			2x Balanced XLR link outs, 2x Balanced XLR fixed hi-pass outs
Controls	2x channel gain, Master Volume, logo on/off, Ground Lift, EQ Mode			Volume, Variable crossover frequency (60-200Hz)
EQ	User selectable performance presets for Music, Live, Monitor, Vocal			Shape switch
Protection	Comprehensive protection and clip free limiting + clip indicator			Comprehensive protection and clip free limiting + clip indicator
Indicators	Power, Clip Indicator, EQ Mode, Front illuminated logo			Power, Clip Indicator, Front illuminated logo (with on/off switch)
Other	Crossover, EQ, Dual Band Limiters, Phase and Time Optimisation			Phase reverse switch, Ground lift switch
Accessories	Optional Slip Cover SC-TRE15	Optional Slip Cover SC-TRE12		Optional Slip Cover SC-TRS15
AC Power	User Switcheable 100-120 or 220-240V~ 50/60HZ			User Switcheable 110-120 or 220-240V~ 50/60HZ
AC Power Consumption	300W Typical			350W Typical
AC Power Inlet	IEC C14 INLET			
ENCLOSURE				
Cabinet	Robust polypropylene cabinet with three handles and monitor angle			18mm plywood cabinet with extensive internal bracing
Grille	1.5mm Thick Steel, Hexagonal mesh lined with Acoustic foam.			1.5mm Thick Steel, Hexagonal mesh lined with Acoustic foam.
Finish	Black			Rugged Black spatter paint finish
Mouting Points	4 x M8 Mounting Points, 35mm Pole Mount Socket			35mm Pole Mount Socket
Unit dimensions (HWD)	694x 420x 385mm 27.3" x 16.5" x 15.2"	610x 357x 356mm 24" x 14.1" x 14"	530 x 300 x 310 mm 20.9" x 11.8" x 12.2"	465 x 500 x 557 mm 18.3" x 19.7" x 21.9"
Unit weight	18Kg, 39.7 lbs	14.4Kg, 31.7 lbs	11.6Kg, 25.6 lbs	28Kg, 61.7 lbs
Carton dimensions (HWD)	775x 500x 465mm 30.5" x 19.7" x 18.3"	685x 440x 440mm 27" x 17.3" x 17.3"	61.5 x 390 x 385 mm 2.4" x 15.4" x 15.2" (Shipping Volume 0.01 M3)	560 x 615 x 560 mm 22" x 24.2" x 22"
Packed weight	21.4Kg, 47.2 lbs	16.8Kg, 37 lbs	13.6Kg, 30 lbs	32.6Kg, 71.9 lbs
EAN code	5060109456967	5060109456950	5060109457551	5060109457162

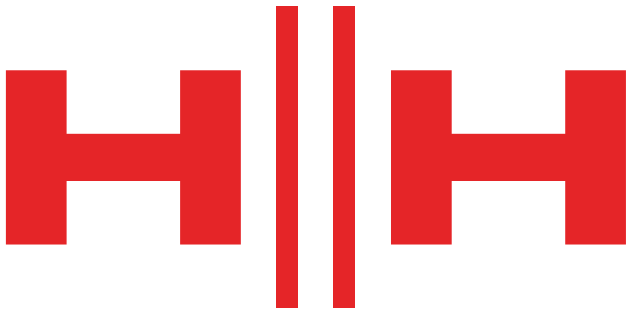| TRS-1800	TRM-1201	Tensor-GO
Active Subwoofer	Active Powered Stage Monitor	Ultra Portable Column PA System, Battery Powered
350W RMS, 700W Continuous, 1400W Peak	350W RMS, 700W Continuous, 1400W Peak	200W RMS, 800W Peak
35Hz-200Hz	55Hz-18KHz	50-20KHz
130 dB SPL	130 dB SPL	121dBSPL
18" HH designed professional bass driver	1x12" HH designed high performance driver	8" HH Long Throw Woofer
	1" HH Compression Driver	6x 2.75"
	80° x 80° (35° Monitor Angle)	
60Hz - 200Hz Variable	2.8KHz	Internal DSP driven crossover
Class D		
2x Balanced XLR	Balanced Female XLR/6.3mm Jack Combi Socket	2x Combo (XLR/Jack) balanced/unbalanced input with Mic/Line preset switch. 3.5mm Stereo Aux in, Bluetooth V5.0 Audio Receiver, 2x RCA
2x Balanced XLR link outs, 2x Balanced XLR fixed hi-pass outs	Balanced Male XLR with ground lift switch	Balanced XLR mix out
Volume, Variable crossover frequency (60-200Hz)	Volume, Monitor/FOH mode	CH1-3 Level, CH1-2 Reverb on/off switch, Master Volume, Bluetooth Pairing, EQ preset
Shape switch	FOH / Monitor EQ voice switch	User selectable performance presets for Music, Band, Natural, Speech
Comprehensive protection and clip free limiting + clip indicator	Comprehensive protection and clip free limiting + clip indicator	Short circuit, Thermal overload, multi band limiter
Power, Signal / Limit indicator	Power, Signal Present, Clip Indicator	Power, Signal Present, Clip Indicator
Phase reverse switch, Ground lift switch	Ground lift switch for Link Out	Battery status LEDs (Charging, Low, 25%, 50%, 100%), Illuminating HH Logo
SC-TRS18 - Transport cover for TRS-1800		Included 1x Padded Subwoofer Slip Cover, 1x Padded 3 Piece Column Carry
User Switcheable 110-120 or 220-240V~ 50/60HZ	User Switcheable 110-120 or 220-240V~ 50/60HZ	Universal SMPS 100-240V~ or 12-36V DC in
350W Typical	300W Typical	Internal 26V/5200mAH
18mm plywood cabinet with extensive internal bracing	Acoustically optimised Plywood cabinet with integrated carry handles	Robust Polypropylyne Enclosure (Sub), ABS (Sat)
1.5mm Thick Steel, Hexagonal mesh lined with Acoustic foam.		1.5mm Thick Steel, Hexagonal mesh
Rugged Black spatter paint finish		Black
35mm Pole Mount Socket	35mm Pole Mount Socket	
540 x 580 x 592 mm 21.3" x 22.8" x 23.3"	340 x 510 x 500mm, 13.4" x 20.1" x 19.7"	1975mm, 77.8" (Height Assembled) 403 x 320 x 300mm, 15.9" x 12.6" x 11.8" (SUB) 560 x 105 x 105mm, 22" x 4.1" x 4.1" (TOP)
30Kg, 66.1 lbs	17.7Kg, 39 lbs	13.7Kg, 30.2 lbs (Overall) 9.9Kg, 21.8 lbs (SUB) 1.8Kg, 4 lbs (1Kg, 2.2 lbs Spacers) (TOP)
630 x 650 x 650 mm 24.8" x 25.6" x 25.6"	605 x 540 x 470mm, 23.8" x 21.3" x 18.5" , 0.154 M3	645 x 495 x 400mm, 25.4" x 19.5" x 15.7" (0.128 M3)
40.8Kg, 89.9 lbs	21Kg, 46.3 lbs	16.8Kg, 37 lbs
5060109457179	5060109457582	5060109457537

MODELS	VRC-210	VRE-15AG2
System type	Portable PA system with 2x Loudspeakers & 6 Ch mixer/amplifier	Active 2-Way Loudspeaker w/ Bluetooth
Power Rating	2x 500W Peak	800W Peak
LF Driver	10" Woofer	15" Woofer
HF Driver	1" Compression Driver	1" Compression Driver
Amplifier Type	Class D	Class A/B
Power Supply	SMPS (100-120 or 220-240 fixed)	Linear Toroidal PSU - Switchable Voltage
FEATURES		
Inputs	4x Balanced Combi XLR/Jack 2x 6.3mm Unbalanced Jack, 2x RCA, Media player with Bluetooth 5.0, USB and SD card	2x balanced XLR 2x 6.3mm Unbalance Jack 1x 3.5mm Stereo Jack Media player with Bluetooth 5.0, USB and SD card
Outputs	CA mix out. 2x 6.3mm Jack speaker outputs	Balanced XLR mix out.
Controls	CH1-4 gain, 2 band eq, effect send, mic/line switch, CH5-6 gain, Master 16 digital effect section with level, Master 2 band eq, master volume, Phantom power.	CH1,2,3 Gain Controls, Master 2 Band EQ, Master Volume
Dispersion Angle	90°H X 40°V	90°H X 40°V
ENCLOSURE		
Cabinet	Robust polypropylene cabinet with carry handle	Robust polypropylene cabinet with three handles and monitor angle
Grille	Powdercoated steel with acoustic foam backing	Powdercoated steel with acoustic foam backing
Finish	Black	Black
Mounting	35mm Pole Socket	35mm Pole Socket
Unit dimensions (HWD)	490 x 315 x 312 mm 19.3" x 12.4" x 12.3"	690 x 440 x 370 mm, 27.2" x 17.3" x 14.6"
Unit weight	18.7Kg, 41.2 lbs	13.5Kg, 29.8 lbs
Carton dimensions (HWD)	555 x 635 x 365 mm, 21.9" x 25" x 14.4"	765 x 497 x 410 mm, 30.1" x 19.6" x 16.1"
Packed weight	19.5Kg, 43 lbs	16.9Kg, 37.3 lbs
EAN13	5060109456745	5060109456714

VRE-12AG2	VRE-8AG2
Active 2-Way Loudspeaker w/ Bluetooth	Active 2-Way Loudspeaker w/ Bluetooth
800W Peak	300W Peak
12" Woofer	8" Woofer
1" Compression Driver	1" Compression Driver
Class A/B	Class A/B
Linear Toroidal PSU - Switchable Voltage	Linear Toroidal PSU - Switchable Voltage
2x balanced XLR 2x 6.3mm Unbalance Jack 1x 3.5mm Stereo Jack Media player with Bluetooth 5.0, USB and SD card	1x balanced XLR 1x 6.3mm Unbalance Jack 1x 3.5mm Stereo Jack Media player with Bluetooth 5.0, USB and SD card
Balanced XLR mix out.	Balanced 6.3mm Jack mix out.
CH1,2,3 Gain Controls, Master 2 Band EQ, Master Volume	CH1,2 Gain controls, Master Volume
90°H X 40°V	90°H X 40°V
Robust polypropylene cabinet with three handles and monitor angle	Robust polypropylene cabinet with two handles and monitor angle
Powdercoated steel with acoustic foam backing	Powdercoated steel with acoustic foam backing
Black	Black
35mm Pole Socket	35mm Pole Socket
585 x 365 x 325 mm, 23" x 14.4" x 12.8"	390 x 255 x 195 mm, 15.4" x 10" x 7.7"
10.3Kg, 22.7 lbs	5Kg, 11 lbs
658 x 435 x 360 mm, 25.9" x 17.1" x 14.2"	455 x 300 x 253 mm, 17.9" x 11.8" x 10"
13Kg, 28.7 lbs	6.5Kg, 14.3 lbs
5060109456707	5060109456783

DESIGNED AND ENGINEERED IN THE UK
WWW.HHELECTRONICS.CO.UK