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Professional Audio
Product Catalogue

cie
av solutions

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UK Main Commercial Distributor for Inter-M

Bringing technology to life.

CIE AV Solutions is one of the UK's leading and most innovative Audio Visual and Electronics distributors, supplying professional AV, Intercom and Connectivity solutions to industry. Delivering value-added distribution is key to CIE's success, providing our customers with a unique free system design and consultancy service, training and the highest quality support from end to end of each project.

CIE AV solutions is the **exclusive UK supply partner for Inter-M**. Having worked together for over 25 years, CIE is recognised as one of the most successful Inter-M supply partners in the world.

Over this period, Inter-M's Professional Audio product range has been specified into many of the UK's leading system installations across the full spectrum of commercial and private sectors; resulting in its enviable reputation as 'The Industry Standard' for installed Sound.

Within many of the retail sector's largest high street and supermarket chains, banks & building

societies, airports, places of worship, hospitals and education, you'll find high quality, trusted PA and AV systems powered by Inter-M.

Catalogue Contents

Multiple award winners for outstanding service & innovation

CIE are proud of our multi-award winning history, having repeatedly been recognised by the Audio Visual & Electronics industries as an innovative, forward-thinking and high performing value-added trade distributor.

Our System Design Process

One of the most significant services provided by our AV experts is our free-of-charge System Architecture & Design Service - providing our customers with a unique total project management provision...

- Consultation / site survey
- System scoping & design
- Quotation
- AV Rack Build
- Detailed system architecture
- Delivery to site
- System commissioning
- Training

Audio support from our AV Experts

Whether it's simply advice with choosing the right product for your application, product configuration support, wiring diagrams or detailed advice on system integration or architecture, CIE's team of AV and intercom experts are on-hand to help.

Our team includes fully trained sales support staff, system designers and technical engineers, as well as area account managers who are happy to provide or arrange advice or training at your place of work or on-site at your project.

Just a few examples of the hundreds of AV and Intercom Systems designed and delivered by the CIE team of AV experts, benefitting from our product specification, system architecture and rack build services...

Wembley Park, London

New York Bagel Factory

Nirvana Spa

Bishop Wilson Primary School

Product Service & Repair

Our technical services team also provides a UK-based product Service & Repair provision, ensuring fast and efficient warranty and out-of-warranty support for your products. For all Product Servicing enquiries please contact our Customer Services Team.

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AV Installer Expert Training

CIE provides a wide range of free technical training academies for AV professionals at our Nottingham-based training facility and at venues throughout the UK.

Our AV experts deliver these free one-day academies for installers and integrators, many of which are certified by professional bodies including CEDIA, InfoComm and the HDBaseT Alliance.

To date, we have delivered more than 50 free AV Training Academies to over 400 AV professionals and have recently become the UK's first approved provider of the HDBaseT Alliance's certified HDBaseT Installer Expert Program.

More free AV Training Academies to be announced shortly!..

Tailored training for our customers

Our team of AV technology experts can also provide custom training sessions to meet your needs at our training facility in Nottingham. Contact your CIE account manager to discuss your needs and we'll tailor a specific training programme designed around you.

Whether it be hands-on training on any of our products, technical training on the lastest signal distribution technologies or an introductory course for your trainee installers, the CIE AV experts will deliver high quality, informative but informal training customised just for you and your team.

HowToAV.tv
Industry's leading
AV training channel

CIE is proud to bring **HowToAV.tv** - the first and only free AV training channel - to the audio visual industry, our award-winning online training initiative for AV professionals and end users.

HowToAV is an online channel delivering free technical videocasts on all the lastest AV technologies, installation techniques, jargon-busters and industry news from trade expos from around the world.

Presented by the CIE team of AV experts, plus a whole host of independent AV industry thought

www.howtoav.tv

leaders, HowToAV.tv provides free to view training videocasts on hundreds of technology subjects including 100v Line, low impedance, audio-over-IP, RS-232, induction loops, HDMI, HDBaseT and more - and it's all brought to you free of charge, courtesy of CIE!

Total Project Management from our AV Experts

Let the CIE in-house team of AV and technology experts make your next project as smooth and trouble-free as possible.

CIE is a whole lot more than simply a 'box-shifting' distributor and is a pioneer in the AV industry for 'value-added distribution' - we understand that to compete in this market our customers require the very highest standards of service and support with products and projects.

Total System Support for your AV project

CIE's award-winning team of AV and systems integration experts provides a unique total project management service to the UK installer/integrator market.

Our AV experts offer a wide range of added-value services above and beyond the expectations of many other distributors including; System Design, Product Specification, Wiring Diagrams, Rack Design & Build, System Configuration, Training and Onsite/Remote System Support.

Our customers can access any or all of these services - many of which are totally free-of-charge - on a project by project basis; benefitting from increased skill levels, specialists in new technologies & integration or simply to increase your resource for pre- and post-sales support.

Desktop Mixer-Amplifiers

Inter-M are the market-leaders in professional and commercial amplification.

Our range of **100v line and low impedance Desktop Amplifiers** are packed with innovation and efficiency, whilst remaining easy to use and highly reliable.

Ideal for **public address** and **background music** systems.

Desktop Mixer-Amplifiers

Power Amplifiers

Low Z Power Amplifiers

Processors & Mixers

Audio-over-IP

Audio Sources

Loudspeakers

Conference System

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PA1000B | 30W Mixer Amplifier

The **PA1000B** is a compact, desktop 30 watt mixer amplifier ideal for use in reception areas, waiting rooms, factories, education, AV and retail applications.
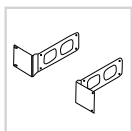
Full range frequency response makes the unit ideal for any voice or background music system. Features 2 x balanced microphone inputs, plus line level input.

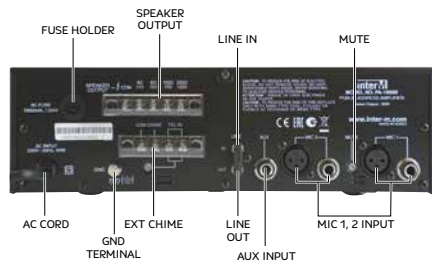The PA1000B also provides bass & treble controls and a four-tone chime for pre-announcement.

Features:

- 2 Mic inputs (¼" jack ~ 3 pin XLR)
- 1 AUX input (¼" jack)
- Line in ~ Line out
- Priority inputs, telephone, Mic 1
- Bass/treble control
- 100v/70v Loudspeaker output
- 8Ω/4Ω Low Z output option
- Remote chime option
- Optional 19" rack kit (BKT-PA1000B)
- 2U high

Specifications	PA1000B
Output Power	30W RMS @ 100v/70v 30W RMS 8Ω/4Ω
Inputs	1 x Mic (¼" jack and 3 pin XLR) 1 x Aux (¼" jack) 1 x Telephone (screw terminal)
Priority	Telephone, Mic 1
Input Sensitivity/ Impedance	Mic 1, 2 = 1m v/ 10kΩ
Frequency Response (±3dB)	60Hz ~ 20kHz
Line In	1v/10kΩ
Line Out	1v/600Ω
Power Requirement	230v AC, 50Hz
Dimensions	300(W) x 88(H) x 268(D)mm
Weight	4.6kg

BKT-PA100B
19" Rack Bracket Option

FUSE HOLDER
SPEAKER OUTPUT
LINE IN
MUTE

AC CORD
EXT CHIME
GND TERMINAL
LINE OUT
AUX INPUT
MIC 1, 2 INPUT

Desktop Mixer-Amplifiers

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inter-M PA-935N AMPLIFIER

MIC 1   MIC 2 / AUX   MIC3 / CD /SATELLITE   BASS   TREBLE   MASTER VOLUME   POWER ON OFF
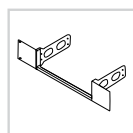
PA935N | 35W Mixer Amplifier

The **PA935N** is a 35 watt compact, desktop mixer amplifier ideal for use in smaller installations such as waiting rooms, office, factories, educational and retail applications.

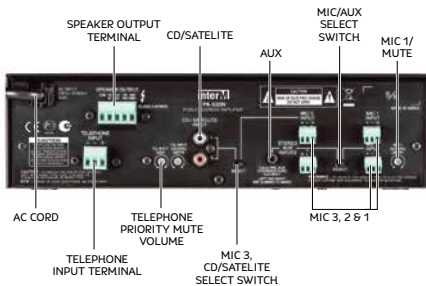Features Telephone Paging Input. Provides clear voice and full range background music.

Features:

- Compact design
- 1 Mic input (¼" jack)
- 2 Mic/AUX switchable (¼" jack/stereo phono)
- Priority inputs, telephone, Mic 1
- Bass/treble control
- 100v/70v loudspeaker output
- 8Ω/4Ω Low Z output option
- Optional 19" rack kit (BKT-PA935A)

Specifications	PA935N
Output Power	35W RMS @ 100v/70v 35W RMS 8Ω/4Ω
Inputs	1 x Mic (¼" jack) 1 x Mic/AUX (¼" jack) 1 x Mic/AUX ~ Sat (¼" jack and stereo phono) 1 x Screw terminal (telephone)
Priority	Telephone, Mic 1
Input Sensitivity/ Impedance	Mic 1/2/3 ~ -50dB/600Ω Aux ~ -15dB/10kΩ Sat ~ 0dB/10kΩ Telephone ~ 0.775v/600Ω
Frequency Response (±3dB)	80Hz ~ 15kHz
Power Requirement	230v AC, 50Hz
Dimensions	290(W) x 76(H) x 185(D)mm
Weight	4.4kg

BKT-935A
19" Rack Bracket Option

SPEAKER OUTPUT TERMINAL   CD/SATELITE   AUX   MIC/AUX SELECT SWITCH   MIC 1/ MUTE

AC CORD   TELEPHONE PRIORITY MUTE VOLUME   MIC 3, 2 & 1

TELEPHONE INPUT TERMINAL   MIC 3, CD/SATELITE SELECT SWITCH

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MA106 | 60W Mixer Amplifier

The **MA106** is a highly compact 60 watt 100v line/low impedance switchable desktop amplifier for standard PA and background music applications and is ideally suited to retail installations or where space is at a premium.

Only 1U in height and just 30cm wide, this newly-styled 60W Class-D amplifier provides both power output and features beyond the expectations of a unit so small.
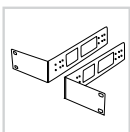
Provides 3 x Mic/Line inputs with Phantom power to Input 1, as well as Telephone input and External Mute.
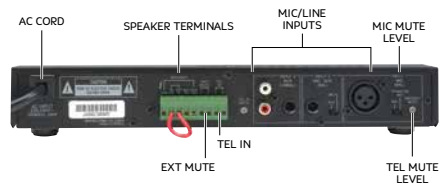
Features:
- 60W Class-D high efficiency amplifier
- 3 x Mic/line inputs
- Highly compact desktop unit
- Separate bass and treble tone controls
- 4Ω/100v line selectable
- External mute and Telephone In
- Optional 19" rack kit available (BKT-MA106)

Specifications	MA106
Output Power	60W RMS @ 100v/4Ω
Inputs	1 x balanced Mic (XLR) complete with phantom power 1 x balanced Mic/Aux (¼" jack) 1 x unbalanced Aux (¼" jack/dual phono)
Priority	Telephone, Mic 1
Frequency Response (±3dB)	80Hz ~ 15kHz
Operating Temperature	-10°C ~ +40°C
Power Requirement	230v AC, 50 ~ 60Hz
Dimensions	300(W) x 44(H) x 230(D)mm
Weight	2.35kg

BKT-MA106
19" Rack Bracket Option

AC CORD   SPEAKER TERMINALS   MIC/LINE INPUTS   MIC MUTE LEVEL

TEL IN

EXT MUTE   TEL MUTE LEVEL

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MA110 | 100W Mixer Amplifier

The **MA110** is a highly compact 100 watt 100v line/low impedance switchable desktop amplifier for standard PA and background music applications and is ideally suited to retail installations or where space is at a premium.
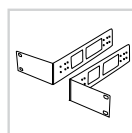
Only 1U in height and just 30cm wide, this newly-styled 100W Class-D amplifier provides both power output and features beyond the expectations of a unit so small.

Provides 3 x Mic/Line inputs with Phantom power to Input 1, as well as Telephone input and External Mute.
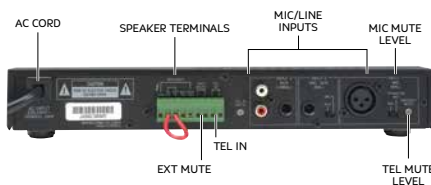
Features:

- 100W Class-D high efficiency amplifier
- 3 x Mic/line inputs
- Highly compact desktop unit
- Phantom Power to Mic Input 1
- Separate bass and treble tone controls
- 4Ω/100v line selectable
- External mute and Telephone In
- Optional 19" rack kit available (BKT-MA106)

Specifications	MA110
Output Power	100W RMS @ 100v/4Ω
Inputs	1 x balanced Mic (XLR) complete with phantom power 1 x balanced Mic/Aux (¼" jack) 1 x unbalanced Aux (¼" jack/dual phono)
Priority	Tel, Mic 1
Frequency Response (±3dB)	80Hz ~ 15kHz
Operating Temperature	-10°C ~ +40°C
Power Requirement	230v AC, 50 ~ 60Hz
Dimensions	300(W) x 44(H) x 230(D)mm
Weight	3kg

BKT-MA106
19" Rack Bracket Option

AC CORD   SPEAKER TERMINALS   MIC/LINE INPUTS   MIC MUTE LEVEL

TEL IN

EXT MUTE   TEL MUTE LEVEL

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Low Z
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PA60 | 60W Integrated Mixer Amplifier

The Inter-M **PA60** is a professional 60 watt integrated mixer amplifier for both 100v line and low impedance loudspeaker systems.
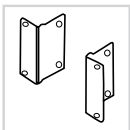
The PA60 Mixer Amplifier can be desktop or rack-mounted and is ideal for commercial audio applications such as background music, paging and public address.

This economical multi-purpose mixer amplifier features 6 inputs; 5x microphone or line level, balanced on XLR female and/or euro terminal block connectors on the rear of the unit. Each input terminal features rear-mounted level selector switch for microphone or line level sensitivity.
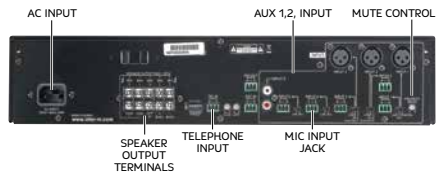
Features:

- High efficiency Class-D Amplifier: for greater power efficiency, reduced physical size and lower heat dissipation
- Multiple Inputs: 6 x Mic/Line inputs, 1 x Telephone input (euroblock connector)
- Priority broadcasting: priority-telephone, Mic 1, Mic 2, chime and siren
- Phantom Power available (INPUT 1 ~ 3) for use with condenser microphones
- Input/Output Monitoring: Channel-specific input signal LED, output level 7 segment Bar graph LED VU meter
- Bass and treble tone controls
- 5 Zone Speaker Selection: allows the selection and audio broadcast to a specific zone, all zones or any combination of 5 zones
- Announce tones: Chime and Siren
- Expandability: Line in/Line out

Specifications **PA60**

Specifications	PA60
Output Power	60W RMS @ 100v line 60W RMS @ 4Ω
Frequency Response (Speaker Output, 1W)	80Hz ~ 17kHz
THD (@Rated Power, 1kHz)	<1%
S/N (@ Rated Output, Line Input)	>78dB
Tone Control (100Hz, 10Hz, +3dB)	+10dB
Input Sensitivity/ Impedance (@ High Impedance Output)	Input 1 ~ 5: Mic -50dBu/2kΩ, Line -10dBu/2kΩ
Operating Temperature	-10°C ~ +44°C
Power Source	230v AC/ 50Hz
Power Consumption	40W
Dimensions	420(W) x 88(H) x 319(D)mm
Weight	6.2kg

BKT-A120
19" Rack Bracket Option

AC INPUT

AUX 1,2, INPUT   MUTE CONTROL

SPEAKER
OUTPUT
TERMINALS

TELEPHONE
INPUT

MIC INPUT
JACK

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PA120 | 120W Integrated Mixer Amplifier

The **PA120** is a professional 120 watt integrated mixer amplifier for both 100v line and low impedance loudspeaker systems.
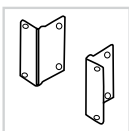
The PA120 Mixer Amplifier can be desktop or rack-mounted and is ideal for commercial audio applications such as background music, paging and public address.

This economical multi-purpose mixer amplifier features 6 inputs; 5x microphone or line level, balanced on XLR female and/or euro terminal block connectors on the rear of the unit. Each input terminal features rear-mounted level selector switch for microphone or line level sensitivity.
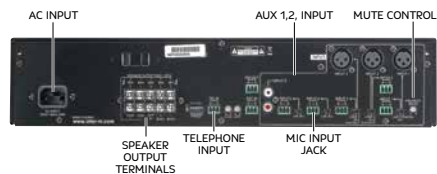
Features:

- High efficiency Class-D Amplifier: for greater power efficiency, reduced physical size and lower heat dissipation
- Multiple Inputs: 6 x Mic/Line inputs, 1 x Telephone input (euroblock connector)
- Priority broadcasting: priority-telephone, Mic 1, Mic 2, chime and siren
- Phantom Power available (INPUT 1 ~ 3) for use with condenser microphones
- Input/Output Monitoring: Channel-specific input signal LED, Output level 7 segment Bar graph LED VU meter
- Bass and treble tone controls
- 5 Zone Speaker Selection: allows the selection and audio broadcast to a specific zone, all zones or any combination of 5 zones
- Announce tones: Chime and Siren
- Expandability: Line in/Line out

Specifications	PA120
Output Power	120W RMS @ 100v line 120W RMS @ 4Ω
Frequency Response (Speaker Output, 1W)	80Hz ~ 17kHz
THD (@Rated Power, 1kHz)	<1%
S/N (@ Rated Output, Line Input)	>78dB
Tone Control (100Hz, 10Hz, +3dB)	+10dB
Input Sensitivity/ Impedance (@ High Impedance Output)	Input 1 ~ 5: Mic -50dBu/2kΩ, Line -10dBu/2kΩ
Operating Temperature	-10°C ~ +44°C
Power Source	230v AC/ 50Hz
Power Consumption	60W
Dimensions	420(W) x 88(H) x 319(D)mm
Weight	7.4kg

BKT-A120
19" Rack Bracket Option

AC INPUT   AUX 1,2, INPUT   MUTE CONTROL

SPEAKER OUTPUT TERMINALS   TELEPHONE INPUT   MIC INPUT JACK

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PA240 | 240W Integrated Mixer Amplifier

The Inter-M **PA240** is a professional 240 watt integrated mixer amplifier for both 100v line and low impedance loudspeaker systems.
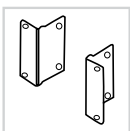
The PA240 Mixer Amplifier can be desktop or rack mounted and is ideal for commercial audio applications such as background music, paging and public address.

This economical multi-purpose mixer amplifier features 6 inputs (5 microphone or line level), balanced on XLR female and/or euro terminal block connectors on the rear of the unit. Each input terminal features rear-mounted level selector switch for microphone or line level sensitivity.
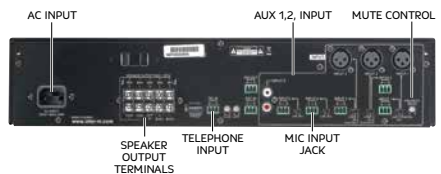
Features:

- High efficiency Class-D Amplifier: for greater power efficiency, reduced physical size and lower heat dissipation
- Multiple Inputs: 6 x Mic/Line inputs, 1 x Telephone input (euroblock connector)
- Priority broadcasting: priority-telephone, Mic 1, Mic 2, chime and siren
- Phantom Power available (INPUT 1 ~ 3) for use with condenser microphones
- Input/Output Monitoring: Channel-specific input signal LED, output level 7 segment Bar graph LED VU meter
- Bass and treble tone controls
- 5 Zone Speaker Selection: allows the selection and audio broadcast to a specific zone, all zones or any combination of 5 zones
- Announce tones: Chime and Siren
- Expandability: Line in/Line out

Specifications	PA240
Output Power	240W RMS @ 100v line 240W RMS @ 4Ω
Frequency Response (Speaker Output, 1W)	80Hz ~ 17kHz
THD (@Rated Power, 1kHz)	<1%
S/N (@ Rated Output, Line Input)	>78dB
Tone Control (100Hz, 10Hz, +3dB)	+10dB
Input Sensitivity/ Impedance (@ High Impedance Output)	Input 1 ~ 5: Mic -50dBu/2kΩ, Line -10dBu/2kΩ
Operating Temperature	-10°C ~ +44°C
Power Source	230v AC/ 50Hz
Power Consumption	90W
Dimensions	420(W) x 88(H) x 319(D)mm
Weight	9.8kg

BKT-A120
19" Rack Bracket Option

AC INPUT   AUX 1,2, INPUT   MUTE CONTROL

SPEAKER OUTPUT TERMINALS   TELEPHONE INPUT   MIC INPUT JACK

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PAM120A | 120W Mixer Amplifier

The **PAM120A** is Inter-M's best selling mixer amplifier, providing a versatile and flexible solution for many applications including AV, church and high-end retail installations.

Featuring 6 input channels and 5 loudspeaker output channels, this professional 120W 100v / low impedance amplifier is ideal for multi-zone PA and BGM installations.

The PAM120A can be further enhanced with the addition of the **PAM-MPM4** Tuner/CD/MP3 Module. This amplifier can be mains AC or 24v DC powered.
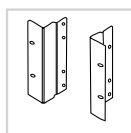
Features:

- 6 Mic/line inputs (3 Pin XLR)
- Optional Tuner/CD/MP3 Module available (PAM-MPM4)
- Priority broadcasting: priority-telephone, Mic 1, Mic 2, chime and siren
- Link input (¼" jack)
- Amp in (¼" jack)
- Pre amp out (¼" jack)
- External chime (screw terminal)
- External mute (screw terminal)
- Individual EQ per input channel
- Individual phantom power (per Mic input)
- Priority Mic 1, Mic 2 (switchable)
- 5 Zone loudspeaker selector
- Bar graph VU metre
- 230v AC/24v DC powered
- Optional 19" rack kit (BKT-PAM)

Specifications — PAM120A

Specifications	PAM120A
Output Power	120W RMS @ 100v/70v line 120W RMS @ 4Ω
Inputs	6 x Mic/line (3 pin XLR)
Priority	Mic 1, Mic 2
Phantom Power	22v DC individually switched per input
Input Sensitivity/ Impedance	Inputs 1 ~ 6, -60dB ~ 16dB, 1mv/10kΩ
Frequency Response	80Hz ~ 20kHz
Link In	100mv/10kΩ
Amp In	1v/600Ω
Power Requirement	230v AC, 50Hz, 24v DC
Dimensions	420(W) x 132(H) x 360(D)mm
Weight	13kg

PAM-MPM4
Tuner/CD/MP3 Module

BKT-PAM
19" Rack Bracket Option

SPEAKER OUTPUT TERMINALS

IMPEDANCE SELECTOR

EX MUTE TERMINAL

LINK INPUT

PHANTOM POWER SWITCH

PRIORITY SWITCH

AC CORD

DC INPUT TERMINAL

AMP INPUT

CHANNEL INPUT GAIN VOLUME

CH1 ~ CH6 INPUTS

3 BAND EQ

EX CHIME TERMINAL

PRE AMP OUTPUT

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PAM340A | 340W Mixer Amplifier

The **PAM340A** is a 340W version of our best selling 100v line Modular Mixer Amplifier.

Featuring 6 Mic/Line Inputs with level control per input, EQ per input, 5 Zone Loudspeaker Output from 5 output channels, switchable input priority and a whole lot more; the Inter-M PAM340A provides versatility and flexibility for many, public address and background music applications including AV, church and high end retail installations.

The PAM340A can be further enhanced with the addition of the **PAM-MPM4** CD/MP3/Tuner Module. Also features multi-zone paging microphone interface allowing simple 5 zone paging using optional **RM-05A** multi-zone microphone.

Features:

- 6 Mic/line inputs (3 Pin XLR)
- Optional Tuner/CD/MP3 Module available *(PAM-MPM4 - see page 19)*
- Link input (¼" jack)
- Amp in (¼" jack)
- Pre amp out (¼" jack)
- External chime (screw terminal)
- Zone Mic interface (15 pin D-type)
- External mute (screw terminal)
- Individual EQ per input channel
- Individual phantom power (per Mic input)
- Priority Mic 1, Mic 2 (switchable)
- 5 Zone loudspeaker selector
- Optional 5 Zone Microphone Console *(RM-05A - see page 20)*
- Bar graph VU metre
- Optional 19" rack kit (BKT-PAM)
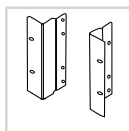
Specifications — PAM340A

Specifications	PAM340A
Output Power	340W RMS @ 100v
Inputs	6 x Mic/line (3 pin XLR)
Priority	Mic 1, Mic 2
Phantom Power	22v DC individually switched per input channel
Input Sensitivity/ Impedance	Inputs 1 ~ 6, -60dB ~ 16dB, 1mv/10kΩ
Frequency Response	80Hz ~ 20kHz
Power Requirement	230v AC, 50Hz
Dimensions	420(W) x 132(H) x 360(D)mm
Weight	13.5kg

PAM-MPM4
Tuner/CD/MP3 Module

RM-05A
5 Zone Microphone Console

BKT-PAM
19" Rack Bracket Option

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PHANTOM POWER SWITCH
PRIORITY SWITCH
AC CORD
RM-05A INPUT TERMINAL
AMP INPUT
CHANNEL INPUT GAIN VOLUME
CH1~CH6 INPUTS
3 BAND EQ
EX CHIME TERMINAL
PRE AMP OUTPUT

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PAM480A | 480W Mixer Amplifier

The **PAM480A** is a 480W version of our best selling 100v line Modular Mixer Amplifier.

Featuring 6 Mic/Line Inputs with level control per input, EQ per input, 5 Zone Loudspeaker Output, switchable input priority and a whole lot more; the Inter-M PAM480A provides versatility and flexibility for many public address and background music applications including AV, church and high end retail installations.

The PAM480A can be further enhanced with the addition of the **PAM-MPM4** CD/MP3/Tuner Module. Also features multi-zone paging microphone interface allowing simple 5 zone paging using optional **RM-05A** multi-zone microphone.

Features:

- 6 Mic/line inputs (3 Pin XLR)
- Optional Tuner/CD/MP3 Module available *(PAM-MPM4 - see page 19)*
- Link input (¼" jack)
- Amp in (¼" jack)
- Pre amp out (¼" jack)
- External chime (screw terminal)
- Zone Mic interface (15 pin D-type)
- External mute (screw terminal)
- Individual EQ per input channel
- Individual phantom power (per Mic input)
- Priority Mic 1, Mic 2 (switchable)
- 5 Zone loudspeaker selector
- Optional 5 Zone Microphone Console *(RM-05A - see page 20)*
- Bar graph VU metre
- Optional 19" rack kit (BKT-PAM)

Specifications — PAM480A

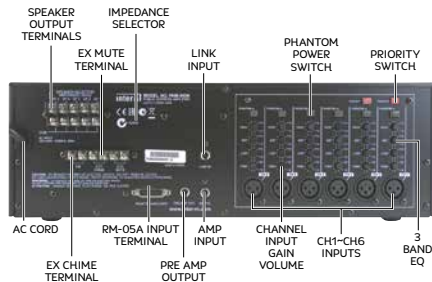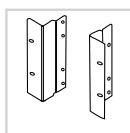| Specifications	PAM480A
Output Power	480W RMS @ 100v
Inputs	6 x Mic/line (3 pin XLR)
Priority	Mic 1, Mic 2
Phantom Power	22v DC individually switched per input channel
Input Sensitivity/Impedance	Inputs 1 ~ 6, -60dB ~ 16dB, 1mv/10kΩ
Frequency Response	80Hz ~ 20kHz
Power Requirement	230v AC, 50Hz
Dimensions	420(W) x 132(H) x 360(D)mm
Weight	15.5kg

PAM-MPM4
Tuner/CD/MP3 Module

RM-05A
5 Zone Microphone Console

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PRIORITY SWITCH

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RM-05A INPUT TERMINAL

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CHANNEL INPUT GAIN VOLUME

CH1~CH6 INPUTS

3 BAND EQ

EX CHIME TERMINAL

PRE AMP OUTPUT

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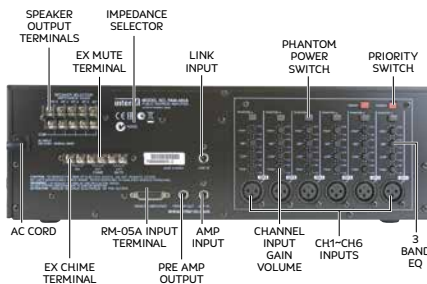
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PAM520
240W Mixer Amplifier with Zone Attenuation

The Inter-M **PAM520** is our latest addition to the best-selling PAM series of professional 100v line Mixer Amplifiers.

This latest 240 watt version features volume attenuation to each of the five output channels, allowing individual volume control per zone controlled directly from the amplifier.

The PAM520 can be fitted with the **PAM-MPM4** Tuner/CD/MP3 Module (requires removal of monitor loudspeaker module supplied as standard). This new PAM model also features built-in monitor speaker for checking of output signals.

Features:

- 5x Attenuation/Volume Controls to allow adjustment of the 5x Loudspeaker Outputs (100v line)
- 4x Selectable Mic/Line XLR Inputs, with Phantom Power and EQ facility
- 2x Stereo RCA Inputs for BGM Sources
- 1x Telephone Input (Priority)
- 1x Monitor Loudspeaker Module (this can be removed and replaced with CD/Tuner/MP3 Module) *(PAM-MPM4 - see page 19)*
- Emergency Mute Terminal for connection to PA System
- Optional Zone Paging Microphone connection port *(RM-05A - see page 20)*
- Individual EQ per input channel
- Individual phantom power (per Mic input)
- 230v AC /24v DC powered
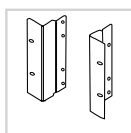- Optional 19" rack kit (BKT-PAM)

Specifications	PAM520
Output Power	240W RMS @ 100v line (Maximum 50W per output) 240W RMS @ 4Ω
Speaker Zone 1 ~ 5 Output	50W MAX
Input Sensitivity/ Impedance	Mic -60dBv 600Ω Line -30dBv 10kΩ
S/N	>85dB
Phantom Power	24v DC
Operating Temperature	-10°C ~ +40°C
Power Source	240v AC, 50/60Hz, 24v DC
Power Consumption	320W
Dimensions	482(W) x 132(H) x 398(D)mm
Weight	19kg

PAM-MPM4
Tuner/CD/MP3 Module

RM-05A
5 Zone Microphone Console

BKT-PAM
19" Rack Bracket Option

SPEAKER OUT 1 ~ 5
RM-05A INPUT TERMINAL
PRIORITY BUTTON
PROGRAMMABLE ZONES
LINE IN
4X MIC INPUTS

DC INPUT
REC OUT
AC INPUT
REMOTE POWER
AMP IN/ PRE OUT

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PAM-MPM4 | Tuner/CD/MP3 Module

The Inter-M **PAM-MPM4** is an integrated Tuner/CD/MP3 Input Module exclusively for use with the PAM Series of Modular Mixer Amplifiers.

The unit can be easily installed and fits into one of the PAM Amplifier's module units on the front of the amplifier. The unit includes CD Player, MP3 Player via USB input and FM Tuner.

Can be used with any of the Inter-M PAM120A, PAM340A, PAM480A or PAM520 models.

Features:
- For use with PAM Series modular amplifiers
- CD/USB/DRP (Digital Record and Playback/ SD Memory)
- CD+USB, DRP 9SD Memory Portable FM Tuner
- CD Long-life Function
- FM 30 Memories

Specifications	PAM-MPM4
Frequency Response	20Hz ~ 20kHz, ±1.5dB
THD + N (with a filter)	<0.08% (<0.1%)
S/N Ratio (with a filter)	>80dB
Output Signal Level	1.2v
Capacity of internal memory	2GB
Tuner Range of receipt frequency	FM: 87.5 ~ 108MHz
Antenna input	75Ω unbalanced
Operating Temperature	-10°C ~ +40°C
Power Source	17v DC, 22v
Dimensions	184(W) x 55(H) x 180(D)mm
Weight	0.95kg

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RM-05A | 5 Zone Microphone Console

The Inter-M **RM-05A** Remote 5-zone Paging Microphone operates exclusively with the PAM340A, PAM480A and PAM520 Amplifiers and provides the facility of a simple 'one cable' multi-zone solution.

The RM-05A paging unit also includes output level LED VU metre, gain/level control and chime facility. Power is provided by the host amplifier.

Features:

- For use with PAM340A, PAM480A and PAM520 amplifiers
- Individual channel selection or all-call
- Flexible condenser-type microphone
- Pre-announcement chime
- LED output level indicator
- Supplied with 3 metre connection cable (D-sub termination)

Specifications	RM-05A
Output Level/ Impedance	1v, 200mv (max gain)/600Ω balanced
MIC Input Sensitivity/ Impedance	0.8mv, 0.2mv/600Ω balanced
Frequency Response	120Hz ~ 8kHz, 3dB
THD	<0.7%
S/N	>50dB
Speaker Control Terminal & Switch	5 channels
Power Source	24v DC (used by D-Sub connector)
Element	Back Electret Condenser
Polar Pattern	Uni-directional
Frequency Response	50Hz ~ 16kHz
Sensitivity	-45dB, 3dB (0dB=1v/Pa @ 1kHz)
Dimensions	194(W) x 60(H) x 205(D)mm
Weight	1.87kg

Power Amplifiers

Inter-M's market leading range of **100v line power amplifiers** for medium to large installed PA and BGM systems.

The Inter-M Power Amplifier is the back bone to many of the UK's largest and most successful commercial audio systems, powering public address and background music systems for projects as diverse as universities and schools, hospitals, shopping centres and high street retail, offices, banking and much more.

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DPA50E | 8 x 50W 100v line Power Amplifier

The new **DPA50E** is an 8 channel 100v line Power Amplifier which provides the perfect solution for small scale multizone systems such as schools and leisure facilities.

Each unit has 8x 50W 100v or Low Z 4/8 ohm outputs which may be wired as independent channels or can be configured using the Signal Link feature which links inputs to outputs.
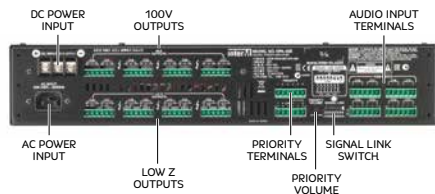
The DPA50E also features a Priority Function, allowing the broadcast of a connected Priority Signal across the system, activated by voltage-free contact closure on the rear panel.

Powered via 230v AC or 24v DC for emergency backup systems.

Features:

- 8 channel, 50W output
- Class-D High-efficiency power amplifier
- 100v/70v line or low impedance loudspeaker output
- AC and DC power operation
- Priority function activated by voltage-free contact closure
- Over-voltage protection circuitry

Specifications	DPA50E
Rated Output Power	8 x 50W @ 100v/70v line 8 x 30W @ 8Ω 8 x 50W @ 4Ω
Gain	4Ω/8Ω (24dB typical) 70v (37dB typical) 100v (40dB typical)
Input Sensitivity	1v/10kΩ balanced
Maximum input level	+20dBu minimum
S/N	20Hz ~ 20kHz, AES17 >80dB
THD	20Hz ~ 20kHz, ½ power ~ 0.1% max
Frequency Response	1W, 80Hz ~ 20kHz, 4Ω ±1dB/-3dB
Operating Temperature	-10°C ~ +40°C
Power Consumption	220 ~ 240v AC, 50/60Hz, 24v DC
Dimensions	482(W) x 88(H) x 420(D)mm
Weight	18kg

DC POWER INPUT   100V OUTPUTS   AUDIO INPUT TERMINALS

AC POWER INPUT   LOW Z OUTPUTS   PRIORITY TERMINALS   SIGNAL LINK SWITCH   PRIORITY VOLUME

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DPA150Q | 4 x 150W 100v line Power Amplifier

The **DPA150Q** is a four channel (4 x 150W) 100v line Class-D Amplifier for professional zoned public address, AV and background music systems and rackbuilds.

Housed within a compact and discreet 2U high casing, this 4 x 150W 100v line power amplifier offers both size and weight reduction benefits.
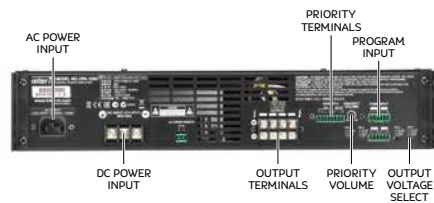
The DPA150Q's Class-D amplification ensures significant effiency improvements (typically 80% efficient compared to an average of 40% efficiency expected from conventional amplification).

The DPA amplifier series also features Priority function, allowing the broadcast of a priority signal input to override the system.

Features:

- Quad channel 4 x 150W output
- Class-D high-efficiency power amplifier
- 100v line/8Ω
- Only 2U rack height
- AC and DC power operation
- Switch Mode power supply
- Priority Program Input
- Remote Power ON/OFF control via control input
- Priority Function activated by voltage-free contact closure

Specifications	DPA150Q
Rated Output Power	4 x 150W @ 100v/70v line 4 x 150W @ 8Ω
Frequency Response	50Hz ~ 20kHz
Input Sensitivity	<1v/10kΩ balanced
THD	<0.2%
S/N	>100dB
Operating Temperature	-10°C ~ +40°C
Power Source	24v DC, 220 ~ 240v AC, 50/60Hz
Dimensions	482(W) x 88(H) x 367(D)mm
Weight	6.8kg

AC POWER INPUT

PRIORITY TERMINALS

PROGRAM INPUT

DC POWER INPUT

OUTPUT TERMINALS

PRIORITY VOLUME

OUTPUT VOLTAGE SELECT

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DPA300S | 1 x 300W 100v line Power Amplifier

The **DPA300S** is a 300W, 100v line Class-D Power Amplifier for professional PA, AV and background music installations and rackbuilds.
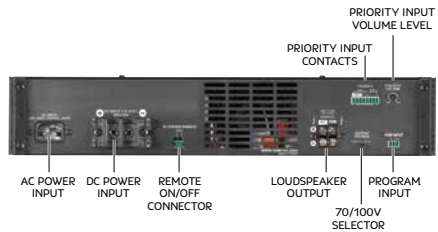
Housed in a discreet and compact 2U casing, this 100v line, single-channel Power Amplifier offers both size and weight reduction benefits. The DPA300S features Class-D amplification circuitry and a switch mode power supply to provide significant efficiency improvements. This compact, professional power amplifier is ideal for large scale PA systems where high power is required over a long speaker line (such as shopping malls, supermarkets, colleges, airports etc).

The DPA amplifier series also features Priority function, allowing the broadcast of a priority signal input to override the system.

Features:

- Single channel, 300W output
- Class-D High-efficiency, high power amplifier
- 100v/70v selector
- Only 2U rack height
- AC and DC power operation
- Switch Mode power supply
- Priority Program Input
- Remote Power ON/OFF control via control input
- Priority Function activated by voltage-free contact closure

Specifications	DPA300S
Output Power	300W @ 100v/70v line
Input Sensitivity	1v/10kΩ balanced
THD Max Output Power	<0.1%
THD Rated Power	<0.03%
S/N	>103dB
Frequency Response	50Hz ~ 20kHz
Operating Temperature	-10°C ~ +40°C
Operating Power	220 ~ 240v AC, 50/60Hz, 24v DC
Power Consumption	130W
Dimensions	482(W) x 88(H) x 397(D)mm
Weight	6.8kg

PRIORITY INPUT VOLUME LEVEL

PRIORITY INPUT CONTACTS

AC POWER INPUT

DC POWER INPUT

REMOTE ON/OFF CONNECTOR

LOUDSPEAKER OUTPUT

70/100V SELECTOR

PROGRAM INPUT

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DPA300D | 2 x 300W 100v line Power Amplifier

The **DPA300D** is a dual channel (2 x 300W) 100v line Class-D Power Amplifier for professional zoned PA, AV and background music installations and rackbuilds.
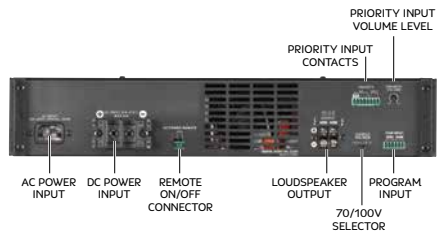
Housed in a discreet and compact 2U casing, this 2 x 300 watt, 100v line Power Amplifier offers both size and weight reduction benefits. The DPA300D features Class-D amplification circuitry and a switch-mode power supply to provide significant efficiency improvements (typically up to 90% efficient compared to an average of 40% efficiency in conventional amplification).

The DPA amplifier series also features Priority function, allowing the broadcast of a priority signal input to override the system.

Features:

- Dual channel, 2 x 300W output
- Class-D high-efficiency power amplifier
- 100v/70v selector
- Only 2U rack height
- AC and DC power operation
- Switch Mode power supply
- Priority Program Input
- Remote Power ON/OFF control via control input
- Priority Function activated by voltage-free contact closure

Specifications	DPA300D
Output Power	2 x 300W @ 100v/70v line
Frequency Response	30Hz ~ 20kHz (-3dB)
Input Sensitivity	1v/10kΩ balanced
THD	<1%
S/N	95dB
Operating Temperature	-10°C ~ +40°C
Power Source	24v DC, 220 ~ 240v AC, 50/60Hz
Dimensions	482(W) x 88(H) x 397(D)mm
Weight	13.75kg

PRIORITY INPUT VOLUME LEVEL

PRIORITY INPUT CONTACTS

AC POWER INPUT   DC POWER INPUT   REMOTE ON/OFF CONNECTOR   LOUDSPEAKER OUTPUT   PROGRAM INPUT

70/100V SELECTOR

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DPA300T | 3 x 300W 100v line Power Amplifier

The Inter-M **DPA300T** is a three channel (3 x 300W) 100v line Class-D Power Amplifier for professional, zoned PA, AV and background music installations and rackbuilds.
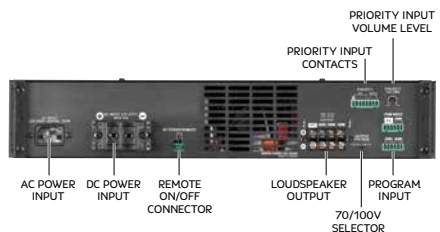
Housed in a discreet and compact 2U casing, this 3 x 300 watt, three-channel Power Amplifier offers both size and weight reduction benefits. The DPA300T features Class-D amplification circuitry and a switch mode power supply to provide significant efficiency improvements (typically up to 90% efficient compared to an average of 40% efficiency in conventional amplification).

The DPA amplifier series also features Priority function, allowing the broadcast of a priority signal input to override the system.

Features:

- Three channel, 3 x 300W output
- Class-D High-efficiency, high power amplifier
- 100v/70v selector
- Only 2U rack height
- AC and DC power operation
- Switch Mode power supply
- Priority Program Input
- Remote Power ON/OFF control via control input
- Priority Function activated by voltage-free contact closure

Specifications	DPA300T
Output Power	3 x 300W @ 100v/70v line
Frequency Response	30Hz ~ 20kHz (-3dB)
Input Sensitivity	1v/10kΩ balanced
THD	<1%
S/N	95dB
Operating Temperature	-10°C ~ +40°C
Power Source	24v DC, 220 ~ 240v AC, 50/60Hz
Dimensions	482(W) x 88(H) x 450(D)mm
Weight	16.5kg

PRIORITY INPUT VOLUME LEVEL

PRIORITY INPUT CONTACTS

AC POWER INPUT

DC POWER INPUT

REMOTE ON/OFF CONNECTOR

LOUDSPEAKER OUTPUT

70/100V SELECTOR

PROGRAM INPUT

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DPA300Q | 4 x 300W 100v line Power Amplifier

The **DPA300Q** is a Quad channel (4 x 300W) 100v line Class-D Power Amplifier for professional, zoned PA, AV and background music installations and rackbuilds.
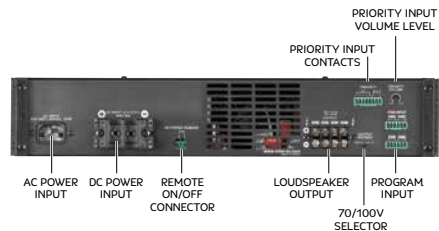
Housed in a discreet and compact 2U casing, this 4 x 300 watt, 100v line Power Amplifier offers both size and weight reduction benefits. The DPA300Q features Class-D amplification circuitry and a switch mode power supply to provide significant efficiency improvements (typically up to 90% efficient compared to an average of 40% efficiency in conventional amplification).

The DPA amplifier series also features Priority function, allowing the broadcast of a priority signal input to override the system.

Features:

- Dual channel, 4 x 300W output
- Class-D high-efficiency power amplifier
- 100v/70v selector
- Only 2U rack height
- AC and DC power operation
- Switch Mode power supply
- Priority Program Input
- Remote Power ON/OFF control via control input
- Priority Function activated by voltage-free contact closure

Specifications	DPA300Q
Output Power	4 x 300W @ 100v/70v line
Frequency Response	30Hz ~ 20kHz (-3dB)
Input Sensitivity	1v/10kΩ balanced
THD	<1%
S/N	95dB
Operating Temperature	-10°C ~ +40°C
Power Source	24v DC, 220 ~ 240v AC, 50/60Hz
Dimensions	482(W) x 88(H) x 450(D)mm
Weight	19.25kg

PRIORITY INPUT VOLUME LEVEL

PRIORITY INPUT CONTACTS

AC POWER INPUT   DC POWER INPUT   REMOTE ON/OFF CONNECTOR   LOUDSPEAKER OUTPUT   PROGRAM INPUT

70/100V SELECTOR

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DPA600S | 1 x 600W 100v line Power Amplifier

The **DPA600S** is a 600W, 100v line Class-D Power Amplifier for professional, zoned PA, AV and background music installations and rackbuilds.
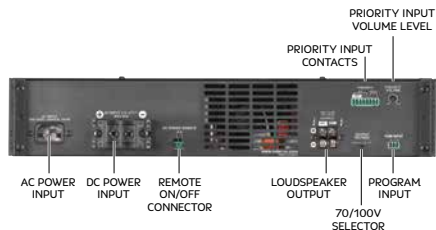
Housed in a discreet and compact 2U casing, this 600 watt, 100v line Power Amplifier offers both size and weight reduction benefits. The DPA600S features Class-D amplification circuitry and a switch mode power supply to provide significant efficiency improvements (typically up to 90% efficient compared to an average of 40% efficiency in conventional amplification).

The DPA amplifier series also features Priority function, allowing the broadcast of a priority signal input to override the system.

Features:

- Single channel, 600W output
- Class-D high-efficiency power amplifier
- 100v/70v selector
- Only 2U rack height
- AC and DC power operation
- Switch Mode power supply
- Priority Program Input
- Remote Power ON/OFF control via control input
- Priority Function activated by voltage-free contact closure

Specifications	DPA600S
Output Power	600W @ 100v/70v line
Input Sensitivity	1v/10kΩ balanced
THD Max Output Power	<1%
THD Rated Power	<1%
S/N	>103dB
Frequency Response	50Hz ~ 20kHz
Operating Temperature	-10°C ~ +40°C
Operating Power	220 ~ 240v AC, 50/60Hz, 24v DC
Power Consumption	130W
Dimensions	482(W) x 88(H) x 450(D)mm
Weight	6.8kg

PRIORITY INPUT VOLUME LEVEL

PRIORITY INPUT CONTACTS

AC POWER INPUT

DC POWER INPUT

REMOTE ON/OFF CONNECTOR

LOUDSPEAKER OUTPUT

70/100V SELECTOR

PROGRAM INPUT

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DPA600D | 2 x 600W 100v line Power Amplifier

The Inter-M **DPA600D** is a Dual channel (2 x 600W) 100v line Class-D Power Amplifier for professional, zoned PA, AV and background music installations and rackbuilds.
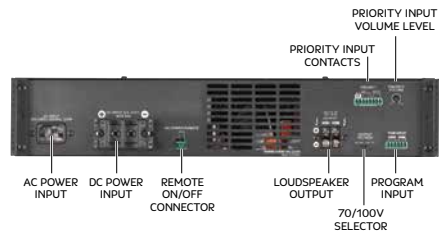
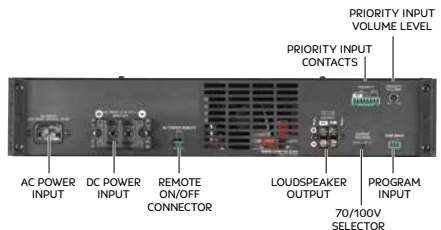Housed in a discreet and compact 2U casing, this 2 x 600 watt, 100v line Power Amplifier offers both size and weight reduction benefits. The DPA600D features Class-D amplification circuitry and a switch mode power supply to provide significant efficiency improvements (typically up to 90% efficient compared to an average of 40% efficiency in conventional amplification).

The DPA amplifier series also features Priority function, allowing the broadcast of a priority signal input to override the system.

Features:

- Dual channel, 2 x 600W output
- Class-D high-efficiency power amplifier
- 100v/70v selector
- Only 2U rack height
- AC and DC power operation
- Switch Mode power supply
- Priority Program Input
- Remote Power ON/OFF control via control input
- Priority Function activated by voltage-free contact closure

Specifications	DPA600D
Output Power	2 x 600W @ 100v/70v line
Frequency Response	30Hz ~ 20kHz (-3dB)
Input Sensitivity	1v/10kΩ balanced
THD	<1%
S/N	95dB
Operating Temperature	-10°C ~ +40°C
Power Source	220 ~ 240v AC, 50/60Hz, 24v DC
Dimensions	482(W) x 88(H) x 450(D)mm
Weight	13.75kg

PRIORITY INPUT VOLUME LEVEL

PRIORITY INPUT CONTACTS

AC POWER INPUT | DC POWER INPUT | REMOTE ON/OFF CONNECTOR | LOUDSPEAKER OUTPUT | PROGRAM INPUT

70/100V SELECTOR

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DPA900S | 1 x 900W 100v line Power Amplifier

The **DPA900S** is a 900W, 100v line Class-D Power Amplifier for professional, zoned PA, AV and background music installations and rackbuilds.

Housed in a discreet and compact 2U casing, this 900 watt, 100v line Power Amplifier offers both size and weight reduction benefits.

The DPA900S features Class-D amplification circuitry and a switch mode power supply to provide significant efficiency improvements.
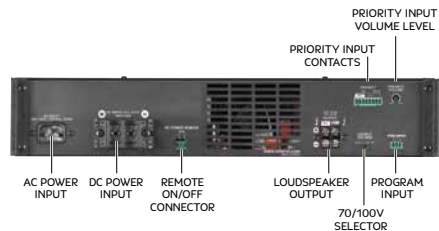
The DPA amplifier series also features Priority function, allowing the broadcast of a priority signal input to override the system.

Features:

- Single channel, 900W output
- Class-D high-efficiency power amplifier
- 100v/70v selector
- Only 2U rack height
- AC and DC power operation
- Switch Mode power supply
- Priority Program Input
- Remote Power ON/OFF control via control input
- Priority Function activated by voltage-free contact closure

Specifications	DPA900S
Output Power	900W @ 100v/70v line
Input Sensitivity	1v/10kΩ balanced
THD Max Output Power	<0.1%
THD Rated Power	<0.03%
S/N	>103dB
Frequency Response	50Hz ~ 20kHz
Operating Temperature	-10°C ~ +40°C
Operating Power	220 ~ 240v AC, 50/60Hz, 24v DC
Power Consumption	250W
Dimensions	482(W) x 88(H) x 450(D)mm
Weight	11kg

PRIORITY INPUT
VOLUME LEVEL

PRIORITY INPUT
CONTACTS

AC POWER INPUT   DC POWER INPUT   REMOTE ON/OFF CONNECTOR   LOUDSPEAKER OUTPUT   PROGRAM INPUT

70/100V SELECTOR

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DPA1200S | 1 x 1200W 100v line Power Amplifier

The new **DPA1200S** is a 1200W, 100v line Class-D Power Amplifier for professional, zoned PA, AV and background music installations and rackbuilds.

Housed in a discreet and compact 2U casing, this 1200 watt, 100v line Power Amplifier offers both size and weight reduction benefits. The DPA1200S features Class-D amplification circuitry and a switch mode power supply to provide significant efficiency improvements.

This amplifier also provides dual input capabilities, allowing a priority input signal to override the standard/normal input signal; an ideal feature to support emergency paging systems.

The DPA amplifier series also features Priority function, allowing the broadcast of a priority signal input to override the system.

Features:

- Single channel, 1200W output
- Class-D high-efficiency power amplifier
- 100v/70v selector
- Only 2U rack height
- AC and DC power operation
- Switch Mode power supply
- Priority Program Input
- Remote Power ON/OFF control via control input
- Priority Function activated by voltage-free contact closure

Specifications	DPA1200S
Output Power	1200W @ 100v/70v line
Input Sensitivity	1v/10kΩ balanced
THD Max Output Power	<0.1%
THD Rated Power	<0.03%
S/N	>103dB
Frequency Response	50Hz ~ 20kHz
Operating Temperature	-10°C ~ +40°C
Operating Power	220 ~ 240v AC, 50/60Hz, 24v DC
Power Consumption	250W
Dimensions	482(W) x 88(H) x 450(D)mm
Weight	11kg

PRIORITY INPUT VOLUME LEVEL

PRIORITY INPUT CONTACTS

AC POWER INPUT DC POWER INPUT REMOTE ON/OFF CONNECTOR LOUDSPEAKER OUTPUT PROGRAM INPUT

70/100V SELECTOR

Mira Showers: Networked PA System

Mira Showers Cheltenham factory features fully-networked Public Address, Background Music and Emergency Messaging System.

Client:

For almost 100 years, Mira Showers has been leading the way in the UK showering market, offering high quality showering solutions to the individual and the contract market; including showers, fittings, enclosures, trays and wall panels.

System Requirements:

Mira Showers manufacturing plant in Cheltenham required a complete overhaul of its public address and emergency messaging system to provide clear and flexible staff communication.

The Solution:

Working together with CIE's system design team, the audio system integrator's accepted proposal combined the latest IP audio with 100v line amplification and loudspeakers; Audio-over-IP technology with a store and record facility for pre-recorded messages, integrates with the existing telephone system. and uses CIE's Inter-M range of 100v line professional amplification. The Inter-M Power Amplifiers are the 'power' behind the system, integrating with the existing audio-over-IP technology to drive almost 40 loudspeakers throughout the site.

Products used in this project

Inter-M - PAM480A 480W Mixer Amplifier

Inter-M - DPA-600S 600W 100v Power Amplifier

Low Impedance Power Amplifiers

Low impedance stereo and quad amplifiers for professional audio systems and installations.

The Inter-M range of **multi-channel professional amplifiers** provides high-quality, reliable and robust power for large scale and complex multi zone public address and background music systems.

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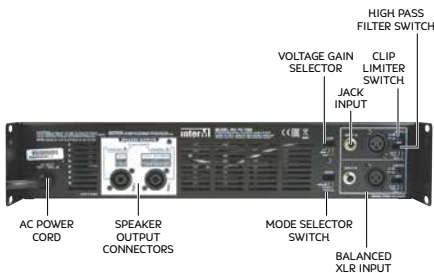# V2-1000 | Stereo Amplifier 300W + 300W 4Ω

The **V2-1000** is a 300W x 300W (4Ω) Professional Stereo Amplifier for high-end music installations requiring maximum performance and reliability.

It features new contemporary styling in a compact, space saving unit - only 2U high for 19" rack mounting.

Including a stable switch mode power supply (SMPS) for low power consumption and weight reduction, plus fan cooling and comprehensive protection facilities for over-drive, DC & short circuit; this 2 x 300W low impedance amplifier is ideal for mid to high range music installations including pub, bar, club and AV applications.

Features:

- Variable fan cooling
- Comprehensive protection circuits
- Low impedance output (2/4/8Ω)
- Bridge mono option
- Balanced inputs (XLR ~ ¼" jack)
- Outputs (speakon-binding post)
- Mains powered
- 2U high, 19" rack mounting

Specifications	V2-1000
Stereo Mode	300W @ 4Ω
Stereo Mode	550W @ 2Ω
Bridged Mono Mode	650W @ 8Ω
Bridged Mono Mode	1100W @ 4Ω
Input Sensitivity Rated output power	1v @ 4Ω
Frequency Response (1W @ 8Ω)	20Hz ~ 20kHz
Signal to Noise Ratio (Rated output power @ 4Ω)	106dB
Input Impedance	12kΩ balanced
Indicators	Active, Clip/Port
Protection Circuitry	Full Short Circuit, Thermal Protection, Power ON/OFF Muting, DC Output Protection
Cooling	Variable Speed Fans, front to rear air flow
Power Source	230v AC, 50Hz
Dimensions	482(W) x 88(H) x 408(D)mm
Weight	10.9kg

HIGH PASS FILTER SWITCH

VOLTAGE GAIN SELECTOR

CLIP LIMITER SWITCH

JACK INPUT

AC POWER CORD

SPEAKER OUTPUT CONNECTORS

MODE SELECTOR SWITCH

BALANCED XLR INPUT

Desktop Mixer-Amplifiers

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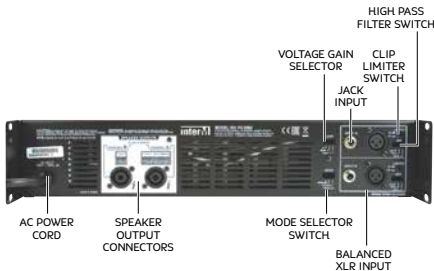**interM**

V2-2000 | Stereo Amplifier 500W + 500W 4Ω

The **V2-2000** is a 500W x 500W (4Ω) Professional Stereo Amplifier for high-end music installations requiring maximum performance and reliability.
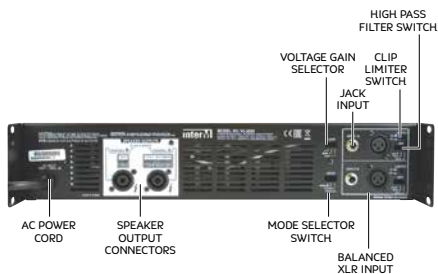
Featuring new contemporary styling in a compact, space saving unit - only 2U high for 19" rack mounting.

Including a stable switch mode power supply (SMPS) for low power consumption and weight reduction, plus fan cooling and comprehensive protection facilities for over-drive, DC & short circuit; this 2 x 500W low impedance amplifier is ideal for mid to high range music installations including pub, bar, club and AV applications.

Features:

- Variable fan cooling
- Comprehensive protection circuits
- Low impedance output (2/4/8Ω)
- Bridge mono option
- Balanced inputs (XLR ~ ¼" jack)
- Outputs (speakon-binding post)
- Mains powered
- 2U high, 19" rack mounting

Specifications	V2-2000
Stereo Mode	500W @ 4Ω
Stereo Mode	850W @ 2Ω
Bridged Mono Mode	1000W @ 8Ω
Bridged Mono Mode	1700W @ 4Ω
Input Sensitivity Rated output power	1v @ 4Ω
Frequency Response (1W @ 8Ω)	20Hz ~ 20kHz
Signal to Noise Ratio (Rated output power @ 4Ω)	106dB
Input Impedance	12kΩ balanced
Indicators	Active, Clip/Port
Protection Circuitry	Full Short Circuit, Thermal Protection, Power ON/OFF Muting, DC Output Protection
Cooling	Variable Speed Fans, front to rear air flow
Power Source	230v AC, 50Hz
Dimensions	482(W) x 88(H) x 408(D)mm
Weight	10.9kg

HIGH PASS FILTER SWITCH

VOLTAGE GAIN SELECTOR

CLIP LIMITER SWITCH

JACK INPUT

AC POWER CORD

SPEAKER OUTPUT CONNECTORS

MODE SELECTOR SWITCH

BALANCED XLR INPUT

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V2-3000 | Stereo Amplifier 900W + 900W 4Ω

The **V2-3000** is a 900W x 900W (4Ω) Professional Stereo Amplifier for high-end music installations requiring maximum performance and reliability.

Featuring new contemporary styling in a compact, space saving unit - only 2U high for 19" rack mounting.

Including a stable switch mode power supply (SMPS) for low power consumption and weight reduction, plus fan cooling and comprehensive protection facilities for over-drive, DC & short circuit; this 2 x 900W low impedance amplifier is ideal for mid to high range music installations including pub, bar, club and AV applications.

Features:

- Variable fan cooling
- Comprehensive protection circuits
- Low Impedance output (2/4/8Ω)
- Bridge mono option
- Balanced inputs (XLR ~ ¼" jack)
- Outputs (speakon-binding post)
- Mains powered
- 2U high, 19" rack mounting

Specifications	V2-3000
Stereo Mode	900W @ 4Ω
Stereo Mode	1500W @ 2Ω
Bridged Mono Mode	1800W @ 8Ω
Bridged Mono Mode	3000W @ 4Ω
Input Sensitivity Rated output power	1v @ 4Ω
Frequency Response (1W @ 8Ω)	20Hz ~ 20kHz, ±0.3dB
Signal to Noise Ratio (Rated output power @ 4Ω)	106dB
Input Impedance	12kΩ balanced
Indicators	Active, Clip/Port
Protection Circuitry	Full Short Circuit, Thermal Protection, Power ON/OFF Muting, DC Output Protection
Cooling	Variable Speed Fans, front to rear air flow
Power Source	230v AC, 50Hz
Dimensions	482(W) x 88(H) x 408(D)mm
Weight	12kg

HIGH PASS FILTER SWITCH

VOLTAGE GAIN SELECTOR

CLIP LIMITER SWITCH

JACK INPUT

AC POWER CORD

SPEAKER OUTPUT CONNECTORS

MODE SELECTOR SWITCH

BALANCED XLR INPUT

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V2-4000 | Stereo Amplifier 1200W + 1200W 4Ω

The **V2-4000** is a 1200W x 1200W (4Ω) Professional Stereo Amplifier for high-end music installations requiring maximum performance and reliability.
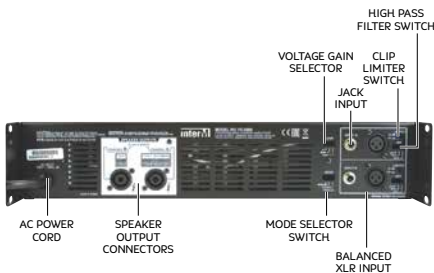
The V2-4000 features new contemporary styling in a compact, space saving unit – only 2U high for 19" rack mounting.
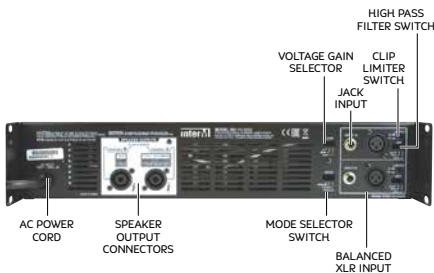
Including a stable switch mode power supply (SMPS) for low power consumption and weight reduction, plus fan cooling and comprehensive protection facilities for over-drive, DC & short circuit; this 2 x 1200W low impedance amplifier is ideal for mid to high range music installations including pub, bar, club and AV applications.

Features:

- Variable fan cooling
- Comprehensive protection circuits
- Low impedance output (2/4/8Ω)
- Bridge mono option
- Balanced inputs (XLR - ¼" jack)
- Outputs (speakon-binding post)
- Mains powered
- 2U high, 19" rack mounting

Specifications	V2-4000
Stereo Mode	1200W @ 4Ω
Stereo Mode	1900W @ 2Ω
Bridged Mono Mode	2400W @ 8Ω
Bridged Mono Mode	3800W @ 4Ω
Input Sensitivity Rated output power	1v @ 4Ω
Frequency Response (1W @ 8Ω)	20Hz ~ 20kHz ± 3dB
Signal to Noise Ratio (Rated output power @ 4Ω)	106dB
Input Impedance	12kΩ balanced
Indicators	Active, Clip/Port
Protection Circuitry	Full Short Circuit, Thermal Protection, Power ON/OFF Muting, DC Output Protection
Cooling	Variable Speed Fans, front to rear air flow
Power Source	230v AC, 50Hz
Dimensions	482(W) x 88(H) x 408(D)mm
Weight	12.1kg

HIGH PASS FILTER SWITCH

VOLTAGE GAIN SELECTOR

CLIP LIMITER SWITCH

JACK INPUT

AC POWER CORD

SPEAKER OUTPUT CONNECTORS

MODE SELECTOR SWITCH

BALANCED XLR INPUT

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V2-5000 | Stereo Amplifier 1700W + 1700W 4Ω

The **V2-5000** is a 1700W x 1700W (@ 4Ω) Professional Stereo Amplifier for high-end music installations requiring maximum performance and reliability.

The V2-5000 features new contemporary styling in a compact, space saving unit – only 2U high for 19" rack mounting.

Including a stable switch mode power supply (SMPS) for low power consumption and weight reduction, plus fan cooling and comprehensive protection facilities for over-drive, DC & short circuit; this 2 x 1700W low impedance amplifier is ideal for mid to high range music installations including pub, bar, club and AV applications.

Connections are via XLR / ¼" jack inputs and Speakon / Binding Post outputs to the rear of the unit.

Features:

- Variable fan cooling
- Comprehensive protection circuits
- Low Impedance output (2/4/8Ω)
- Bridge mono option
- Balanced inputs (XLR - ¼" jack)
- Outputs (speakon-binding post)
- Mains powered
- 2U high, 19" rack mounting

Specifications	V2-5000
Stereo Mode	1700W @ 4Ω
Stereo Mode	2500W @ 2Ω
Bridged Mono Mode	3400W @ 8Ω
Bridged Mono Mode	5000W @ 4Ω
Input Sensitivity Rated output power	1.4v @ 8Ω
Frequency Response (1W @ 8Ω)	20Hz ~ 20kHz ±0.3dB
Signal to Noise Ratio (Rated output power @ 4Ω)	106dB
Input Impedance	12kΩ balanced
Indicators	Active, Clip/Port
Protection Circuitry	Full Short Circuit, Thermal Protection, Power ON/OFF Muting, DC Output Protection
Cooling	Variable Speed Fans, front to rear air flow
Power Source	230v AC, 50Hz
Dimensions	482(W) x 88(H) x 408(D)mm
Weight	12.5kg

HIGH PASS
FILTER SWITCH

VOLTAGE GAIN
SELECTOR

CLIP
LIMITER
SWITCH

JACK
INPUT

AC POWER
CORD

SPEAKER
OUTPUT
CONNECTORS

MODE SELECTOR
SWITCH

BALANCED
XLR INPUT

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Processors & Mixers

The Inter-M range of **Audio Processors and Mixers** is ideal to refine and control multiple audio signals in professional PA and Background Music Rack systems.

The range includes multi-channel Mixers, Pre-amplifiers, Audio Matrices and more for full control of complex audio systems.

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PP6213 | 9 Input Mic/Line/Aux Mixer

The Inter-M **PP6213** Mic/Line/Aux Mixer is ideal as part of a multi-channel public address/ 19" rack system.

With Inputs 1 and 2 featuring priority override and ducking over channels 3 ~ 9, the PP6213 supports paging override in large scale background music systems such as restaurants, supermarkets and retail or transportation terminals.

Channel inputs 1 and 2 also feature phantom power for use with condenser microphones.

All 9 inputs feature low, mid and high EQ for individual tone control per input device.

Features:

- 9 microphones/line inputs
- 3 tone EQ all inputs
- 2 auxiliary inputs
- Phantom Power on channels 1&2
- 2 sub output on ¼" jack
- 1 record output on ¼" jack
- Master output on balanced XLR connector
- 4 tone EQ on output
- Effect insert between preamp and out section
- 2U high, 19" rack mounting

Specifications	PP6213
Rated Output (1kHz)	Master Output +4dBm/600Ω balanced Sub 1/2 Output +4dBm/600Ω unbalanced Rec Output -10dBm/10kΩ unbalanced
Input Sensitivity/ Impedance	Mic (CH1 ~ CH9), -60dBm/600Ω balanced Line (CH1 ~ CH6), -20dBm/47kΩ balanced Line (CH7 ~ CH9), -20dBm/47kΩ unbalanced Aux 1, 2 ~ 10dBm/20kΩ unbalanced Priority 1/2 0dBm/20kΩ unbalanced Insert 0dBm/20kΩ unbalanced
T.H.D	<0.3%
Frequency Response	30Hz ~ 20kHz (+1dB, -3dB)
Input Channel Equalizer	High ±12dB (10kHz) Mid ±12dB (1kHz) Low ±12dB (100kHz)
Output Channel Equalizer	High ±12dB (10kHz) High ~ Mid ±12dB (2kHz) Low ~ Mid ±12dB (400kHz) Low ±12dB (80kHz)
Residual Noise (at V/R Min)	< -90dB
Crosstalk	< -60dB
Phantom Power	+18v DC
Operating Temperature	-10°C ~ +40°C
Power Source	220 ~ 240v AC, 50/60Hz, 24v DC
Power Consumption	10W
Dimensions	482(W) x 88(H) x 280(D)mm
Weight	4.8kg

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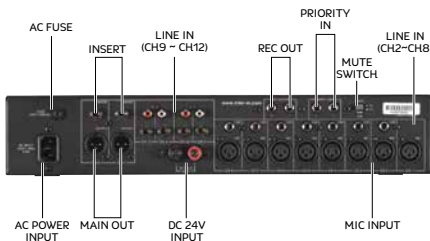
PP6214 | Mixer Pre-Amplifier

The PP6214 is a two output pre-amplifier allowing any of the 10 input signals to be routed to either Output 1, Output 2 or both.

Ideal for dual-zone audio rack systems for applications in factories, leisure centres, hotels and general PA installations.

Features:

- 8 Mic inputs (XLR)
- 8 Line inputs (¼" jack)
- 2 Stereo inputs (phono/¼" jack)
- 2 Outputs (XLR)
- Phantom Power (18v block switched)
- Record output (2 x ¼" jack)
- Priority, Mic 1, priority input 1, priority input 2
- 3 Band EQ per output
- Signal allocation per input channel
- Mains or 24v DC powered
- 2U high, 19" rack mounting

Specifications	PP6214
Inputs	8 Mic (XLR) 8 Mono Line (¼" Jack) 2 Stereo Line (2 x ¼"/2 x Stereo)
Outputs	2 x XLR (CH1 & 2) 2 x ¼" jack (Record out L/R)
Input Sensitivity/ Impedance	Mic: -60dB/600Ω balanced Line: -30dB/10KΩ balanced
Stereo	+4dB, -10dB, -20dB/10Ω unbalanced
Output Sensitivity/ Impedance	+4dBm/600Ω balanced
Rec Out	-6dB/10KΩ
Phantom Power	Mic: 1~8: 18v DC, Block Swithced
Frequency Response	20Hz ~ 20kHz
Power Requirement	230v AC, 50Hz, 24v DC
Dimensions	482(W) x 88(H) x 280(D)mm
Weight	12.8kg

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PX8000 | 8 x 8 Audio Matrix

The Inter-M **PX8000** is an 8x8 Audio Matrix which provides a versatile, simple to operate multi-zone audio distribution system for applications such as hotels, leisure complexes, retail outlets and multi-room public address/background music installations.

Designed to simplify a multi-zone, multiple-input audio system, the PX8000 is a fully configurable controller routing up to 8 audio sources, (voice, background music, tones and recordings, etc.) to any of 8 destination zones.

The system also features 4xRJ45 sockets to connect up to 4 optional **RM8000** Remote Microphone Consoles, plus an additional 8xRJ45 sockets for up to 8 optional **LM8000** Remote Wall-mount Controls.

Features:

- 8 IN ~ 8 OUT Matrix Unit
- Simple and easy to use - clear LED indications, illuminated buttons and fader-type volume controls
- BGM input level LED/output level meter (LEDs)
- Paging via remote Mic (up to 4 units) or via front panel zone control panel
- Auto address allocation for **LM8000/RM8000** on connection
- Monitor Loudspeaker - for monitoring the selected audio input source
- Emergency Message - in-built Digital Message Store allowing recording and broadcast of an emergency message, activated by dry contact closure per zone (if no emergency message is recorded, this facility can be used as an Emergency Mute)
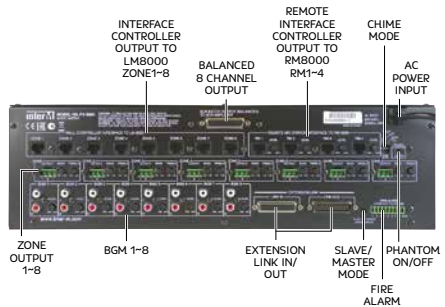- Multiple Units are linkable via D-sub 25pin

Specifications | PX8000

Paging Mic	50dB (balanced)
BGM Audio Input	8 x -10dB (unbalanced)
Audio Output	0dB (balanced)
Sampling Frequency	8kHz
Recording Duration	30 seconds
Total Harmonic Distortion	<0.03% (20kHz LPF)
Signal to Noise Ratio	>75dB (20kHz LPF)
Power Source	230v AC
Dimensions	482(W) x 132(H) x 380(D)mm
Weight	8.50kg
Weight	10.67kg

LM8000 Remote Wallmount Control

RM8000 Remote Microphone Console

INTERFACE CONTROLLER OUTPUT TO LM8000 ZONE1~8

BALANCED 8 CHANNEL OUTPUT

REMOTE INTERFACE CONTROLLER OUTPUT TO RM8000 RM1~4

CHIME MODE

AC POWER INPUT

ZONE OUTPUT 1~8

BGM 1~8

EXTENSION LINK IN/ OUT

SLAVE/ MASTER MODE

PHANTOM ON/OFF

FIRE ALARM

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LM8000
Mic/Line Input Plate and Volume Control

For exclusive use with the **PX8000** Audio Matrix, the **LM8000** Remote Control Wallplate provides a whole lot more than just remote volume control at the end of the line.

It also provides audio source selection from any of the 8 sources connected to the PX8000, plus 3.5mm line input socket and ¼" jack microphone input - both with their own volume level control.

The LM8000 Wallplate features selected channel LED display, line and microphone inputs, plus volume level control. Connects to the PX8000 Matrix unit via standard Cat5e/6 cable.

Features:
- For use with **PX8000** 8x8 Audio Matrix
- Connectivity via standard Cat5e/6 cable
- Remote Volume Control of Zone
- Selector Switch for choice of 8 audio sources from Matrix
- 2.5mm jack for Remote Line Input
- ¼" jack for Remote Microphone Input
- Level Control for Remote Line & Mic Inputs
- Bright LED display of selected source

Specifications	LM8000
Mic Input	-50dB (balanced)
BGM Audio Input	-10dB (balanced)
Audio Output	0dB (balanced)
Maximum Cable Distance	300 metres
Power Source	Powered from PX8000
Dimensions	70(W) x 114(H) x 52(D)mm
Weight	0.13kg

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RM8000 | 8 Zone Paging Console

The Inter-M **RM8000** Remote Microphone Station is a desktop microphone/controller, exclusively for use with the **PX8000** 8x8 Audio Matrix.

This desktop microphone will allow broadcast to any or all of the PX8000's eight zones and also features a dip-switch for selecting an internal chime.

Connects to the PX8000 Matrix unit via standard Cat5e/6 cable.

Features:

- For use with **PX8000** 8 x 8 Audio Matrix
- Connectivity via standard Cat5e/6 cable
- Broadcast to any or all 8 zones from the PX8000 Matrix
- High quality semi-rigid gooseneck microphone
- Removeable microphone connected via XLR

Specifications	RM8000
Mic Input	60dB (balanced)
BGM Audio Input	0dB (balanced)
Audio Output	0dB (balanced)
Maximum Cable Distance	300 metres
Power Source	Powered from PX8000
Dimensions	200(W) x 70(H) x 206(D)mm
Weight	1.40kg

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LM9228 | Line Level Monitor Panel

The **LM9228** will monitor up to 8 separate line level audio signals. Split into 2 groups of 4, each group has an individual line selector with visual LED indicator and volume control for the device's built-in monitor loudspeakers.

Inputs and outputs are XLR and the LM9228 is easily integrated into any line level signal path.

Features:

- 2 groups of 4 individual channels
- 2 x internal loudspeakers with volume control
- Inputs via XLR
- Outputs via XLR
- 24v DC powered
- 2U high, 19" rack mounting

Specifications	LM9228
Zones/Channels	8 x @ Line Level (2 x Groups of 4)
Line In/Out (per channel)	XLR
Loudspeaker Power	1.5W
Channel Activation	Latching Switch with in-built LED
Power Requirement	24v DC
Dimensions	482(W) x 88(H) x 280(D)mm
Weight	7.5kg

GROUP 2 LINE INPUTS   GROUP 1 LINE INPUTS

GROUP 2 LINE OUTPUTS   DC 24v INPUT   GROUP 1 LINE OUTPUTS

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PB6207 | Battery Charger

For use with any of the Inter-M power amplifier range, the **PB6207** allows the use of DC batteries for systems which require back-up in the event of mains failure.

By continuous monitoring of the batteries, the PB6207 will automatically charge, thus keeping the batteries in good condition until needed.

Status and condition of the batteries is shown on a clear LED display on the front panel.

Features:

- 1 large LED status / display shows volts and amps
- DC input terminals (on rear)
- Mains powered
- 2U high, 19" rack mounting

Specifications	PB6207
Charging Current	3A
Charging Voltage	27.3v DC
Display	LED, volts and amps
Protection	Overcurrent and overcharge
Power Requirement	230v AC 50Hz
Dimensions	482(W) x 88(H) x 280(D)mm
Weight	6.2kg

DC INPUT/OUTPUT

AC INPUT   BATTERY CHARGER

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Audio-over-IP

Audio-over-IP (also known as AoIP or Networked Audio) is the latest audio signal distribution technology, allowing long distance, fully controllable voice and music to be distributed over standard Ethernet cable for background music and public address applications.

The Inter-M range offers audio-over-IP for commercial PA and background music applications, as well as advanced Dante solutions offering low-latency, uncompressed audio transmission.

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Low Z Power Amplifiers

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Audio-over-IP

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AOE212N │ 2Ch Audio-Over-IP Transceiver

The **AOE212N** is an audio-over-IP (AoIP) distribution system which allows for long distance transmission of voice, background music and audio messaging via standard TCP/IP LAN or WAN ethernet networks.

This is a bi-directional device meaning that this same unit can be used as either transmitter or receiver.

The Audio-over-IP solution fits into a distributed audio system by connecting up to 8 audio sources to an AOE212N configured as the 'Transmitter'. This is connected to a standard network via Cat5e/6/6e cabling, transmitting both high quality audio and data (for device switching and RS-232) to up to 60 'remote' amplifier zones/sites over LAN or 20 over WAN. At each remote zone an AOE212N is configured as the receiver and is connected to a standard 100v line or low impedance amplifier.

When used in conjunction with an Inter-M PMU Series amplifier or RFA102 Receiver, the AOE212N is only required as a transmitter device.

Features:

- High quality audio and control data transmission over standard LAN/WAN
- Long-distance signal transmission using Ethernet network
- AOE212N configured as either Transmitter or Receiver device
- Transmit to multiple IP end-points; 1 ~ 20 via WAN, 1 ~ 60 over LAN
- Compatible with Inter-M PMU Series Network Amplifiers or RFA102 Receivers
- Uncompressed and Compressed digital audio transmission
- 2-channel bi-directional data transmission (for 8x8 contact-closure device control or RS-422/RS-232 control integration)
- Compatible with both 100v line and low impedance audio systems
- 1U high, 19" rack mounting

Specifications AOE212N

Specifications	AOE212N
Maximum Input Level	+20dBu
Maximum Output Level	+20dBu
T.H.D. (48kHz Sampling)	<0.1%
Support Sampling Frequencies	8/16/32/44.1/48kHz
Quantization bits	24bit
Communication Input / Output	Input 8 Channel, Output 8 Channel
Serial Communication Rate	2400 ~ 115200 bps
Ethernet (LAN)	10 ~ 100 Base-T, RJ45
Power Source	220 ~ 240v AC or 24v DC
Power Consumption	28W
Dimensions	482(W) x 44(H) x 280(D)mm
Weight	3.27kg

RFA102
Audio-over-IP Receiver

DC INPUT
RS-232 OUTPUT
ON/OFF
AC INPUT
CH1 & 2
CONTACT OUTPUT
ETHERNET PORT

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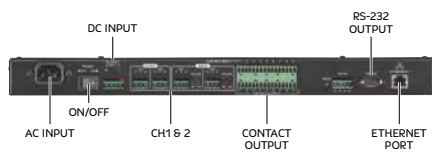
RFA102 | 2Ch Audio-Over-IP Receiver

The **RFA102** is an audio-over-IP (AoIP) Receiver device for exclusive use in conjunction with Inter-M's **AOE212N** Transceiver.

Used together, the RFA102 and AOE212N allow for long distance voice and music signal transmission over standard TCP/IP LAN or WAN ethernet networks.

The RFA102 offers a reduced-cost alternative to using the AOE212N in 'Receiver' mode. Compatible with both 100v line and low impedance audio systems.

Features:

- For use exclusively with **AOE212N** Audio-over-IP Transceiver
- High quality audio and control data transmission using Ethernet network
- Long-distance signal transmission
- Transmit to multiple IP-end-points; 1 ~ 20 via WAN, 1 ~ 60 over LAN
- Uncompressed and Compressed digital audio transmission
- 2-channel bi-directional data transmission (for 8 x 8 contact-closure device control or RS-422/RS-232 control integration)
- Compatible with both 100v line and low impedance audio systems
- 1U high, 19" rack mounting

Specifications	RFA102
THD (@0 dBFS, 1kHz)	<0.1%
S/N (@0 dBFS, 1kHz)	>70dB
Output Level (@0 dBFS, 1kHz)	16 ±3dBv
Ethernet (LAN)	10/100 Base-T, RJ45
Operation Temperature	-10°C ~ +40°C
Power Source	220 ~ 240v AC, 50/60Hz, 24v DC
Power Consumption	5.8W
Dimensions	482(W) x 44(H) x 280(D)mm
Weight	3.1kg

AOE212N
Audio-over-IP Transceiver

SERVICE PORT · AUDIO OUTPUTS · ETHERNET PORT · REMOTE OUTPUT · STEREO RCA · 24V DC OUTPUT · RESET · AC INPUT

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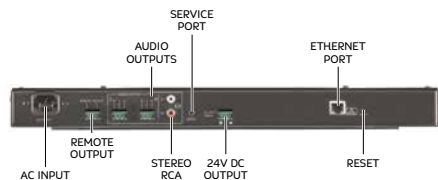
DAC122
Dante™ 2x2 Audio-over-IP Encoder/Decoder (Line only)

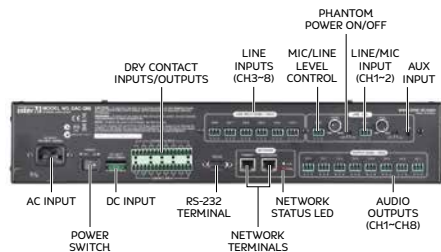The **DAC122** is a digital audio-over-IP Encoder/Decoder which utilises Dante network audio transmission technology.

This audio-over-IP Encoder/Decoder provides 2 In / 2 Out line level switching to transmit high quality audio signals via standard Ethernet cable over longer distances.

Ideal for long distance and campus-wide public address, BGM and music installed systems.

Features:
- Interoperability with other Dante supported products & brands
- PC control of input/output assignment
- Web browser configuration
- 2 Line level inputs (via 3 pin XLRs)
- 2 Line Level outputs (via 3 pin XLRs)
- Single network port and status LED
- 1U high, 19" rack mounting

Specifications

Specifications	DAC122
Max Input Level	+20dBu
Max Output Level	+20dBu
Frequency Response (0±3dB)	20Hz ~ 20kHz
T.H.D (@ +20dBu, 1kHz, LPF 20kHz)	<0.01%
Sampling Frequency	48kHz
Quantization Bit	24bit
S/N (@ Input +20dBu, 1kHz, LPF 20kHz)	>100dB
Ethernet (LAN)	10/100 Base-Tx
Operation Temperature	-10°C ~ +40°C
Power Source	220 ~ 240v AC, 50/60Hz, 24v DC
Power Consumption	10W
Dimensions	482(W) x 44(H) x 280(D)mm
Weight	2.91kg

NETWORK TERMINAL   AUDIO OUTPUTS   AUDIO INPUTS

AC INPUT   DC INPUT   NETWORK STATUS LED

POWER SWITCH

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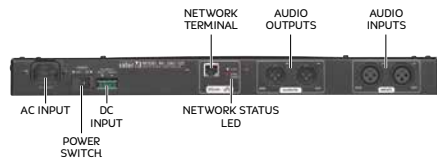
DAC288
Dante™ 8x8 Audio-over-IP Encoder/Decoder (Mic/Line)

The **DAC288** is a digital audio-over-IP Encoder/Decoder which utilises Dante network audio transmission technology.

This audio-over-IP Encoder/Decoder provides 8 x 8 audio signal matrixing via 8 input channels (2 of which are Mic/Line selectable) and 8 output channels, to transmit and control high quality audio signals via standard Ethernet cable over longer distances.

Uniquely, Inter-M Dante audio-over-IP products also support contact-closure data transmission combined with RS232 or RS485 serial data.

Features:

- Interoperability with other Dante supported products & brands
- PC control of input/output assignment
- Web browser configuration
- 8 audio inputs (LINE/Mic Input 1~2, LINE Input 3~8)
- 8 audio outputs (LINE OUTPUTS 1~8)
- 2 phantom switches and 2 volume controls (LINE/Mic Input 1~2)
- 1 source input (LINE/Mic Input 1, volume control possible from PC)
- Data tunneling, 8 contacts input/output dry contact
- 2 network input port and status LED
- 2U high, 19" rack mounting

Specifications — DAC288

Max Input Level	LINE: +20dBu, Mic: -30dBu
Max Output Level	+20dBu
Frequency Response	20Hz ~ 20kHz
T.H.D.	<0.1%
Sampling Frequency	48kHz
Quantization Bit	24bit
Communication	Dry Contact, RS-232C
Dry Contact	8 Input, 8 Output
Baudrate	9600 bps ~ 115200bps
Ethernet (LAN)	10/100/1000 Base ~ Tx (RJ-45)
Operating Temperature	0°C ~ +40°C
Power Source	240v AC, 50/60Hz, 24v DC
Power Consumption	25W
Dimensions	482(W) x 88(H) x 280(D)mm
Weight	6kg

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DASR-288

Dante™ 8x8 Audio-over-IP Encoder/Decoder (Line only)

The **DASR-288** is a digital audio-over-IP Encoder/Decoder which utilises Dante network audio transmission technology.
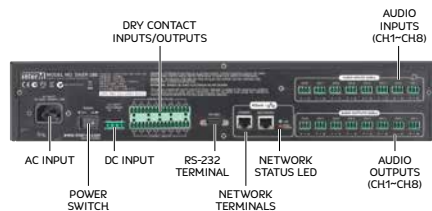
This audio-over-IP Encoder/Decoder provides 8 x 8 audio signal matrixing via 8 Line input channels and 8 output channels, to transmit high quality audio signals via standard Ethernet cable over longer distances.

Uniquely, Inter-M Dante audio-over-IP products also support contact-closure data transmission combined with RS232 or RS485 serial data.

Features:

- Interoperability with other Dante supported products & brands
- PC control of input/output assignment
- Web browser configuration
- 8 audio LINE inputs
- 8 audio LINE outputs
- Data tunneling, 8 contacts input/output dry contact
- 2 network input port and status LED
- 2U high, 19" rack mounting

Specifications	DASR-288
Max Input Level	LINE: +20dBu
Max Output Level	+20dBu
Frequency Response	20Hz ~ 20kHz
T.H.D.	<0.1%
Sampling Frequency	48kHz
Quantization Bit	24bit
Communication	Dry Contact, RS-232C
Dry Contact	8 Input, 8 Output
Baudrate	9600 bps ~ 115200bps
Ethernet (LAN)	10/100/1000 Base ~ Tx (RJ-45)
Operating Temperature	0°C ~ +40°C
Power Source	230v AC, 50/60Hz, 24v DC
Power Consumption	25W
Dimensions	482(W) x 88(H) x 280(D)mm
Weight	4.01kg

DRY CONTACT INPUTS/OUTPUTS

AUDIO INPUTS (CH1~CH8)

AC INPUT   DC INPUT   RS-232 TERMINAL   NETWORK STATUS LED   AUDIO OUTPUTS (CH1~CH8)

POWER SWITCH   NETWORK TERMINALS

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PMU60N
60W 6 Input Network Mixer Amplifier

The **PMU60N** is a 6 input 60W Mixer Amplifier with built-in digital media player and network connectivity for audio-over-IP signal distribution.

The amplifier's digital media player allows playback of MP3/WMA/WAV audio files directly from a USB media stick, whilst an on-board processor allows for Internet Radio capabilities*.

The PMU60N can also form part of an Audio-over-IP system (when used in conjunction with the **AOE212N** Transceiver) for long distance audio transmission via standard TCP/IP LAN or WAN ethernet networks.
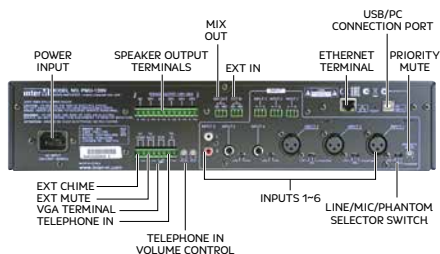
Features:

- Built-in MP3/WMA/WAV player, audio files are accessible via front panel USB input for USB memory stick
- Built-in USB PC sound card allows direct input of PC audio via rear panel USB connector
- Streaming Network Audio input via rear RJ45 connector *(for use with Inter-M AOE212N, page 48)*
- On-board Internet Radio via rear RJ45 connector (requires internet connection)
- 2.8" colour LCD screen displays operations status, output level, internet radio channel, USB MP3 song/artist/cover art
- Switch Mode Power Supply (SMPS) technology delivers high power output with energy efficient, low power consumption
- 6 input mixer amplifier with 5 microphone/line level selection
- Phantom Power to inputs 1, 2 and 3
- Signal indicator confirms and displays signal present for each input
- Bass and treble tone control
- 5 zone loudspeaker selector switches, allowing for independent or all-zone broadcast

Specifications	PMU60N
Rated Output Power	60W @ 100v line/4Ω
Frequency Response (SP OUT/1W output)	80Hz ~ 15kHz
T.H.D. @ Rated output 1kHz	<0.5%
S/N Rated output	< -78dB
Graphic Equaliser (100Hz, 330Hz, 1kHz, 3.3kHz, 10kHz)	±10dB
Input 1 ~ 5	Mic -50dBu/2kΩ Line -10dBu/2kΩ
Input 6	0dBu/10kΩ
Tel In	0dBu/10kΩ
Ext In	0dBu/20kΩ
Amp In	0dBu/47kΩ
Mix Out/Impedance	0dBu/10kΩ
Operating Temperature	-10°C ~ +40°C
Dimensions	420(W) x 88(H) x 319(D)mm
Weight	5kg

POWER INPUT   SPEAKER OUTPUT TERMINALS   MIX OUT   EXT IN   USB/PC CONNECTION PORT   ETHERNET TERMINAL   PRIORITY MUTE

EXT CHIME
EXT MUTE
VGA TERMINAL
TELEPHONE IN

TELEPHONE IN VOLUME CONTROL

INPUTS 1~6

LINE/MIC/PHANTOM SELECTOR SWITCH

* requires internet connection

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PMU120N
120W 6 Input Network Mixer Amplifier

The **PMU120N** is a 6 input 120 watt Mixer Amplifier with built-in digital media player and network connectivity for audio-over-IP signal distribution.
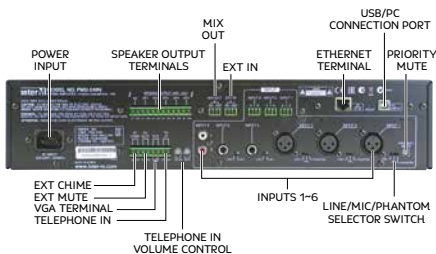
The amplifier's digital media player allows playback of MP3/WMA/WAV audio files directly from a USB media stick, whilst an on-board processor allows for Internet Radio capabilities*.

The PMU120N can also form part of an Audio-over-IP system (when used in conjunction with the **AOE212N** Transceiver) for long distance audio transmission via standard TCP/IP LAN or WAN ethernet networks.

Features:

- Built-in MP3/WMA/WAV player, audio files are accessible via front panel USB input for USB memory stick
- Built-in USB PC sound card allows direct input of PC audio via rear panel USB connector
- Streaming Network Audio input via rear RJ45 connector *(for use with Inter-M AOE212N, page 48)*
- On-board Internet Radio via rear RJ45 connector (requires internet connection)
- 2.8" colour LCD screen displays operations status, output level, internet radio channel, USB MP3 song/artist/cover art
- Switch Mode Power Supply (SMPS) technology delivers high power output with energy efficient, low power consumption
- 6 input mixer amplifier with 5 microphone/line level selection
- Phantom Power to inputs 1, 2 and 3
- Signal indicator confirms and displays signal present for each input
- Bass and treble tone control
- 5 zone loudspeaker selector switches, allowing for independent or all-zone broadcast

Specifications — PMU120N

Specifications	PMU120N
Rated Output Power	120W @ 100v line/4Ω
Frequency Response (SP OUT/1W output)	80Hz ~ 15kHz
T.H.D. @ Rated output 1kHz	<0.5%
S/N Rated output	< -78dB
Graphic Equaliser (100Hz, 330Hz, 1kHz, 3.3kHz, 10kHz)	±10dB
Input 1 ~ 5	Mic -50dBu/2kΩ Line -10dBu/2kΩ
Input 6	0dBu/10kΩ
Tel In	0dBu/10kΩ
Ext In	0dBu/20kΩ
Amp In	0dBu/47kΩ
Mix Out/Impedance	0dBu/10kΩ
Operating Temperature	-10°C ~ +40°C
Dimensions	420(W) x 88(H) x 328(D)mm
Weight	5.2kg

POWER INPUT · SPEAKER OUTPUT TERMINALS · MIX OUT · EXT IN · USB/PC CONNECTION PORT · ETHERNET TERMINAL · PRIORITY MUTE

EXT CHIME
EXT MUTE
VGA TERMINAL
TELEPHONE IN

TELEPHONE IN VOLUME CONTROL

INPUTS 1~6

LINE/MIC/PHANTOM SELECTOR SWITCH

* requires internet connection

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PMU240N
240W 6 Input Network Mixer Amplifier

The **PMU240N** is a 6 input 240 watt Mixer Amplifier with built-in digital media player and network connectivity for audio-over-IP signal distribution.
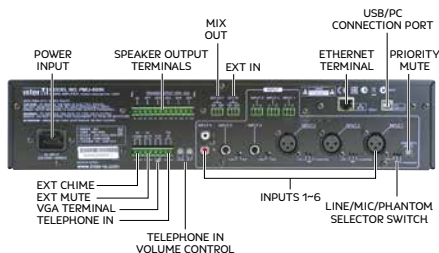
The amplifier's digital media player allows playback of MP3/WMA/WAV audio files directly from a USB media stick, whilst an on-board processor allows for Internet Radio capabilities*.

The PMU240N can also form part of an Audio-over-IP system (when used in conjunction with the AOE212N Transceiver) for long distance audio transmission via standard TCP/IP LAN or WAN ethernet networks.

Features:

- Built-in MP3/WMA/WAV player, audio files are accessible via front panel USB input for USB memory stick
- Built-in USB PC sound card allows direct input of PC audio via rear panel USB connector
- Streaming Network Audio input via rear RJ45 connector *(for use with Inter-M AOE212N, page 48)*
- On-board Internet Radio via rear RJ45 connector (requires internet connection)
- 2.8" colour LCD screen displays operations status, output level, internet radio channel, USB MP3 song/artist/cover art
- Switch Mode Power Supply (SMPS) technology delivers high power output with energy efficient, low power consumption
- 6 input mixer amplifier with 5 microphone/line level selection
- Phantom Power to inputs 1, 2 and 3
- Signal indicator confirms and displays signal present for each input
- Bass and treble tone control
- 5 zone loudspeaker selector switches, allowing for independent or all-zone broadcast

Specifications	PMU240N
Rated Output Power	240W @ 100v line/4Ω
Frequency Response (SP OUT/1W output)	80Hz ~ 15kHz
T.H.D. @ Rated output 1kHz	<0.5%
S/N Rated output	< -78dB
Graphic Equaliser (100Hz, 330Hz, 1kHz, 3.3kHz, 10kHz)	±10dB
Input 1 ~ 5	Mic -50dBu/2kΩ Line -10dBu/2kΩ
Input 6	0dBu/10kΩ
Tel In	0dBu/10kΩ
Ext In	0dBu/20kΩ
Amp In	0dBu/47kΩ
Mix Out/Impedance	0dBu/10kΩ
Operating Temperature	-10°C ~ +40°C
Dimensions	420(W) x 88(H) x 328(D)mm
Weight	5.2kg

POWER INPUT — SPEAKER OUTPUT TERMINALS — MIX OUT — EXT IN — USB/PC CONNECTION PORT — ETHERNET TERMINAL — PRIORITY MUTE

EXT CHIME — EXT MUTE — VGA TERMINAL — TELEPHONE IN

TELEPHONE IN VOLUME CONTROL

INPUTS 1~6

LINE/MIC/PHANTOM SELECTOR SWITCH

* requires internet connection

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PMU480N
480W 6 Input Network Mixer Amplifier

The **PMU480N** is a 6 input 480 watt Mixer Amplifier with built-in digital media player and network connectivity for audio-over-IP signal distribution.

The amplifier's digital media player allows playback of MP3/WMA/WAV audio files directly from a USB media stick, whilst an on-board processor allows for Internet Radio capabilities*.

The PMU480N can also form part of an Audio-over-IP system (when used in conjunction with the AOE212N Transceiver) for long distance audio transmission via standard TCP/IP LAN or WAN ethernet networks.

Features:

- Built-in MP3/WMA/WAV player, audio files are accessible via front panel USB input for USB memory stick
- Built-in USB PC sound card allows direct input of PC audio via rear panel USB connector
- Streaming Network Audio input via rear RJ45 connector *(for use with Inter-M AOE212N, page 48)*
- On-board Internet Radio via rear RJ45 connector (requires internet connection)
- 2.8" colour LCD screen displays operations status, output level, internet radio channel, USB MP3 song/artist/cover art
- Switch Mode Power Supply (SMPS) technology delivers high power output with energy efficient, low power consumption
- 6 input mixer amplifier with 5 microphone/line level selection
- Phantom Power to inputs 1, 2 and 3
- Signal indicator confirms and displays signal present for each input
- Bass and treble tone control
- 5 zone loudspeaker selector switches, allowing for independent or all-zone broadcast

Specifications	PMU480N
Rated Output Power	480W @ 100v line/4Ω
Frequency Response (SP OUT/1W output)	80Hz ~ 15kHz
T.H.D. @ Rated output 1kHz	<0.5%
S/N Rated output	< -78dB
Graphic Equaliser (100Hz 330Hz 1kHz 3.3kHz 10kHz)	±10dB
Input 1 ~ 5	Mic -50dBu/2kΩ Line -10dBu/2kΩ
Input 6	0dBu/10kΩ
Tel In	0dBu/10kΩ
Ext In	0dBu/20kΩ
Amp In	0dBu/47kΩ
Mix Out/Impedance	0dBu/10kΩ
Operating Temperature	-10°C ~ +40°C
Dimensions	420(W) x 88(H) x 328(D)mm
Weight	5.2kg

POWER INPUT   SPEAKER OUTPUT TERMINALS   MIX OUT   EXT IN   USB/PC CONNECTION PORT   ETHERNET TERMINAL   PRIORITY MUTE

EXT CHIME
EXT MUTE
VGA TERMINAL
TELEPHONE IN

TELEPHONE IN VOLUME CONTROL

INPUTS 1~6   LINE/MIC/PHANTOM SELECTOR SWITCH

* requires internet connection

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Audio Sources

Inter-M's range of Professional Audio Source devices are designed to provide ongoing and reliable, high quality music and voice signals for 19" rack installed audio systems, such as public address, background music and audio advertising.

Our Audio Source range includes multi-CD changers, USB / MP3 players, tuners and internet radio receivers for installation into a standard 19" rack enclosure.

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CD610U | Single CD & USB MP3 Player

The **CD610U** is a professional CD Player for 19" rack mounting in PA and background music systems.

It features integrated USB digital media player for playback of MP3, WMA and WAV files from an external USB drive.

This device also features RS-232 connectivity for third-party control system integration (such as Creston, AMX, Savant, etc) and can be AC or DC powered - ideal for outdoor or portable PA applications, as well as installed systems requiring battery back-up.

Features:

- Supports multi-format audio files
- File formats supported include CDA, WMA, MP3 and WAV
- USB Audio Playback
- RS-232 Control port compatible with third-party control systems such as AMX, Creston, etc
- Stereo (RCA), Mono (XLR) Output
- Auto play (selectable CD/USB/MEM)
- 20-step pitch Control
- AC/DC Powered
- 2U high, 19" rack mounting

Specifications — CD610U

Specifications	CD610U
Disc	12cm (4.7 inch)/CD, CD-R, CD-RW
Number of channels	RCA: L/R, XLR: Mono
Analog Output Level (Max)	+8dBu (2v RMS) +6dBv (2v RMS)
Frequency Response (20Hz ~ 20kHz) ~ CD, Pitch off	+0.5/-1dB
T.H.D. (20kHz LPF, A-WTD) ~ CD, Pitch off	<0.003% normal, 0.007% limit
S/N (20kHz LPF, A-WTD) ~ CD, Pitch off	>100dB normal, 95dB limit
Channel separation (1kHz, +8dBu, 20kHz LPF) ~ CD, Pitch off	>90dB normal, 80dB limit
Operating Temperature	-10°C ~ +40°C
Power Source	230v AC, 50Hz
Power Consumption	27W
Dimensions	482(W) x 88(H) x 280(D)mm
Weight	5.3kg

AC POWER SWITCH   DC POWER INPUT   RCA STEREO OUTPUT

RS-232 TERMINAL   XLR MONO OUTPUT

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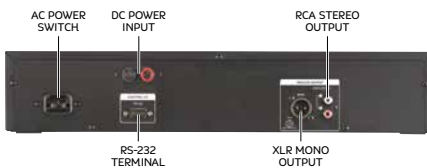
inter**M**

CD6208 | CD Player/Multi-Source Audio Player

The Inter-M **CD6208** is more than just your average commercial CD player; this multi-source audio media player offers a whole host of clever digital audio format playback features..

Virtual 6 CD Changer: What might seem to be a single CD player slot; the new CD6208 allows content from CDs to be stored onto its internal memory card, allowing up to 6 full audio CDs to be stored, therefore providing a 'virtual' 6 CD changer.

USB Playback: Using the USB input on the front of the unit, the CD-6208 supports MP3/WMV/WAV audio file playback from a USB memory stick.

Instant Play: 10x instant playback buttons allow for immediate access and playback of stored audio files (using the virtual CD Changer feature).

Features:

- Virtual 6 CD Disc Storage
- 10 x 'instant key' for disc memory instant replay
- Memory Playback
- Instant/Auto Play/Pitch/Cue
- USB Drive input for audio file playback
- Supports multi-format decoder incl. CDA, WMA, MP3 and WAV
- Front panel LED display for track selection, volume level, etc
- High quality headphone output
- RS-232 control port compatible with AMX, Creston and other AV control systems
- Multi Input/Output formats including SPDIF and Optical
- Stereo (RCA, XLR), Mono (XLR) Output
- Auto Play (selectable CD/USB/MEM)
- CUE Function
- 20-step Pitch Control
- 2U high, 19" rack mounting

Specifications	CD6208
Disc Formats	CD, CD-R, CD-RW
Number of channels	RCA: L/R, XLR: L/R/Mono
Analog Output Level (Max)	+8dBu (2v RMS)
Frequency Response (20Hz ~ 20kHz) - CD, Pitch off	+0.5/-1dB
T.H.D. (20kHz LPF, A-WTD) - CD, Pitch off	<0.003% normal, 0.007% limit
S/N (20kHz LPF, A-WTD) - CD, Pitch off	>100dB normal, 95dB limit
Channel separation (1kHz, +8dBu, 20kHz LPF) - CD, Pitch off	>90dB normal, 80dB limit
Optical Output	S/PDIF
Coaxial Output (RCA)	S/PDIF
Operating Temperature	-10°C ~ +40°C
Power Source	230v AC, 50Hz
Power Consumption	27W
Dimensions	482(W) x 88(H) x 280(D)mm
Weight	5.3kg

OPTICAL DIGITAL OUTPUT

COAX DIGITAL OUTPUT

MONO XLR OUTPUT

RCA OUTPUTS

AC INLET

RS-232 INTERFACE

RIGHT CHANNEL XLR OUTPUT

LEFT CHANNEL XLR OUTPUT

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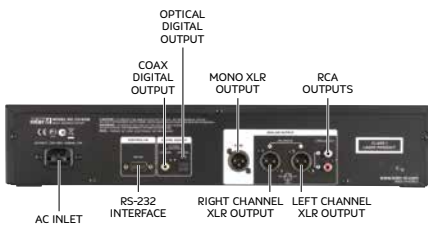
interM

TU6200 | AM/FM Tuner Module

The **TU6200** is the latest 19" rack mount Tuner Module to be added to the Inter-M professional audio product range. This robust, simple to use Tuner device operates on the FM and AM frequency bands and features 40 memory presets.

The TU6200 Tuner also features 10 memory 'hot-keys' on the front panel, auto-scan and manual tuning and is also RS-232 compatible for remote control and integration with 3rd-party control systems such as AMX, Creston, Control4, etc.

Features:

- 40 Memory presets (FM/AM)
- 10-key memory quick access
- Channel auto scan and manual tuning
- Mono/stereo selection function (FM)
- Button operation beep ON/OFF
- Stereo RCA and balanced XLR outputs
- RS-232 serial remote control terminal
- Power switch
- 2U high, 19" rack mounting

Specifications — TU6200

FM:	
Tuning range	87.5 ~ 108.8MHz
Sensitivity	2uV (<10uV)
THD (with A filter)	0.2% (<0.5%)
S/N (mono)	60dB (>50dB)
Output level (75kHz MOD.)	0dB ±3dB
AM:	
Tuning range	Europe 522 ~ 1629kHz
Sensitivity	18uV (<58uV)
S/N	50dB (>40dB)
T.H.D.	1% (<2%)
Output level	-10dB±3dB
Operating Temperature	-10°C ~ +40°C /14°F ~ 104°F
Power Source	AC 220V, 60Hz
Power Consumption	7W
Dimension (SET)	482(W) x 88(H) x 280(D)mm
Weight (SET)	4.2kg

LEFT CHANNEL XLR OUTPUT   ANTENNA TERMINAL

AC POWER INPUT   RS-232 INTERFACE   RIGHT CHANNEL XLR OUTPUT   RCA OUTPUT

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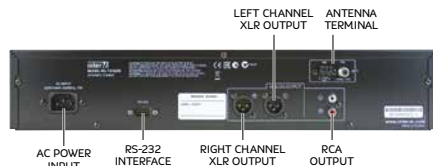
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NTU100 | Internet Radio Player

The **NTU100** is a professional Internet Radio Player and audio streaming device which allows for a huge range of audio content to be integrated in AV and PA systems from the almost limitless range of internet radio stations available from around the world.

The NTU100 uses a standard broadband connection to access online radio content and is designed in a 19" format for inclusion in professional public address and audio visual rack systems.

Set-up and programming of your Internet Radio system is fast and simple using a built-in, browser-based interface and a weekly timer can schedule the broadcasting of chosen stations/programmes at any time.

Features:

- Receive and play streamed media from internet radio stations
- Almost limitless number of media choices (currently estimates in excess of 40,000 different stations available worldwide)
- 40 preset stations (built-in), 20 additional preset stations (user defined)
- Front LCD identifies channel selection
- Internet radio station and program scheduling via web interface
- Requires internet connection
- Control of internet radio playback, stop, reset, etc via web interface
- Integration of third party switching equipment via dry contact closures for scheduled broadcast
- Log view and password control via browser-based interface for maintenance and security
- AC/DC powered
- 2U high, 19" rack mounting

Specifications	NTU100
Broadcasting Reception	Network (TCP/IP), RJ-45 connector
Frequency Response	20Hz ~ 20kHz (0dBu ±3dB)
T.H.D.	>0.5% (at 0dBu ouput 20kHz LPF)
S/N	RCA Output: >75dB (20kHz LPF, A-WTD) EURO Output: >75dB (20kHz LPF, A-WTD)
Output Level	0dBu ±3dB
Operating Temperature	0°C ~ +40°C
Power Source	230v AC, 24v DC, 60Hz
Power Consumption	5.6W
Dimension (Set)	483(W) x 88(H) x 280(D)mm
Weight	3.3kg

L/R AUDIO OUTPUT   NETWORK CONNECTION

REMOTE OUTPUT

AC INPUT

Bicester Village Retail Park: Audio-over-IP

Bicester Village Retail Park features the latest Audio-over-IP distributed sound technology and a full design-to-delivery audio rack system from CIE AV Solutions.

Client:

Located just an hour from central London, Bicester Village Retail Park is a luxury boutique shopping experience featuring over 130 world-famous fashion, accessory and household brands.

System Requirements:

Midland Communications worked in partnership with CIE's team to design an improved public address and background music system and specify a solution using the latest audio-over-IP technology.

The Solution:

CIE's AV system design team devised a solution which would integrate the existing infrastructure with a hybrid analogue / audio-over-IP solution, controlled from an audio server rack and an IP-connected zone paging microphone and audio system control device.

The IP audio system also features Inter-M's latest 4 channel power amplifier for additional zone control within a purpose-built audio rack, also designed and built by CIE's in-house AV rack build team.

Product used in this project

**InterM DPA300Q 4x 300W
100v Power Amplifier**

inter M

Loudspeakers

Inter-M offers an extensive range of professional loudspeaker products to meet the needs of all types of commercial applications including voice reinforcement, public address, background & foreground music.

Available in both 100v line and low impedance formats, Inter-M Loudspeakers are designed to ensure reliable, high quality and intelligible sound reproduction in all types of environment including indoor / outdoor, high-noise and harsh conditions.

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CS303FC | 3W 100v line Mini Ceiling Speaker

The **CS303FC** is a 3 watt 100v line Mini Ceiling Speaker for low-level voice and background music installations.

This compact and discreet ceiling speaker features a fast-fix installation mechanism and bright white plastic grille.

Tappings at 0.75, 1.5 and 3 watts.

Features:

- White plastic front grille
- Fast-fix installation
- Simple, unobtrusive compact design
- Tappings at 0.75, 1.5 and 3 watts

Specifications	CS303FC
100v Power Tappings	0.75/1.5/3W
Impedance	COM/3.3kΩ
Frequency Response	260Hz ~ 12kHz
SPL (1W/1m)	83dB
Dimensions	126(Ø) x 42(D)mm
Weight	0.23kg

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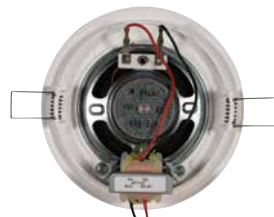
CS610F | 10W 100v line Ceiling Speaker

The **CS610F** Ceiling Speaker is a high quality, fast-fix solution which features premium grade drivers for professional acoustic performance and long-term reliability.

This 10 watt 100v line loudspeaker is ideal for public address and ambient background music applications such as offices, retail, waiting rooms, corridors, etc.

Tappings at 3, 6 and 10 watts.

Features:
- 6" full-range ceiling speaker
- White metal front grille
- Fast-fix installation
- Simple, unobtrusive compact design
- Premium grade driver
- Plastic rear housing/enclosure
- Tappings at 3, 6 and 10 watts

Specifications	CS610F
100v Power Tappings	3/6/10W
Frequency Response	350Hz ~ 12kHz
SPL (1W/1m)	92dB
Dimensions	230(Ø) x 100(D)mm
Weight	0.85kg

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CS510F | 10W 100v line Ceiling Speaker

The **CS510F** is a 10 watt 100v line, ceiling speaker, designed for public address, background music and emergency messaging audio systems.

Utilising a 5" full-range speaker driver, the CS10F5 loudspeaker provides high quality audio reproduction from a compact and discreet ceiling-mounted unit.

Tappings at 3, 6 and 10 watts.

Features:

- 5" full-range ceiling speaker
- Fire-resistant
- White plastic front grille
- Fast-fix installation
- Simple, unobtrusive compact design
- Premium grade driver
- Metal rear housing/enclosure
- Tappings at 1.25, 2.5, 5 and 10 watts

Specifications	CS510F
100v Power Tappings	1.25/2.5/5/10W
Frequency Response	175Hz ~ 13kHz
SPL (1W/1m)	89dB
Dimensions	178(Ø) x 100(D)mm
Weight	0.69kg

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MCS20F | 20W Full Range Ceiling Speaker

The **MCS20F** Ceiling Speaker is a high quality, fast-fix solution which features premium grade drivers for professional acoustic performance and long-term reliability.

This 20 watt 100v line loudspeaker features a 6" 2-way coaxial driver for improved sound quality and is ideal for public address and ambient background music application such as offices, retail, waiting rooms, corridors, etc.

Tappings at 5, 10 and 20 watts.

Features:
- 6" 2-way coaxial speaker system
- White metal front grille
- Fast-fix installation
- Simple, unobtrusive compact design
- Premium grade driver
- Metal Rear Housing/Enclosure
- Tappings at 5, 10 and 20 watts

Specifications	MCS20F
100v Power Tappings	5/10/20W
Frequency Response	150Hz ~ 20kHz
SPL (1W/1m)	92dB
Dimensions	230(Ø) x 180(D)mm
Weight	2kg

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inter M

WS203 | WS210 | WS230
3W/10W/30W Wall Speakers

Inter-M's new-design **WS Series** wall speakers combine discreet styling and simplicity to provide an elegant voice/background music loudspeaker for use in offices, waiting rooms, cafeterias, retail sites, etc.

Available in black or white finish, with 3W, 10W and 30W output versions.

Features:
- Modern, discreet styling
- Available in black or white
- Multicore cable connection
- High quality 100v line transformer
- WS203/210: 6" full range driver
- WS230: 6" 2-way driver

Part Nos.
- WS203B - 3W black
- WS203W - 3W white
- WS210B - 10W black
- WS210W - 10W white
- WS230B - 30W black
- WS230W - 30W white

Specifications	WS203/WS210/WS230
100v Power Tappings	**WS203:** 1/2/3W **WS120:** 3/5/10W **WS230:** 10/20/30W
Frequency Response	**WS203:** 137Hz ~ 16kHz **WS120:** 136Hz ~ 16kHz **WS230:** 126Hz ~ 16kHz
SPL @ 1W/1m	**WS203:** 91dB **WS120:** 92dB **WS230:** 93dB
Dimensions	315(W) x 183(H) x 124(D)mm
Weight	**WS203:** 1.2kg **WS120:** 1.4kg **WS230:** 2.2kg

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Loudspeakers

Conference
System

CU610M | CU620M | CU630M | CU640M
Slimline Indoor Column Loudspeakers

The Inter-M **CU600M Series** of indoor column speakers provides a stylish, discreet and slimline audio solution for public address, backgrouond music and AV applications.

Ideal for church, mosque, classroom, retail and corridor installations, these high quality 100v line column speakers are available in 10, 20, 30 and 40 watt versions and are supplied complete with mounting brackets.

Features:
- Designed for indoor audio installations
- Slimline, discreet design
- Multi-position mounting bracket
- 100v Power taps (rated and ½ power)
- Screw terminal connection
- Aluminium alloy construction
- 2-way speaker driver system

Specifications	CU610M/620M/630M/640M
Rated Power	**CU610M:** 10W **CU620M:** 20W **CU630M:** 30W **CU640M:** 40W
Impedance	**CU610M:** 10kΩ / 2kΩ **CU620M:** 500Ω / 1kΩ **CU630M:** 330Ω / 660Ω **CU640M:** 250Ω / 500Ω
Frequency Response	220Hz ~ 15kHz
SPL @ 1W/1m	**CU610M:** 87dB **CU620M:** 90dB **CU630M:** 91dB **CU640M:** 93dB
Casing	Aluminium
Operating Temperature	-10°C ~ +40°C
Dimensions	**CU610M:** 104(W) x 290(H) x 86(D) mm **CU620M:** 104(W) x 400(H) x 86(D) mm **CU630M:** 104(W) x 490(H) x 86(D) mm **CU640M:** 104(W) x 580(H) x 86(D) mm
Weight	**CU610M:** 1.45kg **CU620M:** 2.35kg **CU630M:** 2.85kg **CU640M:** 3.35kg

104mm

290mm 400mm 490mm 580mm

CU610M CU620M CU630M CU640M
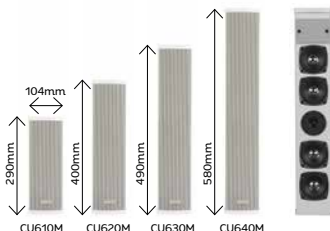
*All speakers have a Depth of 86mm & Width of 104mm

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Loudspeakers

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inter**M**

CU420F | CU430F | CU440F
Indoor Column Loudspeakers

Inter-M's latest addition to their column speaker range, the **CU400F** Series are stylish, high-quality loudspeakers featuring improved frequency response for both voice and music applications. Ideal for church, mosque, high quality background music and AV systems.

Available in 20W, 30W and 40W versions, these professional column speakers feature an IP protection rating of IP34 (or 'splash proof').

Features:

- Stylish new design
- Robust construction
- Multi-position mounting bracket
- 100v Power taps (rated and ½ power)
- Screw terminal connection
- IP 34 Rating

Specifications	CU420F/CU430F/CU440F
Rated Power	**CU420F:** 20W (500Ω)/10W (1000Ω) **CU430F:** 30W (330Ω)/15W (660Ω) **CU440F:** 40W (250Ω)/20W (500Ω)
Frequency Response	**CU420F:** 180Hz ~ 14kHz **CU430F:** 180Hz ~ 14kHz **CU440F:** 180Hz ~ 14kHz
SPL @ 1W/1m	**CU420F:** 94dB **CU430F:** 95dB **CU440F:** 97dB
Dimensions	**CU420F:** 156(W) x 400(H) x 129(D)mm **CU430F:** 156(W) x 500(H) x 129(D)mm **CU440F:** 156(W) x 600(H) x 129(D)mm
Weight	**CU420F:** 3kg **CU430F:** 4.8kg **CU440F:** 5kg

156mm

156mm

156mm

400mm

500mm

600mm

CU420F0 CU430F0 CU440F0

*All speakers have a Depth of 129mm

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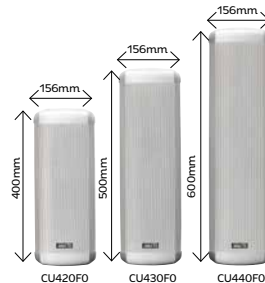
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CU420FO | CU430FO | CU440FO
Splashproof Rugged Column Loudspeakers

Stylish and robust loudspeakers for installation in both indoor and outdoor applications. Manufactured from aluminium extrusion with a steel grille, the loudspeaker drivers are proofed to withstand damp environments and can be used in indoor or protected outdoor installations, in shopping centres, car parks, atria and leisure centres.

Available in 20W, 30W and 40W versions, these rugged column loudspeakers have an IP34 rating ('splash proof') making them suitable for protected outdoor environments such as transport terminals, smoking shelters and verandas.

Features:
- Proofed drivers/loudspeakers for use in damp environments
- Rugged steel front grille
- Robust construction
- Multi-position mounting bracket
- 100v Power taps (rated and ½ power)
- Screw terminal connection
- IP 34 Rating

Specifications	CU420FO/CU430FO/CU440FO
Rated Power	**CU420F0:** 20W (500Ω)/10W (1000Ω) **CU430F0:** 30W (330Ω)/15W (660Ω) **CU440F0:** 40W (250Ω)/20W (500Ω)
Frequency Response	**CU420F0:** 180Hz ~ 14kHz **CU430F0:** 180Hz ~ 14kHz **CU440F0:** 180Hz ~ 14kHz
SPL @ 1W/1m	**CU420F0:** 94dB **CU430F0:** 95dB **CU440F0:** 97dB
Dimensions	**CU420F0:** 156(W) x 400(H) x 129(D)mm **CU430F0:** 156(W) x 500(H) x 129(D)mm **CU440F0:** 156(W) x 600(H) x 129(D)mm
Weight	**CU420F0:** 3kg **CU430F0:** 4.8kg **CU440F0:** 5kg

156mm

156mm

156mm

400mm

500mm

600mm

CU420F0   CU430F0   CU440F0

*All speakers have a Depth of 129mm

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HS-S20 | Compact Horn Speaker

The Inter-M **HS-20** is a professional-grade 20W Horn Speaker for use in environments where clear, precise voice messages, announcements or emergency tones or signals are required.

The HS-20 can be used in indoor or protected outdoor installations in both 100v line and low impedance Public Address audio systems.

100v line power tappings at 10W and 20W.

Features:

- Re-entrant horns
- Metal/ABS construction
- Indoor and protected outdoor use
- 100v Line/low impedance operation
- Conforms to IP 54

Specifications	HS-S20
Power Tappings	10 / 20W @100v, 20W @ 8Ω
Connection	Multicore cable
Frequency Response	380Hz ~ 6.5kHz
SPL @ 1W/1m	106dB
Dimensions	169(Ø) x 230(D) mm
Weight	1.5kg

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HS-30RT | 30W Paging Horn Speaker

The Inter-M **HS-30RT** is a double re-entrant Paging Horn Speaker which delivers 30W of continuous power handling. The HS-30RT operates within a nominal frequency response range of 380Hz to 6.5kHz and offers a sensitivity of 170dB at 1W, 1 metre to provide clear voice intelligibility, signal communication and efficiency.

The HS-30RT is constructed in robust weather-resistant aluminium and finished in grey epoxy for reliable indoor and outdoor use.

Features:

- Excellent intelligibility for voice and tone signalling
- Highly directional
- High reliability
- Environment-resistant for outdoor and indoor use
- High-efficiency driver with proven performance

Specifications	HS-30RT
Power Tappings	15/30W @ 100v, 30W @ 8Ω
Frequency Response	380Hz ~ 6.5kHz
SPL @ 1W/1m	107dB
IP Rating	IP54
Operating Temperature	-45 ~ 50°C
Dimensions	320(W) x 210(H) x 365(D) mm
Weight	2.95kg

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CH522 | Music Horn Loudspeaker

Proofed for outdoor use, the Inter-M **CH522** 20W Music Horn Speaker can be used in areas where high quality voice and music reproduction is required.

Robust in construction, proofed against moisture, yet capable of providing high quality music reproduction, you will regularly find the CH522 Horn Speaker installed in leisure applications. Ideal for installations in swimming pools, leisure centres, snowdomes, as well as car parks, factories, warehouses and distribution centres.

Features full-range loudspeaker driver and adjustable mounting bracket.

Features:

- Modern design
- Indoor/outdoor mounting
- Full range driver/loudspeaker
- 100v Line taps (rated and ½ power)
- Universal mounting bracket
- Conforms to IP 54

Specifications	CH522
Power Tappings	10, 20W @ 100v
Connection	Multicore cable
Frequency Response	110Hz ~ 20kHz
SPL @ 1W/1m	95dB
Dimensions	294(W) x 209(H) x 326(D)mm
Weight	3.5kg

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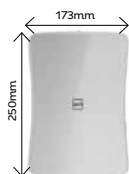# WS15T-BK | WS15T-WK
15W 2-way Music Speakers, 100v line/Low Z

The **WS15T-BK** (Black) & **WS15T-WK (**White) are 15 watt, 100v line/Low Z full range Music Loudspeakers.

These stylish, discreet music speakers are ideal for voice & mid-level music applications. The WS range has an IP34 rating making them suitable for both indoor installation and covered outdoor applications such as transport terminals, shelters and verandas.

These full range music speakers combine compact, modern styling with high performance audio and is ideal for installations in applications such as bars & restaurants, leisure centre, schools & colleges, gymnasiums and boardrooms.

Features:

- Available in Black (WS15T-BK) or White (WS15T-WK)
- 15W full-range loudspeaker
- 100v Multi-tap transformer/low impedance
- Compact size with high power
- 90° Sound dispersion angle
- Aesthetic design
- High performance sound quality for background music & voice reproduction
- Protection rating of IP34
- Supplied with multi-position knuckle mount bracket

Specifications	WS15T-BK/WS15T-WK
Type	1 way passive
Frequency Response (-10dB)	110Hz ~ 20kHz
Component	2.5 inch full range
Power Rating	Continuous (AES STD): 15W, Program: 30W, Peak: 60W
Sensitivity (1m/1W)	84dB
Maximum SPL (Peak)	102dB
Nominal Coverage (1kHz)	90°
Nominal Impedance (THRU setting)	8Ω
100v Power Tappings	2/4/8/15W
Low Frequency Transducer	Paper Cone with impregnation
Enclosure Material	ABS Resin
Connectors	Screw terminal 2P
Protection Rating	IP34 (splash proof)
Colour	Available in Black (WS15T-BK) or white (WS15T-WK)
Dimensions	120(W) x 92(H) x 114(D)mm
Weight	0.90kg

92mm

120mm

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WS30T-BK | WS30T-WK
30W 2-way Music Speakers, 100v line/Low Z

The **WS30T-BK** (Black) & **WS30T-WK** (White) are 30 watt, 100v line/Low Z full range Music Loudspeakers. These stylish, discreet music speakers are ideal for voice and mid-level music applications thanks to the 2-way asymmetric speaker drivers for wide area coverage.

The WS range have an IP34 rating making them suitable for both indoor installation and covered outdoor applications such as transport terminals, shelters and verandas. These full range music speakers combine compact, modern styling with high performance audio and is ideal for installations in applications such as bars & restaurants, leisure centre, schools/colleges, gymnasiums & boardrooms.

Features:

- Available in Black (WS30T-BK) or White (WS30T-WK)
- 30W full-range loudspeaker
- 100v Multi-tap transformer/low impedance
- Compact size with high power
- 90° Sound dispersion angle
- Aesthetic design
- High performance sound quality for background music & voice reproduction
- Protection rating of IP34
- Supplied with multi-position knuckle mount bracket
- Optional 'U' mount brackets also available UB30TW (White) / UB30TB (Black)

Specifications	WS30T-BK/WS30T-WK
Type	2 way passive
Frequency Response (-10dB)	100Hz ~ 20kHz
Component	LF: 4 inch / HF: VC 13mm
Power Rating	Continuous (AES STD): 30W, Program: 60W, Peak: 120W
Sensitivity (1m/1W)	85dB
Maximum SPL (Peak)	106dB
Nominal Coverage (1kHz)	Asymmetric Horn, Horizontal Coverage: Far Field 60°, Near Field 120°, Vertical Coverage: upward +20°, download -40° (on Axis)
Nominal Impedance (THRU setting)	8Ω
100v Power Tappings	1.9/3.8/7.5/15/30W
Low Frequency Transducer	Polypropylene Cone (PP Cone) high stiffness compare to paper cone, low distortion, flat frequency response, low vibration mode than paper cone
High Frequency Transducer	Polyethyleneimine (PEI semidome) High frequency extend with diffuser
Enclosure Material	ABS Resin
Connectors	Screw terminal 2P
Protection Rating	IP34 (splash proof)
Colour	Available in Black (WS30T-BK) or white (WS30T-WK)
Dimensions	210(W) x 139(H) x 129(D)mm
Weight	1.72kg

139mm

210mm

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WS50T-BK | WS50T-WK
50W 2-way Music Speakers, 100v line/Low Z

The **WS50T-BK** (Black) and **WS50T-WK** (White) are 50 watt, 100v line/Low Z, full range Music Loudspeakers. These stylish, discreet music speakers are ideal for voice and mid-level music applications thanks to the 2-way asymmetric speaker drivers for wide area coverage.

The WS range has an IP34 rating making them suitable for both indoor installation and covered outdoor applications such as transport terminals, shelters and verandas These full range music speakers combine compact, modern styling with high performance audio and are ideal for installations in applications such as bars & restaurants, leisure centre, schools & colleges, gymnasiums & boardrooms.

Features:
- Available in Black (WS50T-BK) or White (WS50T-WK)
- 50W full-range loudspeaker
- 100v Multi-tap transformer/low impedance
- Compact size with high power
- Asymmetric horn for optimised sound performance
- Aesthetic design
- High performance sound quality for background music & voice reproduction
- Protection rating of IP34
- Supplied with multi-position knuckle mount bracket
- Optional 'U' mount brackets also available UB50TW (White) / UB50TB (Black)

Specifications	WS50T-BK/WS50T-WK
Type	2 way passive
Frequency Response (-10dB)	100Hz ~ 20kHz
Component	LF: 5 inch / HF: VC 13mm
Power Rating	Continuous (AES STD): 50W, Program: 100W, Peak: 200W
Sensitivity (1m/1W)	87dB
Maximum SPL (Peak)	110dB
Nominal Coverage (1kHz)	Asymmetric Horn, Horizontal Coverage: Far Field 60° Near Field 120° Vertical Coverage: upward +20°, download -40° (On Axis)
Nominal Impedance (THRU setting)	8Ω
100v Power Tappings	3.3/6.5/13/25/50W
Low Frequency Transducer	Polypropylene Cone (PP Cone) High stiffness compare to paper cone, low distortion, flat frequency response, low vibration mode than paper cone
Enclosure Material	ABS Resin
Connectors	Screw terminal 2P
Protection Rating	IP34 (splash proof)
Colour	Available in Black (WS50T-BK) or white (WS50T-WK)
Dimensions	250(W) x 173(H) x 150(D)mm
Weight	2.37kg

173mm

250mm

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WS80T-BK | WS80T-WK
80W 2-way Music Speakers, 100v line/Low Z

The **WS80T-BK** (Black) and **WS80T-WK** (White) are 80 watt, 100v line/Low Z, full range Music Loudspeakers. These stylish, discreet music speakers are ideal for voice and mid-level music applications thanks to the 2-way asymmetric speaker drivers for wide area coverage.

The WS range has an IP34 rating making them suitable for both indoor installation and covered outdoor applications such as transport terminals, shelters and verandas These full range music speakers combine compact, modern styling with high performance audio and is ideal for installations in applications such as bars & restaurants, leisure centre, schools & colleges, gymnasiums and boardrooms.

Features:
- Available in Black (WS80T-BK) or White (WS80T-WK)
- 80W full-range loudspeaker
- 100v Multi-tap transformer/low impedance
- Compact size with high power
- Asymmetric horn for optimized sound performance
- Aesthetic design
- High performance sound quality for background music & voice reproduction
- Protection rating of IP34
- Supplied with multi-position knuckle mount bracket
- Optional 'U' mount brackets also available UB80TW (White) / UB80TB (Black)

Specifications	WS80T-BK/WS80T-WK
Type	2 way passive
Frequency Response (-10dB)	100Hz ~ 20kHz
Component	LF: 6.5inch / HF: VC 13mm
Power Rating	Continuous (AES STD): 80W, Program: 160W, Peak: 320W
Sensitivity (1m/1W)	90dB
Maximum SPL (Peak)	115dB
Nominal Coverage (1kHz)	Asymmetric Horn, Horizontal Coverage: Far Field 60° Near Field 120° Vertical Coverage: upward +20°, download -40° (On Axis)
Nominal Impedance (THRU setting)	8Ω
100v Power Tappings	5/10/20/40/80W
Low Frequency Transducer	Paper Cone with impregnation
Enclosure Material	ABS Resin
Connectors	Screw terminal 2P
Protection Rating	IP34 (splash proof)
Colour	Available in Black (WS80T-BK) or white (WS80T-WK)
Dimensions	311(W) x 210(H) x 169(D)mm
Weight	3.75kg

210mm

311mm

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IX8 | 250W Portable Cabinet Loudspeaker

The Inter-M **IX8** is a 250 watt low impedance portable music loudspeaker for full range audio reproduction in mobile, temporary and installed music systems.

Manufactured with durable ABS housing and steel front grille, the IX8 loudspeaker features full-range 2-way speaker drivers, pole-mount & rigging points, making it ideal for both temporary and permanent applications such as live performance, school halls & gymnasiums and sound reinforcement.

Features:
- 250W low impedance
- 2-way passive full-range loudspeaker
- Strong, durable ABS housing and steel grille
- Connection via Speakons
- Pole mount or M8 rigging points

2 X SPEAKON
INPUT

POLE
MOUNTING
SCREW

Specifications	IX8
Type	8" 2 way Passive
Frequency Response (-10dB)	55Hz ~ 20kHz
Rated Power (AES)	125W
Rated Power (Program)	250W
Rated Power (Peak)	600W
Recommended Power	250W
Sensitivity (1W/1m @ 300/400/500/600Hz)	95dB
Maximum SPL (Continuous/Peak)	122dB SPL
Nominal Dispersion (H/V)	90°H / 60°V
Nominal Impedance	8Ω
Recommended High-Pass Filter	50Hz 12dB/Oct
LF Driver	8" Woofer
HF Driver	1" Polyester Compression driver
Enclosure Material	ABS Injection
Grill	Powder Coated Metal
Connectors	2 x NL4
Fittings/Suspension	35mm Pole Cup
Colour	Black
Dimensions	270(W) x 430(H) x 260(D)mm
Weight	6.3kg

Desktop Mixer-Amplifiers

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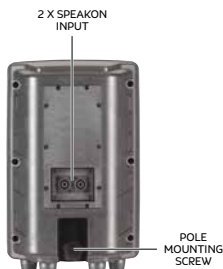
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IX8H | 450W Portable Cabinet Loudspeaker

The Inter-M **IX8H** is a 450 watt low impedance portable music loudspeaker for full range audio reproduction in mobile, temporary and installed music systems.

Manufactured with durable ABS housing and steel front grille, the IX8H loudspeaker features full-range 2-way speaker drivers, pole-mount and rigging points, making it ideal for both temporary and permanent applications such as live performance, school halls & gymnasiums and sound reinforcement.

Features:

- 450W low impedance
- 2-way passive full-range loudspeaker
- Strong, durable ABS houseing and steel grille
- Connection via Speakons
- Pole mount or M8 rigging points

Specifications	IX8H
Type	High Power 8" 2 way Passive
Frequency Response (-10dB)	60Hz ~ 20kHz
Rated Power (AES)	225W
Rated Power (Program)	450W
Rated Power (Peak)	900W
Recommended Power	450W
Sensitivity (1W/1m @ 300/400/500/600Hz)	99dB
Maximum SPL (Continuous/Peak)	128dB SPL
Nominal Dispersion (H/V)	90°H / 60°V
Nominal Impedance	8Ω
Recommended High-Pass Filter	50Hz 12dB/Oct
LF Driver	8" High Power Woofer
HF Driver	1.3" Titanium Compression Driver
Enclosure Material	ABS Injection
Grill	Powder Coated Metal
Connectors	2 x NL4
Fittings/Suspension	35mm Pole Cup
Colour	Black
Dimensions	270(W) x 430(H) x 260(D)mm
Weight	7.9kg

2 X SPEAKON INPUT

POLE MOUNTING SCREW

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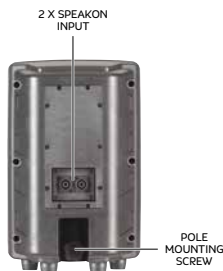
IX8HT
450W 100v/low Z Cabinet Loudspeaker

The **IX8HT** is a 450 watt 100v line / low impedance music loudspeaker for full range music installed systems.

This two-way ABS housed music speaker is ideal for permanently installed mid-range music systems such as gymnasiums, school halls and leisure or retail PA, but is also ideal as part of a portable touring music system.

Features:
- 450W 100v line / low impedance
- 2-way passive full-range loudspeaker
- Strong, durable ABS housing and steel grille
- Connection via Speakons or screw terminals
- Pole mount M8 rigging points

2 X SPEAKON INPUT

SCREW TERMINALS

POLE MOUNTING SCREW
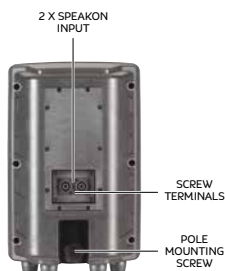
Specifications	IX8HT
Type	High Power 8" 2 way Passive High Impedance
Frequency Response (-10dB)	50Hz ~ 20kHz
Rated Power (AES)	225W
Rated Power (Program)	450W
Rated Power (Peak)	900W
Recommended Power	450W
Sensitivity (1W/1m @ 300/400/500/600Hz)	99dB SPL
Maximum SPL (Continuous/Peak)	128dB SPL
Nominal Dispersion	90°H / 60°V
Nominal Impedance	8Ω
Transformer Taps	70v: 44.4Ω, 115W / 100v: 44.4Ω, 225W
Recommended High-Pass Filter	50Hz 12dB/Oct
LF Driver	8" High Power Woofer
HF Driver	1.35" Titanium Compression Driver
Enclosure Material	ABS Injection
Grill	Powder Coated Metal
Connectors	2 x NL4 with 2P screw terminal
Fittings/Suspension	35mm Pole Cup
Colour	Black
Dimensions	270(W) x 430(H) x 260(D)mm
Weight	8.5kg

Eastwood High School - Zoned PA and Induction Loop Systems

State-of-the-art Eastwood High School, part of the Schools for the Future Project, puts inclusion and innovation first in its exemplar facility.

Client:

Part of the Scottish Government's Schools for the Future Project, Eastwood High School in Glasgow, a new, state-of-the-art secondary school.

System Requirements:

Scotland's leading M&E Contractors – FES – were brought on board to manage the installation, including specification & implementation of a large scale public address and induction loop system throughout.

The Solution:

All amplification, audio control & loudspeakers, supplied by CIE, includes two bespoke built PA racks built in-house by CIE's technical services team including CIE's own-brand Clever Little Box LB-8A Digital Audio Store, which has been integrated to provide bells, tones and messages triggered by the LEA's own class-change system. A complete PA and Induction loop system were added using Inter-M's latest DPA range of professional, multi-channel compact amplifiers and the SigNET PDA range of AFILs.

Products used in this project

Inter-M - DPA300Q 4x300W 100v Power Amplifier

Inter-M - DPA300D 2x300W 100v Power Amplifier

Inter-M - CS-6 100v Ceiling Speaker

Inter-M - WS210W Wall mount Loudspeaker

Conference System

The Inter-M Conference System is a simple, quick to install, plug & play solution for voice reinforcement and recording of meetings and conferences for up to 250 delegates.

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IM300
Conference System Main Controller 60W Amplifier

The Inter-M Conference System is a simple, quick to install plug & play solution for voice reinforcement and recording of meetings and conferences for up to 250 delegates.

The **IM300** is the system's Main Controller Unit for connecting the first 30 conference microphones and for control functionality such as all-talk, next speaker reservation, 'delegates waiting' number display, speaking time limitation and tone/level controls.

This main conference system control unit also allows for the audio of the meeting to be recorded directly to memory stick via USB input.

Features:

- Inter-M Conference System Main Control Unit
- Direct connection of up to 30 microphone units (Part Nos **IMC300** and **IMD300**)
- Expandable up to 250 microphones using **IMS300** sub-amplifiers
- Built-in 60W amplifier provides sound to monitor speaker of each connected microphone
- Clear VFD display shows broadcast mode, number of delegates connected, number of delegates waiting to speak, input signal level, etc
- USB input allows recording of meetings directly to USB memory stick (up to 20 hours at 128kbit)
- Time Set mode allows control of speaker time before automatically switching to next microphone in the queue (1 min, 2 min, 3 min, 5 min, OPEN)
- Built-in monitor loudspeaker
- Line/Aux output to connect to standard public address system for large audience broadcast
- System connectivity via 15 pin D-type cables:
  - IMW15 - 15 metres
  - IMW30 - 30 metres

Specifications	IM300
Rated Output Power (@1kHz, THD 1%, 165Ω Load Output)	60W
AUX/LINE Input (@ 1kHz, 165Ω Load Output):	
Input Sensitivity	0dBv
Signal to Noise Ratio	>60dB
Frequency Response (1W Power output, ±3dB)	250Hz ~ 12kHz
Mic Input (@ 1kHz, 165Ω Load Output)	
Input Sensitivity	-52dBv
Signal to Noise Ratio (S/N)	>50dB
Frequency Response (@ Power output, ±3dB)	300Hz ~ 10kHz
AUX/LINE Output (@ AUX/LINE in Mic in, IMC/IMD-300 Mic in):	
Output Level	1v
Tone Control (100Hz/1kHz/10kHz)	±8dB
Monitor Speaker Output (1@ 1kHz, THD 1%)	0.5W
Operation Temperature	-10°C ~ +40°C
Power Source	230 ~ 240v AC, 50/60Hz
Power Consumption	80W
Dimension	483(W) x 44(H) x 380(D)mm
Weight	5.8kg

IMS300 Conference System 60W Amplifier Expansion

IMC300 Conference System Chairman Microphone

IMD300 Conference System Delegate Microphone

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IMS300
Conference System 60W Amplifier Expansion

The **IMS300** is a 60 watt expansion amplifier which allows for an additional 30 delegate microphones (Part No. **IMD300**) to be added to the Inter-M Conference System, via connection to the IM300 Main Controller Amplifier.

Up to 8 IMS300 devices can be daisy-chained together with the main controller to provide a simple plug & play conference system with up to 250 delegate microphones.

Features:

- Inter-M Conference System Expansion Amplifier
- Connects an additional 30 delegate microphones to Inter-M **IM300**
- Daisy chain up to 8 Expansion units for a maximum of 250 delegate microphones on one system
- Built-in 60 watt amplifier provides sound to monitor speaker of each connected microphone
- System connectivity via 15 pin D-type cables:
  - IMW15 - 15 metres
  - IMW30 - 30 metres

Specifications	IMS300
Rated Output Power (@1kHz, THD 1%, 165Ω Load Output)	60W
AUX/LINE Input (@ 1kHz, 165Ω Load Output):	
Signal to Noise Ratio	>60dB
Frequency Response (1W Power output, ±3dB)	250Hz ~ 12kHz
Mic Input (@ 1kHz, 165Ω Load Output)	
Signal to Noise Ratio (S/N)	>50dB
Frequency Response (@ Power output, ±3dB)	300Hz ~ 10kHz
Operation Temperature	-10°C ~ +40°C
Power Source	230 ~ 240v AC, 50/60Hz
Power Consumption	80W
Dimension	483(W) x 44(H) x 380(D)mm
Weight	5.5kg

IMC300 Conference System Chairman Microphone

IMD300 Conference System Delegate Microphone

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IMC300 | Conference System Chairman Mic

The **IMC300** is the main control Chairman's Microphone for the Inter-M Conference System.

This main Chairman's Microphone provides remote control and overall override of the same functionality as the **IM300** Main Controller Amplifier, including full system level control, all-talk, speak time settings, etc.

Features:

- Inter-M Conference System Chairman's Microphone
- For use exclusively with **IM300** Main Controller
- Remote overall control of the system from microphone base
- Built-in 2W monitor loudspeaker & 3.5mm earphone jack
- LCD display for control, monitoring and IM300 status
- Connects via simple D-type cables
- Electret condenser gooseneck microphone
- System connectivity via 15 pin D-type cables:
  - IMW15 - 15 metres
  - IMW30 - 30 metres

Specifications	IMC300
Mic Type	Condenser Mic
Mic Input Sensitivity	-60dBv ±3dB
Speaker Output (8Ω Load Output)	2W
Speaker Output Frequency Response (1W Power Output, ±3dB)	250Hz ~ 10kHz
Earphone Output (32W Load Output)	0.2W
Operation Temperature	-10°C ~ +40°C
Power Source	19v DC via IM300, IMS300
Dimension (Base)	129(W) x 78(H) x 208(D)mm
Weight	1.9kg

GOOSENECK MICROPHONE

ALL CLEAR BUTTON

MONITOR LOUDSPEAKER

TIME SET BUTTON

VOLUME CONTROL

SPEAKING DISPLAY LED

TIME CLEAR BUTTON

CLEAR ONE BUTTON

CHIME BUTTON

PUSH-TO-TALK BUTTON

SPEAKER VOLUME CONTROL

LCD DISPLAY

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IMD300 | Conference System Delegate Mic

The **IMD300** is the Delegate Microphone for Inter-M's Conference System.

This gooseneck condenser Base Microphone Unit features built-in monitor loudspeaker and status LCD display screen, plus push-to-talk button and speak reservation function.

Features:

- Inter-M Conference System Delegate Microphone
- Connect up to 250 Delegate Microphones (using both **IM300** & **IMS300** amplifiers)
- Built-in 2W loudspeaker & 3.5mm earphone jack
- LCD status display
- Connects via simple D-type cables
- Electret condenser gooseneck microphone
- System connectivity via 15 pin D-type cables:
  - IMW15 - 15 metres
  - IMW30 - 30 metres

Specifications	IMD300
Mic Type	Condenser Mic
Mic Input Sensitivity	-60dBv ±3dB
Speaker Output (8Ω Load Output)	2W
Speaker Output Frequency Response (1W Power Output, ±3dB)	250Hz ~ 10kHz
Earphone Output (32Ω Load Output)	0.2W
Operation Temperature	-10°C ~ +40°C
Power Source	19v DC via IM300, IMS300
Dimension	129(W) x 78(H) x 208(D)mm
Weight	1.8kg

GOOSENECK MICROPHONE

MONITOR LOUDSPEAKER

EMERGENT DEMAND CALL

PRESENTATION CANCELLATION BUTTON

SPEAKING DISPLAY LED

PUSH-TO-TALK BUTTON

SPEAKER VOLUME CONTROL

LCD DISPLAY

Marks & Spencer Distribution Centre: PA / BGM Sound System

Marks & Spencer's new Online Distribution Centre features a site-wide Public Address and Background Music System designed and supplied with audio rackbuild by CIE's System Design Team.

Client:

Founded in 1884, M&S has grown from a single market stall to an international, multi-channel retailer. Selling high quality, great value products to 32 million customers through their 914 UK stores.

System Requirements:

Key to Marks & Spencer's (M&S) plans to become a leading international, multi-channel retailer is their newly opened 900,000 sq ft distribution centre in Castle Donington and which required site-wide communication with all staff utilising a high performance, flexible public address system.

The Solution:

Leicester Lighting & Sound, teamed up with CIE for products, have installed the brand new Castle Donington centre with a site-wide amplifier rack build Public Address and Background Music System powered by Inter-M DPA quad amplification providing zoned audio control of messaging and background music throughout the site and using a range of bi-directional Projector Loudspeakers.

Products used in this project

Inter-M - DPA300Q 4X
300W Power Amplifier

Inter-M - PA6348 480W
100v Power Amplifier

Inter-M - PA2312 2x 120W
100v Power Amplifier

Technical Tips

To ensure you get the very best results from your Inter-M professional audio products, our team of system experts have put together some simple tips & guidance on loudspeaker choice and positioning, low impedance & 100v line system configuration and I.P. protection ratings.

You'll find even more great 'How To' blogs and videos from our audio experts online at **www.cie-group.com**

Installation Advice & Information

Inter-M - The Industry Standard for professional audio

Inter-M provides a range of specially-developed installation loudspeakers for indoor and outdoor PA applications.

Designed to achieve optimum voice/BGM clarity in a wide range of commercial applications, Inter-M speakers continue to be specified into many of the UK's leading public address installations.

The basic principles of effective surface-mount ceiling speaker installation

The first priority of a high quality sound reproduction system is that of providing listeners with an acoustic level higher than that of any possible background noise. The system must simultaneously ensure a wide frequency range and maximum intelligibility.

It should also guarantee a flat frequency response and uniform sound pressure level to give optimum listening pleasure and clarity. To meet these criteria, the hypothetical ideal solution would be to place each sound source at an equal distance from all required listening points.

Ceiling-mounted Loudspeakers

In environments with suitable ceiling heights, this 'hypothetical' ideal standard can be approximated by using loudspeakers with very wide frequency response and dispersion angles which remain consistent at different frequencies, arranged in a ceiling or 'shower'-type configuration.

This provides the following acoustic benefits:

- Maximum sound distribution uniformity
- Maximum speech intelligibility
- Constant quality of music reproduction
- Reduced reverberation in the environment
- Sound source remains at a constant distance from the listening position

FIGURE 1

Once the required loudspeaker type has been chosen and the characteristic (ie. dispersion angle, room shape and size), the number of loudspeaker units needed to obtain constant and uniform sound dispersion can easily be calculated by dividing the floor area in square metres by the area of coverage of each loudspeaker on the listening plane.

[Figure 1 clearly illustrates this concept]
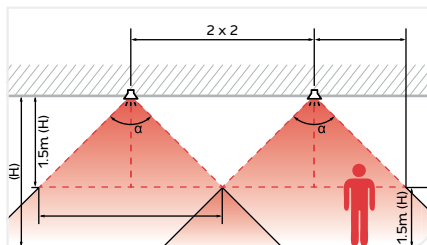
Wall-mounted Loudspeakers

If the architectural features of the room are not compatible with ceiling-mounted loudspeakers or if a wall-mounted solution is preferred, it is essential to observe a few basic rules to obtain the most effective sound distribution.

In order to maintain the most efficient listening point inside the direct signal areas, both in-wall and surface mounted loudspeakers with power from 6 to 20W should be installed at a height between 2 and 2.5m.

The maximum distance between adjacent loudspeakers must be no more than 5 ~ 6 metres along the length of the room, where the room is no wider than 4 ~ 5 metres.

For wider rooms (for example 8 ~ 10 metres), it is recommended to install loudspeakers in an alternate pattern along both opposite walls, to provide adequate coverage and maintain sound pressure at the best possible constant level throughout the area for coverage.

[**see Figures 2 and 3**]
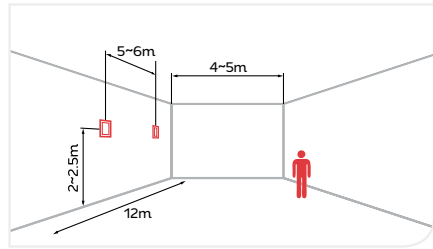
FIGURE 2
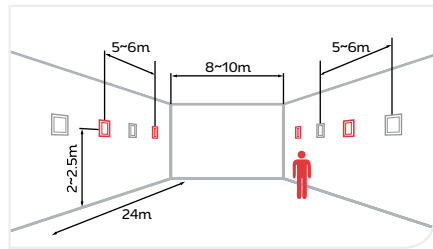
FIGURE 3

Corridor/Tunnel: Area Coverage

For effective sound distribution in corridors, tunnels or passenger platforms in railway underground stations, horn speakers (A) are normally specified for increased voice clarity in these high ambient noise conditions. For higher quality sound reproduction, 'sound projectors' can be used as an alternative.

In all cases, these loudspeakers must be installed at a maximum distance of 15 metres from one another, mounted all in the same direction and in observance with the phase of each loudspeaker.

Alternatively, bi-directional versions (B) of these loudspeakers can be considered, positioned at a maximum of 30 metres apart (again observing phasing).

[**see Figure 4**]
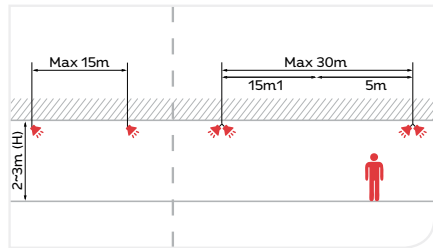
FIGURE 4

Loudspeaker Spacing

Distance from Speaker:	
1m:	95: SPL (dB) @ 1W
	98: SPL (dB) @ 2W
	101: SPL (dB) @ 4W
	104: SPL (dB) @ 8W
2m:	89: SPL (dB) @ 1W
	92: SPL (dB) @ 2W
	95: SPL (dB) @ 4W
	98: SPL (dB) @ 8W
3m:	83: SPL (dB) @ 1W
	86: SPL (dB) @ 2W
	89: SPL (dB) @ 4W
	92: SPL (dB) @ 8W

* Lose 6dB time distance is doubled from speaker
*Add 3dB when power is doubled

Quantity of Ceiling Speakers per Sq/metre for background music	
Floor Area:	
100m²	4 x Speakers (Quiet 55dB Tap @1 W)
250m²	10 x Speakers (Normal 60dB Tap @ 2W)
1000m²	40 x Speakers (Noisy 65dB Tap @ 3W)

*Ceiling Height = 2.5m
*Speaker Spacing = 5m
*Coverage = 25 Sq.m

Degrees of protection (I.P. rating)

The characteristics of a product in terms of its resistance to the penetration of solid objects and liquids is indicated by the letters IP (Ingress Protection) followed by two numbers in accordance with EN standards 60529-CEI 70-1.
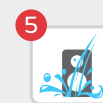
IP degree of protection

- The first number identifies the level of protection against the ingress of solid objects. Number from 0 ~ 6.
- The second number identifies the level of protection against penetration of liquids. Number from 0 ~ 8.

First IP number:

0 Not protected

1 Protected against the ingress of solid objects larger than 50mm

2 Protected against the ingress of solid objects larger than 12mm

3 Protected against the ingress of solid objects larger than 2.5mm

4 Protected against the ingress of solid objects larger than 1mm

5 Dust-proof, minimal dust ingress

6 Dust-tight, zero ingress of dust

Second IP number:

0 Not protected

1 Protected against vertically dripping water

2 Protected against water dripping at an angle (up to 15° from the vertical)

3 Protected against rain

4 Protected against water spray

5 Protected against water jets

6 Protected against waves

7 Protected against the effects of temporary immersion

8 Protected against the effects of permanent immersion

![interM logo]

Low Impedance & 100v Line Systems

Constant impedance lines (low impedance) are used normally in the case of a low number of loudspeakers, placed at a minimum distance from the amplifier of less than 20 metres.

The constant voltage connection system (ie. 100v line) offers a host of advantages making it ideal for sound systems of all sizes, above all in the case of long distance speaker runs.

This connection system requires each loudspeaker to be equipped with its own line transformer, which adapts the impedance of the loudspeaker (usually very low) to the much higher level of the line itself. In proportion to power transmitted, the current circulating on a line at 100v is considerably lower than that circulating on wires of a constant impedance system and consequently, drops along the line are less frequent; therefore the cable gauge can be lower.

The function of the amplifier device is to raise the signal of a sound source, such as a microphone, CD player, MP3 player or an AM/FM tuner to a sufficient level to pilot the transducer loudspeaker. The amplifier has several inputs, to which the various sound sources are connected.

The sound sources have to be mixed (mixer) and acoustically modified with tone control and equalisers to optimise listening in relation to the environment's characteristics. A terminal board is also fitted on output indicating impedance and voltage to which the loudspeaker line is connected.

100v Line Speaker Load

Amplifier power should be equal to or greater than the total speaker load (preferably leaving approx. 20% available power, where possible).

20W   **+**   20W   **+**   20W   **=**   60W AMPLIFIER OR GREATER

FIGURE 5

A few basic rules must always be observed

1. **When the load is on 'constant impedance'; it must be connected to the relative socket.**

   For example, a load of 4Ω must be connected to a socket marked 4Ω, and so on. The power that the load can withstand must always be greater than the amplifier's rated power.

   For example in the case of a load of 100Q, the amplifier must have a power equal to or less than 100W.

2. **When the load is at 'constant voltage'; it must be connected to the sockets indicating output at constant voltage - 50, 70 or 100v; the power that the load can withstand must always be less than or equal to the amplifier rated power.**

   For example, with a load of 100W, the amplifier must have a power equal to or greater than 100W.

   To calculate the required value of a 100v line amplifier power, simply add together the power, simply add together the power of each loudspeaker. (see Figure 5).

However, on a constant impedance system, the load must have an equivalent impedance (series/parallel) equal to or greater than the minimum value indicated on the amplifier output (see Figure6).

The loudspeaker power supply lines, with no connected attenuator, must be with 2 sheathed wires; cables with 3 sheathed is activated. Adequate wire sections are required:

1.5mm² for lines up to 500W power, 2.5mm² for lines with power over 500w. The following general standards must also be observed.

- Never use a single cable (lead) for loudspeaker connections: this would cause disturbance producing a loud 'HUM'
- Never use shielded cables for the loudspeaker connections: this would cause serious damage to the power units.
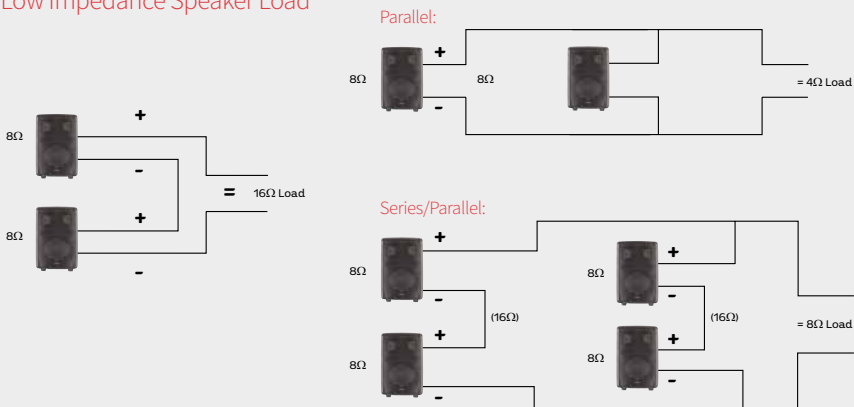
Low Impedance Speaker Load

FIGURE 6

Dedicated Rack Design & Build Facility

For many years, our customers have also benefited from our comprehensive Inter-M Rack System Design & Build Service, to provide 'ready to install' PA, VA and AV Racks in some of the UK's largest and most successful installations.

Using our extensive portfolio or Inter-M products, our highly skilled, UK-based Technical Services Team have a reputation for consistently producing some of the UK's highest quality, ready-to-install PA rack systems to customers' specifications.

There is no set limit to the size of system we can produce, anything from a small single zone speech-only system, to a multi-zone system combining speech and music. Monitoring and battery back-up can also be accommodated by our in-house Technical Facility.

To ensure that we build your system to your specific requirements, we have produced a technical questionnaire which, once completed by yourselves or with our assistance, outlines requirements such as number of microphones, etc.

Each system is supplied assembled, wired and fully tested before leaving our workshops.

As part of the Build Package, each System is supplied with a comprehensive operations manual incorporating user instructions for each individual piece of equipment, a schematic drawing of the System, a visual of the Rack layout and easy to use connection details.

Finally, each System is given a unique identification number specific to your installation which allows our Technical Services Team to easily identify any system we have assembled, to efficiently assist with any after sales service requirements.

Call the CIE AV sales desk or your area representative on 0115 977 0075 for advice, free UK site surveys and a highly competitive quotation.

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