inter M PROFESSIONAL

4CH Professional Power Amplifier with
Digital Signal Processing and Dante™ Digital Audio Networking

DSA Series

DSA-500Q
DSA-2000Q





4CH Professional Power Amplifier with
Digital Signal Processing and Dante™
Digital Audio Networking

DSA-500Q/2000Q



The DSA series is a high-power 4-channel professional amplifier that can deliver high performance in environments such as school auditoriums, music rooms, government offices, cultural centers, and religious facilities that require high-quality sound.
You can input 4 analogue audio channels and Dante™ digital audio, and you can use the built-in DSP to tune the system to suit your environment for better sound quality.
In addition, high efficiency digital amplifier technology and various protection circuits enable stable operation

Cultural Center
Small and Medium Performance Hall, Cultural Center



Religious Facilities
Churches, Cathedral, Auditoriums, etc.



Sports Facilities
Gym

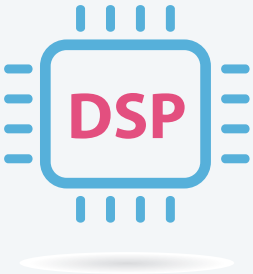


KEY TECHNOLOGY



Complete protection circuit for stable amplifier operation

In order to reproduce powerful and vivid sound, you need an amplifier that is capable of high power output and stable operation. Therefore, Inter-M has provided various protection circuits to provide stable operation and sufficient sound pressure even in harsh environments, ensuring the reliability of the amplifier.
In case of over-current (OCP-over-current protection), over-voltage (OVP-over-voltage protection), over-temperature (OTP-over temperature-protection), protection circuits kick in to ensure stability. In addition, the LIMITER function protects the system perfectly.



Built-In DSP/Dante™

Sound distortion from the sound system due to the influence of the installed space may occur. This distortion can be compensated by the various functions of the internal DSP (Parametric EQ, Xover, Delay, Compressor / Limiter, etc.) precisely to achieve even more vivid and powerful sound.
With PC software , various DSP functions can be easily controlled, and preset function is provided to enhance user convenience.
With Dante™, you can transfer multi-channel high-quality audio over a single UTP cable instead of the conventional complex audio cable wiring.



High-quality audio system starts with Class-D Amplifier

Pro audio speakers that convey an impression to the audience require a high power amplifier that is sufficiently higher than the speaker's power handling for good sound quality and powerful sound reproduction.
The DSA series complements Inter-M's know-how in high-efficiency, high-power SMPS power supply design and Class-D amplifier technology, the heart of digital amplifiers.
A Class-D amplifier design with excellent sound quality and high output power can reduce the power loss dramatically, resulting in more than 90% efficiency (about 20% efficiency for Class -A) and lightweight, low-power consumption amplifier. In addition, the embedded DSP function enables the best sound system.



Thorough quality testing for reliability and stability

In order to provide reliable products based on stability, Inter-M conducts quality tests on various environments that products may experience to evaluate performance and check for problems beforehand.
The DSA series has undergone rigorous quality testing, from testing for durability, such as drop / vibration, and field testing to ensure environmental behavior, such as quenching / temperature. For thorough quality control, only products that have passed all the tests are given a PASS and shipped.

High quality CLASS-D 4CH Professional Amplifier

DSA-500Q / 2000Q is a High Performance Class-D Power Amplifier using SMPS power and can reproduce high-quality audio in various environments such as auditorium and performance hall.

4CH Dante™ Digital Audio Input

You can input 4CH Dante™ digital audio through the network port and 4CH analog audio inputs.

Built-in DSP

Parametric 8 band EQ, crossover filtear using HPF and LPF,delay, attack / release adjustable limiter.

Easy control of equipment through front panel with OLED and PC GUI

Using OLED and operation switches installed on the front, and DSA-500Q / 2000Q dedicated software, various parameters can be adjusted.



Simultaneous control of multiple amplifiers via PC GUI

The PC GUI allows intuitive manipulation of various functions of the DSP, and simultaneous control of multiple amplifiers through IP registration of the equipments.

Up to 340 ms delay time adjustable

When configuring a system with multiple speakers, you can adjust the Delay function to control the audio transmission time up to 340 msec for clear sound.

Frequency band adjustment using HPF and LPF

You can use the Butterworth / Bassel / Linkwithz-Riley filter to adjust the frequency band required for your speakers.

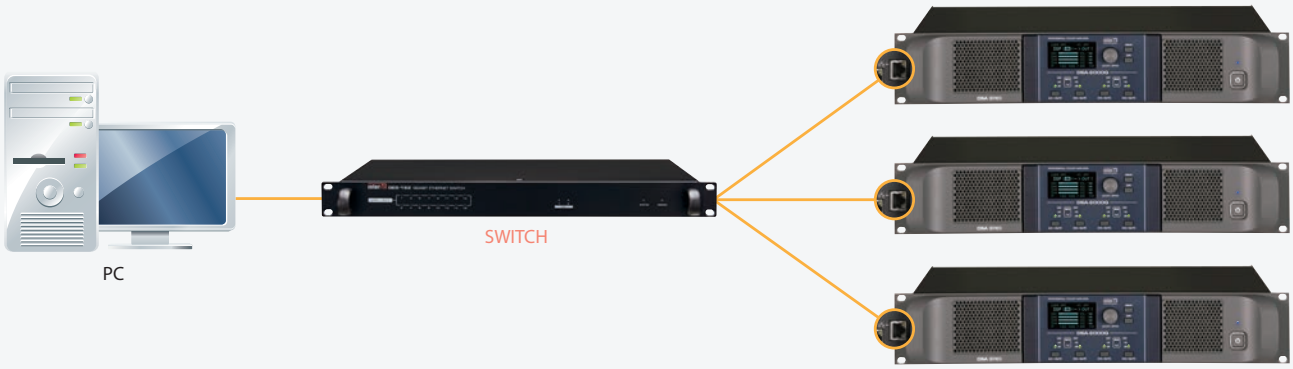
Unlimited preset creation for environment-optimization

Up to 10 presets can be saved to the internal memory of the device.
In addition, environment parameters can be saved to a PC as a file via the PC GUI and can be easily managed without restriction on the number of files.



PC GUI for DSA remote control

You can conveniently set up DSA–500Q / 2000Q Equipment and its DSP remotely via PC GUI. Connect the network terminal (CONTROL) on the back of the DSA–500Q / 2000Q and the PC 1: 1 to the LAN CABLE. Or, if multiple devices are connected to the same network via a switch, multiple DSA amplifiers can be easily controlled by a single PC. You must set the IP address of each device.



Configuration Setup



Operation and connection status
- Equipment network connection status
- Dante™ connection status
- Fault, Clip, Level Meter status

1. Amplifier Mode Setting
2. Input signal setting
3. Component status display - Filter, PEQ, Delay, Limit
4. Volume, Delay, Polarity, Channel Link setting

Filter / Crossover



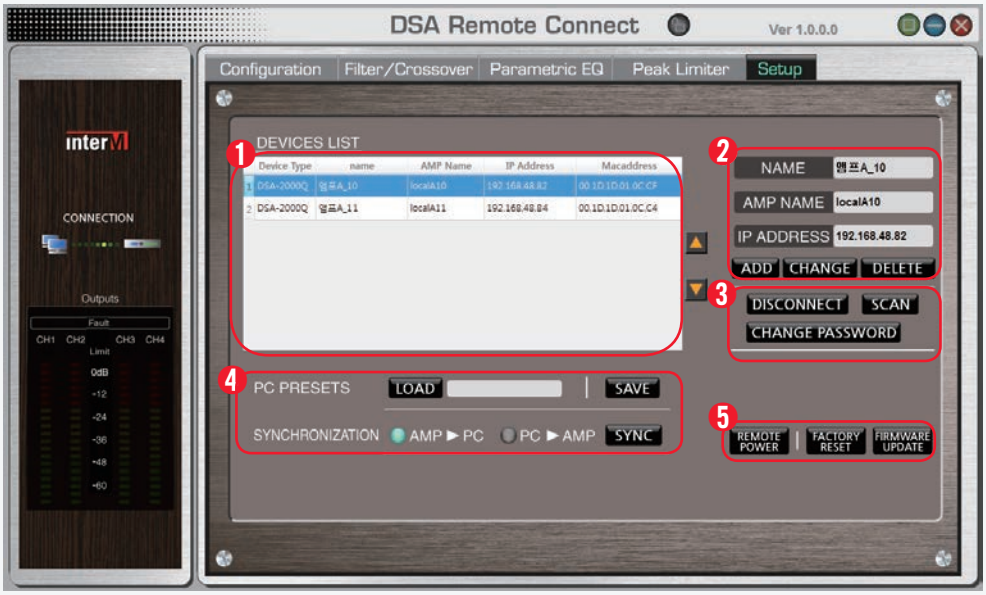
1. Crossover graph display
2. Selection Channel link
3. HPF / LPF frequency adjustment range : 20Hz ~ 20kHz
4. Filter type selection : Off, Butterworth, Bassel, Linkwitz-Riley
5. Filter slope adjustment:12dB/18dB/24dB
6. Adjustment

Parametric EQ



1. 8-Band PEQ Graph Display
2. Selection Bypass / Defeat
3. GAIN control range : -15dB to + 15dB
4. Frequency control range : 20Hz ~ 20kHz
5. Q factor adjustment range : 0.1 ~ 10
6. Type selection : Low / High shelving support

Setup



1. Device information display : Name, IP address
2. PC Presets : Preset settings and saving
3. Synchronization : PC-device information synchronization
5. Scan : Search network for devices
6. Change Password
7. Remote Power, Factory Reset, Firmware Update

FRONT/REAR PANEL

FRONT PANEL



❶ Vents
- Vents for amplifier temperature control

❷ LCD
- Check or control the status of the equipment

❸ Equipment control button
- SELECT / ENTER: Moving / adjusting / selecting menu
- MENU : Executing setting menu
- ESC : Terminate control

❹ Operation indicator LED (PROT / CLIP / SIG)
- PROT : Lights up during protection operation
- CLIP : Lights when audio is clipped
- SIG : Lights up when audio is input

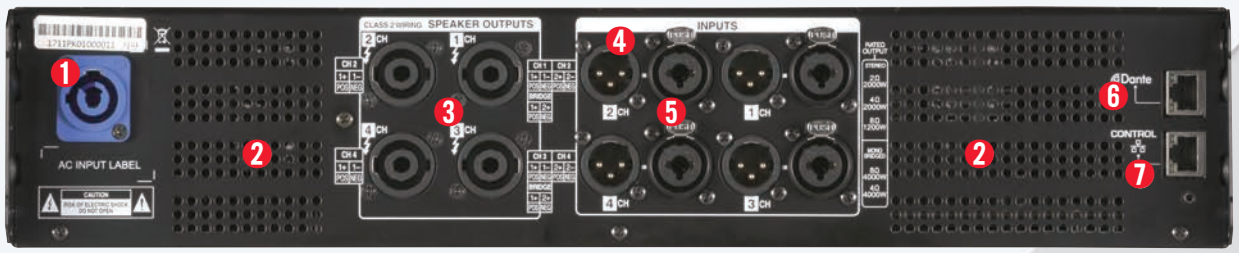
❺ Channel select / mute button
- Short press : Select the channel to control
- Long press : To mute the channel's output

❻ Bridge Mode Indication LED
Lights when corresponding channel bridge mode is set

❼ Power LED
Turns on when amplifier power is turned on

❽ Power switch
Control amplifier power

REAR PANEL



❶ AC power input terminal
Connected using connector

❷ Vents
Vents for amplifier temperature control

❸ Amp output terminal
4 Pole Speakon connector

❹ Analog audio pass-through terminal
- XLR male (balanced) connector
- pass-through the input analog audio to another device

❺ Analog audio input terminal
XLR Female / TRS COMBI (balanced) connector

❻ Digital audio input jack
- RJ45 connector
- Dante™ digital audio input

❼ Ethernet terminal
- RJ45 connector
- Ethernet network connection for equipment control

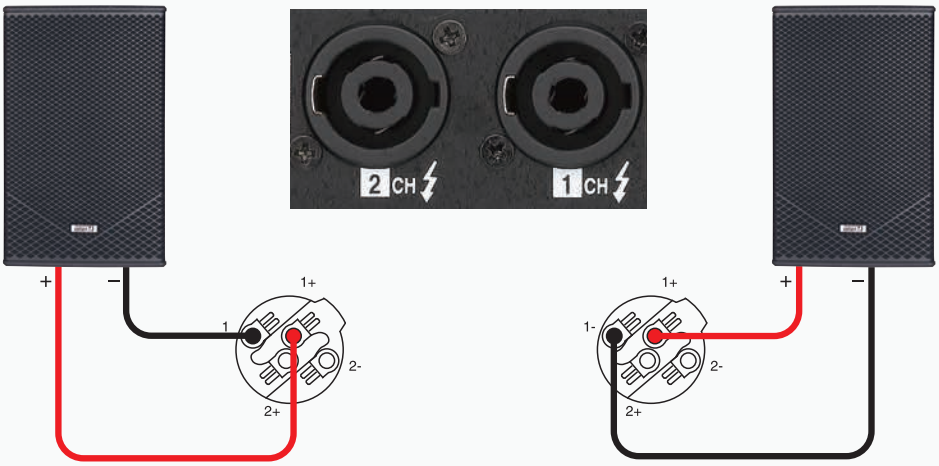
CONNECTION

· Various operation mode selection and application

STEREO MODE

Signals input to CH1 and CH2 inputs are independently amplified and output to OUTPUTS CH1 and CH2

Connect to speakers using 4Pole Speaker Socket for each of CH1 and CH2 inputs

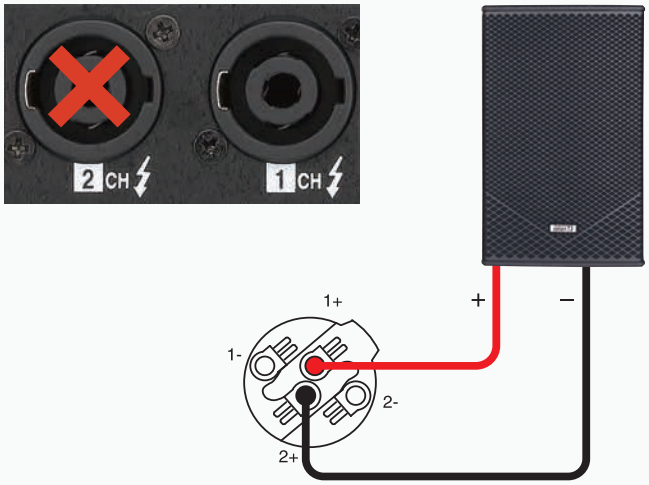


*Using two 4Pole Speaker Sockets
*2 Do not use + and 2–.

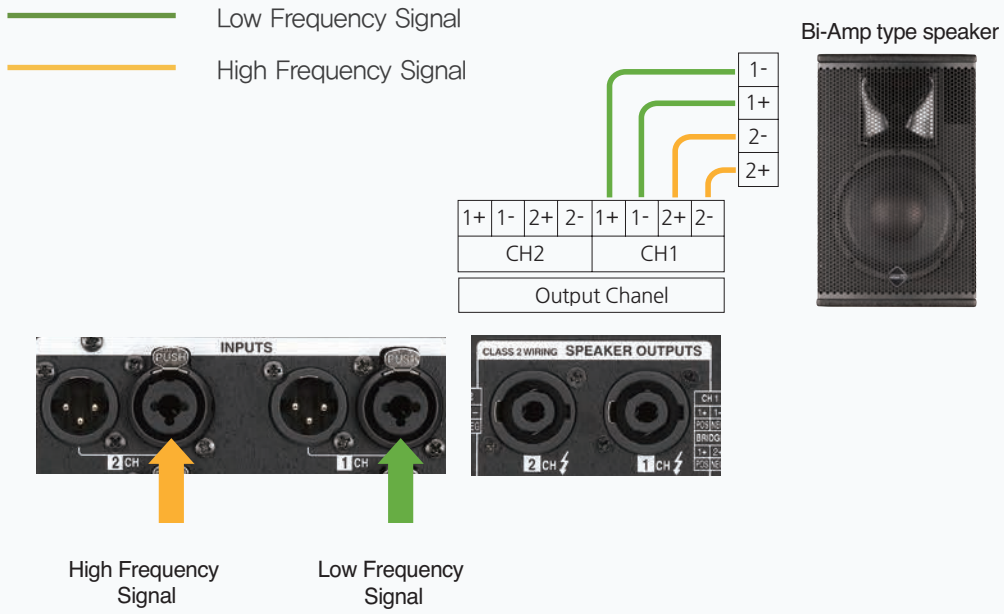
BRIDGE MODE

Signal input by the CH1 input is combined with the two amplifier modules into two outputs

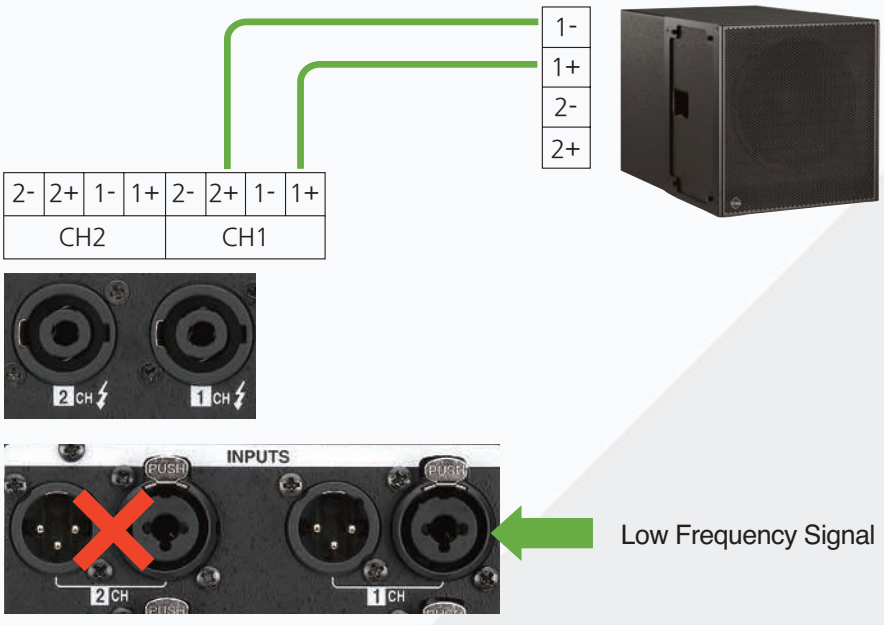
In BRIDGE MODE, the input signal is amplified by two amplifier modules.
Connected one speaker to the CH1 output using only one 4Pole Speaker Connector



When driving a Bi-amp type speaker with STEREO MODE



When driving a subwoofer speaker using BRIDGE MODE



LCD CONTROL

· Home Screen and Buttons



1) CH / MUTE : On the LCD initial screen, go to the Volume Set screen to adjust the GAIN (volume) of the CH
2) SELECT / ENTER Button
   * By rotating left and right, you can move the scroll to the top, bottom, left, or right and set the character.
   * Press and hold the button to select the function and move to the sub-item.
3) MENU button: On the LCD initial screen, moves to the MENU screen to set the function.
4) ESC button: Moves to the previous screen.

1. Channel GAIN / MUTE Setting

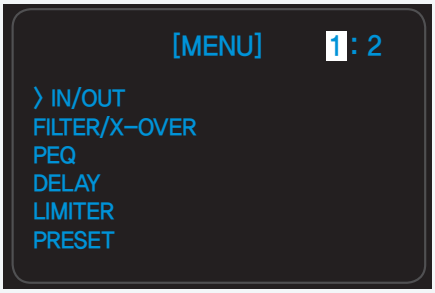
On the LCD initial screen, press the CH / MUTE button to move to [CHANNEL GAIN / MUTE].



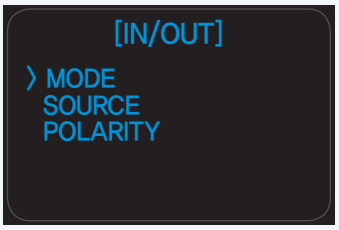
* GAIN can be adjusted by left / right adjustment of the SELECT / ENTER button.
* If you press and hold the CH / MUTE button after selecting a channel, the corresponding channel's MUTE function can be used. In the MUTE state, you can return to the original level.
* Press ESC button to return to the previous screen.

2. Select MENU / FUNCTION

On the LCD initial screen, press the MENU button to move to [MENU / FUNCTION].

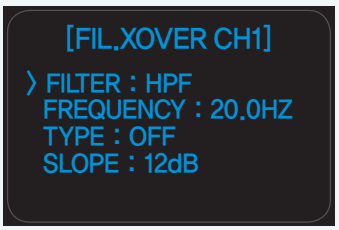






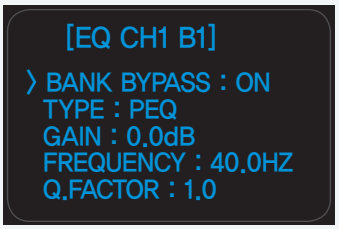
① IN/OUT

MODE : MONO, STREO, BI-AMP1, BI-AMP2, BRIDGE Setting
SOURCE : Set input signal to desired channel / Use signal link function
POLARITY : Set the phase of each channel
(Normal : Normal-phase / Invert : inverse-phase)



② Filiter/X-OVER

FILTER: Channel-specific HPF, LPF settings
FREQUENCY: Within 20Hz to 20KHz, adjustable to 0.1Hz STEP
TYPE : Select filters
Choose from BASSEL, LINKWITHZ-RILEY, BUTTERWORTH or OFF
SLOPE : 12dB/oct, 18dB/oct, 24dB/oct slope select



③ PEQ

Eight banks selectable per channel
BANK BYPASS ON : Default value,
BANK BYPASS OFF : Set frequency value (DSP operation)
GAIN : -15dB to + 15dB range, adjustable to 0.1dB step
FREQUENCY : Within 20Hz to 20KHz, adjustable to 0.1Hz STEP
FACTOR : Adjustable from 0.1 to 10.0 in 0.1 step



④ DELAY

0 ~ 300ms for each channel, adjustable in 0.1ms step
Default : 0.0ms



⑤ LIMITER

ON / OFF setting for each channel is available.
RELEASE TIME : Adjustable from 20ms to 400ms in 1ms step
ATTACK TIME : Adjustable from 1ms to 50ms in 1ms step
– THRESHOLD : Adjustable from 0.0dBfs to -25dBfs, 0.1dBfs Step



⑥ PRESET

LOAD PRESET : Load preset data
SAVE PRESET : Save preset data (Up to 10pcs can be saved)
VIEW PRESET : Check preset data

APLLICATION #1

· Point Source Speaker System

You can use DSA-500Q/2000Q and Inter-M's PE / HE / TE Series speakers for small and medium auditoriums, seminar rooms, and multi-purpose lecture rooms for speeches and musical performances.
For main speakers and stage monitors, High-output DSA-2000Q is suitable, and for delay speakers, DSA-500Q is ideal for even sound pressure to all audiences.



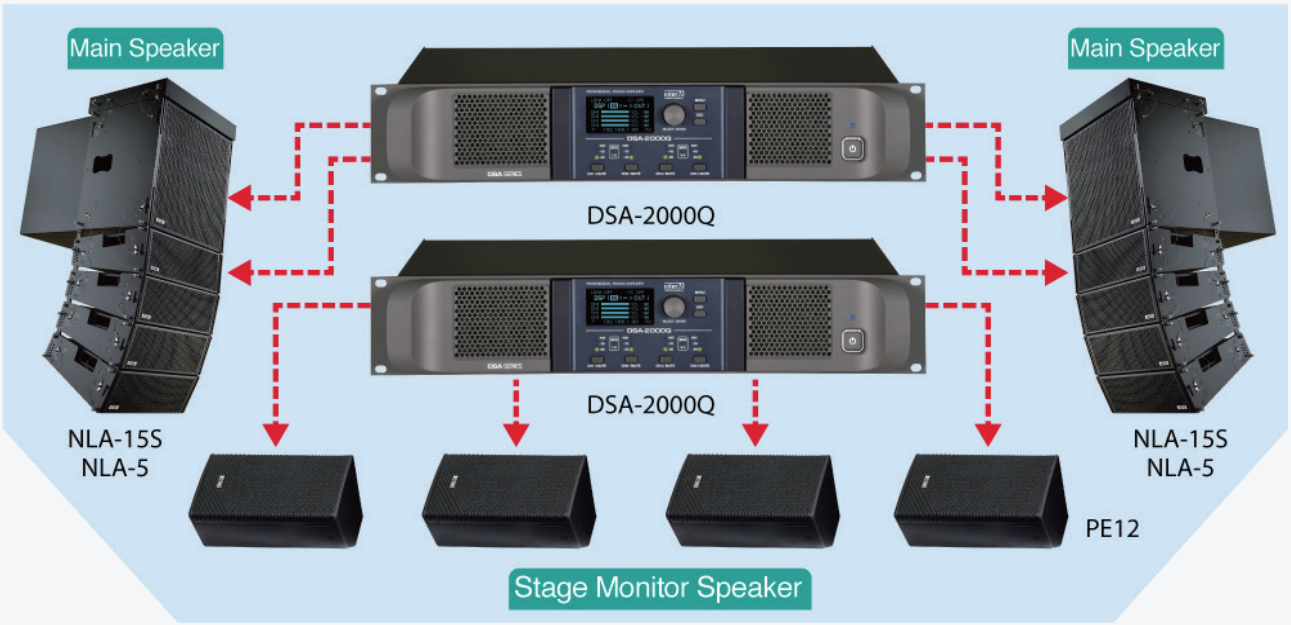


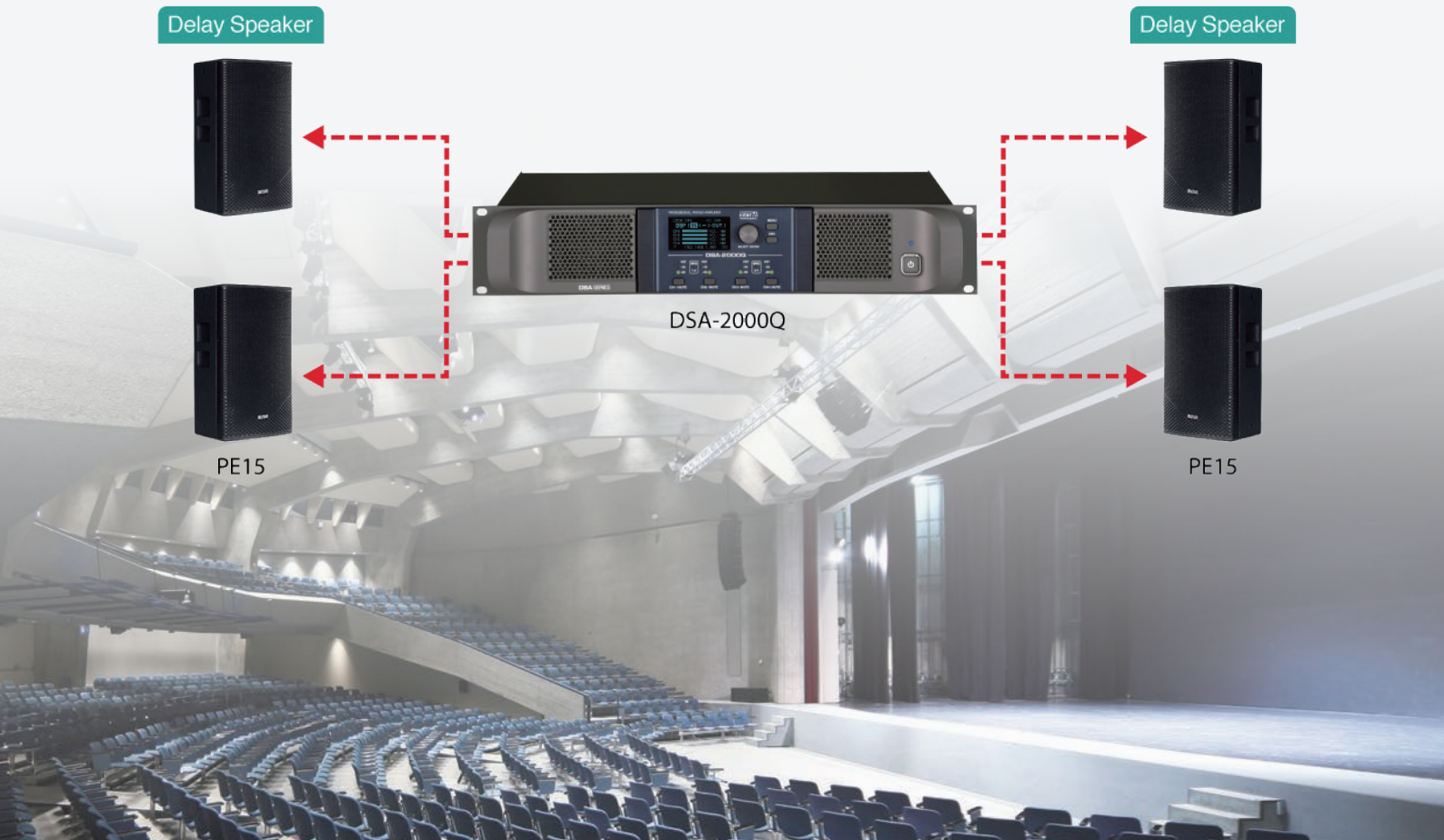


APLLICATION #2

· Line Array Speaker System

Using the DSA-2000Q 4 Channel amplifier, it can be applied to various environments that require professional audio ranging from medium size auditoriums and banquet halls to performance stages. Using Line array and subwoofer. The NLA series is designed as a main speaker for rich and powerful sound pressure. We used the PE series of Point source speakers to operate monitor speakers for performancers and delay speakers for relatively low sound pressure areas.





RECOMMENED SPEAKERS

			DSA-2000Q		DSA-500Q	
Speker Model	Power Handling (W)	Recommended Amplifier output(W)	Stereo 1200W (8Ω)	Bridge 4000W (8Ω)	Stereo 300W (8Ω)	Bridge 1000W (8Ω)
TE08	130	260	o	o	o	o
TE10	160	320	o	o	o	o
TE12	300	600	o	o		o
TE15	400	800	o	o		o
HE08	200	400	o	o		o
HE10	250	500	o	o		o
HE12	400	800	o	o		o
HE15	500	1000	o	o		o
PE08	250	500	o	o		o
PE10	300	600	o	o		o
PE12	500	1000	o	o		o
PE15	600	1200	o	o		
MS-80	80	160	o	o	o	o
MS-100	100	200	o	o	o	o
MS-130	130	260	o	o	o	o
MS-200S	200	400	o	o		o
MS-400S	400	800	o	o		o
IX8	125	250	o	o	o	o
IX12	200	400	o	o		o
IX15	300	600	o	o		o
IX8H	225	450	o	o		o
IX12H	400	800	o	o		o
IX15H	600	1200	o	o		
CSB-12K	500	1000	o	o		o
CSB-15K	600	1200	o	o		o
CSB-18K	800	1600		o		
CMM-12K	350	700	o	o		o
CMM-15K	450	900	o	o		o

SPECIFICATIONS

		DSA-500Q	DSA-2000Q
Rated Power -20ms burst	8Ω, STEREO MODE	300W	1200W
	4Ω, STEREO MODE	500W	2000W
	2Ω, STEREO MODE	800W	2000W
	8Ω, BRIDGED MONO MODE	1000W	4000W
	4Ω, BRIDGED MONO MODE	1600W	4000W
Input Sensitivity		+4dBu	+10dBu
GAIN(STEREO,MONO)		32dB	
GAIN(BRIDGE)		38dB	
S/N		More than 92dB	
THD	1/3W Rated power	Less than 0.5%	Less than 0.7%
Frequency Response(1W, 0±2dB / 8Ω)		20Hz~20kHz	
DSP Precision		32bit Fixed Point(8.24 format)	
A/D, D/A		24bit conversion, sampling rate : 48kHz	
DSP Function		input gain, Parametric EQ, HPF, LPF, Limiter, Delay	
Operating Temperature/Humidity		-10℃~+40℃ / 0%~90%	
Operating Power		AC 220-240V, 50/60Hz	
Operating Power(1/8 rated output power@2Ω)		390W	700W
Weight(Set)		10.48kg	11.79kg
Dimensions(Set)		482(W) x 88(H) x 420(D)mm	

Inter-M Corp. (IMK)

719, Dobong-ro, Dobong-gu, Seoul, Korea
Overseas Sales Team
Tel_ +82-2-2289-8141~7 **Fax_** +82-2-2289-8149 **E-mail_** overseas@inter-m.com **www.inter-m.net**

※ Design and specification are subject to be changed for the improvement of product quality without pre notice.

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