

mini COM.P.A.S.S. iMode



Outline

Outlinearray



2005: OUTLINE INVENTS THE ROBOT-ARRAY...

Following the wishes of founder Guido Noselli, Outline patented the first robotized loudspeaker enclosure of all time: **COM.P.A.S.S.** In fact, the **COMpact Polar Adjustable Sound System** received Europe's most coveted acknowledgment: **the Award for Product Innovation** at London's 2005 Plasa Show.

Its revolutionary peculiarity consists in the fact that its dispersion can be remote controlled as required on both planes; all by means of motorized actuators and control software, once the element has been positioned (alone or in multiples) when used for sound reinforcement.

So 2005 saw the beginning of a new chapter in Sound Reinforcement history, and the ambitious corporate mission aimed at combining "**Mind, PC and Enclosure**" in fact became a reality.

TODAY...

The latest "iMode" version of today's Mini-COM.P.A.S.S. takes its form from the COM.P.A.S.S., which can be considered an exemplary "concept".

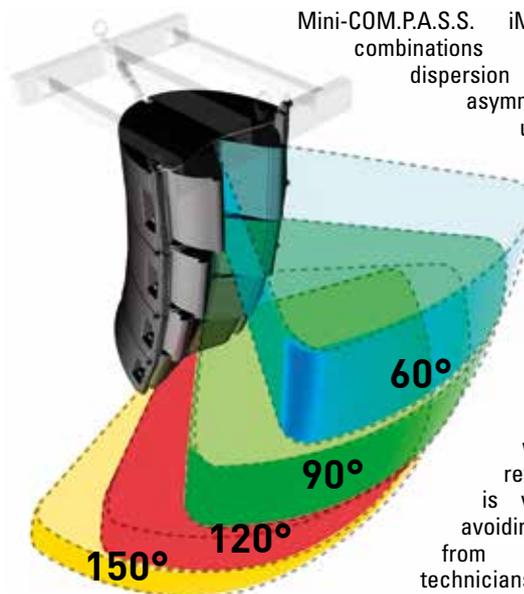
A compact, ultra-light (23kg / 50.7lb) **self-powered** element, equipped with six loudspeakers: **four high-efficiency 5" mid-woofers** with a twin neodymium magnetic circuit and **two compression drivers, each with a 1.75" diaphragm** and loaded with a D.P.R.W.G. waveguide (Outline patent - see specific paragraph). Mini-COM.P.A.S.S. is the only compact VLA on the world market that ensures a fundamental feature:

- **Adjustable horizontal directivity with a very wide angle of variation, from 60° to 150° in 15° steps per side in relation to the axis, even asymmetrically.**

HOW...?

By means of a simple, reliable mechanical movement, it is possible to move the system's "wings" (or the sides of the waveguide) and aim them as required, thus modifying the system's acoustic dispersion characteristics to meet the most varied needs.

SOUND IS ONLY AIMED WHERE IT'S NEEDED



Mini-COM.P.A.S.S. iMode has 16 combinations of horizontal dispersion (including asymmetric ones), for use according to the size and position of the audience, but also according to venues' acoustic properties. For example, in arenas with excessive reverberation, it is very useful for avoiding reflections from walls. Audio technicians are well aware that the "intelligibility" factor is decisive for a show's success or failure from an acoustic point of view. **Because sound is only aimed where it's needed.**

iMODE: THE INTELLIGENT AUDIO PLATFORM

Outline's Mini-COM.P.A.S.S. embodies iMode, an innovative (proprietary) Digital Loudspeaker Multi-Control Platform, conceived to re-think the state of the art in the world of loudspeaker system control.

HOW DOES iMODE WORK? Directly from the computer to the loudspeaker enclosure.

This is the basic principle of this unique Outline technology. Every Outline loudspeaker system equipped with "iMode" has a PC, network and Web site on board. Users therefore access a computer, not a loudspeaker enclosure, "navigating" in the enclosure's core using a normal Web browser (Internet Explorer, Chrome, Safari, Firefox, etc.).

Summing up: a PC in the cabinet, with a Web site that is used as a control unit of the actual enclosure. Anything that has to be "communicated" to the enclosure is done via "its" Web page. The obvious substantial difference compared to competitors is that there is nothing - no processor, matrix, software or other equipment - between the computer and the loudspeaker system.

To fully understand iMode's potential, visit www.outlineimode.com

EVERYTHING UNDER CONTROL WITH iPad, iPhone AND iPod TOUCH

The Mini-COM.P.A.S.S. iMode can be controlled using an iPad, iPhone or iPod touch, with native applications, in real time, via WiFi (APPS downloadable from Apple Store's Productivity category). **Precisely what can be controlled?**

- Gain
- Mute
- Polarity
- Delay
- Filters
- Impedance measurement (in "live" mode with a music signal and in "warehouse" mode, via a test signal)
- Limiter (RMS/Peak)
- Bypass of all functions
- Ghost technology: for the creation of "steered" arrays and separate control of a group or single enclosure
- Network settings (static/dynamic IP)
- Variation of network communication speed (to ensure the best network topology match)
- Enclosure description (the enclosure's name)
- 3-level system update (application, presets, operating system)
- Type of input: analogue/AES3 digital (two channels with possibility of selection)
- Sensitivity: +10dBu/+20dBu (to optimize interfacing with analogue devices)
- Power LED (a power LED lights up, enabling the enclosure in question to be identified at a glance)
- Amplifier Mute

The system has EVERYTHING on-board: EQ, compressors, crossovers, matrices, DSP or any other outboard units are not required. This means greatly simplified system transport, storage and cabling, resulting in a considerable reduction in costs.

UP TO 2 SECONDS' DELAY AND A TWIN COMPRESSOR-LIMITER PER CHANNEL

In the event of the PA to control being complicated - for example in the case of multiple VLAs - and a delay being required, Mini-COM.P.A.S.S. iMode provides a delay time of up to 2 seconds for each channel, an operation normally only possible with a matrix. This is yet another feature that clearly distinguishes it from competitors (which offer a few milliseconds to align the enclosures' LF and HF sections). Mini-COM.P.A.S.S. iMode can also count on a twin dynamic processor for each channel (peak/RMS), guaranteeing its reliability.

FIR AND IIR FILTERS WITH A RESOLUTION OF UP TO 64 BIT

To obtain the maximum phase linearity and ensure even coverage of the area in question, Mini-COM.P.A.S.S. iMode uses FIR and IIR filters with a resolution of up to 64 bit. Another unique characteristic among compact VLAs on the international market that contributes to making this system a unit for no-nonsense professional Sound Reinforcement applications.

iMODE FEELS THE MOVEMENT OF WINGS

The power of iMode technology is exploited better by a MiniCompass than by Outline point source systems, thanks in particular to the former's unique feature: adjustable horizontal directivity with a very wide range of variation: from 60 to 150 degrees.

Moving the "wings" (the sides of the waveguide) in sixteen possible combinations - including asymmetric ones - means changing acoustic radiation (directivity) conditions each time. At this point, an ingenious sensor-based recognition unit comes into play, with the job of "informing" iMode of the dispersion angle chosen by the user.

Whatever the angle is, on-axis response is always unvaried, as its phase response, by means of the "morphing" of the audio algorithm's parameters. The position of the "wings" can also be viewed on the iPad screen in real time. In fact, iMode "perceives" the physical movement carried out manually by the user on the enclosure and immediately displays it on the screen.

This instant feedback to the tablet is not easily expressed in words but, seen under effective working conditions, is a clear demonstration of the concept of sensor applications, and the resulting benefits.



D.P.R.W.G. WAVEGUIDE: REFERENCE HF SECTION

The section for the reproduction of the high frequencies on the Mini-COM.P.A.S.S. iSP is entrusted to two compression drivers, each with a 1.75" diaphragm and loaded with a **D.P.R.W.G.** (Double Parabolic Reflective Wave Guide), an Outline international patent, already used successfully on the other VLAs manufactured by

the company. The result of three years' research and trials, the D.P.R.W.G. is a truly original device, the design of which is based firmly on mathematical calculations.

Further information can be found in the **White Paper** by Guido Noselli, which can be downloaded from www.outline.it.

HIGH-PRECISION MECHANICS

No matter how many enclosures are used, setting up the VLA is a job that takes just a few minutes and does not require any physical strain. The mechanics of the flying system offers the necessary precision for the foreseen adjustments with resolution of 0.5° per step between the elements, in spite of the capacity being over-sized compared to the load. The mechanics' intelligent design facilitates individual elements' positioning.



Outline uses top-grade mechanisms: the result of a skilful combination of top quality material and treatment used, in order to ensure the structure superlative hardness (500 HV) and for extremely high resistance to corrosion and abrasion, as well as high resistance to stress. All with a really low weight.

APPLICATIONS

BOTH PERMANENT AND PORTABLE SYSTEMS. MOBILE AND TOURING APPLICATIONS, MEDIUM-SIZED PA COMPANIES. CORPORATE AV, HOUSES OF WORSHIP, PERFORMING ARTS CENTRES, CONCERT HALLS, THEATRES AND OTHER SIMILAR APPLICATIONS.

MiniCOM.P.A.S.S. iSP KEY FEATURES

- Adjustable horizontal directivity (60° to 150°, even asymmetrically)
- 16 different horizontal pattern controls
- Built-in Outline's proprietary 'iMode' technology (Intelligent Audio Platform)
- Extremely high audio quality (192 kHz minimum, 24-bit A/D and D/A conversion)
- Analogue/AES3 digital inputs (from the computer to the enclosures - directly)
- Linux OS with Outline-customized kernel for great stability and flexibility
- Fully controllable using an iPad, iPhone, iPod Touch
- Fitted with Web server and sophisticated network facilities
- FIR and IIR filters with a resolution of up to 64 bit
- Ghost technology (creation of "steered" arrays; separate control of a group of speakers/single enclosure)
- Twin dynamic processor for each channel (peak/RMS)
- Up to 2 seconds' delay and a twin compressor-limiter per channel
- Feedback circuit from transducers and diagnostic capabilities
- Self-powered loudspeaker system (500+500 Watts)
- Components: 4 x 5" (LF/MF); 2 x 1.75" (HF) diaphragms
- 2 Outline's D.P.R.W.G. waveguides
- Very high SPL (4 modules): 141 dB @ 1 m (peak)
- Very low weight (including flying hardware): 23 kg - 50.7 lb



The **PLATE-E265** is designed to support up to two Mini-COM.P.A.S.S. line array cabinets in a ground stacked setup. When used on top of Outline subwoofers the "PLATE-E265" is secured using the M20 flange.

FLYSUB 15 iSP KEY FEATURES

- Low frequency reinforcement unit for Mini-COM.P.A.S.S. iSP array
- Self-powered system equipped with Outline's iMode technology
- Analogue and digital (AES/EBU) input
- Fully controllable using an iPad, iPhone, iPod Touch
- Internal two-port Ethernet switch to reduce the need for external networking hardware
- Small footprint - low visual impact
- Single 15" double-spider woofer
- Trapezoidal design
- Integrated ultra-light flying hardware

FLYSUB 15 iSP is a self-powered subwoofer specifically designed to reinforce the low-frequency response in a Mini-COM.P.A.S.S. iSP array. It features a single 15" woofer (76 mm voice coil and double spider), customized in order to have a very low distortion figure both at low and high levels.

The transducer is loaded in a bass-reflex enclosure and is mounted on an oblique baffle, that gives the loudspeaker a secondary loading, which improves the overall tonal balance.

The accurate placement of the reflex ports, on the same baffle, eliminates air turbulence noise, allowing superior fidelity, even at higher SPLs. The internal class-D amplifier is able to deliver 1000 W EIAJ on 8 Ω.

The integrated suspension hardware is a combination of top quality material and treatment in order to ensure extremely high resistance to stress, corrosion and abrasion - resulting in a simple, effective, and light weight rigging system.

The angle between the enclosures is selectable from 0° to 7.5° with a 0.5° step.

The cabinet is built from high-quality birch plywood and strengthened by the internal structure and thus is free from harmful colouring due to internal resonances.

A sturdy steel painted grille, internally covered with acoustically-transparent foam and braced with two reinforcement bars provides superior physical protection for the components housed within the front of the cabinet. Four recessed handles facilitate the handling and dedicated flight-cases make the transport easy and safe.





iMODE APP: iPad OPERATION

Available on the
App Store

Available on the
App Store



FIG. 1



FIG. 2



FIG. 3

FIG. N° 1 Monitor input and output gains, confirm the cabinets' horizontal angle, being symmetric and asymmetric

FIG. N° 2 Take a photo and set the back ground from the actual event

FIG. N° 3 EQ, delay, reverse the polarity, on individual or selected groups

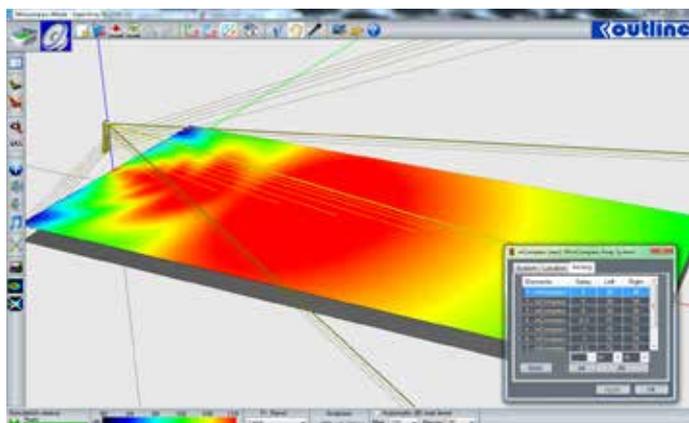


**ON REQUEST,
MINI-COM.P.A.S.S. IS AVAILABLE
IN AN ALMOST LIMITLESS RANGE
OF COLOURS TO SUIT ANY DÉCOR.**

OPENARRAY 3D SIMULATION SOFTWARE

OPENARRAY is the avant-garde control and 3D simulation software, written by Outline's R&D team.

It's a three dimensional software program that can predict the results expected from either a live performance or an installation of a wide range of Outline products, including all the Line Arrays and subwoofers models as well Outline's most popular point source systems. The result is a 'tool' able to guide PA system engineers through correct set-up procedure from an acoustic and mechanical point of view while fully respecting safety norms.



OPENARRAY greatly facilitates installation, setting and aiming of Line Array elements: the risk of poor results is thus drastically reduced. The technology behind **OPENARRAY** is based on a GL platform and features incredibly fast rendering time from input of data to final design.

OPENARRAY also has the ability to import DXF files, thus giving engineers a head start to final deployment of the intended system. This, and many other features, makes **OPENARRAY** one of the most exclusive product on the international scenario.



TECH SPECS

TRANSDUCERS & LOADING

LOW/MID
HIGH

ACOUSTICAL

FREQUENCY RANGE (-10 dB)

MAX PEAK (Short Term) SPL @ 1 m

COVERAGE ANGLE

Vertical
Horizontal

POWER AMPLIFIERS

TYPE
RATED POWER

PHYSICAL DIMENSIONS (H x W x D)

WEIGHT

MiniCOM.P.A.S.S. iSP

4 x 5" NdFeB woofers with vented loading
2 x 1.75" diaphragm NdFeB compression drivers,
D.P.R.W.G. (Double Parabolic Reflective Wave Guide) loaded

"Flat" preset
100 Hz ÷ 20 kHz
131 dB SPL (1 enclosure in free-field)
141 dB SPL (4 enclosures in free-field)

Depends on array length and configuration
Depends on geometrical configuration (16 combinations)

Class D (Digital)
2 x 500 W EIAJ on 4 Ohm

35 x 55 x 41.6 cm (13.8 x 21.7 x 16.4 inches)
23 kg (50.7 lb)

FLYSUB 15 iSP

1 x 15" (381 mm) woofer, bass-reflex loaded

35 Hz ÷ 550 Hz (suggested X-Over @ 200 Hz max)
134.5 dB SPL (1 enclosure in free-field)
140.5 dB SPL (1 enclosure in half-space)

Depends on array length and configuration
Quasi-omnidirectional

Class D (Digital)
1 x 1000 W EIAJ on 8 Ohm

73.4 x 55 x 54.6 cm (28.9 x 21.7 x 21.5 inches)
45 kg (99.2 lb)

MiniCOM.P.A.S.S. iSP & FLYSUB 15 iSP

AUDIO INPUT

INPUT TYPE
CONNECTORS
INPUT IMPEDANCE

AC POWER REQUIREMENTS

CONNECTORS
VOLTAGE SELECTION

CURRENT CONS. (Continuous)

Recommended max number
of enclosures on the same AC Line:

Analogue/Digital AES3
1 XLR + 1 Link Out
10 kOhms

1 PowerCon + 1 Link Out
Automatic selection
two ranges (115 V / 230 V)
1.6 A (230 VAC), 2.6 A (115 VAC)

3

REMOTE CONTROL

CONNECTORS
FEATURES

RIGGING (Mounting Information)

FLYING SYSTEM
MAX ARRAY WEIGHT
SPLAY ANGLES between enclosures

FRAME

MATERIAL
DIMENSIONS (H x W x D)
WEIGHT

2 x EtherCon (RJ 45 Socket)
Built-in iMode Technology

Integrated hardware
300 kg (12 miniCOM.P.A.S.S. or 6 FLYSUB)
0/ 0.5 / 1 / 1.5 / 2 / 2.5 / 3 / 3.5 / 4 / 4.5 / 5 / 6 / 7 / 7.5

Light-weight, high-strength aluminium alloy
10 x 70 x 85 cm (3.9 x 27.6 x 33.5 inches)
12 kg (26.5 lb)

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