



Multi purpose high power touring monitor SMX15

Overview

The SMX15 is a high sonic performance multi-purpose loudspeaker combining high performance with sophisticated ergonomics to answer the needs of professional users.

The SMX15 relies on coaxial technology to offer a perfectly coherent conical acoustic field of 85°.

Designed for applications requiring a combination of accurate sonic precision and very high SPL down to low frequencies, the SMX15 delivers an audio quality and accuracy to rival the best studio monitors as well as exceptional dynamic capability with very low distortion. The unique ergonomics of the SMX15 makes it a highly versatile product adapted to many different types of application, and in particular as monitor wedge thanks to its ATS™ System (Aiming Tuning System).

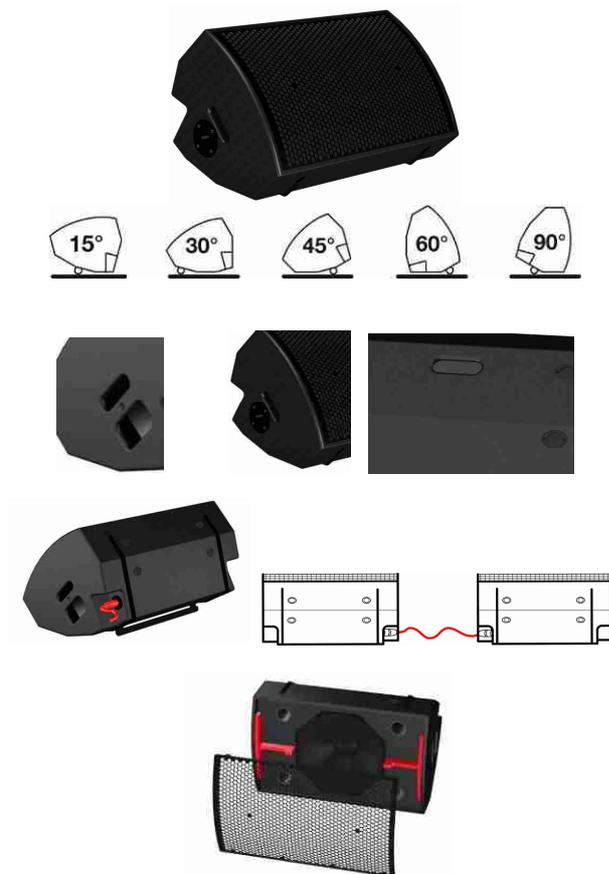
Benefits

The SMX15 is fitted with highly optimised transducers in terms of acoustic performances. Taking advantage of a proprietary technique of forced thermal transfer, which drastically reduces thermal compression effects, the SMX15 offers exceptional sound pressure capacity down to 60 Hz. The high frequency section uses a neodymium compression driver offering extremely low distortion and frequency extension up to 20 kHz. Linearity of frequency and phase responses confer an exceptional feedback reduction.

The sophisticated ergonomics makes the SMX15 adapted to all professional demands: versatility, compactness, ease and precision of set up. The ATS™ technology enables the speaker to be tilted at five different angles: 15°/30°/45°/60°/90°. It is made possible thanks to magnetic block that is fixed onto the speaker with a discrete cable.



1. SMX15 speaker



SMX15 is a two-way bi-amplified coaxial loudspeaker. The mid/low section consists of a 38cm (3" coil) speaker while the high section has a 1.4" HF driver (3" coil).

The ATSTM system (Aiming Tuning System) utilizes a magnetic block connected to the speaker with a fine cable which enables the speaker to be tilted at five different angles (15°, 30°, 45°, 60°, 90°).

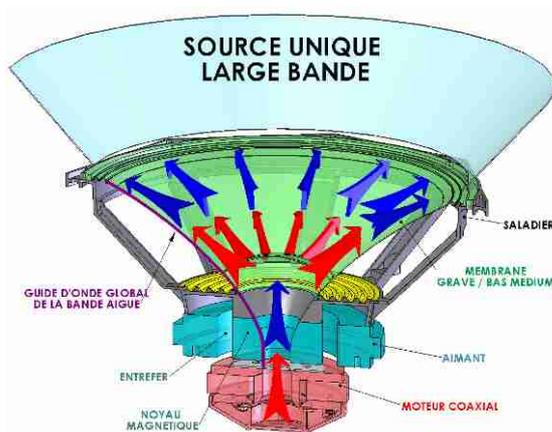
Three integrated handles ensure straightforward lifting and handling.

Connectors are located in two recesses, one on each side of the cabinet. This ensures that the connectors are fully protected whilst remaining accessible at all times.

Two rubber bands prevent the speaker from slipping when in use as stage monitor as well as protecting the cabinetry and paintwork.

The rugged steel grille is reinforced to offer maximum protection, and will not bend or buckle, even when stood upon.

2. Internal technology and cabling



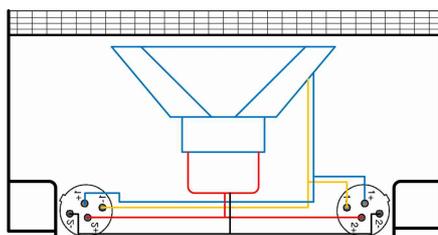
Coaxial loudspeakers

A coaxial loudspeaker is one in which the individual driver units are placed one inside the other to radiate sound from the same axis. The resulting single point source generates a perfectly coherent acoustic field.

The overall weight of the SMX15 is just 29 kg thanks to the use of lightweight neodymium magnet drivers.

The 15" mid/low section takes advantage of the large ported enclosure to deliver extended low frequency response while the 1.4" HF driver offers a response up to 20kHz.

The loudspeakers have been optimized by APG's designers and engineers in order to reduce distortion. Similarly, we've opted for a "pure" coaxial technology approach (no horn) to avoid diffraction of high frequencies on the edge of the horn.



Câblage « haut-parleurs » interne

La connexion entre les amplis et les enceintes se fait grâce à des connecteurs Speakon™ 4 points.

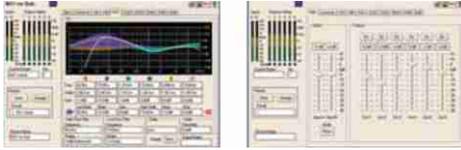
1+/1- en Lo/LoMid

2+/2- en Mid/Hi

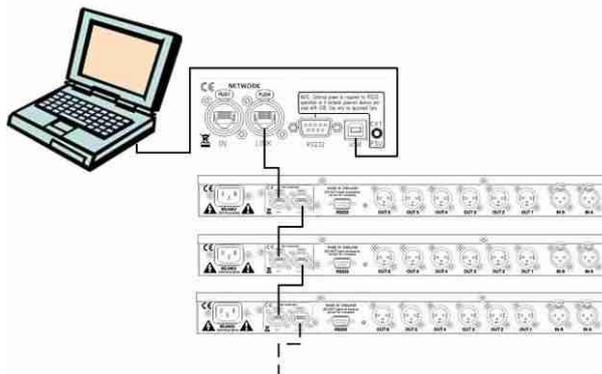
3. Electronics and cabling



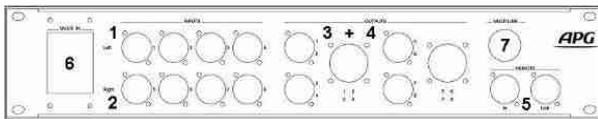
Digital processor DMS26



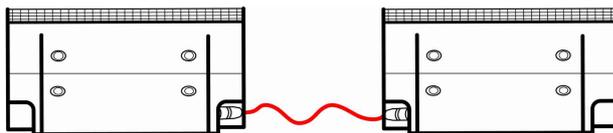
PWAPG Interface



Up to 119 DMS26 in daisy chain.



Connecting patch



Signal processing : digital processor DMS26

The APG DMS26 processor features 2 inputs and 6 analog outputs (96kHz/24 bits).

The DMS26 comes pre-loaded with the APG loudspeaker presets. It is also possible to create and save your own presets.

Several DMS26 devices may be networked together using a **BVNETCARD** card and the **BVNETADAPT** interface for large scale configurations with remote control via the **PWAPG** software.

Power Amplification

APG recommends the use of professional amplifiers with following minimum power values :

SMX15 Lo Section : 1200W into 8 Ohms

SMX15 HI Section: 600 W into 8 Ohms

Connection panel for SMX15 Amp racks : PCM panel (mono) and PCS panel (stereo)

1. 4 XLR 3 inputs
2. 4 XLR 3 links (PCM) OR 4 XLR 3 inputs (PCS)
3. 2 Speakon™ 8 point outputs
4. 4 Speakon™ 4 point outputs
5. Network connectors (In + Link)
6. Location for Harting™ 24 point connector
7. Location for cable gland (Ø 26mm)

Cabling : daisy-chaining

Cabling is done with Speakon™ connectors and 2.5mm² conductors.

Daisy-chaining is carried out using discrete cables, thus avoiding the risk of breaking connectors.

4. Low frequency extension



TB218S

TB215S



TB118S

TB115S

Subwoofers

APG recommends the use of TB series subwoofers (K-horn technology) in order to extend the system's bandwidth down to infra bass.

SMX15 alone : 55Hz – 20kHz

SMX15 + TB115S : 45Hz – 20kHz

SMX15 + TB118S : 40Hz – 20kHz

SMX15 + TB215S : 45Hz – 20kHz

SMX15 + TB218S : 35Hz – 20kHz

The subwoofer and cardioid network configuration presets for the DMS26 digital signal processor are provided on demand.

Combination examples :

2 x SMX15 and 2 x Sub TB115S

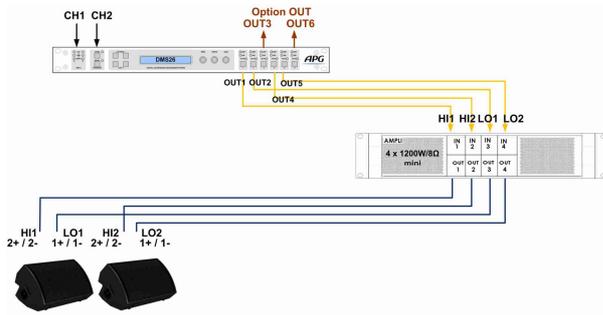
2 x SMX15 and 2 x Sub TB118S

2 x SMX15 and 1 x Sub TB215S

2 x SMX15 and 1 x Sub TB218S

5. System configuration

Stereo kit or 2 channel stage monitoring



SMX15 stereo kit

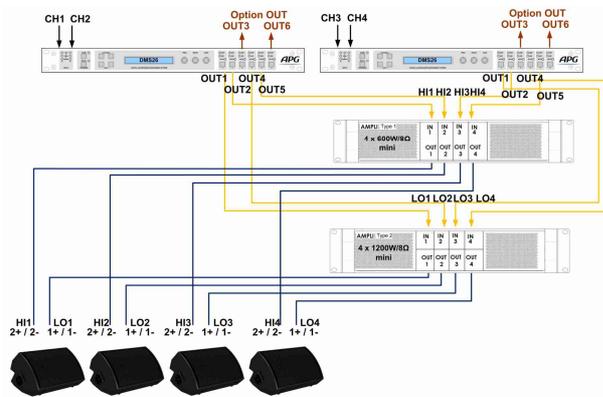
Main elements:

- 2 x SMX15
- 1 x PCM
- 1 x DMS26
- 1 x amp (4 x 1200W/8Ω mini)

This configuration can be used as main FOH or side fill system.

This kit is also used for mid range power FOH full range system and rental inventories.

Four channel system



SMX15 four channel kit

Main elements:

- 4 x SMX15
- 1 x PCM
- 2 x DMS26
- 1 x ampli type 1 (4 x 600W/8Ω mini)
- 1 x ampli type 2 (4 x 1200W/8Ω mini)

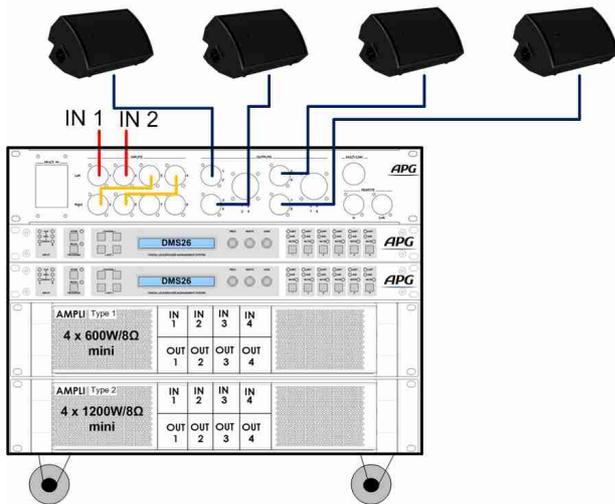
Network and remote control option :

- 2 x BVNET Card
- 1 x BVNET Adapt

This kit is a typical stage monitor configuration for touring applications.

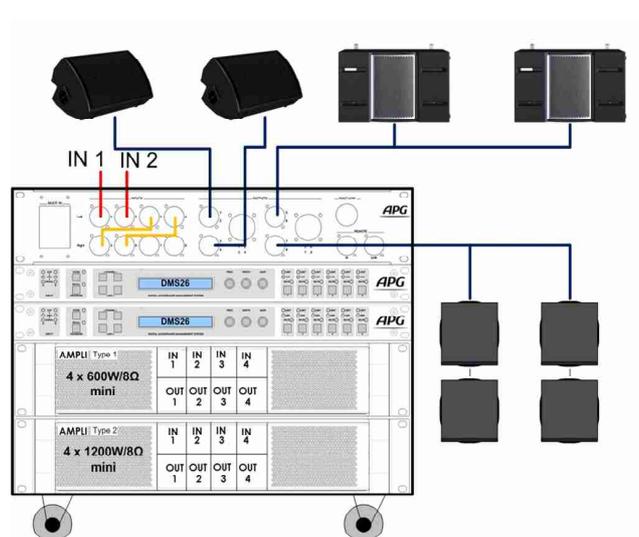
Example 1:

Use of the standard rack for 4 channels stage monitoring



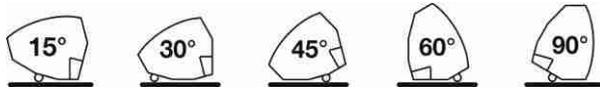
Example 2:

Use of the standard rack for F.O.H. system
2xSMX15 + Sub 2xTB218S+ Delay 4xMX1



The presets adapted to the different configurations (FOH, stage monitor, with or without processing, etc...) are available on APG's web site : www.apg.tm.fr

6. Install



On the ground

5 orientation angles are possible when SMX15 is on the floor, thanks to the ATS™ System (Aiming Tuning System). The choice of angle depends on the stage configuration and the position of the artist. See paragraph 7 for more details.



Example of coupling with a TB118S.

In some stage monitor applications (Drum fill, Side fill), the SMX15 can be coupled with a subwoofer of the TB range; giving a compact and discreet system on stage.

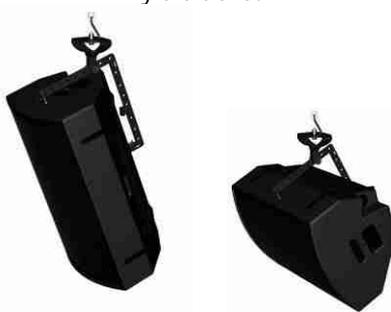
This configuration is adapted to stage monitor when the artist is sitting.



Lyre bracket

For the permanent or temporary installation, different rigging options are available:

- Bracket for a horizontal position – adapted to roof hanging installations.
- Rail + rotule combination offers an easy and quick install and setup – adapted to rental use and vertical use (SMX15 on stick)



Rail + rotule

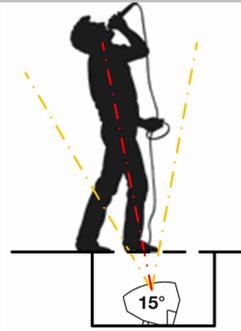


SMX15 + pied

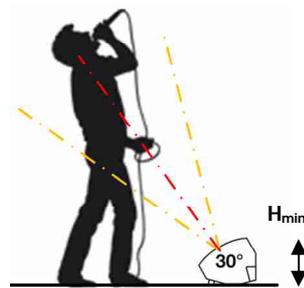
SMX15 can be put on stick. It is equipped with a standard 36mm hole for close FOH use or side fill on stage...

Thanks to the location of the connectors, even in FOH configuration, the cables run along the stick and stay discreet.

7. Use of angles



15° angle for under stage. This solution is often used on TV stages to hide the monitor speakers.
From approx. 0,5m to 1,5m.

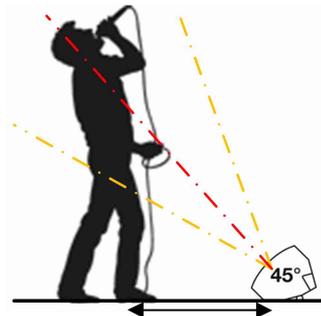


30° angle for use in close range on theater or concert stage.

In this position, the speaker presents its low profile, reducing the visual impact for the audience before the stage. This angle is adapted to small stages and when the speakers are on the edge of the stage.

Min Height : 0,32m

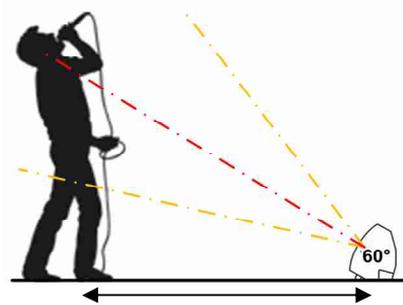
From approx. 0,5m to 1,5m



45° angle for use in medium range on theatre or concert stage.

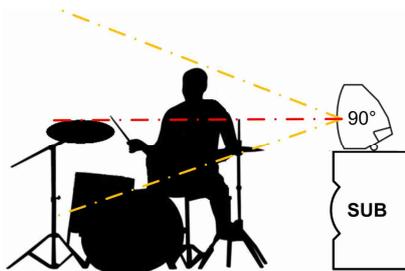
This angle offers a more extended cover.

From approx. 1m to 2,5m



60° angle for use in a further range for artists in the back of the stage (dancers, choirs ...) It is also a very useful angle to hide speakers on the side of the stage.

> 2,50m

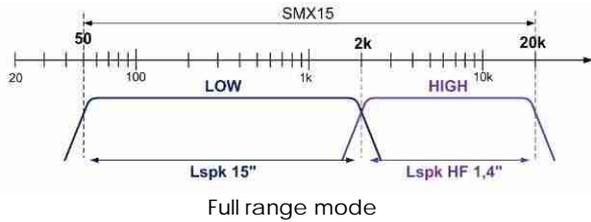


Sitting artists (drummers, keyboards, etc.).

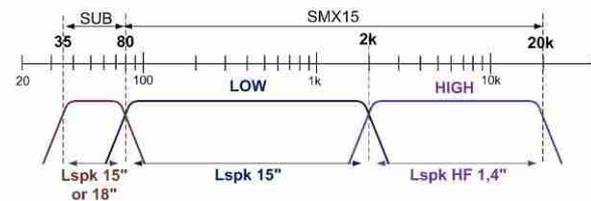
In this case, the combination SMX15 + Sub is more discreet than when the speaker is vertical. This angle is also perfect for use on the front stage or on large scale stages.

Acoustics fields represented at -3dB from axle.

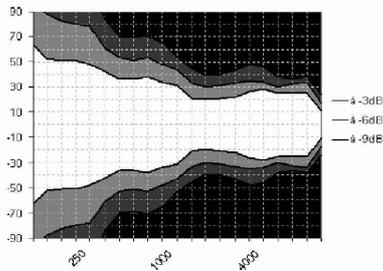
8. Characteristics



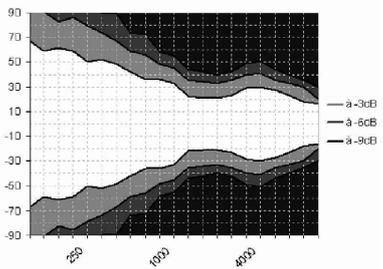
Full range mode



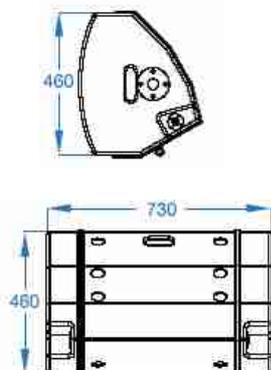
Combination with sub



Horizontal directivity



Vertical directivity



Technical specifications

Speaker

	Low section	High section
Response ($\pm 3\text{dB}$) *	50 – 2000 Hz	2 – 20 kHz
Efficiency @ 1W /1m	100 dB SPL	110 dB SPL
Power AES	800W	125W
Max SPL @1m		130 dB SPL
Peak SPL @1m		136 dB SPL

*the crossover is carried out by the DMS26 digital processor that also enables to temporarily align two coaxial sources. The result is an acoustic response exceptionally linear in amplitude as well as in phase.

Components

	Low section	High section
Transducers	1 x 15"	1 x HF 1,4"
Impedance	8 Ohm	8 Ohm
Coil diameter	3"	3"
Average angle directivity	80° (conical coverage)	

The measures of directivity in the horizontal and vertical plans show an acoustic field with no defect nor major accident.

This confirms the absence of diffraction that appears with most other products based on classical horn.

Physical characteristics

Dimensions	18"x 28.7"x 14.4"
Weight (unit)	64 IB

Materials

The woodwork is made of birch plywood covered with a black high resistance aquarethan coating. The front protection grill is made of punched steel, providing high acoustic transparency. The grill is 2mm thick which is enough to handle the weight of a person without plying. An acoustic foam is glued under the front grill to protect the speakers against projections of dust and liquids.

Training

APG organises a number of training days on the use of its product aimed at different areas of specialisation within the world of professional sound reinforcement. There are two levels of training: sound technician and sound engineer.

Technical support

APG's technical support engineers offer an advanced level of ongoing technical support with the aim of finding the optimum solution from both a technical and economic point of view.

Also, as well as acoustic simulation performed using classic acoustic modelling software, APF has developed two "project specification" tools – APG Project Manager, and the APG Project Specification Guide software – which will enable third party installers to create and document an APG installation, which can then be easily reviewed and ratified by our technical department.

General information

APG takes no responsibility for errors committed on behalf of the users of their products.

APG has a comprehensive research and development policy for the continual improvement of its products and service.

Due to this, new materials, manufacturing methods and technological changes may be introduced without prior notice.

As a result, an APG product may differ from its published description in certain areas. However, unless otherwise indicated, its characteristics will always equal or better the published specifications.

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The logo for APG, consisting of the letters 'APG' in a bold, italicized, sans-serif font. The letters are black with a white outline, and there is a blue horizontal line underneath the text.