AXYS®Source[G2]System

Networkable, Self Powered, Sound Reinforcement Loudspeakers
with Built-in Digital Signal Processing

JBL PROFESSIONAL by HARMAN

AXYS®Sound Reinforcement - Total Transparency

A little History

The AXYS Source system was introduced to the world in 1986. The Source System was, at that time, one of the few commercially available self powered loudspeaker systems, a concept that is now common place throughout the pro audio industry.

The introduction of this system was a significant milestone in the history of the AXYS brand and included many ground breaking advances, which included:

- The Voltage Controlled Current Source (VCCS), an advanced technique to interface the transducers and control stages, which reduces the acoustical distortion to an absolute minimum
- Dynamic Level Control (DLC), circuitry which monitors and controls the average power applied to the speakers according to the power handling capacity without affecting the dynamic response.
- A high ratio of SPL (Sound Pressure Level) versus cubic volume. The modular concept and compact dimensions made transport very economical and easy.

But most importantly the system held true to the companies' philosophy of "Total Transparency". Hence the system was called "The Source" system, because it was the acoustical source that you could hear reproduced rather than a coloured version of it.

Following the success of the Source System several other ranges of self powered loudspeaker systems were added to the AXYS brand throughout the late 1980's and the 90's. Thanks to the quality engineering and components used these systems are still in use (20 years later) around the world working hard and sounding great.

The original source system was released in 1986

AXYS®G2 - The New Generation

AXYS®G2 Loudspeakers have been designed with the theatre, places of worship, corporate and live music industries in mind.

The full range models have active three-way designs which boast in a very smooth extended high frequency response. The result is a big 'hi-fi' sound which is achieved without compromising the power or dispersion characteristics required of a product in this class.

Drawing on the best of today's modern driver, amplifier and DSP technology, backed up with 25 years of experience in loudspeaker manufacture and focused attention to detail, the new generation will change the way you listen.

All G2 Series loudspeakers are self powered with built-in DSP and include 8 presets, switchable under software control over an RS485 network or directly from the rear panel of the loudspeaker.

Typical AXYS® Source stack
2 x B-07 + 1 x T-07

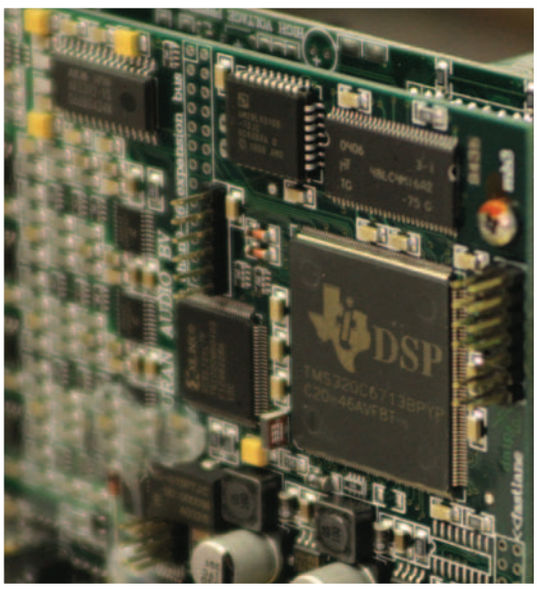
From total transparency to up-front vocals, It is very easy to change the tonal "flavour" of the G2 series using the supplied or downloadable presets, ensuring that your sound system can adapt to each application without further investment in technology.

For individual tastes and system configuration, delay times, EQ, gain and other system parameters can be adjusted using the supplied software, which allows system elements to be grouped and controlled together for convenience. Presets can then be stored in the speakers allowing fast easy and convenient switching.

Rigging G2 series speakers couldn't be easier - from the easy to stack Source^{G2}system to the Scope^{G2}series' 5-position tilting pole hole adaptor; from seat track to industry standard nutplate fittings - the choice is yours.

Optional Pan/tilt rigging frames are available.

The AXYS®Source^{G2}System - Key Features



The AXYS®Source^{G2}system is a horn loaded system that is designed for use: as a front of house system for live music venues, medium throw reinforcement for theatre and conference applications and stage side fills for touring applications.

The system is made up of the T-07^{G2}and the B-07^{G2} units. The T-07^{G2}is a 3 way mid/hi loudspeaker with a horn loaded MF section, (2x10" drivers) and a coaxial 2" HF driver.

The B-07^{G2}is a single 18" subwoofer.

A standard Source "stack" would consist of one T-07^{G2} and two B-07^{G2}'s

Powerful DSP control

Each unit in the AXYS®Source system has an extremely powerful on-board DSP which can be controlled via an RS-485 network. AXYS®WinControl is the PC based Control software, developed by our in-house, R&D team, specifically for AXYS®products.

WinControl offers users:

- Full control of the DSP features, which include: Delay, Gain and 8 band parametric EQ setting
- Choice of downloadable cross-over settings for different applications
- 8 presets - providing factory defined and user configurable presets, including the option to individually lock / password protect presets
- Highly Advanced Digital Limiting algorithms
- Surveillance functionality which include: load monitoring and input pilot tone detection, Real time input and output level monitoring)
- Grouping - loudspeakers can be grouped so that you can adjust the delay, gain and EQ of a complete group at the same time
- "Whisper algorithm" controls fan operation with respect to the input level; ensuring unobtrusive operation.

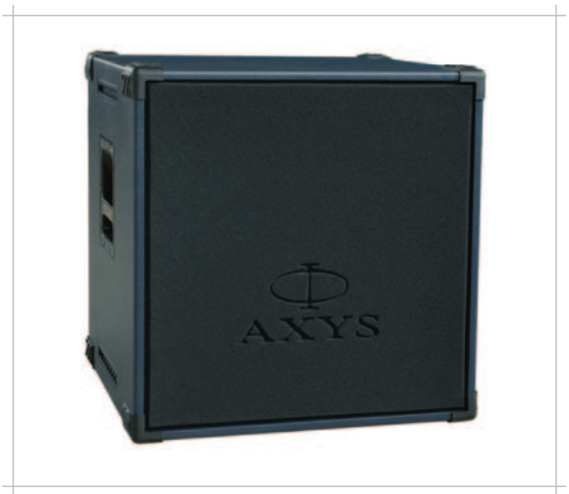
What happens when I don't have my PC with me?

For quick and simple operation each unit has a recessed button on the rear panel which can be used to:

1. Select the next preset - A short button press (< ~1 second) selects the next preset. Presets are numbered from 0 to 7 and will loop back to zero.

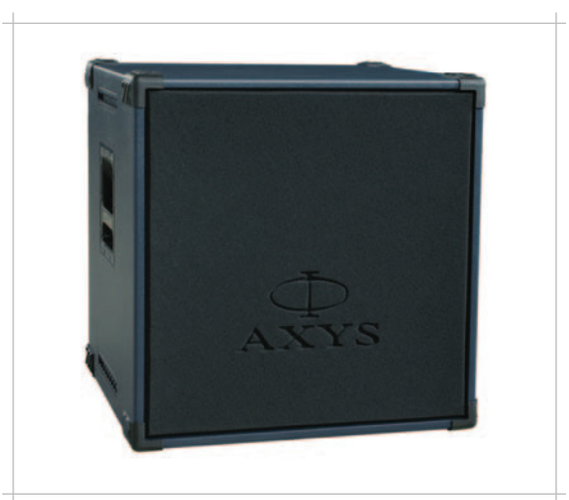
2. Select preferential preset - A long button press (>= ~ 1 second) will select the preferential preset. The preset used can be selected by the user.

The AXYS®SourceG2System



AXYS®T-07

- 3 way design
- Coaxial compression driver
- Dual 10"; horn loaded
- 80 degree x 60 degree coverage*
- Built-in amplification and DSP
- RS-485 network ready
- "Seat track" provided for optional flying hardware
- Choice of cross-overs to suit your application



AXYS®B-07

- Vented direct radiating subwoofer
- Single 18" low frequency transducer
- Built-in amplification and DSP
- RS-485 network ready
- Low frequency response down to 40 Hz**
- M20 connector plate for optional distance rods
- Choice of cross-overs to suit your application

Rigging

AXYS® SourceG2 loudspeakers are designed to be easily ground stacked for quick and easy setup but also come fitted with industry standard seat track for optional flying hardware.

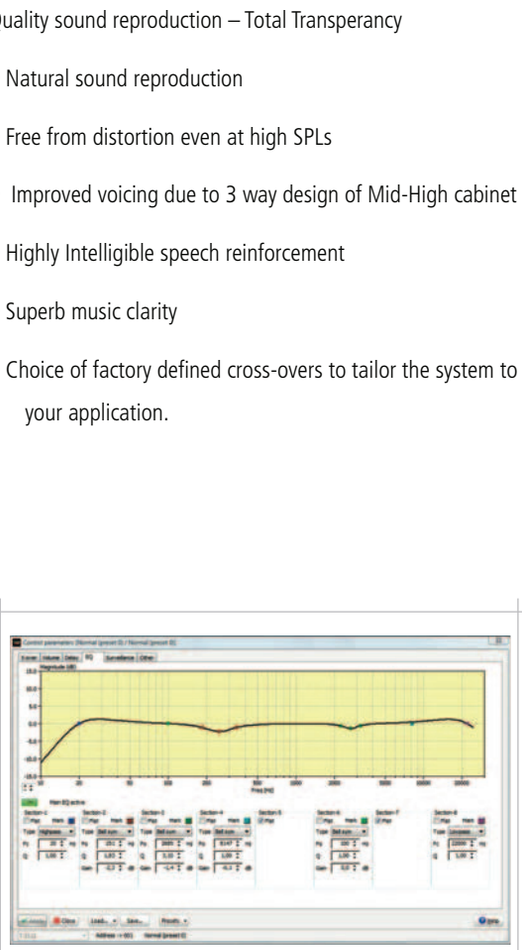
* = -6dB average 1k-8k Hz octave band ** = -3dB point

Why choose the AXYS®Source^{G2}System?

A great sounding system

Quality sound reproduction – Total Transperancy

- Natural sound reproduction
- Free from distortion even at high SPLs
- Improved voicing due to 3 way design of Mid-High cabinet
- Highly Intelligible speech reinforcement
- Superb music clarity
- Choice of factory defined cross-overs to tailor the system to your application.



AXYS®WinControl is used to control the built-in DSP's via a PC connected to an RS-485 network

A versatile system

A wide range of applications and features

Applications

- Medium throw systems for theatres and concert halls
- FOH systems for live music venues and Corporate Events
- Night club systems
- Places of Worship
- Side fills as part of large arena systems
- Stage side fills for large concerts

Features

- Full control over built-in delay, EQ and gain
- On-board memory holds up to 8 presets
- Modular design

Why choose the AXYS®Source^{G2}System?

An easy to rig and transport system

Hassle free handling

- T-07^{G2}and B-07^{G2}, can be easily ground stacked using the interlocking corners.
- High power to weight ratio
- Built in amplification saves on flight case and rigging costs
- Self powered - just plug and play
- Audio, mains & data cables can be looped
- Default settings can be recalled without the use of a PC

Optional Programming Set which includes an RS-485 to USB converter, drivers, cables and a copy of the AXYS®WinControl software

A safe and reliable system

Built to last

- All elements are constantly monitored by the on board RISC processor.
- Faults can be reported via the built in LED or via the RS-485 network.
- Rigging points designed and manufactured to exceed European Standards.
- Highly advanced digital limiting algorithms
- The use of high quality components in combination with extensive burn-in tests ensure the highest level of reliability

Units can be easily ground stacked using the interlocking corners.

Generic Specifications

All AXYS®, New Generation, Sound Reinforcement products have built-in amplification, DSP and networking capability.
The common Specifications for the AXYS®Source system are:

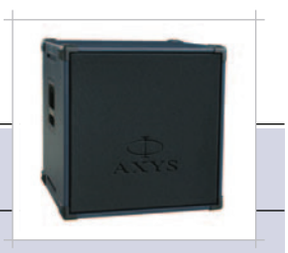
Input	- Nominal level	0 dBV (RMS)
	- Maximum level	+ 18 dBV (peak)
	- Type	twin transformer balanced
	- Impedance (balanced)	32 kΩ
DSP hardware	- Type	floating point 900 MFLOPS 32 bits
	- Memory	64 Mb SDRAM + 3 MB non volatile
	- AD - DA conversion	24 bits sigma-delta 128 x oversampling
	- Auxiliary processor	200 nsec single cycle RISC
	- Sample rate	48.8 kHz (full range enclosures); 12.2 kHz (subwoofers)
DSP software	- Delay	- up to 21 s of overall delay - up to 21 s of individual output delay
	- Volume control and mute	- volume range -72 to +18 dB - adjustable mute auto-release
	- EQ	8-band parametric EQ
	- X-overs	See individual specs
	- Dynamics	Independent peak compressor/limiters on all outputs - Frequency dependent thresholds (excursion limiting) - Auto-attack 'look-ahead' scheme - Independent RMS limiters on all outputs Time dependent thresholds (power limiting)
	- Presets	8 configurable internal presets
Power amplifiers	- Protection	- DC - short circuit
Network control unit	- Interface type	- serial full-duplex RS-485 - optically isolated - parallel connection - 'star' configuration allowed, depending on cable properties - closed loop not allowed
Status / failure monitoring	- Surveillance	- input pilot tone detection (20k - 30k Hz, level > -22 dBV) - transducer loadmonitoring - amplifier monitoring - general status (DSP running, temperatures etc.) - thermal overload protection scheme - real-time in- and output level monitoring - status of dynamics processing
	- Fan	- single low speed large fan - temperature controlled - audio signal dependent control scheme - speed and failure monitoring
	- Failure	- indication on rear and front LED (maskable)
Indicators	- Front LED (red)	- failure indication (software configurable) - unit identification
	- Rear LED (bi-colour)	- power-on - failure indication (software configurable) - unit identification
Controls	- Reset switch	- Preset selection - Select preferential preset
Connectors	- Audio input and link	XLR 3p female (input), XLR 3p male (hardwired link)
	- RS-485 interface and link	XLR 5p female (input), XLR 5p male (hardwired link)
	- Mains input and link	Neutric Powercon 3p male (input), Neutric Powercon 3p female (hardwired link)
Mains	- Type - Voltage range	switched mode PSU 100 V to 250 V, 50 or 60 Hz
	- Protection	- thermal protection on standby supply - output power limiting - under-voltage and over-voltage lock out

Individual Specifications

AXYS®Source System

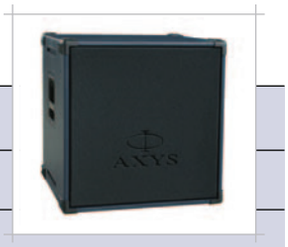
The Source system consists of two B-07^{G2}s for the low-end response and a T-07^{G2}for the mid and high frequencies. Installation and connection is very fast and easy because of the light weight, compact enclosures and daisy-chain audio cabling. The 18 mm Scandinavian birch plywood and sturdy enclosures, coated with a durable finish makes the system suitable for rugged 'on the road' handling.

AXYS®B-07^{G2}



Acoustical		
Freq range		40 Hz, -3dB,LF 120 Hz, -6dB,HF (typical)
Max SPL (1 m)	- Continuous (max) - Continuous (limiter onset) - Peak (max) - Peak (limiter onset)	122 dBSPL(RMS) 117 dBSPL(RMS) 130 dBSPL(peak) 125 dBSPL(peak)
Dynamic range		> 104 dB
X-overs		- typical slope 24 dB/oct - typical target 4th order Linkwitz-Riley delay aligned - typical crossing frequency 120 Hz - HPF for 6th order LF alignment
Latency		- 5.7 ms
Power amplifiers	- Type	MOSFET (class AB) 1 x
	- Power	700 Wrms (4 Ω)
General:		
Transducer		1 x 18" front-loaded bass-reflex
Dimensions (H x W x D)		620 mm (24.4") x 620 mm (24.4") x 550 mm (21.7")
Weight		45 kg (99 lbs)

AXYS® T-07^{G2}

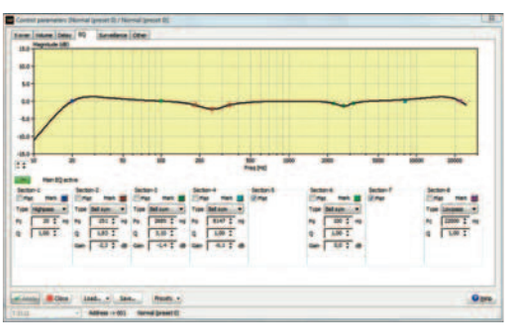


Acoustical		
Freq range		150 - 22k Hz (+/-3 dB), 'full-space'
Max SPL (1 m)	- Continuous (max) - Peak (max)	134 dBSPL(RMS) 146 dBSPL(peak)
Coverage	Horizontal Vertical	80°, -6 dB average 1k - 8k Hz octave band 60°, -6 dB average 1k - 8k Hz octave band
Dynamic range		> 104 dB
X-overs		- typical slope 24 dB/oct - typical target 4th order Linkwitz-Riley delay aligned - typical acoustical crossing frequencies 2k Hz (MF - HF1), 6k5 Hz (HF1 - HF2)
Latency		- 2.4 ms
Power amplifiers	- Type	MOSFET (class AB)
	- Power	3 x 350 Wrms (8 Ω)
General:		
Transducers		2 x 10" horn-loaded, 1 x coaxial 2" throat horn-loaded compression driver
Dimensions (H x W x D)		620 mm (24.4") x 620 mm (24.4") x 550 mm (21.7")
Weight		53 kg (117 lbs)

AXYS® WinControl

G2 series products are configured using our proprietary WinControl software with communication between the PC running WinControl and the speakers via an RS-485 network.

WinControl allows users to manipulate the DSP parameters from a PC running the Windows operating system (including Macintosh computers using Boot Camp or virtualisation software).

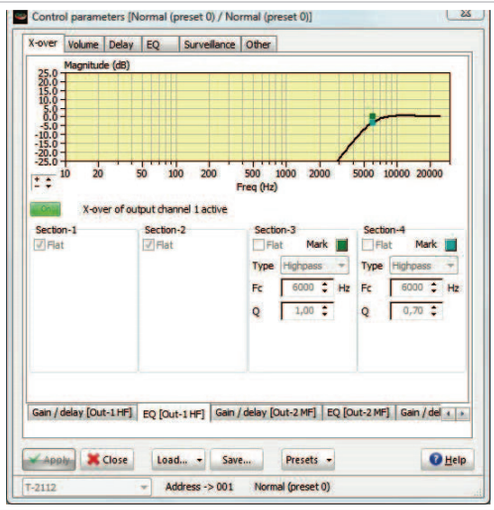


WinControl's intuitive functions will be familiar to system engineers without a steep learning curve, leaving more time for listening. Using the robust RS-485 network (radial or looped connections), a reliable control system can quickly be built that allows adjustment and monitoring of parameters such as:

- Input and Output Gain control for system optimisation
- Preset organisation
- Eight band parametric EQ
- Delay, up to 20 seconds
- Audio Levels through DSP
- Amplifier Statistics
- Fault conditions

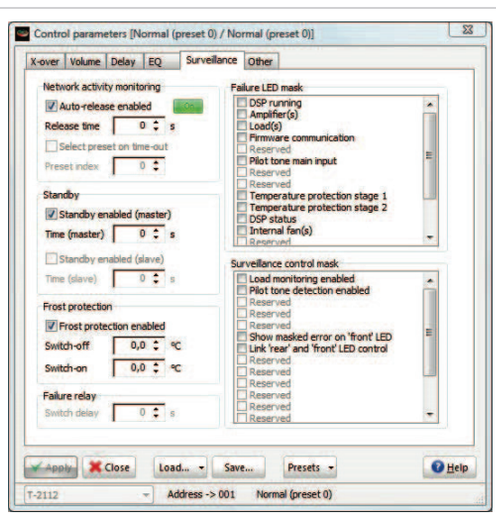
WinControl software allows system elements to be grouped together for control purposes. This includes saving of settings to disk - where the entire group's information is stored together for easy management and archiving.

On-board Presets



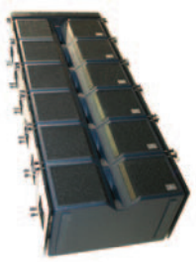
Each speaker can store up to eight presets which can be individually locked to protect the settings. A selection switch on the amplifier allows direct recall of these eight presets without a network connection or WinControl. This arrangement allows easy storage of particular applications settings, safe in the knowledge that they can always be recalled at the push of a button.

This facility has been designed to cater for the touring market where system engineers may prefer to start with known settings and for equipment hire companies who want to 'default' a returned system to factory settings.



Other AXYS®Sound Reinforcement products

AXYS®Target System



A fully scalable, front of house system which Incorporatesthe AXYS®DDS technology. High SPL, even coverage plusdirectivity control what more do you need?

AXYS®Arena System

A touring system which is remarkably smallconsidering it's with enormous SPL capabilities. Theultimate choice for any large venue and perfect foranything from Classical to Rock.

AXYS®Scope^{G2}Range

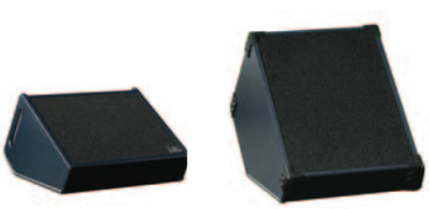
Networkable, Self Powered, Sound Reinforcement Loudspeakers with Built-in Digital Signal Processing.

The ultimate choice for any small to medium sized venueand perfect for anything from Classical to Rock.

AXYS®U-12

Self-powered and two-way actively controlled sounddistribution system, offering high acoustical outputcapability and true studio reference quality.

AXYS®UFM Range



A new approach in stage monitoring. The UFM range ofmonitors are compact, self-powered and actively controlledtwo-way loudspeakers.

JBL Intellivox

Specifically designed for highly reverbarent spaces, JBL Intellivox Steerable loudspeaker arrays offer ultimatespeech intelligibility and even SPL coverage.

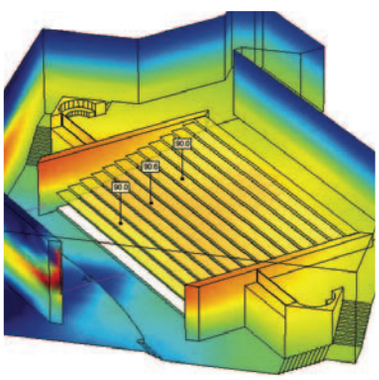
JBL Professional

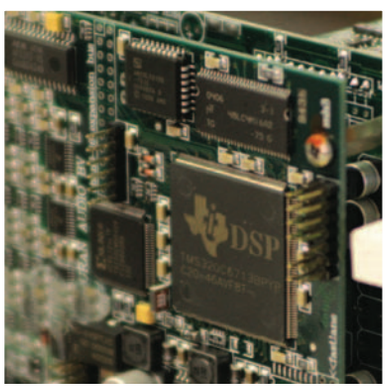
JBL Professional, selling products under the AXYS brand, is a company strongly based on research. The company is committed to developing and manufacturing its products within the EU ensuring that the highest possible production, environmental and quality standards are achieved.

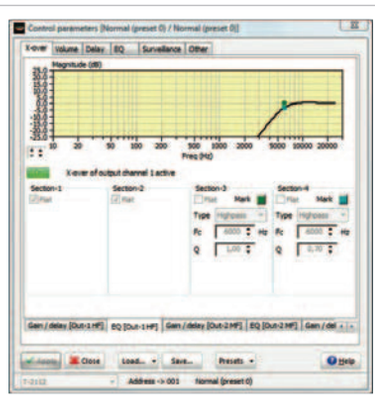
Our R&D team is rather unique, as we handle all product development in house, and has four main areas of competence:

- Electro-Acoustic/Loudspeaker design
- Digital and Analogue Electronic Design
- Digital Signal processing
- Software development, user interfaces

Avoiding any 3rd party involvement within our product development ensures that AXYS owners/users have a fully engineered solution suited to their needs.







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