AXYS®Scope^{G2}range

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

AXYS®Sound Reinforcement - Total Transparency

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.

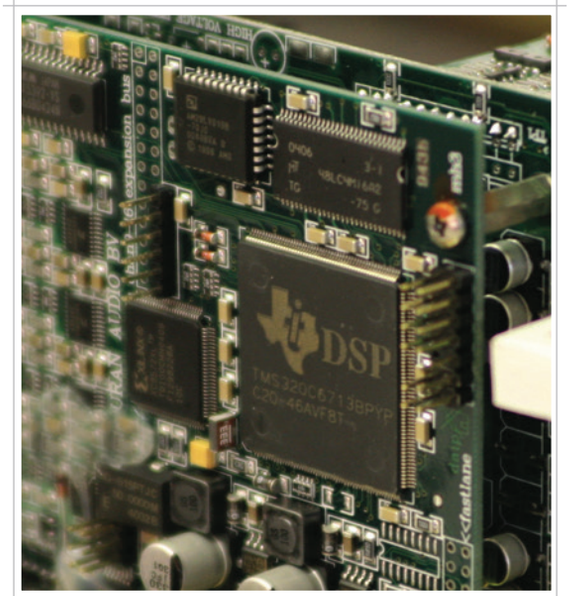
From total transparency to up-front vocals, It is very easy to change the tonal "flavour" of the G2 series using the supplied or downloadable presets, ensuring that your sound system can adapt to each application without further investment in technology.

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 SourceG2system to the ScopeG2series' 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.

AXYS®Scope^{G2}- Key Features



- 3-way active design (for all full range units).
- Full range units feature an extended HF response thanks to a highly innovative new compression driver.
- Lightweight high linear excursion low frequency drivers with good transient response and high sensitivity.
- Built-in amplification and digital signal processing.
- High power to weight ratio - weight has been minimised with 'state of the art' neodymium drivers.
- RS-485 network ready.

Powerful DSP control

Each unit in the AXYS®Scope^{G2}range has an extremely powerful on-board DSP which can be controlled via an RS-485 network. Built-in amplification means the electronics are closely coupled to the drivers and a line level input stage with a very high CMRR gives accurate and clean 'Totally Transparent' Sound reproduction. 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 settings for different applications.
- 8 on-board 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 includes: load monitoring and fault detection; real time input and output level monitoring.
- Grouping - loudspeakers can be grouped to adjust the delay, gain and EQ of a complete group at the same time.
- "Whisper algorithm" controls fan operation with respect to temperature and input level; ensuring unobtrusive operation.

Rigging

The T-2112 and T-2115 full range loudspeakers have an innovative stand adaptor built in, which allows the unit to be set at 5 different angles from -15° to +15° in 7.5° steps, without the need for extra hardware*. These units also come with industry standard seat track for optional flying hardware.

Designed to integrate perfectly with the full range units, the AXYS®

UB-25 and B-07 bass loudspeakers are equipped with an M20 connector plate for an optional distancing rod. To allow for safe and easy stacking the UB25 and B07 are also fitted with interlocking corners.

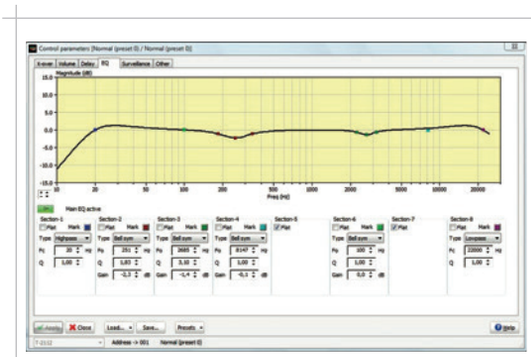
* Sturdy, hollow stand required

Why choose the AXYS®Scope[G2]range?

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 full range cabinet
- Highly Intelligible speech reinforcement
- Superb music clarity
- Choice of factory defined crossovers to tailor your system to your application.



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

AXYS®T-2112 and AXYS®UB-25.

A versatile system

A wide range of applications and features

- FOH systems for theatres and concert halls
- Conferences
- Sound Reinforcement in TV studios
- Places of Worship
- Sound FX speakers for theatres
- Stage foldback systems
- Full control over built in delay, EQ and gain
- On-board memory holds up to 8 presets
- Modular design

Why choose the AXYS®Scope^{G2}range?

AXYS®T-2115.

A safe and reliable system

Built to last

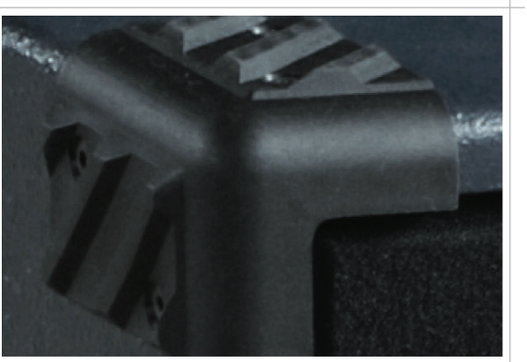
- All elements are constantly monitored by the on board RISC processor.
- Faults can be reported via the built in LED or via the RS-485 network.
- Rigging points designed and manufactured to exceed European Standards.
- Highly advanced digital limiting algorithms
- The use of high quality components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

An easy to rig and transport system

Hassle free handling

- Bass units UB-25 and B-07, can be easily ground stacked using the interlocking corners.
- T-2112 & T-2115 come with optional pan/tilt frames.
- 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 setting can be recalled without the use of a PC
- T-2112 and T-2115 have an innovative stand adaptor that allows them to be angled up or down on a standard speaker stand.

M20 captive nut for distancing rod.

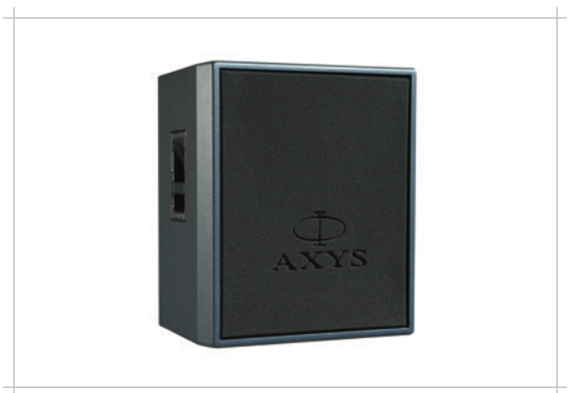


Bass units UB-25 and B-07, can be easily ground stacked using the interlocking corners.

The AXYS®Scope Range[G2]

AXYS®T-2112[G2]

- 3 way design
- Coaxial compression driver
- Upper frequency range of 22 kHz (-3dB)
- Single 12" direct radiating
- 70˚ (H) x 50˚ (V) coverage*
- Built-in amplification and DSP
- RS-485 network ready
- "Seat track" and nut plate provided for optional flying hardware
- Stand adaptor allows you to tilt your loudspeaker
- Choice of cross-overs to suit your application



AXYS®T-2115[G2]

- 3 way design
- Coaxial compression driver
- Upper frequency range of 22 kHz -3dB
- Single 15"; direct radiating
- 90˚ (H) x 50˚ (V) coverage*
- Built-in amplification and DSP
- RS-485 network ready
- "Seat track" and nut plate provided for optional flying hardware
- Stand adaptor allows you to tilt your loudspeaker
- Choice of cross-overs to suit your application

AXYS®UB-25[G2]

- Vented direct radiating subwoofer
- Single 15" low frequency transducer
- Built-in amplification and DSP
- RS-485 network ready
- Low frequency response down to 40 Hz**
- Can be used with T-2112 or T-2115
- M20 connector plate for optional distance rods
- Choice of cross-overs to suit your application

AXYS®B-07[G2]

- 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**
- Can be used with T-2112 or T-2115
- M20 connector plate for optional distance rods
- Choice of cross-overs to suit your application

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

Generic Specifications

All AXYS®G2 Sound Reinforcement products have built-in amplification, DSP and networking capability.

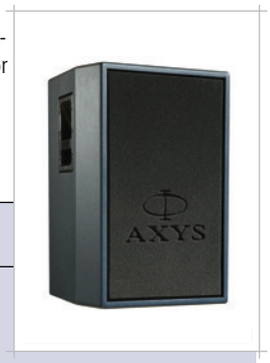
The common Specifications for the AXYS®Scope range are:

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®T-2112G2 and AXYS®T-2115G2

The AXYS®T-2112G2and T-2115G2are trapezoidal shaped 3 way systems with incredible power handling capability in a small sized package. The modest dimensions allow them to be used unobtrusively as stand-alone systems in all kinds of applications. The precisely defined dispersion pattern makes them suitable for true array configuration. They can also be easily combined with the B-07G2for enhanced LF response.



AXYS®T-2112G2

Acoustical		
Freq range		55 - 22k Hz (+/-3 dB)
Max SPL (1 m)	- Continuous (max) - Continuous (limiter onset) - Peak (max) - Peak (limiter onset)	124 dBSPL(RMS) 119 dBSPL(RMS) 135 dBSPL(peak) 129 dBSPL(peak)
Coverage	- Horizontal - Vertical	70°, -6 dB average 1k - 8k Hz octave band 50°, -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 (LF - HF1), 6k5 Hz (HF1 - HF2) - HPF for 6th order LF alignment
Latency		- 2.4 ms
Power amplifiers	- Type	MOSFET (class AB)
	- Power	3 x 350 Wrms (8 Ω)
General:		
Transducers	- LF - HF1 / HF2	1 x 12" front loaded bass reflex, 75 mm (3") voice coil 1 x coaxial 2" throat horn-loaded compression driver 90 mm (3.5") voice coil MF driver, 44 mm (1.75") voice coil HF driver
Dimensions (H x W x D)		620 mm (24.4") x 400 mm (15.7") x 460 mm (18.1") - trapezoidal enclosure
Weight		31 kg (68 lbs)

AXYS®T-2115G2

Acoustical		
Freq range		50 - 22k Hz (+/-3 dB)
Max SPL (1 m)	- Continuous (max) - Continuous (limiter onset) - Peak (max) - Peak (limiter onset)	127 dBSPL(RMS) 122 dBSPL(RMS) 139 dBSPL(peak) 133 dBSPL(peak)
Coverage	- Horizontal - Vertical	90°, -6 dB average 1k - 8k Hz octave band 50°, -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 1k5 Hz (LF - HF1), 6k5 Hz (HF1 - HF2) - HPF for 6th order LF alignment
Latency		- 2.4 ms
Power amplifiers	- Type	MOSFET (class AB)
	- Power	3 x 350 Wrms (8 Ω)
General:		
Transducers	- LF - HF1 / HF2	1 x 15" front loaded bass reflex, 100 mm (4") voice coil 1 x coaxial 2" throat horn-loaded compression driver 90 mm (3.5") voice coil MF driver, 44 mm (1.75") voice coil HF driver
Dimensions (H x W x D)		620 mm (24.4") x 535 mm (21.1") x 498 mm (19.6") - trapezoidal enclosure
Weight		37 kg (82 lbs)

Individual Specifications

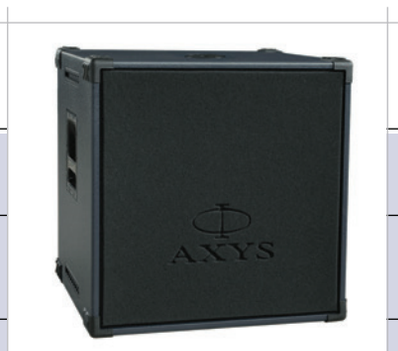
AXYS®UB-25G2 and AXYS®B-07G2

The AXYS®UB-25G2and AXYS®B-07G2are self-powered subwoofers designed to enhance the low-end response of the T-2115G2and T-2112G2. This set-up is the ideal choice for applications such as small touring systems, surround systems for theatres and cinemas and music playback system in restaurants and clubs.

AXYS®UB-25G2

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)	120 dBSPL(RMS) 114 dBSPL(RMS) 128 dBSPL(peak) 122 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		- 5.6 ms
Power amplifiers	- Type	MOSFET (class AB)
	- Power	1 x 700 Wrms (4 Ω)
General:		
Transducer		1 x 15" front-loaded bass-reflex
Dimensions (H x W x D)		429 mm (16.9") x 620 mm (24.4") x 550 mm (21.7")
Weight		36 kg (79 lbs)

AXYS®B-07G2

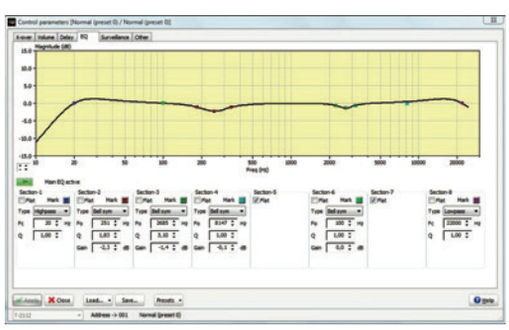


Acoustical		
Freq range		40 Hz, -3dB, LF 120 Hz, -6dB, HF (typical)
Max SPL (1 m)	- Continuous (max) - Continuous (limiter onset) - Peak (max) - Peak (limiter onset)	122 dBSPL(RMS) 117 dBSPL(RMS) 130 dBSPL(peak) 125 dBSPL(peak)
Dynamic range		> 104 dB
X-overs		- typical slope 24 dB/oct - typical target 4th order Linkwitz-Riley delay aligned - typical crossing frequency 120 Hz - HPF for 6th order LF alignment
Latency		- 5.6 ms
Power amplifiers	- Type	MOSFET (class AB)
	- Power	1 x 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® 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).

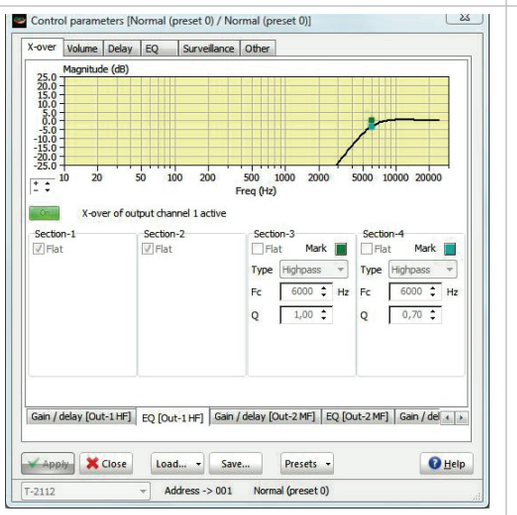


WinControl's intuitive functions will be familiar to system engineers without a steep learning curve, leaving more time for listening. Using the robust RS-485 network (radial or looped connections), a reliable control system can quickly be built that allows adjustment and monitoring of parameters such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

- Level control for system optimisation
- Preset organisation
- Eight band parametric EQ
- Delay, up to 20 seconds
- Audio Levels
- Amplifier Statistics
- Fault conditions

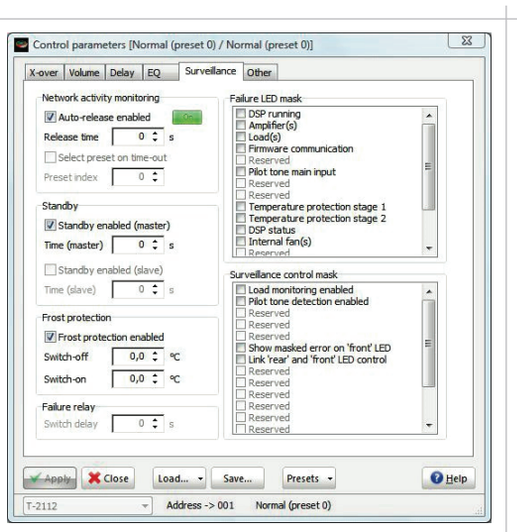
WinControl software allows system elements to be grouped together for control purposes.

On-board Presets



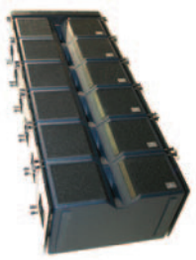
Each speaker can store up to eight presets which can be individually locked to protect the settings. A selection switch on the amplifier allows direct recall of these eight presets without a network connection or WinControl. This arrangement allows easy storage of particular applications settings, safe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

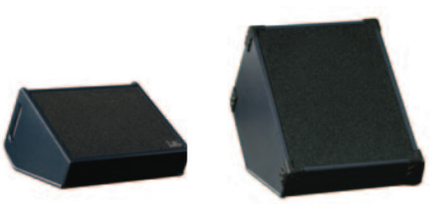
Networkable, Self Powered, Sound Reinforcement Loudspeakers with Built-in Digital Signal Processing.

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.

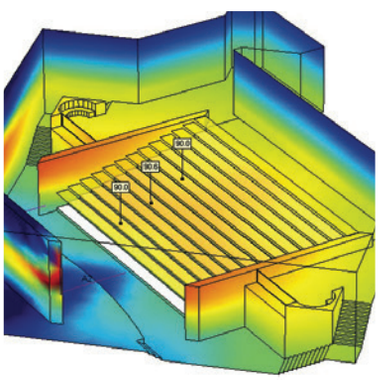
JBL Professional

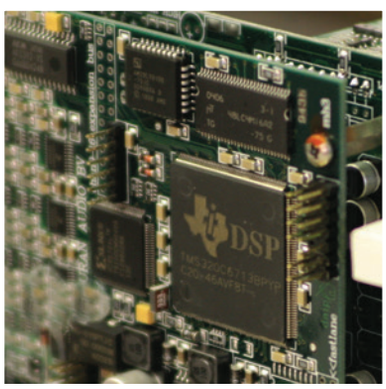
JBL Professional, selling products under the AXYS brand, is a company strongly based on research. The company is committed to developing and manufacturing its products within the EU ensuring that the highest possible production, environmental and quality standards are achieved.

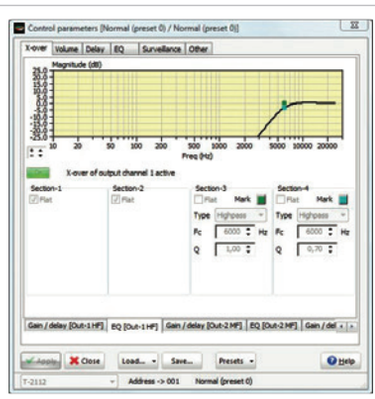
Our R&D team is rather unique, as we handle all product development in house, and has four main areas of competence:

- 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.







JBL Professional
8500 Balboa Boulevard
Northridge, CA 91329 U.S.A.

www.jblpro.com

SCPA40807-BR