

1AM+ Self Powered Coaxial Stage Monitor/Point Source



ONE
series



Applications

Vocal Monitor
Stage / DJ Monitor
Side Fill | Front Fill
Delay

Features

Coaxial, Horn-loaded
Two-Way Active
Max Output 135 dB SPL
LF Device: 12 in (304.8mm)
HF Device: 3 in (76.2mm)
40°H x 60° V Coverage
Integrated Pole Mount
(12) M10 x 1.5 Mounting Pts.
Standard Configuration:
NL Connectors on 3 Sides
[Option of EP-4 connectors]
(3) Handles
1,600W 2-Channel Amp.
Module (Clair OEM Powersoft)
XLR In/Thru
PowerCon In/Thru
4 Native Presets

General Description

The Clair Brothers 1AM+ is the next generation single 12" stage monitor / multipurpose loudspeaker. The engineering behind the 1AM+ combines the Clair tradition of great stage monitors with the successful Clair coaxial horn technology developed over the past 5 years. The result is a highly capable and compact speaker with excellent coherence between components that is simultaneously in-your-face and smooth and hi-fi sounding. The 1AM+ is not only a stage monitor, but also very capable of portable and installed PA functions based on its integral mounting points and pole mount. A family of optional mounting accessories is available to facilitate permanent installation configurations.

1AM+ Transducer Components:

The high frequency compression driver features a 1.5" throat diameter (3" voice coil diameter), a pure titanium diaphragm, and a neodymium magnet assembly. The driver is joined to a 40° horizontal by 60° vertical rotatable horn. A 12" cone transducer provides mid-bass and low frequency reproduction.

1AM+ Connectors:

The 1AM+ input panel features PowerCon (In/Thru) connectors and a pair of XLRs (In/Thru). Additionally, there are two slightly more hidden connectors that can output loudspeaker signal level to power a non-powered 1AM. One is positioned within the right side handle and the other on the bottom. When

used for drum fills or in pole-mount positions these additional connectors prove to be extremely useful for clean cable management.

1AM+ Electronics:

The 1AM+ features an extremely lightweight and powerful OEM amplifier module made exclusively for Clair Brothers by Powersoft. The base configuration of the 1AM+ features a similar DSP to the successful kiTseries with 32-bit floating point processing with crossover slopes up to 48dB/oct and FIR filtering. The 1AM+ is voltage agile with a PFC corrected PSU that accepts 85-240VAC 50/60Hz.

1AM/1AM+ Preset Modes:

The 1AM presents interesting preset configurations native to the 1AM+ built-in DSP. The preset modes include:

- (1) 1AM Stage Monitor Mode
- (2) 12AM Emulation Mode
- (3) 1AM Full Range PA Mode
- (4) 1AM 100Hz HPF Mode (for use with complementary subwoofer)

Low profile styling and ergonomic side handles along with an extended front handle provides great aesthetic appeal and portability. The speaker grille is constructed of high grade 14 gauge perforated steel and is specially treated to create a durable exterior finish.

1AM+ Self Powered Coaxial Stage Monitor/Point Source



Description (continued)

Clair Brothers combines amplification, and proprietary DSP processing in portable racks for all monitor systems. Custom cabling for systems is available and can be pre-wired, labeled and delivered in road cases. As with all Clair Brothers products, the cabinet is constructed of the finest Baltic birch and finished with a rugged polyurea paint to withstand the most demanding conditions.

Options & Accessories

RC-1 – Road Case for (2) 1AM+ (PN: 11221)

Horizontal Mounting Bracket (PN: 11148)

Vertical Mounting Bracket (PN: 11149)

Upgrade to Networked DSP Available

Proprietary DSP + Amp Rack Packages

Custom Colors Available

[see **1AM** for non-powered model]

1AM+ NL4 EP-4* Pin Configuration		
NL PIN	EP	USE
-1	1	Low (-)
+1	2	Low (+)
-2	3	High (-)
+2	4	High (+)
(3) NL4 are Standard Connectors.		
(3) EP-4 are *Optional: Must spec on order.		

Audio Specifications (Loudspeaker)

Loudspeaker Type	Self Powered Two-Way Coaxial Stage Monitor / Point Source	
Frequency Response	60Hz–18kHz (+/- 2dB) 50Hz–20kHz (-10dB)	
Power Amplifier	1600W 2-Ch. Amp Module <i>(see Specifications on next page)</i>	
Sensitivity (1 Watt @ 1 Meter)	LF	99 dB SPL
	HF	107 dB SPL
Maximum Output	Peak	135 dB SPL
Drivers	LF	(1) 12 in (304.8mm)
	HF	(1) 3 in (76.2mm)
Nominal Impedance	LF	8 Ohms
	HF	16 Ohms
Power Handling	LF	350W Cont. 1400W Peak
	HF	80W Cont. 160W Peak
Dispersion	40° H x 60° V (Rotatable)	
Input Connection	Signal	(1) XLR (F) In, (1) XLR (M) Thru (+10.8dBu Max)
	Power	PowerCon In/Thru
Speaker Output	Standard	(3) NL4 *Optional (3) EP-4

Mechanical Specifications

Enclosure	Shell	Baltic Birch Premium Grade
	Finish	Black Polyurea
Grille	Perforated Steel, Foam Backed	
Dimensions	Height including feet	14.82 in (376.3mm) 14.61in. (371.1mm) no feet
	Width including feet	20.32 in (516.2mm) 20.08in. (510.0mm) no feet
	Depth	22.0 in (558.4mm)
Weight	61 lbs (27.7kg)	
Shipping Weight	77 lbs (34.9kg)	

Note: All wattage figures are calculated using the rated nominal impedance.
Clair Brothers products are designed to perform optimally by utilizing factory recommended proprietary DSP settings.

Architect and Engineer Specifications

The loudspeaker shall be a two-way active system featuring a total of two drivers. The low frequency module contains one 12 in. driver capable of handling 350 watts of pink noise with a 6 dB crest factor for 8 hours (as per EIA RS-426-A standard). The high frequency model contains a 1.5 in. exit, 3 in. voice coil diameter compression driver joined to a 40° horizontal by 60° vertical rotatable horn. The 3 in. driver is capable of handling 80 watts (1 kHz to 10 kHz) of pink noise with a 6 dB crest factor for two hours (as per AES-1984 and ANSI S4.26-1984 standards). The signal processing is Clair Brothers proprietary data. The enclosure shall be constructed of premium grade Baltic birch and covered with a durable black polyurea finish. The dimensions shall be 14.82 in high, 20.32 in wide, and 22.0 in deep. The system weight shall be 61 lbs (27.7kg). The loudspeaker shall be the Clair Brothers 1AM+.

1AM+ POWER MODULE



The ONE Series Power Module is a two channel amplifier module representing an important evolution in the ONE Series family of products. Delivering up to 1600 W on 4Ω per channel (3200 W on 8Ω in mono-bridged mode), the ONE Series Power Module reaches a new level of excellence in terms of power consumption and sonic performance, guaranteeing reliability and consistency in all operating conditions thanks to a new power supply equipped with PFC and featuring Smart Rails Management.

The ONE Series Power Module shares the same compact mechanical layout of the ONE Series non-powered speaker cabinets allowing simple conversion and upgrade possibilities.

Efficiency and robustness, always and everywhere | Latest generation single-stage patented Power Factor Correction design allows achieving optimal and consistent performance in all operating conditions worldwide.

Maximize performance, minimize consumption | Patented SRM (Smart Rails Management) technology allows maximizing the efficiency of the system and drastically reducing power consumption at any load condition.

Premium Performance | Class-D technology is an industry standard in terms of quality, reliability, robustness and attention to detail. Accurate design of the Pulse Width Modulation block guarantees maximum performance, high predictability and immunity from intermodulation artifacts.

Powerful and flexible signal processing tools | Using DSP solutions: together with Armonía Pro Audio Suite™ Clair Brothers tailored the module's behavior to fit specific models within the ONE Series. Processing capabilities include standard Linkwitz-Riley crossovers to FIR filters, from Peak and RMS limiters to delays and everything in between.

Complete set of protections | Amp modules are equipped with extensive protection circuitry: power limiters, thermal shutdown, short circuit and overload, clip limiter.

Compact | Power supply, output stage, DSP and connectors are all included in a single, compact, lightweight and protected chassis.

Power Module Specifications

General	Number of Channels	2 ins - 2 outs			
	Output power	2-channel mode		mono-bridged mode	
	EIAJ Test Standard, 1 kHz, 1% THD	4Ω / Ch	8Ω / Ch	16Ω / Ch	8Ω / Ch pair 16Ω / Ch pair
		1600 W	1100 W	600 W	3200 W 1600 W
	Max output voltage	150 V _{peak} (106 V _{RMS})			
AC Mains Power	Max output current	54 A _{peak} (38 A _{RMS})			
	Max aux supply current draw	500 mA			
	Power requirements	AC 100 V - 240 V ± 10%, 50/60Hz with PFC			
	Efficiency	> 75% (typical)			
	Power factor cos (φ)	> 0.90 @ 4Ω full power			
Thermal	Power consumptions				
	1/8 of max power @ 8Ω bridged	600VA (5A @ 120V, 2.6A @ 230V)			
	Max environmental operating temperature	40° C			
	Thermal dissipation	Fan, variable speed, temperature controlled			
		115 V		230 V	
Audio	1/8 of max output power @ 4Ω	297 BTU/h	75 kcal/h	293 BTU/h	74 kcal/h
	1/4 of max output power @ 4Ω	587 BTU/h	148 kcal/h	556 BTU/h	140 kcal/h
	Gain	32 dB			
	Voltage gain	x 40			
	Frequency response	10 Hz - 25 kHz (-3 dB) for 1 W @ 4Ω			
	S/N ratio (amplifier section)	> 115 dBA (20 Hz - 20 kHz, A weighted)			
	Crosstalk separation	-71 dB @ 1 kHz (4Ω)			
	Input sensitivity @ 8Ω	1.6 V / +6 dBu			
	Max input level	+10.8 dBu			
	Input impedance	10 kΩ balanced			
Presets	THD+N / SMPTE IMD	< 0.05% from 0.1 W to full power (typically <0.02%)			
	DIM100 IMD	< 0.05% from 0.1 W to full power (typically <0.02%)			
	Slew rate	50 V/μs @ 8Ω, input filter bypassed			
	Damping factor	> 10000 @ 100 Hz			
	Output type	unbalanced to ground			
DSP & Networking (optional board)	Connector	72-pin SIMM connector (DSP-C and DSP- 4 compatible)			
	Configuration	Configurable with Sigma Studio™ or predefined layout			
	Remote control	Fully supported by Powersoft Armonía™ Pro Audio Control Suite			
	Dimensions	216 mm x 122 mm x 79 mm (8.5 " x 4.8 " x 3.1")			
	Weight	1550 g (3.4 lb)			
Construction		1AM+	Compatible Subs ->	kiT-Sub+	kiT-Sub-mini+
	Preset 1	1AM MONITOR	(Full range stage monitor with extended LF)	80Hz	80Hz
	Preset 2	12AM EMULATION	(Transfer function plus EQ to 12AM response)	100Hz	100Hz
	Preset 3	1AM FOH	(Full range FOH / PA mode)	120Hz	120Hz
	Preset 4	1AM FILL / HPF	(High output with HPF for use w/ Sub or as PA fill)	160Hz	160Hz

Due to constant research, development and improvements all specifications are subject to change without notice.

Technical Drawings

