



## Design Without Boundaries - Performance Without Limits

Loudspeakers; amplifiers; signal processors; audio and control networks. SYGMA brings them all together to create a new kind of sound system, a new level of performance. World-class European transducers are paired with our advanced Complex Conic horns for audiophile reproduction that makes performances and audiences truly come alive. PF-1 Series Intelligent Digital Amplifiers can connect to RHAON, the Renkus-Heinz Audio Operations Network. RHAON gives you complete control of digital audio distribution, loudspeaker processing and system management.

The global SYGMA development and manufacturing process delivers unsurpassed quality and innovation, for performance and style that will make you proud and durability that will keep you sounding great. Before we'll ship them, your loudspeakers have to meet our exacting requirements,

### Applications

- Virtually any application where size is critical and high output and outstanding sonic performance are required.
- Ideal for many side and front fill applications; mounts inconspicuously on walls or ceilings, stage lips, under and over balconies, etc.
- Foreground music systems in shopping malls, retail stores, offices.
- Multi-channel playback systems in clubs and disco's (with optional subwoofers), compact floor monitors, cue loudspeakers for live mixing, etc.



### PF Series Intelligent Amplifiers

Passive, powered or networked: you can choose the SG/SGX system that suits your needs at any time. At the factory or in the field, the SGX passive connector plate can be easily replaced by a PF1-200 series Class D digital amplifier with loudspeaker specific processing. The PF1-200's lightweight switching power supply delivers 70% efficiency at full output, reducing AC requirements and eliminating the need for a cooling fan.



Whenever you are ready for Ethernet audio networking, your Sygma loudspeakers are, too; just replace the connector plate or the PF1-200 with a RHAON empowered amplifier equipped for connection to the Renkus-Heinz Audio Operations Network. RHAON empowers you with full control over digital audio distribution, loudspeaker-specific DSP and control/monitoring – all using standard Ethernet hardware and cable.

Ready now for a self-powered Sygma System? Order the SG81-2. If you need full audio operations networking, order the RHAON empowered SG81-2R.

## SG/SGX Series

**SGX81**  
Non-Powered

**SYGMA**

**SG81**  
Powered

**Compact 8" + 1" HF  
2-Way Complex Conic Loudspeakers**

**PASSIVE : POWERED : NETWORKED**



- **High Volume Output, Small Enclosure**  
80 Hz to 20 kHz  $\pm 3$  dB: Outstanding, full-range performance in a compact, space saving design.
- **Flexible Input Configurations**  
Choose passive inputs, or go self-powered with the PF1-200 series intelligent amplifier, either with or without RHAON net working.
- **RHAON Renkus-Heinz Audio Operations Network**  
Self-Powered SG81 cabinets are easily connected to RHAON for flexible digital signal distribution, loudspeaker management and control using standard Ethernet hardware and cabling.
- **Exclusive 90° by 60° Complex Conic Design**  
Provides constant beamwidth/directivity without the problems of conventional rectangular horns: can be rotated 90° within the cabinet for wide or deep listening spaces.
- **1" Extended Range Titanium HF Driver**  
Provides smooth, low distortion high frequency performance to 20 kHz and beyond.
- **Heavy-Duty 8" Woofer**  
Easily handles 200 Watts of program power.

## TECHNICAL INFORMATION

**Sensitivity**  
**SG81-2 & -2R:** 1.0 V for RPO  
**SGX81:** 95 dB (1W/1m)

**Max SPL**  
**SG81-2 & -2R:** 117 dB program, 120 dB peak  
**SGX81:** 117 dB program, 120 dB peak

**Dispersion:** 90° H by 60° V

**Freq. Resp:** ± 3 dB, 80 Hz to 20 kHz

**HF Driver:** 1" Titanium driver, model SSD103-8;  
 15 W RMS, 30 W program

**LF Driver:** 8" woofer, model SSL8-14;  
 100 W RMS @ 8 Ohms, 200 W program.

**Enclosure:** Multy-ply hardwood, perforated metal grille

**Power**  
**SG81-2 & -2R:** 115 V AC OR 230V AC  
**SGX81:** 200 Watts program at 8 Ohms

**Connectors**  
**SG81-2 & -2R:** See PF1-200 Amplifier  
**SGX81:** Screw terminals & looping 4-pin Neutrik SpeakOn style connectors

**Finish:** Black or white paint

**Hardware:** 12-point univ. mtg. hdw.  
 U-bracket attachment points

**Dimensions:** 19 3/4" H x 11 1/2" W x 12 3/8" D  
 (50.17 cm x 29.21 cm x 31.4 cm)

**Weight**  
**SG81-2 & -2R:** 28.10 Lbs (12.74 Kg) net  
**SGX81:** 26.10 Lbs (11.83 Kg) net

## PF1-200 AMPLIFIER

**Power:** 200 W RMS @ 4 Ohms

**Freq. Resp:** +0.0, -5 dB, 20 Hz to 20 kHz

**THD Distortion:** < 0.02% typical

**Hum & Noise:** <100 dB (A weighted)

**Damping:** >100

**Input:** 10K Ohm balanced differential

**Sensitivity:** 1.0 V for RP

**CMR:** 74 dB

**Controls:** Gain (screwdriver adjustable)

**Connectors:** Input: Looping XLR; female in, male out (pin 1 chassis, pin 2 +, pin 3 -)  
 Power: IEC Power connector

**Power:** Universal 90-260 VAC, 50/60Hz.  
 2.4 A @ 120 V, 1.2 A @ 240 V  
 Idle current: 200 mA @ 120 V;  
 100 mA @ 240 V  
 Max inrush current: 1 A

## PF1-200R RHAON EMPOWERED AMPLIFIER

The PF1-200R is identical to the PF1-200 except for the addition of the RHAON Network Interface; additional capabilities include:

**Input:** CobraNet; dual RJ45 connectors; accept Cat 5 copper cable.  
 AES/EBU Phoenix connectors:  
 Analog Phoenix connectors

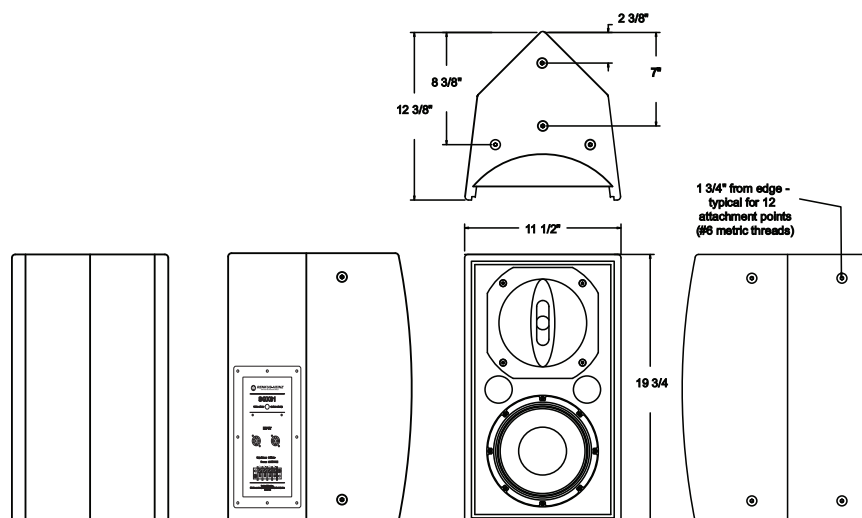
**Digital Format:** 16, 20 or 24 bit PCM; 48 or 96 kHz sample rate; selectable Network Latency.

**Protection:** Soft & Peak Limiting, Excursion Control & Thermal Regulation

For additional details on the RHAON Audio Operations Network, refer to Renkus-Heinz brochure # RH 606.

Note: All analog inputs and outputs comply with AES Standard 45-2005 on interconnecting, grounding and shielding.

## DIMENSIONAL INFORMATION



**SYGMA**

### Note:

The UMH (Universal Mounting Hardware) attachment points have #6 metric threads and are positioned 1 3/4" from the edges unless otherwise indicated.

The rear view of a SGX81 is shown. The enclosure is shown without its metal grille.

For more detailed dimensional information, please refer to the 2D and 3D drawing files on our website, [www.renkus-heinz.com](http://www.renkus-heinz.com)