THE SYMETRIX 572 SPL COMPUTER IS AN AUTOMATIC LEVEL CONTROLLER that maximizes intelligibility by changing gain in proportion to environmental noise level changes; in essence, controlling the volume of the background/paging system by measuring the volume of the ambient noise and then adjusting the system gain accordingly. Unique to the 572 is its ability to utilize the sound system's loudspeakers as noise measurement transducers, in place of the usual microphones.

The 572 switches the speaker line from the amplifier's output to its own sensing input. In less than one second it reads the ambient noise level and switches the speaker line back to the amplifier. Special impedance matching, frequency shaping, and level shifting circuits allow the 572 to acquire precise relative noise measurements from virtually any speaker line, with any number of speakers of any impedance, transformer coupled or direct coupled, 25V or 70V.

The operating characteristics of the SPL computer are controlled by a powerful microprocessor, running under Symetrix proprietary software. This reduces the 572's calibration time and allows the installer to optimize performance for any situation. No test gear is needed because the 572 obtains and stores the information it needs during calibration.

The 572 has separate inputs for paging and music as well as a direct paging microphone input. Both the speakers and the amplifiers connect directly to the 572. A front panel page over music function enables up to 14 dB of music attenuation during announcements. There are multiple option switches for telling the 572 how to treat the page/music signal as well as how to react to changes in the acoustic environment. The LED meter on the front not only indicates gain change but also aids in setup and calibration and identifies errors.

You show the 572 the parameters of the acoustic environment during calibration and then set the way you want the unit to respond to changes. The 572 then takes the information it has stored in memory and makes smooth,

appropriate changes to keep the levels exactly where you want them. In order for the speakers to act as loudspeakers and sensors, there must be times when no audio is passing through the speakers to allow the sample of the ambient noise to be taken. This 572 takes advantage of silent periods in the paging or music to take a sample, or it forces a sample based on the front panel setting at timed intervals. The 572 will unobtrusively fade out the music, take a sample, and then fade the music back in, all in a matter of seconds. The 572 will not, however, interrupt any signal that appears at the page input, thus keeping the unit from forcing a sense period during a page.

From malls to restaurants to factories, the Symetrix 572 gives you effective, reliable, system level control without an operator or the normal additional costs.

571 vs. 572…
Which one is right for your application?

Both of our SPL Computers perform similar functions but are quite different in application and features.

The 571 uses one or more microphones to sense the ambient, therefore, there is no need to interrupt the audio signal to make changes. This is necessary for applications that require constant paging signals that need to be raised or lowered over short sections of time. The cost effective 572 uses the speaker system itself to sense changes, thus saving the installer/customer from the price of external sensing microphones and cabling, but it must have periodic silence in the audio for the speaker to perform as a sensor. •
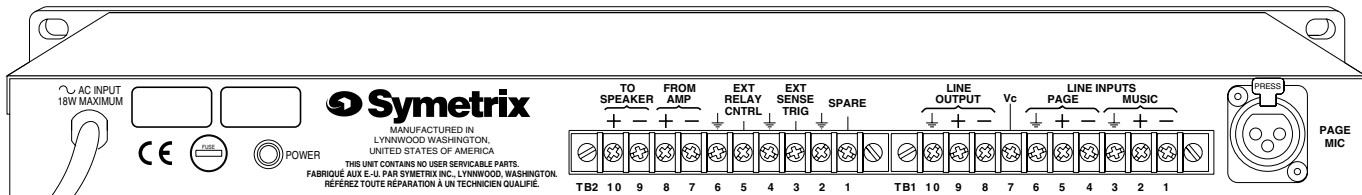
APPLICATIONS

Factories
▪
Malls
▪
Airports
▪
Restaurants
▪
Casinos
▪
Schools
▪
Museum Exhibits
▪
Stadiums
▪

FEATURES

Uses speakers as noise sensing "microphones"
▪
Separate Page and Music inputs
▪
Works with direct coupled and distributed systems
▪
Fast, simple calibration
▪

572

SPECIFICATIONS

Input/Output

Inputs	All Balanced, Transformerless
Paging Mic	Impedance >1800 Ohms
(For microphone level paging signals)	Nominal Level -80 dBu to -40 dBu
	Maximum Level -30 dBu
	CMRR >60 dB
Paging	Impedance >40 kilohms
(For line level paging signals)	Nominal Level 0 dBu, Maximum Level +18 dBu
	CMRR >40 dB
Music	Impedance >40 kilohms
(For line level music signals)	Nominal Level -10 dBu, Maximum Level +18 dBu
	CMRR>40 dB
	+21.5 dBu
Output	Balanced, Transformerless
Impedance	200 Ohms Balanced, 100 Ohms Unbalanced
	Minimum load: 600 Ohms Balanced
	Nominal Level 0 dBm
	Maximum level +24 dBm (into 600 Ohms)

Performance Data

Control Range	Variable, up to 40 dB (-20 dB to +20 dB)
Noise to Gain Ratio	Variable, 2:1 to 1:2
Sample Interval	Forced: Variable, 1 min. to 26 min
	Auto: Silence periods (< -30 dBm) > 800 ms
	Page-Over Music: Variable, 0 to 15 dB
Frequency Response	20 Hz to 20 kHz + 1 dB, -0 dB
THD+Noise	<0.05% THD, unity gain, 1 kHz
	music into balanced output
Signal to Noise Ratio	>70 dB, ref: 0 dBu, unity gain
	(30 kHz noise bandwidth)
Gain (VCA at unity)	Balanced Input to Unbalanced Output = 0 dB
	Unbalanced Input to Balanced Output = 6 dB
Voltage Control Scale	156 mV/ dB
Software	Copyright Symetrix, Inc. 1989

Physical

Size	1.74 x 19 x 6.25 inches, 4.42 x 48.3 x 15.875 centimeters
Weight	7.2 lbs (3.3 kgs)

Electrical

Power Requirements	115V AC, 60 Hz, 12 watts
	230V AC, 50 – 60Hz, 12 watts

572 ARCHITECTS AND ENGINEERS SPECIFICATIONS

The ambient sensing automatic level controlling device shall regulate the operating level of a sound system in proportion to changing noise levels in the sound system's operating area. The device shall be capable of adjusting gain control over 40 dB overall (max) range, and shall be governed by a microprocessor which shall be controlled by embedded software. The device shall vary its gain based upon measurements of the sound pressure level of ambient noise in the environment. These sound level measurements shall be made by the level controlling device through the loudspeakers otherwise used

for the system's output. To facilitate the use of the system's loudspeakers as noise measuring "microphones" the device shall provide relay switching of the speaker line circuit so as to disconnect the speakers from the amplifier output and connect the speakers to its own sensing input. The device shall provide inputs for paging signals at microphone level (nominal -40 dBv) or line level (nominal 0 dBv), and for music signals at line level (nominal 0 dBv). The device shall have a Ratio control to vary the ambient noise-to-gain ratio continuously from 2:1 to 1:2, and a front panel switchable hard-wired bypass. Calibration of the automatic level controlling device shall be semiautomatic,

and shall require switching the device to CAL Mode, and adjusting the minimum desired operating level and the maximum desired operating level. Calibration settings shall be continuously maintained in nonvolatile memory without the need for battery pack up power.

In addition to the various functions and general specifications mentioned above, the ambient sensing automatic level controlling device shall meet or exceed the following overall performance criteria: frequency response ±1 dB 20 Hz to 20 kHz, total harmonic distortion less than .05% at any attenuation from -40 dB to 0 dB (2 kHz), maximum paging microphone

input level -30 dBv, maximum line input level +18 dBu, maximum output level +24 dBm into 600-Ohms (balanced). Minimum impedance at the microphone inputs shall be 1800 Ohms, minimum impedance at the line inputs shall be 10 kilohms. The device shall be housed in an all steel chassis designed to be mounted in a 1U (1.74") space in a standard 19" rack. The ambient sensing automatic level controlling device shall be the Symetrix model 572 SPL Computer.

572