Genelec 1037B
Tri-amplified Monitoring System
1037B Tri-amplified Active Monitoring System

SYSTEM

The Genelec 1037B is a three-way active monitoring system including loudspeaker drivers, speaker enclosure, multiple power amplifiers and active, low signal level crossovers. Designed for moderate sized control rooms this system is ideal for project studios, general purpose broadcasting and television studios, digital workstations and postproduction facilities.

The 1037B is designed to perform well both as a free-standing monitor and flush mounted into the control room wall. The unique Directivity Control Waveguide (DCW) Technology used provides excellent stereo imaging and frequency balance even in difficult acoustic environments. The fast, low distortion amplifiers are capable of driving the stereo system to peak output levels in excess of 126 dB SPL at 1.7 m with program signals. Versatile crossover controls allow for precise matching of the speaker system to different acoustic conditions. The system can be used in both vertical and horizontal orientations by simply rotating the DCW unit.

INTEGRATED CONSTRUCTION

The system is very easy to use as only mains power and an input signal are needed. The performance is optimised because the loudspeakers and amplifiers are built as a single integrated, matched and calibrated package. The rugged amplifier is mounted into the enclosure with vibration isolators which also act as quick release hinges making maintenance operations very easy and straightforward. The speaker cabinet is constructed of veneered MDF, which is heavily braced to eliminate structural resonances.

APPLICATIONS

Project studios
Broadcast Control Rooms
TV Control Rooms
Drama and music studios
Post Production
CD Mastering

AMPLIFIERS

The bass, midrange and treble amplifiers each produce 180W, 120W and 120W, respectively of short term power with very low THD and IM distortion. Special attention is paid to the electronic design to achieve the best subjective sound quality currently possible. To improve the acoustic transient response the output impedance of the woofer amplifier is made negative. The system incorporates special circuitry to protect the drivers from overload. Thermal protection is included for the amplifiers.
CROSSOVER FILTERS

The crossover frequencies of the active crossover network are 420 Hz and 3.2 kHz. In order to obtain uniform frequency balance in different acoustic conditions, special calibrated controls are included in the crossover. The Bass, Midrange and Treble level controls operate in 1 dB steps. Moreover, the low frequency Tilt and Roll-off controls both have four 2 dB steps to allow refined LF response tailoring. A high-pass filter is included in the LF channel to protect the woofer from subsonic signals. The crossover network is driven by an active balanced input stage. Variable input sensitivity allows for accurate level matching to the mixing console.

DRIVERS

The bass frequencies are reproduced by a 305 mm bass driver loaded with a 65 litre vented box. The -3dB point is 35 Hz and the low frequency response extends down to 33 Hz. The midrange frequencies are reproduced with a very carefully designed 130 mm direct radiating driver loaded with a proprietary DCW. The high frequency driver is a 1” metal dome tweeter that is also loaded by a DCW. A magnetic shielding option is available for applications where the stray magnetic field must be minimized.

DCW TECHNOLOGY

The revolutionary Directivity Control Waveguide Technology is a means of vastly improving the performance of a direct radiating multiway loudspeaker in normal listening conditions. The basic idea is to match the different drive units precisely, both in terms of frequency response and directivity. This will result in a smoother and a virtually uncoloured off-axis response. Also, due to improved directivity control especially in the midrange frequencies, more direct sound and less early boundary reflections are received at the listening position. This gives more accurate stereo imaging and makes the system less sensitive to differing control room acoustics than any conventional direct radiator design. The DCW Technology improves drive unit sensitivity from +2 to +6 dB thus increasing the maximum sound pressure level produced by the system.

The upper curve group shows the horizontal directivity characteristics of 1037B in its vertical configuration measured at 1 m. The lower curve is a 1/3 octave band power response. The curves above left show the effect of the ‘bass tilt’, ‘bass level’ and ‘bass roll-off’ controls on the free field response. The curves to the right show the effect of the treble and midrange ‘level’ controls.

The reference axis lies between midrange and tweeter drivers.

Calibrated ‘Level’ switch. MUTE disconnects the channel for testing.

Options

- Opt-01 Flight case
  Order Code 1037-401
- Opt-03 Magnetic shielding
  Order Code 1037-403
- Opt-05 Floor stand
  Order Code 1037-405-V
- Opt-06 Handles
  Order Code 1001-406
- Opt-09 Grille
  Order Code 1037-409

The tweeter and the sealed midrange driver are mounted on a DCW to match their dispersion characteristics. The DCW can be rotated for horizontal mounting.

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SYSTEM SPECIFICATIONS

Lower cut-off frequency, -3 dB: \( \leq 35 \text{ Hz} \)
Upper cut-off frequency, -3 dB: \( \geq 22 \text{ kHz} \)

Free field frequency response of system: \( 37 \text{ Hz}-21 \text{ kHz (±2.5 dB)} \)

Maximum short term sine wave acoustic output on axis in half space, averaged from 100 Hz to 3 kHz:
\[
\text{SPL} @ 1m \geq 116 \text{ dB}
\]

Maximum long term RMS acoustic output in same conditions with IEC-weighted noise (limited by driver unit protection circuit):
\[
\text{SPL} @ 1m \geq 107 \text{ dB}
\]

Maximum peak acoustic output per pair on top of console, @1.7m from the engineer with music material:
\[
\geq 126 \text{ dB}
\]

Self generated noise level in free field @1m on axis:
\[
\leq 15 \text{ dB (A-weighted)}
\]

Harmonic distortion at 95 dB SPL at 1m on axis:
\[
\text{freq.} < 100 \text{ Hz} \leq 3\% \\
\text{freq.} > 100 \text{ Hz} \leq 0.5\%
\]

Drivers:
- Bass: 305 mm (12") cone
- Mid: 130 mm (5") cone
- Treble: 25 mm (1") metal dome

Weight: 37 kg (82 lb)

Dimensions:
- Height: 680 mm (26 3/4")
- Width: 400 mm (15 3/4")
- Depth: 380 mm (15")

AMPLIFIER SECTION

Bass amplifier output power with a 4 Ohm load:
- Short term: 180 W

Midrange amplifier output power with a 8 Ohm load:
- Short term: 120 W

Treble amplifier output power with a 8 Ohm load:
- Short term: 120 W

Long term output power is limited by driver unit protection circuitry.

Slew rate: 80 V/µs

Amplifier system distortion at nominal output:
- THD \( \leq 0.05\% \)
- SMPTE-IM \( \leq 0.05\% \)
- CCIF-IM \( \leq 0.05\% \)
- DIM 100 \( \leq 0.05\% \)

Signal to Noise ratio, referred to full output:
- Bass \( \geq 100 \text{ dB} \)
- Midrange \( \geq 100 \text{ dB} \)
- Treble \( \geq 100 \text{ dB} \)

Mains voltage: 100/200V or 115/230V

Power consumption:
- Idle: 50W
- Full output: 300W

CROSSOVER SECTION

Input connector:
- XLR female
  - pin 1: gnd
  - pin 2: +
  - pin 3: -

Input impedance: 10 kOhm

Input level for 100 dB SPL output @1m:
- variable from +6 to -6 dB

Input level for maximum short term output of 116 dB SPL @1m:
- variable from +22 to +10 dB

Subsonic filter below 32 Hz:
- 18 dB/octave

Ultrasonic filter above 25 kHz:
- 12 dB/octave

Crossover frequency:
- Bass/Mid: 420 Hz
- Mid/Treble: 3.2 kHz

Crossover acoustical slopes:
- 18 - 24 dB/octave

Crossover level control operating range in 1 dB steps:
- Bass from 0 to -6 dB
- Mid from 0 to -6 dB
- Treble from 0 to -6 dB

Bass roll-off control in 2 dB steps:
- from 0 to -8 dB
- \( @85 \text{ Hz} \)

Bass tilt control in 2 dB steps:
- from 0 to -8 dB
- \( @80 \text{ Hz} \)

The 'CAL' position is with all tone controls set to 'off' and input sensitivity control to maximum.

All data subject to change without prior notice.