

ATC SCM0.1/15 Pro Powered Subwoofer



While designing and building Sony's Multichannel DVD Mastering Suite in New York, the need arose for a system-matching subwoofer, capable of deep bass response with an SPL 10 dB greater than the sum of all the other channels. This led to the development of ATC's SCM0.1/15 Pro powered subwoofer. For the home theatre market, this subwoofer was tagged the C6, and is featured in the Concept 6 and 7 Collections.

The SCM0.1/15 Pro down-firing powered subwoofer is a sealed enclosure (acoustic suspension) design that features a modified version of the 20-kilogram (44-pound), 375mm (15-inch) driver used in the SCM150ASL Pro. Using Super Linear Magnet (SLM) technology (described below), the driver is driven by a massive built-in 1,000-watt (650 watts continuous RMS) MOSFET amplifier, to deliver over 118 dB SPL at very low distortion, down to well below 20 Hz. The specified cut-off frequencies (-6 dB free-standing) is 18 Hz and 2 kHz. The amplitude linearity is specified as 25 Hz to 1 kHz, ± 2 dB. As all ATC bass drivers have critically damped low frequency cut-offs, there is minimum phase disturbance at the bottom end of the frequency range, and there is always useable output well below the specified point. Furthermore, ATC specifies that there is no hump or coloration before the ultimate roll-off. A huge power amplifier and a robust Super Linear (SL) driver ensure

that there is minimal distortion in the LFE channel, even at very high levels.

The ATC hand-wound 10mm (7/16 inch) short voice coil uses high-density edge-wound flat oxygen-free copper (OFC) wire, operating in a 20mm (7/8 inch) long narrow magnetic gap, with linear suspensions for large linear diaphragm excursion and front and rear magnet venting, to reduce airflow noise and distortion, and increase power handling and long-term reliability. ATC prefers the short coil in a long-gap approach because, says Woodman, it is the best solution regarding geometry, and results in improved heat dissipation, and therefore, reduced operating temperature of the voice coil, as well as a reduction in the variation of voice coil induction in relation to its instantaneous position in the magnet gap.

A versatile interface provides for easy setup with phase, level, low-pass, and contour controls to make filter adjustments. Low-pass requirements are adjustable to include the Dolby® and THX® recommended 80 Hz crossover. The SCM0.1 amplifier module also facilitates phase reversal to aid in the combination with satellite loudspeakers. With the Contour control set to the Flat+ position the frequency response is flat. Change the Contour control to Flat- and the same frequency response is achieved but with a reversal of the phase, which can achieve better summing of the acoustic wave from satellite loudspeakers and the subwoofer, depending on their relative positions and other room considerations.

The SCM0.1 amplifier module also features a theatre equalizer with a range of boost between 40 to 60 Hz at +6 dB, making movie sound effects more dramatic. The low-pass control changes the crossover frequency as indicated on the panel—50 Hz, 60 Hz, 70 Hz, 80 Hz, 90 Hz, 2 kHz.

For this review, I used two SCM0.1/15 Pro subwoofers for the low frequency effects (LFE) channel, set to the Flat+ position with the low-pass control set at 2 kHz.