XX-XXXX; Rev 0; 3/08

MAXIM

20W Stereo Class D Speaker Amplifier with Volume Control

MAX9744

General Description

The MAX9744 20W stereo Class D audio power amplifier provides Class AB amplifier performance with Class D efficiency, conserving board space and eliminating the need for a bulky heatsink. This device features single-supply operation, adjustable gain, shutdown mode, SYNC output, speaker mute, and industry-leading click-and-pop suppression.

The MAX9744 features a 64-step dual-mode (analog or digital), programmable volume control and mute function. The MAX9744 operates from a 4.5V to 14V single supply and can deliver up to 20W per channel into a 4Ω speaker with a 14V supply.

The MAX9744 offers two modulation schemes: a fixed-frequency modulation mode that allows one of several preset switching frequencies to be selected, and a spread-spectrum modulation mode that helps to reduce EMI-radiated emissions.

The MAX9744 features high 75dB PSRR, low 0.04% THD+N, and SNR in excess of 90dB. Robust short-circuit and thermal-overload protection prevent device damage during a fault condition. The MAX9744 is available in a 44-pin thin QFN-EP (7mm x 7mm x 0.8mm) package and is specified over the extended -40°C to +85°C temperature range.

Applications

Flat-Panel Televisions

PC Speaker Systems

Multimedia Docking Stations

Features

♦ **Wide 4.5V to 14V Power-Supply Voltage Range**

♦ **Filterless Spread-Spectrum Modulation Lowers Radiated RF Emissions from Speaker Cables**

♦ **20W Stereo Output (4Ω, V_{DD} = 12V, THD+N = 10%)**

♦ **Integrated Volume Control (I²C or Analog)**

♦ **Low 0.04% THD+N**

♦ **High 75dB PSRR**

♦ **High 93% Efficiency (20W, 8Ω)**

♦ **Integrated Click-and-Pop Suppression**

♦ **Low-Power Shutdown Mode**

♦ **Short-Circuit and Thermal-Overload Protection**

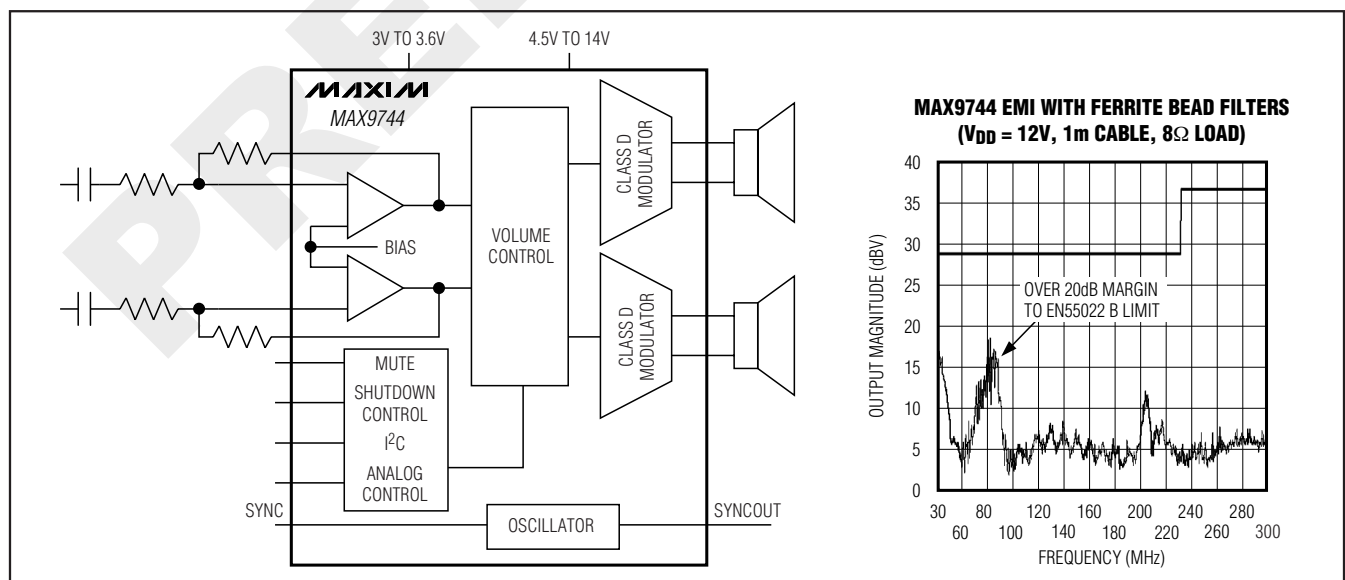♦ **Available in a 44-Pin Thin QFN-EP (7mm x 7mm x 0.8mm)**

Ordering Information

PART	TEMP RANGE	PIN-PACKAGE	PKG CODE
MAX9744ETH+	-40°C to +85°C	44 TQFN-EP*	T4477-3

+Denotes a lead-free package.

*EP = Exposed paddle.

Pin Configuration appears at end of data sheet.

Simplified Block Diagram

MAX9744 EMI WITH FERRITE BEAD FILTERS (V_DD = 12V, 1m CABLE, 8Ω LOAD)

MAXIM _____ **Maxim Integrated Products** 1

For pricing, delivery, and ordering information, please contact Maxim Direct at 1-888-629-4642, or visit Maxim's website at www.maxim-ic.com.