

Amended on July 13, 2009 and July 14, 2011)

(Full title of the plan)

Douglas J. Hillman

President and Chief Executive Officer

Aerosonic Corporation

1212 North Hercules Avenue

Clearwater, Florida 33765

Phone: (727) 461-3000

(Name, address and telephone number, including area code, of agent for service)

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act (Check One):

Large accelerated filer Accelerated filer

Non-accelerated filer Smaller reporting company

CALCULATION OF REGISTRATION FEE

Title of securities TM to be registered	Amount to be registered (1)	Proposed maximum offering price per share (2)	Proposed maximum aggregate offering price (2)	Amount of registration fee (2)
Common Stock, par value \$0.40 per share	200,000 shares	\$2.55	\$510,000	\$58.45

Pursuant to Rule 416 under the Securities Act of 1933, as amended, this Registration Statement shall also cover (1) additional shares of Common Stock which may become issuable by reason of any stock splits, stock dividends, recapitalizations or other similar transactions effected without receipt of consideration.

(2) Estimated solely for the purpose of computing the amount of the registration fee. Pursuant to Rule 457(c) and Rule 457(h) under the Securities Act of 1933, as amended, the proposed maximum offering price per share and proposed maximum aggregate offering price are based on the average of the high and low prices for the Registrant's Common Stock reported on The NYSE Amex on April 16, 2012.

EXPLANATORY NOTE

This Registration Statement on Form S-8 has been filed for the purpose of registering an additional 200,000 shares of the common stock, par value \$0.40 per share (the “Common Stock”), of Aerosonic Corporation (the “Company” or the “Registrant”) to be issued pursuant to the Aerosonic Corporation 2004 Stock Incentive Plan, as amended and restated on July 26, 2007, and as further amended on July 13, 2009 and July 14, 2011 (the “Plan”). The Company previously filed registration statements on Form S-8 on September 27, 2005 (File No. 333-128625), August 31, 2007 (File No. 333-145825) and July 16, 2009 (File No. 333-160619) to register an aggregate of 550,000 shares of the Common Stock to be issued under the Plan (collectively, the “Prior Registration Statements”).

INCORPORATION BY REFERENCE

Pursuant to General Instruction E of Form S-8, the contents of the Prior Registration Statements are incorporated herein by reference.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the Registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-8 and has duly caused this Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Clearwater, State of Florida, on April 20, 2012.

AEROSONIC CORPORATION

By: /s/ Douglas J. Hillman
 Douglas J. Hillman
 President and Chief Executive Officer

Pursuant to the requirements of the Securities Act of 1933, this Registration Statement has been signed below by the following persons in the capacities and on the dates indicated.

Signature	Title	Date
/s/ Douglas J. Hillman Douglas J. Hillman	President, Chief Executive Officer and Director (principal executive officer)	April 20, 2012
/s/ Kevin J. Purcell Kevin J. Purcell	Executive Vice President and Chief Financial Officer (principal financial and accounting officer)	April 20, 2012
/s/ P. Mark Perkins P. Mark Perkins	Executive Vice President and Director	April 20, 2012
/s/ Roy Robinson Roy Robinson	Director	April 20, 2012
/s/ Donald Russell Donald Russell	Director	April 20, 2012
/s/ Thomas E. Whytas Thomas E. Whytas	Director	April 20, 2012

EXHIBIT INDEX

EXHIBIT NUMBER	DESCRIPTION
4.1	Aerosonic Corporation 2004 Stock Incentive Plan, as amended.
5.1	Opinion of Hill, Ward & Henderson, P.A. regarding the legality of the securities being registered.
23.1	Consent of Counsel (included in Exhibit 5.1).
23.2	Independent Auditor's Consent