

Michael D. Prinn
Chief Financial Officer
80 Blanchard Road
Burlington, MA 01803
(781) 376-5555

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

Copies of all communications to:

Joseph Marrow, Esq.
Morse, Barnes-Brown & Pendleton, PC.
CityPoint, 230 Third Street
Waltham, Massachusetts 02451
(781) 622-5930

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.

Large accelerated filer Accelerated filer
Non-accelerated filer Smaller Reporting Company
(do not check if a smaller reporting company)

CALCULATION OF REGISTRATION FEE

| Title of Securities to be Registered | Amount to be Registered (1) | Proposed Maximum Proposed Maximum Amount of | | |
|---|------------------------------------|--|---------------------------------|-------------------------|
| | | Offering Price Per Share | Aggregate Offering Price | Registration Fee |
| Common stock, \$0.001 par value | 2,500,000 (2) | \$0.82845 (3) | \$2,071,125 | \$208.56 |
| Total | 2,500,000 shares | | | \$208.56 |

Plus such indeterminate number of shares of Common Stock of the Registrant as may be issued to prevent dilution (1) resulting from stock dividends, stock splits or similar transactions in accordance with Rule 416 under the Securities Act of 1933 (the "Securities Act").

(2) Represents shares of common stock issuable upon exercise of stock options available for grant pursuant to the Bridgeline Digital, Inc. 2016 Stock Incentive Plan.

(3) Estimated solely for purposes of calculating the registration fee in accordance with Rule 457(h)(1) under the Securities Act, using the average of the high and low sales price as reported on the Nasdaq Capital Market on August 16, 2016.

EXPLANATORY NOTE

This Registration Statement on Form S-8 is being filed for the purpose of registering 2,500,000 shares of Bridgeline Digital, Inc. common stock to be issued pursuant to the Bridgeline Digital, Inc. 2016 Stock Incentive Plan (the “Plan”).

PART II

INFORMATION REQUIRED IN THE REGISTRATION STATEMENT

ITEM 8. EXHIBITS.

The exhibits filed as part of this Registration Statement are as follows:

| Exhibit Number | Description |
|-----------------------|--|
| 4.1 | Amended and Restated Certificate of Incorporation of Bridgeline Digital, Inc., as amended (incorporated by reference to Exhibit 3.1 to Quarterly Report on Form 10-Q filed with the Commission on May 15, 2013). |
| 4.2 | Certificate of Amendment to Amended and Restated Certificate of Incorporation (incorporated by reference to Exhibit 3.1 to the Company’s Current Report on Form 8-K filed with the Commission on May 5, 2015). |
| 4.3 | Amended and Restated By-laws of Bridgeline Digital, Inc. (incorporated by reference to Exhibit 3.1 to our Quarterly Report on Form 10-Q filed with the Commission on February 17, 2015). |
| 4.4 | Bridgeline Digital Inc. 2016 Stock Incentive Plan (incorporated by reference to Appendix B of the Company’s Definitive Proxy Statement filed with the Commission on March 22, 2016). |
| 5.1* | Legal Opinion of Morse, Barnes-Brown & Pendleton, P.C. |
| 23.1* | Consent of Marcum LLP |
| 23.2 | Consent of Morse, Barnes-Brown & Pendleton, P.C. (included in Exhibit 5.1) |
| 24.1 | Power of Attorney (included on the signature page) |

* Filed herewith.

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 caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in Burlington, Massachusetts, on this 17th day of August 2016.

Bridgeline Digital, Inc.

By: /s/Michael D. Prinn

Michael D. Prinn

Chief Financial Officer

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Roger Kahn and Michael D. Prinn, and each of them acting individually, his true and lawful attorney-in-fact and agent with full power of substitution and resubstitution, for him and in his name, place and stead, in any and all capacities, to sign any and all amendments (including post-effective amendments filed pursuant to Rule 462, or otherwise) of and supplements to this registration statement, and to file the same, with all exhibits thereto, and other documents in connection therewith, with the U.S. Securities and Exchange Commission, granting unto each such attorney-in-fact and agent, or his substitutes, full power and authority to do and perform each and every act and thing requisite and necessary to be done in and about the premises, to all intents and purposes and as fully as he might or could do in person, hereby ratifying and confirming all that each such attorney-in-fact and agent, or his substitutes, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, this registration statement has been signed by the following persons in the capacities indicated as of August 17, 2016.

| Signature | Date | Title |
|---|-----------------|---------------------------------------|
| /s/Roger Kahn Roger Kahn | August 17, 2016 | President and Chief Executive Officer |
| /s/Michael D. Prinn Michael D. Prinn | August 17, 2016 | Chief Financial Officer |
| /s/Kenneth Galaznik Kenneth Galaznik | August 17, 2016 | Director |
| /s/Joni Kahn Joni Kahn | August 17, 2016 | Director |
| /s/Scott Landers Scott Landers | August 17, 2016 | Director |

/s/Michael Taglich August 17, 2016 Director
Michael Taglich

/s/Robert Taglich August 17, 2016 Director
Robert Taglich

INDEX TO EXHIBITS

**Exhibit
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