HOLOGIC INC Form SC 13G/A September 10, 2007

SCHEDULE 13G Amendment No. 2 Hologic Incorporated Common Stock Cusip #436440101 Cusip #436440101 Item 1: Reporting Person - FMR Corp. Item 4: Delaware Item 5: 301,100 Item 6: 0 Item 7: 3,343,235 Item 8: 0 Item 9: 3,343,235 Item 11: 6.197% Item 12: HC Cusip #436440101 Item 1: Reporting Person - Edward C. Johnson 3d Item 4: United States of America Item 5: 0 Item 6: 0 Item 7: 3,343,235 Item 8: 0 Item 9: 3,343,235 Item 11: 6.197% Item 12: IN SCHEDULE 13G - TO BE INCLUDED IN STATEMENTS FILED PURSUANT TO RULE 13d-1(b) or 13d-2(b) Item 1(a). Name of Issuer: Hologic Incorporated Item 1(b). Name of Issuer's Principal Executive Offices: 35 Crosby Drive Bedford, MA 01730 Item 2(a). Name of Person Filing: FMR Corp. Item 2(b). Address or Principal Business Office or, if None, Residence:

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82 Devonshire Street, Boston, Massachusetts 02109 Item 2(c). Citizenship: Not applicable Title of Class of Securities: Item 2(d). Common Stock Item 2(e). CUSIP Number: 436440101 Item 3. This statement is filed pursuant to Rule 13d-1(b) or 13d-2(b) and the person filing, FMR Corp., is a parent holding company in accordance with Section 240.13d-1(b)(ii)(G). (Note: See Item 7). Item 4. Ownership Amount Beneficially Owned: 3,343,235 (a) (b) Percent of Class: 6.197% Number of shares as to which such (C) person has: (i) sole power to vote or to direct 301,100 the vote: (ii) shared power to vote or to direct the vote: 0 (iii) sole power to dispose or to direct the disposition of: 3,343,235 shared power to dispose or to (iv) direct the disposition of: 0 Item 5. Ownership of Five Percent or Less of a Class. Not applicable. Item 6. Ownership of More than Five Percent on Behalf of Another Person. Various persons have the right to receive or the power to direct the receipt of dividends from, or the proceeds from the sale of, the Common Stock of Hologic Incorporated. No one person's interest in the Common Stock of Hologic Incorporated is more than five percent of the total outstanding Common Stock.

Item 7. Identification and Classification of the Subsidiary Which Acquired the Security Being Reported on By the Parent Holding Company.

See attached Exhibit A.

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Item 8. Identification and Classification of Members of the Group.

Not applicable. See attached Exhibit A.

Item 9. Notice of Dissolution of Group.

Not applicable.

Item 10. Certification.

By signing below I certify that, to the best of my knowledge and belief, the securities referred to above were acquired in the ordinary course of business and were not acquired for the purpose of and do not have the effect of changing or influencing the control of the issuer of such securities and were not acquired in connection with or as a participant in any transaction having such purpose or effect.

Signature

After reasonable inquiry and to the best of my knowledge and belief, I certify that the information set forth in this statement is true, complete and correct.

September 07, 2007 Date

/s/Eric D. Roiter Signature

Eric D. Roiter Duly authorized under Power of Attorney dated December 30, 1997 by and on behalf of FMR Corp. and its direct and indirect subsidiaries

SCHEDULE 13G - TO BE INCLUDED IN STATEMENTS FILED PURSUANT TO RULE 13d-1(b) or 13d-2(b)

Pursuant to the instructions in Item 7 of Schedule 13G, Fidelity Management & Research Company ("Fidelity"), 82 Devonshire Street, Boston, Massachusetts 02109, a whollyowned subsidiary of FMR Corp. and an investment adviser registered under Section 203 of the Investment Advisers Act of 1940, is the beneficial owner of 2,997,035 shares or 5.555% of the Common Stock outstanding of Hologic Incorporated ("the Company") as a result of acting as investment adviser to various investment companies registered under Section 8 of the Investment Company Act of 1940.

Edward C. Johnson 3d and FMR Corp., through its control of Fidelity, and the funds each has sole power to dispose of the 2,997,035 shares owned by the Funds.

Members of the family of Edward C. Johnson 3d, Chairman of FMR Corp., are the predominant owners, directly

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or through trusts, of Series B shares of common stock of FMR Corp., representing 49% of the voting power of FMR Corp. The Johnson family group and all other Series B shareholders have entered into a shareholders' voting agreement under which all Series B shares will be voted in accordance with the majority vote of Series B shares. Accordingly, through their ownership of voting common stock and the execution of the shareholders' voting agreement, members of the Johnson family may be deemed, under the Investment Company Act of 1940, to form a controlling group with respect to FMR Corp.

Neither FMR Corp. nor Edward C. Johnson 3d, Chairman of FMR Corp., has the sole power to vote or direct the voting of the shares owned directly by the Fidelity Funds, which power resides with the Funds' Boards of Trustees. Fidelity carries out the voting of the shares under written guidelines established by the Funds' Boards of Trustees.

Pyramis Global Advisors, LLC ("PGALLC"), 53 State Street, Boston, Massachusetts, 02109, an indirect whollyowned subsidiary of FMR Corp. and an investment adviser registered under Section 203 of the Investment Advisers Act of 1940, is the beneficial owner of 30,000 shares or 0.056% of the outstanding Common Stock of Hologic Incorporated as a result of its serving as investment adviser to institutional accounts, non-U.S. mutual funds, or investment companies registered under Section 8 of the Investment Company Act of 1940 owning such shares.

Edward C. Johnson 3d and FMR Corp., through its control of PGALLC, each has sole dispositive power over 30,000 shares and sole power to vote or to direct the voting of 30,000 shares of Common Stock owned by the institutional accounts or funds advised by PGALLC as reported above.

Pyramis Global Advisors Trust Company ("PGATC"), 53 State Street, Boston, Massachusetts, 02109, an indirect wholly-owned subsidiary of FMR Corp. and a bank as defined in Section 3(a)(6) of the Securities Exchange Act of 1934, is the beneficial owner of 316,200 shares or 0.586% of the outstanding Common Stock of the Hologic Incorporated as a result of its serving as investment manager of institutional accounts owning such shares.

Edward C. Johnson 3d and FMR Corp., through its control of Pyramis Global Advisors Trust Company, each has sole dispositive power over 316,200 shares and sole power to vote or to direct the voting of 269,600 shares of Common Stock owned by the institutional accounts managed by PGATC as reported above.

SCHEDULE 13G - TO BE INCLUDED IN STATEMENTS FILED PURSUANT TO RULE 13d-1(b) or 13d-2(b) RULE 13d-1(f)(1) AGREEMENT

The undersigned persons, on September 07, 2007, agree and consent to the joint filing on their behalf of this Schedule 13G in connection with their beneficial ownership of the Common Stock of Hologic Incorporated at August 31, 2007.

FMR Corp. By /s/ Eric D. Roiter Eric D. Roiter Duly authorized under Power of Attorney dated December 30, 1997, by and on behalf of FMR Corp. and its direct and indirect subsidiaries Edward C. Johnson 3d By /s/ Eric D. Roiter Eric D. Roiter Duly authorized under Power of Attorney dated December 30, 1997, by and on behalf of Edward C. Johnson 3d Fidelity Management & Research Company By /s/ Eric D. Roiter Eric D. Roiter Senior V.P. and General Counsel