SPIRENT COMMUNICATIONS PLC Form 6-K November 20, 2006

> UNITED STATES SECURITIES AND EXCHANGE COMMISSION Washington, D.C. 20549

> > FORM 6-K

REPORT OF FOREIGN PRIVATE ISSUER PURSUANT TO RULE 13a-16 OR 15d-16 UNDER THE SECURITIES EXCHANGE ACT OF 1934

For the month of November, 2006

SPIRENT COMMUNICATIONS plc

(Translation of registrant's name into English)

Spirent House, Crawley Business Quarter, Fleming Way, Crawley, West Sussex RH10 9QL, UK.

(Address of principal executive offices)

Indicate by check mark whether the registrant files or will file annual reports under cover Form 20-F or Form 40-F.

Form 20-F X Form 40-F....

Indicate by check mark whether the registrant by furnishing the information contained in this Form is also thereby furnishing the information to the Commission pursuant to Rule 12g3-2(b) under the Securities Exchange Act of 1934.

Yes No X

If "Yes" is marked, indicate below the file number assigned to the registrant in connection with Rule 12g3-2(b): 82-

Spirent Communications Plc Transaction in Own Shares

Spirent Communications PLC announces that it has today purchased through Citigroup Global Markets U.K. Equity Limited 600,000 ordinary shares at an average price of 57.6924 pence per share. The highest price and the lowest price paid for these shares were 58.75 pence and 55.5 pence respectively.

Following the above purchase, Spirent Communications plc holds 89,651,487 Spirent Communications plc ordinary shares in treasury, and has 885,800,064 Spirent Communications plc ordinary shares in issue (excluding treasury shares).

Signatures

Pursuant to the requirements of the Securities Exchange Act of 1934, the

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registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

____MICHAEL ANSCOMBE_____

(Registrant)

Date: 20 November, 2006

By ____/s/ Michael Anscombe_____

(Signature)*