

*Prospectus Supplement No. 5
(To Prospectus Supplement No. 4 dated March 18,
2010, Prospectus Supplement No. 3 dated December
11, 2009, Prospectus Supplement No. 2 dated April 7,
2009, Prospectus Supplement No. 1 dated January 7,
2009 and Prospectus Supplement dated October 28,
2008 to Prospectus dated July 25, 2008)*

Pursuant to Rule 424(b)(7)
Registration File No. 333-152548

Sirius XM Radio Inc.
COMMON STOCK

This prospectus supplement relates to the resale from time to time by selling stockholders of shares of our common stock that we may issue to them upon the exchange of XM Satellite Radio Inc.'s 7% Exchangeable Senior Subordinated Notes due 2014, which we refer to as the "notes."

This prospectus supplement, which supplements the prospectus dated July 25, 2008, as supplemented by the prospectus supplement dated October 28, 2008, the prospectus supplement dated January 7, 2009, the prospectus supplement dated April 7, 2009, the prospectus supplement dated December 11, 2009 and the prospectus supplement dated March 18, 2010, contains information about certain selling stockholders.

Neither the Securities and Exchange Commission nor any state securities commission have approved or disapproved these securities, or determined if this prospectus supplement or the accompanying prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

August 19, 2010.

SELLING STOCKHOLDERS

XM Satellite Radio Inc. ("XM Inc.") originally issued the notes to the initial purchasers in transactions exempt from the registration requirements of the Securities Act. The initial purchasers resold the notes to persons reasonably believed by the initial purchasers to be "qualified institutional buyers" within the meaning of Rule 144A under the Securities Act in transactions exempt from registration under the Securities Act. The selling stockholders, including their transferees, pledgees or donees or their successors, may from time to time offer and sell the shares of our common stock delivered upon the exchange of the notes under this prospectus supplement pursuant to existing registration rights conferred by the registration rights agreement dated as of August 1, 2008 among us, XM Inc. and the initial purchasers. Our registration of the shares of common stock issuable upon exchange of the notes does not necessarily mean that the selling stockholders will sell all or any of the shares of common stock.

The table of selling stockholders appearing under the caption "Selling Stockholders" beginning on page S-8 of the prospectus supplement dated October 28, 2008, and the table of selling stockholders appearing under the caption "Selling Stockholders" in prospectus supplement no. 1, prospectus supplement no. 2, prospectus supplement no. 3 and prospectus supplement no. 4 is hereby

- supplemented by adding the information regarding certain selling stockholders set forth in the table entitled "Additional Selling Stockholders" below; and
- amended by replacing the information regarding certain selling stockholders identified in the table entitled "Revised Information Regarding Selling Stockholders" below with the information set forth in such table.

The following tables set forth certain information as of August 13, 2010 concerning the shares of common stock that may be offered from time to time by each selling stockholder identified below pursuant to this prospectus supplement. The information is based on information provided by or on behalf of the selling stockholders.

Because the selling stockholders may offer all or some portion of the common stock, no estimate can be given as to the amount of the shares of common stock that will be held by the selling stockholders upon termination of any sales. Information about the selling stockholders may change over time. In particular, the selling stockholders identified below may have sold, transferred or otherwise disposed of all or a portion of their notes or common stock since the date on which they provided to us information regarding their notes or common stock. Any changed or new information given to us by the selling stockholders will be set forth in supplements to this prospectus supplement or amendments to the registration statement of which this prospectus supplement is a part, if and when necessary.

Except as set forth in the tables, none of the selling stockholders identified below nor any of their affiliates, officers, directors or principal equity holders (5% or more) has held any position or office or has had any other material relationship with us or XM Inc. (or our or XM Inc.'s predecessors or affiliates) during the past three years.

Additional Selling Stockholders

Name ⁽¹⁾	Shares of Common Stock Beneficially Owned Prior to Offering ⁽²⁾	Shares of Common Stock That May be Offered Hereby ⁽²⁾	Number of Shares of Common Stock Beneficially Owned After Offering ⁽³⁾	Percentage of Outstanding Shares of Common Stock Beneficially Owned After Offering ⁽³⁾
Advent Global Phoenix Convertible Fund ⁽⁴⁾	485,333	485,333	—	*
Alcon Laboratories ⁽⁵⁾	191,466	191,466	—	*
Altma Fund SICA P.I.C. in respect of Advent Convertible Arbitrage Sub-Fund (INOCAP) ⁽⁶⁾	149,333	149,333	—	*
BMW — Suzuka Annapurna ⁽⁷⁾	789,333	789,333	—	*
British Virgin Islands Social Security Board ⁽⁸⁾	108,266	108,266	—	*
Domestic & Foreign Missionary Society DFMS ⁽⁹⁾	54,933	54,933	—	*
GMIMCO Trust ⁽¹⁰⁾	746,666	746,666	—	*
Grady Hospital Foundation ⁽¹¹⁾	83,199	83,199	—	*
HFR CA Opportunity Master Trust ⁽¹²⁾	164,266	164,266	—	*
New York City MTA ⁽¹³⁾	309,333	309,333	—	*
Occidental Petroleum Corporation ⁽¹⁴⁾	227,199	227,199	—	*
Pro Mutual ⁽¹⁵⁾	529,599	529,599	—	*
San Francisco City and County ERS ⁽¹⁶⁾	671,999	671,999	—	*
State of Maryland ⁽¹⁷⁾	53,333	53,333	—	*

(*) Less than one percent.

- (1) Information concerning other selling stockholders will be set forth in additional supplements to the prospectus supplement from time to time, if required.
- (2) Assumes exchange of all of the selling stockholder's notes at an exchange rate of 533.3333 shares of our common stock per \$1,000 principal amount of the notes. This exchange rate is subject to certain adjustments. As a result, the number of shares of common stock issuable upon exchange of the notes may increase or decrease in the future. Under the terms of the indenture governing the notes, fractional shares will not be issued upon exchange of the notes. Cash will be paid instead of fractional shares, if any.
- (3) Calculated based on Rule 13d-3(d)(i) of the Exchange Act, using 3,888,667,924 shares of common stock outstanding as of July 30, 2010 (including 202,399,983 shares of common stock issued and lent to affiliates of the initial purchasers of the notes in order to facilitate hedging transactions). In calculating this amount for each stockholder, we treated as outstanding the number of shares of common stock issuable upon exchange of that stockholder's notes, but we did not assume exchange of any other stockholder's notes. The beneficial ownership in this column assumes that the selling stockholder sells all of the shares offered by this prospectus supplement issuable upon the exchange of the notes that are beneficially owned by the selling stockholder as of the date of this prospectus supplement, and that any other shares of common stock owned by the selling stockholder as of the date of this prospectus supplement will continue to be beneficially owned by the selling stockholder.
- (4) Advent Capital Management, LLC is the investment manager for Advent Global Phoenix Convertible Fund and has voting control and investment discretion over securities owned by Advent Global Phoenix Convertible Fund.
- (5) Advent Capital Management, LLC is the investment manager for Alcon Laboratories and has voting control and investment discretion over securities owned by Alcon Laboratories.
- (6) Advent Capital Management, LLC is the investment manager for Altma Fund SICA P.I.C. in respect of Advent Convertible Arbitrage Sub-Fund (INOCAP) and has voting control and investment discretion over securities owned by Altma Fund SICA P.I.C. in respect of Advent Convertible Arbitrage Sub-Fund (INOCAP).
- (7) Advent Capital Management, LLC is the investment manager for BMW — Suzuka Annapurna and has voting control and investment discretion over securities owned by BMW — Suzuka Annapurna.
- (8) Advent Capital Management, LLC is the investment manager for British Virgin Islands Social Security Board and has voting control and investment discretion over securities owned by British Virgin Islands Social Security Board.
- (9) Advent Capital Management, LLC is the investment manager for Domestic & Foreign Missionary Society DFMS and has voting control and investment discretion over securities owned by Domestic & Foreign Missionary Society DFMS.
- (10) Advent Capital Management, LLC is the investment manager for GMIMCO Trust and has voting control and investment discretion over securities owned by GMIMCO Trust.
- (11) Advent Capital Management, LLC is the investment manager for Grady Hospital Foundation and has voting control and investment discretion over securities owned by Grady Hospital Foundation.
- (12) Advent Capital Management, LLC is the investment manager for HFR CA Opportunity Master Trust and has voting control and investment discretion over securities owned by HFR CA Opportunity Master Trust.
- (13) Advent Capital Management, LLC is the investment manager for New York City MTA and has voting control and investment discretion over securities owned by New York City MTA.
- (14) Advent Capital Management, LLC is the investment manager for Occidental Petroleum Corporation and has voting control and investment discretion over securities owned by Occidental Petroleum Corporation.
- (15) Advent Capital Management, LLC is the investment manager for Pro Mutual and has voting control and investment discretion over securities owned by Pro Mutual.
- (16) Advent Capital Management, LLC is the investment manager for San Francisco City and County ERS and has voting control and investment discretion over securities owned by San Francisco City and County ERS.
- (17) Advent Capital Management, LLC is the investment manager for State of Maryland and has voting control and investment discretion over securities owned by State of Maryland.

Revised Information Regarding Selling Stockholders

Name ⁽¹⁾	Shares of Common Stock Beneficially Owned Prior to Offering ⁽²⁾	Shares of Common Stock That May be Offered Hereby ⁽²⁾	Number of Shares of Common Stock Beneficially Owned After Offering ⁽³⁾	Percentage of Outstanding Shares of Common Stock Beneficially Owned After Offering ⁽³⁾
California Health Care Foundation ⁽⁴⁾	530,133	530,133	—	*
Florida Power and Light ⁽⁵⁾	1,207,999	1,207,999	—	*
HBK Master Fund L.P. ⁽⁶⁾	25,346,411	20,279,998	5,066,413	*
HFR CA Opportunity Master Trust ⁽⁷⁾	196,266	196,266	—	*
Institutional Benchmark Series Ltd. ⁽⁸⁾	330,133	330,133	—	*
MABSTOA ⁽⁹⁾	124,266	124,266	—	*
New York City Employees Retirement System ⁽¹⁰⁾	1,125,866	1,125,866	—	*
New York City Fire Department Pension Fund ⁽¹¹⁾	294,933	294,933	—	*
New York City Police Pension Fund ⁽¹²⁾	606,399	606,399	—	*
New York City Teachers Retirement System ⁽¹³⁾	787,199	787,199	—	*
Oyster Global Convertibles ⁽¹⁴⁾	719,999	719,999	—	*
Partners Group Alternative Strategies PCC Limited Gold Zeta Cell ⁽¹⁵⁾	212,266	212,266	—	*
State of Alaska ⁽¹⁶⁾	426,133	426,133	—	*
Teachers Retirement System of the City of New York ⁽¹⁷⁾	1,111,466	1,111,466	—	*
The Advent Convertible Arbitrage (Cayman) Offshore Fund II ⁽¹⁸⁾	985,066	985,066	—	*
The Advent Convertible Arbitrage Master Fund ⁽¹⁹⁾	3,445,866	3,445,866	—	*

(*) Less than one percent.

- (1) Information concerning other selling stockholders will be set forth in additional supplements to the prospectus supplement from time to time, if required.
- (2) Assumes exchange of all of the selling stockholder's notes at an exchange rate of 533.3333 shares of our common stock per \$1,000 principal amount of the notes. This exchange rate is subject to certain adjustments. As a result, the number of shares of common stock issuable upon exchange of the notes may increase or decrease in the future. Under the terms of the indenture governing the notes, fractional shares will not be issued upon exchange of the notes. Cash will be paid instead of fractional shares, if any.
- (3) Calculated based on Rule 13d-3(d)(i) of the Exchange Act, using 3,888,667,924 shares of common stock outstanding as of July 30, 2010 (including 202,399,983 shares of common stock issued and lent to affiliates of the initial purchasers of the notes in order to facilitate hedging transactions). In calculating this amount for each stockholder, we treated as outstanding the number of shares of common stock issuable upon exchange of that stockholder's notes, but we did not assume exchange of any other stockholder's notes. The beneficial ownership in this column assumes that the selling stockholder sells all of the shares offered by this prospectus supplement issuable upon the exchange of the notes that are beneficially owned by the selling stockholder as of the date of this prospectus supplement, and that any other shares of common stock owned by the selling stockholder as of the date of this prospectus supplement will continue to be beneficially owned by the selling stockholder.
- (4) Advent Capital Management, LLC is the investment manager for California Health Care Foundation and has voting control and investment discretion over securities owned by California Health Care Foundation.
- (5) Advent Capital Management, LLC is the investment manager for Florida Power and Light and has voting control and investment discretion over securities owned by Florida Power and Light.
- (6) HBK Investments L.P., a Delaware limited partnership, has shared voting and dispositive power over the shares pursuant to an Investment Management Agreement between HBK Investments L.P. and the selling stockholder. HBK Investments L.P. has delegated discretion to vote and dispose of the shares to HBK Services LLC. The following individuals may be deemed to have control over HBK Investments L.P.: Jamiel A. Akhtar, Richard L. Booth, David C. Haley and William E. Rose.
- (7) Advent Capital Management, LLC is the investment manager for HFR CA Opportunity Master Trust and has voting control and investment discretion over securities owned by HFR CA Opportunity Master Trust.
- (8) Advent Capital Management, LLC is the investment manager for Institutional Benchmark Series Ltd. and has voting control and investment discretion over securities owned by Institutional Benchmark Series Ltd.

- (9) Advent Capital Management, LLC is the investment manager for MABSTOA and has voting control and investment discretion over securities owned by MABSTOA.
- (10) Advent Capital Management, LLC is the investment manager for New York City Employees Retirement System and has voting control and investment discretion over securities owned by New York City Employees Retirement System.
- (11) Advent Capital Management, LLC is the investment manager for New York City Fire Department Pension Fund and has voting control and investment discretion over securities owned by New York City Fire Department Pension Fund.
- (12) Advent Capital Management, LLC is the investment manager for New York City Police Pension Fund and has voting control and investment discretion over securities owned by New York City Police Pension Fund.
- (13) Advent Capital Management, LLC is the investment manager for New York City Teachers Retirement System and has voting control and investment discretion over securities owned by New York City Teachers Retirement System.
- (14) Advent Capital Management, LLC is the investment manager for Oyster Global Convertibles and has voting control and investment discretion over securities owned by Oyster Global Convertibles.
- (15) Advent Capital Management, LLC is the investment manager for Partners Group Alternative Strategies PCC Limited Gold Zeta Cell and has voting control and investment discretion over securities owned by Partners Group Alternative Strategies PCC Limited Gold Zeta Cell.
- (16) Advent Capital Management, LLC is the investment manager for State of Alaska and has voting control and investment discretion over securities owned by State of Alaska.
- (17) Advent Capital Management, LLC is the investment manager for Teachers Retirement System of the City of New York and has voting control and investment discretion over securities owned by Teachers Retirement System of the City of New York.
- (18) Advent Capital Management, LLC is the investment manager for The Advent Convertible Arbitrage (Cayman) Offshore Fund II and has voting control and investment discretion over securities owned by The Advent Convertible Arbitrage (Cayman) Offshore Fund II.
- (19) Advent Capital Management, LLC is the investment manager for The Advent Convertible Arbitrage Master Fund and has voting control and investment discretion over securities owned by The Advent Convertible Arbitrage Master Fund.

Only selling stockholders identified above, or in previous prospectus supplements, who beneficially own the shares of common stock may sell such securities under the registration statement. Prior to any use of this prospectus supplement in connection with an offering of shares of our common stock by any stockholder not identified above, this prospectus supplement will be supplemented to set forth the name and other information about the selling stockholder intending to sell such shares of common stock. The prospectus supplement will also disclose whether any selling stockholder or any of its affiliates, officers, directors or principal equity holders (5% or more) has held any position or office or has had any other material relationship with us or XM Inc. (or our or XM Inc.'s predecessors or affiliates) during the past three years.