



## **Nautel to Develop Spacecraft Power Technology**

*Nautel-developed power amplifiers to be used in plasma generation system for spacecraft propulsion.*

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Nautel Limited, a radio transmitter and communications beacon manufacturer based in Bangor, Maine and Hackett's Cove, Nova Scotia, has announced plans to research and develop a high power RF amplifier for application in space travel. This amplifier will be used for plasma generation and subsequent acceleration in an electric spacecraft propulsion system.

Plasmas are electrically charged fluids that can be heated to extreme temperatures by radio waves and are controlled and guided by strong magnetic fields. The magnetic field also insulates the hot gas from any nearby structure, permitting the gas to exceed the melting point of surrounding materials without affecting them. In rocket propulsion, the higher the temperature of the exhaust gases, the higher their velocity and hence the higher their fuel efficiency. Plasma rockets feature exhaust velocities far above those achievable by their chemical cousins, so their fuel consumption is extremely low.

“This plasma-based propulsion system, aided by Nautel technology, achieves a high exhaust velocity and high fuel efficiency, potentially leading to millions of dollars in fuel savings for space exploration missions,” said Peter Conlon, President and CEO of Nautel Ltd.

Nautel is collaborating with Ad Astra Rocket Company of Texas in the development of this technology: “Nautel’s compact and lightweight high power RF technology is critical to a successful space application,” said Dr. Franklin Chang Díaz, Ad Astra’s Chairman and CEO. “In addition, the low voltage requirements of these RF transmitters make them compatible with the voltage output of space-borne solar power arrays, eliminating costly and bulky power transformers and other intermediate power conditioning equipment.”

“We are excited to apply our specialized engineering knowledge to help advance space travel,” said Mr. Conlon. “Whether it is the latest in HD Radio transmitter solutions or the innovative space propulsion application of this initiative, Nautel prides itself in staying at the leading edge of RF amplifier design.”

To learn more about plasma rockets visit [www.nautel.com/rocketscience/](http://www.nautel.com/rocketscience/).

## **About Nautel**

Nautel is a global leader in the manufacture of AM and FM radio broadcast transmitters, navigational radio beacons, Differential Global Positioning System (DGPS) transmitters, medium frequency (MF) telegraph and NAVTEX transmitters, and high frequency (HF) amplifiers for dielectric heating applications. The latest innovation in broadcasting is digital radio. HD Radio and Digital Radio Mondiale (DRM) are the greatest revolution in radio broadcasting since the introduction of FM. Nautel is a key player in this latest phase of radio broadcast technology, producing transmitters that are fully compatible with all digital transmission methods. Thousands of customers in more than 170 countries have discovered that Nautel delivers world class digital radio solutions - systems that meet stringent quality standards at its ISO-registered manufacturing facilities.

## **About Ad Astra**

Ad Astra Rocket Company is a privately owned Delaware corporation, established January 14, 2005 to commercialize the technology of the VASIMR™, a plasma propulsion system originally developed by NASA with potential to support an emerging in-space transportation market. The company has its main laboratory and corporate headquarters at the Johnson Space Center in Houston, Texas, USA. Ad Astra also owns and operates Ad Astra Rocket Company, Costa Rica, a supporting research and development subsidiary in Guanacaste, Costa Rica. Ad Astra is developing the VX-200, a full-scale, flight-like VASIMR™ prototype to be tested in December of this year, and is planning to demonstrate a flight version of the engine in space in early 2011.

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