Boeing-Built DIRECTV-4S Satellite Ready for Launch

Spacecraft's Spot-Beam Technology to Help DIRECTV Add Local Channels in U.S. Markets

DIRECTV-4S, a Boeing 601HP satellite built for DIRECTV, Inc., is scheduled for launch on Monday, Nov. 26. The satellite was built by Boeing Satellite Development Center, the world's leading satellite manufacturer and a business of The Boeing Company (NYSE: BA). DIRECTV-4S will be the sixth Boeing-built satellite launched this year and the 61st Boeing 601 spacecraft launched to date.

DIRECTV-4S will be launched by Arianespace aboard an Ariane 44LP rocket from the Guiana Space Center on the northeast coast of South America. The 38-minute launch window opens at 9:35 p.m. at the launch site (4:35 p.m. PST; 12:35 a.m. Nov. 27 GMT).

DIRECTV-4S will be stationed with other DIRECTV satellites at 101 degrees West longitude. DIRECTV-4S is designed to provide the DIRECTV® digital satellite television service with more than 300 channels of additional capacity. DIRECTV will use that capacity to deliver additional local channels and to strengthen the redundancy of its in-orbit fleet.

"In addition to being the largest Boeing 601HP spacecraft we've built, DIRECTV-4S will also be a terrific example of leading-edge Boeing technology tailored to serve our customer's business needs," said Boeing Satellite Development Center President Randy H. Brinkley. "Delivering local channels to individual TV markets is an important part of DIRECTV's service, and their ability to do so will be significantly expanded by the spot-beam technology we designed and built into DIRECTV-4S."

This will be the fifth Boeing-built satellite deployed by DIRECTV and the first spacecraft in the DIRECTV fleet to employ spot beams. This technology reuses the same frequencies on multiple spot beams to reach the major television markets where DIRECTV delivers the signals of local network affiliates.

"DIRECTV-4S and its Boeing spot beam technology is an investment that will benefit our customers and enhance our growth in the 41 markets where we offer local channels," said Roxanne Austin, president and COO, DIRECTV, Inc. "DIRECTV and the Boeing satellite manufacturing team have established an enviable record of technological leadership that continues to set us apart in the satellite television industry."

DIRECTV-4S will also be the world's first commercial satellite to employ high-efficiency solar arrays with triple-junction gallium arsenide solar cells built by Spectrolab, Inc., a BSS subsidiary. These solar cells are called triple-junction because they employ a three-layered structure, with each layer able to capture and convert a different portion of the solar spectrum. The DIRECTV-4S solar cells will be able to convert 24.5 percent of the sun's energy into electricity. The spacecraft's two solar arrays are together designed to deliver 8.3 kilowatts of power at the end of its 15-year design life.

The spacecraft will carry two Ku-band payloads: spot beams for local channels, and a national beam payload. The spot beam payload will use a total of 38 traveling wave-tube amplifiers (TWTAs) ranging in power from 30 to 88 watts. The national beam payload will carry two active transponders with further capability for two active high-power transponders and six active low-power transponders.

Once deployed, the DIRECTV-4S solar arrays will measure more than 85 feet long from tip to tip, and its antennas will span 24.5 feet in width. The spacecraft fully fueled at launch will weigh 9,400 lbs. (4,260 kg) at launch.

DIRECTV is the nation's leading digital satellite television service provider with more than 10.3 million customers. DIRECTV and the Cyclone Design logo are trademarks of DIRECTV, Inc., a unit of Hughes Electronics Corp. HUGHES is the world's leading provider of digital television entertainment, broadband services, satellite-based private business networks, and global video and data broadcasting. The earnings of HUGHES, a unit of General Motors Corporation, are used to calculate the earnings per share attributable to the General Motors Class H common stock (NYSE: GMH). For more information, visit the DIRECTV web site.

Boeing Satellite Development Center is the world's leading manufacturer of commercial communications satellites, and is also a major provider of space systems, satellites, and payloads for national defense, science and environmental applications.
The Boeing Company (NYSE: BA) is the largest aerospace company in the world and the United States' leading exporter. It is NASA's largest contractor and the largest manufacturer of commercial jetliners and military aircraft. The company's capabilities in aerospace also include rotorcraft, electronic and defense systems, missiles, rocket engines, launch vehicles, satellites, and advanced information and communication systems. The company has an extensive global reach with customers in 145 countries.
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Note to editors: Live video of the launch will be carried on the Telstar 4 satellite, transponder #11, C-band. You are welcome to use the feed in your news broadcasts. Quicktime video clips of a spacecraft deployment animation and other taped construction milestones are available for download.

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