Lockheed Martin Completes First Flexible Solar Array For LM 2100 Satellite

New Technology Delivers 50 Percent More Power and is 30 Percent Lighter than Previous Arrays

The first Multi-mission Modular Solar Array unfurls at Lockheed Martin's site in Sunnyvale, California. The reconfigurable design delivers 50 percent more power despite being 30 percent lighter.

SUNNYVALE, Calif., Oct. 3, 2017 – After years of development, Lockheed Martin completed the first flight build of its new Multi-mission Modular (MM) Solar Array. This new flexible array advances Lockheed Martin's significant heritage flying flexible arrays on such programs as the International Space Station and a constellation for the U.S. Air Force. The new design is a major component of Lockheed Martin's multi-year modernization of its LM 2100 satellite bus, which is part of its newly-enhanced family of buses.

The MM Array incorporates three key features in the satellite design: higher power, less mass and compact stowage, and all of this enables satellite designers to better meet customers' growing power needs. This compact flexible array design delivers 50 percent more power than previous rigid array designs at 30 percent less mass.

"The new arrays can generate 20 kilowatts of energy in orbit, enough to power an entire home. These new arrays deliver enough energy for even the most advanced communications or remote sensing payloads," said Wahid Azizpor, manufacturing director at Lockheed Martin Space Systems. "Built on an innovative flexible material, these arrays are rugged and reliable at a fraction of the weight and stowed size, which lets customers pack more payload capability into the satellite."

About the array:

• By swapping rigid panels for thin, flexible sheets, the upgraded design achieves reduced weight and compact stowage. Typical rigid panels range from 0.75 to 1.5 inches thick, but the MM Array's synthetic polymer material is just 0.002 inches thick, a significant reduction.

• Combined with an innovative deployment mechanism, the improvements create a design that lowers cost and allows easy configuration changes for different missions. Its first customers are for LM 2100 series of satellites, but engineers can adapt the design for other types of spacecraft.

• The MM Array incorporates the latest efficient solar cell and component technologies. Additionally, engineers designed the solar array to improve manufacturing and test, incorporating robotics and other advanced manufacturing techniques. Lockheed Martin has leveraged expertise from across Space Systems to contribute to the design.

About Lockheed Martin

Headquartered in Bethesda, Maryland, Lockheed Martin is a global security and aerospace company that employs approximately 97,000 people worldwide and is principally engaged in the research, design, development, manufacture, integration and sustainment of advanced technology systems, products and services.

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