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IAF SPACE POWER SYMPOSIUM (C3)
Wireless Power Transmission Technologies and Application (2)

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DEVELOPMENT OF A LASER POWER BEAMING DEMONSTRATION FOR CLPS LANDERS

Abstract

Laser based power transmission represents an enabling technology for moving power from energy rich regions to areas of high demand, while being able to overcome the dramatic topography of the lunar poles [1-4]. To provide the earliest opportunity for flight demonstration of this critical technology, we have designed and conducted relevant environment testing of a low power, minimal mass laser power beaming demonstrator that can be mounted as an ancillary payload on a NASA Commercial Lunar Payload Services (CLPS) lander. Our entire system consists of a laser, beam director, target identification system, and

multiple FemtoSat receivers [5]. This integrated system is able to test key objectives incrementally. We plan to test methods of ejecting and locating the receiver on the lunar surface, pointing and aiming the laser at the receiver, and powering the receiver. We have tested key components of the system and are moving toward integrated tests.