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## ON-ORBIT DEMONSTRATION FOR NEXT GENERATION SPACE SOLAR CELL ON HTV-X

**Abstract**

Japan Aerospace Exploration Agency, JAXA plans to perform on-orbit demonstration test of a variety of state-of-art solar cells which are expected as the next generation space solar cell. The demonstration test is names as “Space solar cell Demonstration instrument on HTV-X (SDX)”. HTV-X is the next generation Japanese transfer vehicle to supply the goods to ISS. Therefore, the demonstration test will be performed in low earth orbit. The SDX demonstrates the electrical performance of InGaP/GaAs//CIGS PHOENIX triple-junction, perovskite, CIGS and micro-concentrator module. It includes the conventional multi-junction cells, the space silicon solar cells and the temperature sensors to calibrate the electrical performance of demonstration solar cells. In this presentation, we overview the system of SDX, and the demonstration solar cells. We performed several environment tests, such as thermal vacuum test, to verify the feasibility of demonstration test for a variety of state-of-art solar cells. All demonstration solar cells have been passed the verification test, therefore, we decided to perform on-orbit demonstration test. The detail results of those verification tests are also discussed in this presentation.