

Delay-Tolerant Networking Payload



TRL 9
Korea Pathfinder
Lunar Orbiter



NASA
Equipped with
NASA's ION S/W



FPGA SoC
FPGA
System-on-Chip



800 g
Lightweight

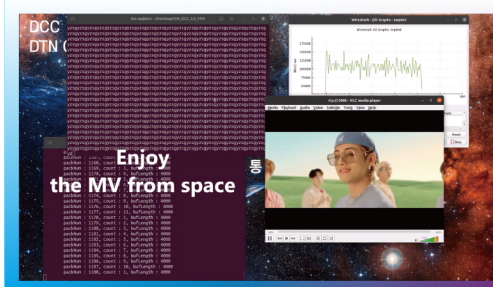


OS
RTEMS v4.11

The Delay-Tolerant Networking Payload for lunar exploration is designed to enable Internet connectivity in space using a delay-tolerant network method, optimized for environments in which communication is frequently disrupted, such as the ultra-long distance between Earth and the Moon. This marks the first application of NASA's ION software on a satellite. By integrating the RF and digital devices using SoC technology, along with a TRM integrated through HMIC process technology, miniaturization and weight reduction were achieved.



**BTS video transmitted to Earth
by Danuri via the DTN payload**



Item	Key Performance
Processor	Single Core 32-bit Leon3 FPGA IP Processor in RTG4 FPGA
MIPS	49.3 MIPS
OS	RTEMS v4.11
Memory	64 Mbits @MRAM, 2.5 Gbits @SDRAM, 4 GB @FLASH
Bus I/F	DMA_UART (RS422)
Payload I/F	RS422 I/F for Payload Data Handling Unit
In-box I/F	NA (Single Board)
Analog I/F	8 ch
Input Power	28V Unregulated
Power Consumption	< 5 W
Size	120 x 170 x 39 mm
Mass	800 g

