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OVERVIEW OF AVIONICS ARCHITECTURE ON STAND-ALONE TEST LAUNCH VEHICLE (TLV),
SECOND STAGE OF KOREA SPACE LAUNCH VEHICLE-II (KSLV-II)

Abstract

In Korea, Korea Space Launch Vehicle-I (KSLV-I) Program was initiated as one of major national aerospace program in 2002. After the successful launch of KSLV-I on 2013, the Korea Space Launch Vehicle-II (KSLV-II) program was followed as a challenging step to entering into the commercial launch vehicle market by Korean Government. The three staged KSLV-II is in the Engineering Model development phase on it with launch capacities to deliver a 1.5 ton-class application satellites into the low earth orbit (600 800 km). The second stage of KSLV-II was chosen as a stand-alone Test Launch Vehicle (TLV) for verifying the performance of 75 ton-class liquid engine system. The TLV launch was successful on 28th Nov at last year at Goheung Space Center, Korea with full performance of 75 ton-class liquid engine. With the heritage of the avionics system for KSLV-I's Upper Stage, the single-staged TLV onboard avionics system had been designed, developed, and performed environmental tests. It consists of power distribution, telemetry and tracking, flight termination, guidance and navigation, thrust vector and roll control, video record, pre-flight checkout, and ground measurement system. In this paper, the overview of avionics architecture including electrical wire harness onboard the TLV is described.