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TELECOMMUNICATION SYSTEM DESIGN AND REALIZATION OF LAND-ROVER ON MARS-1

Abstract

The Land-rover of first Chinese Mars probe includes an Enter and a Rover. Telecommunication system provides Rover direct to Earth (DTE) link and Enter/Rover to Relay (TR) link. DTE link contains X-band uplink (Command) and X-band downlink (Telemetry and Service Data). While TR link contains UHF-band forward and return links of Rover and Relay, UHF-band forward and return links of Enter and Relay, and X-band return link from Rover to Relay. In this paper, we present how the telecommunication system of Land-rover on Mars-1 was designed and realized from the function composition, design principle and solution, system working, detailed realization of hardware/software/protocol to analysis of relay data capacity.