

## SPACE SYSTEMS SYMPOSIUM (D1)

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Author: Dr. Liu Likun

Institute of Communication Satellite, China Academy of Space Technology, China, hitliulk@gmail.com

Mrs. Wang Yihong

China Academy of Space Technology (CAST), China, smiling0114@163.com

Mr. Wei Qiang

China, weiqiang@cast.cn

DEVELOPMENT OF PLATFORM TECHNIQUES OF TELECOMMUNICATION SATELLITE AND  
THEIR APPLICATIONS TO DFH-4E PLATFORM**Abstract**

Development of satellite telecommunication services requires that satellites should have more weight capability, and provide more power, more heat dissipation and larger space for the communication payload. This is achieved by adopting new platform techniques. Multi-stage communication module is applied to accommodate more payload, and to expand heat radiator. Li-ion battery replaces NiH<sub>2</sub> battery as the main power supply during earth shadow. Partitioned payload layout, North/south coupling heat pipes and deployable heat radiators panels increase heat rejection capacity of the payload cabin. Xenon-ion, Hall, or arcjet electric propulsion system is implemented for north/south station keeping. Avionics system synthesizes all the control and data acquisition electric equipments on the platform. For the attitude control, high-precision attitude control is obtained to meet the requirements of new payload techniques, such as multi-beam antenna and laser communication. The above new platform techniques are reviewed in this manuscript, and their applications to DFH-4 extended DFH-4E platform is introduced in detail.