

Title: Recoverable Plasma Diagnostics Package: RPDP

Prepared by: Bill Roberts/NASA/MSFC

Short Description: The RPDP is an ejectable and recoverable satellite with flight and ground support systems so that it can be utilized in three modes: attached to an RMS; tethered; or as a subsatellite. The satellite is well instrumented with particle and field diagnostic as well as optical sensors to: investigate the dynamics of the natural environment or ejected perturbations from particle beams; measure the characteristics and propagation of electrostatic and electromagnetic waves; study wave particle interactions; study natural properties of the magnetosphere, ionosphere, and upper atmosphere.

Instrument Characteristics:

- Mass: 580 kg (540 kg satellite, 40 kgm Space Station equipment)
- Volume: 1.5 cubic meters
- Power: .8 kW (when operated on RMS) .2 kW as a subsatellite
- Data rate: 1.25 Mbs

General Comments:

Early versions flown on OSS-1 (1982) and Spacelab II missions (1985). The RPDP is scheduled for flight on Space Plasma Lab (1990, 1992).

Plan for the RPDP to free fly in a "station keeping" mode with Space Station, so that periodic pickup and repositioning will be done by the STS or OMV. The RPDP has no maneuvering capability.

Range from Space Station should be within 200 km for active experiments (although the RPDP could drift up to one orbit differentially).

Data routed through Space Station. (Ground stations can be used 200 km range).

Source of Information: RPDP fact sheet

For more information contact: Bill Roberts
PS02
NASA/MSFC
Huntsville, AL 35812
(205) 453-3430