

PAYLOAD POWER AND DATA HANDLING

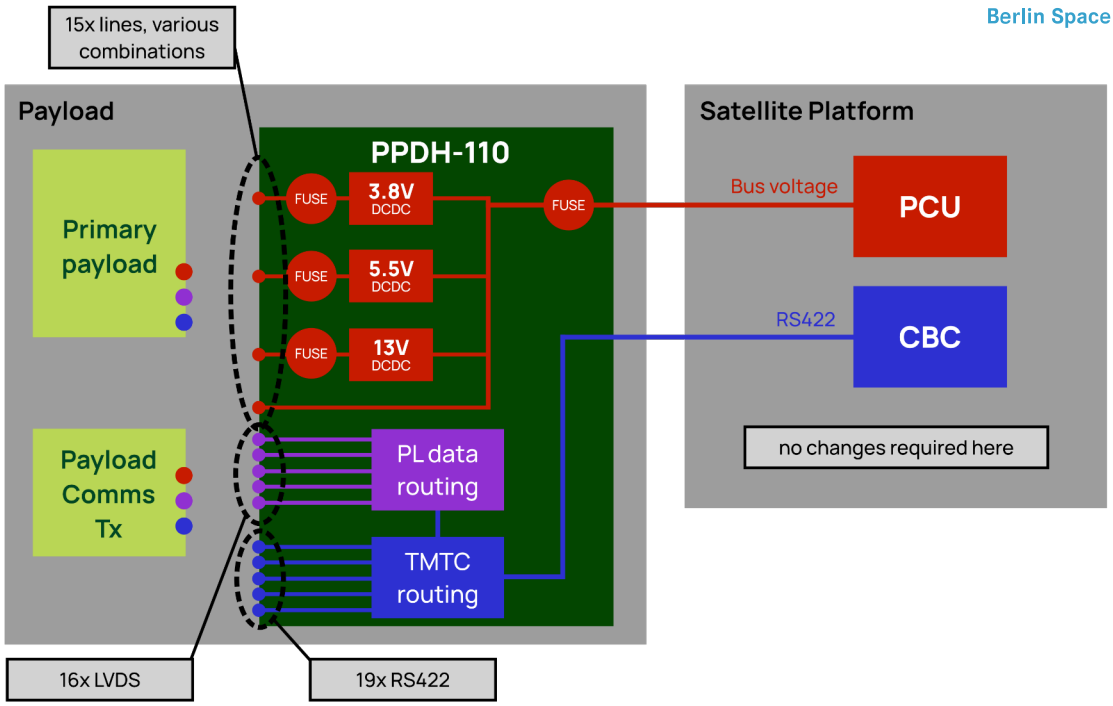
The Payload Power and Data Handling Unit (PPDH-110) by Berlin Space Technologies is a sophisticated unit with space heritage, designed for small spacecraft platform payloads. It acts as the single interface unit between the bus and the payload and its modularity makes it easy to adapt to any new payload while leaving the bus unchanged. Any voltages between 1.8 V and 40 V and any TM/TC interfaces can be provided.

The PPDH-110 combines the functions of power conditioning and data handling for the payload units as shown in the table on the next pages. Its exact configuration can be easily adapted to the customer's specific payload requirements, making it an essential ingredient to a responsive space mission concept.

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TECHNICAL SPECIFICATIONS

PPDH-110 FUNCTIONS	
Power Conditioning Functions	**Command and Data Handling Functions**
Supplying regulated DC voltages and bus voltage to payload units	Forwarding telecommands to payload units
Power switching of payload power lines	Switch payload data routing between payload units
Over-current protection for payload units	Payload time synchronisation
Bus power subsystem protection against payload hatch-ups	Collecting payload telemetry



PPDH Schematic Block Diagram — interface numbers indictate PPDH 2PL version

CHARACTERISTICS	PPDH-110-1PL	PPDH-110-2PL	CUSTOM
TM/TC Interface	RS422		RS422 or other
Payload Data Interfaces	13 x RS422, 12 x LVDS	19 x RS422, 16 x LVDS	As required
Input Voltage	20.5 V – 25.2 V (23.1 V nominal)		23.1 V or other
Nominal Current Consumption	0.20 A	0.80 A	TBD
Number of Power-Out Lines	8	15	As required
Output Voltages	23.1 V, 13 V, 5.5 V, 3.8 V		Any from 1.8 V to 40 V
Process Power	188 W @ 23.1 V, 2x 73 W @ 13 V, 2x 24 W @ 5.5 V, 2x 28 W @ 3.8 V	370 W @ 23.1 V, 2x 73 W @ 13 V, 2x 24 W @ 5.5 V, 2x 28 W @ 3.8 V	As required
Size	186 x 98 x 46 mm^3	186 x 98 x 67 mm^3	TBD
Mass	780 g	1100 g	TBD
Operating Temperature	-15°C to +35°C		
Design Life	5 years in LEO		
Space Heritage	Yes	Yes	On component level