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PAYLOAD EQUIPMENT

PAYLOAD INTERFACE UNIT (PIU)
KU-BAND RECEIVER
X-BAND DOCON-L

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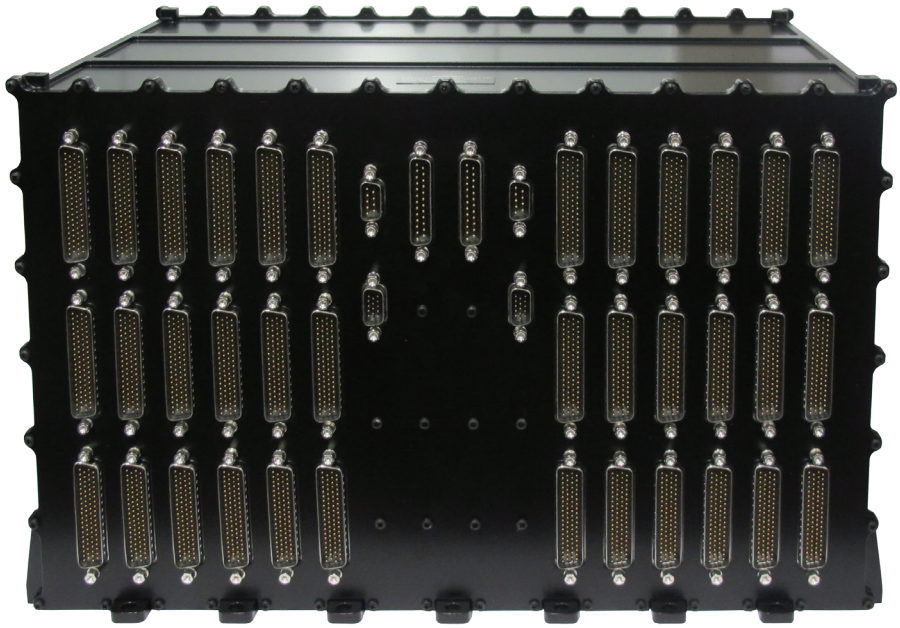

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KU-BAND RECEIVER

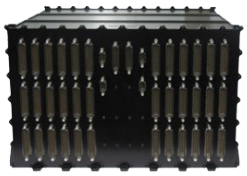
Ku-Band receiver is tasked for amplification of the received uplink signal and downconversion to the downlink frequency band.

Technical Specifications

- RF Input Frequency Range : 17300 - 18350 MHz
- RF Output Frequency Range : 11700-12750 MHz
- Gain : 60 dB
- Noise Figure (Ambient) : 1.9 dB maximum
- Noise Figure @ 65°C : 2.2 dB maximum
- RF Input Port : WR 62
- RF Output Port : SMA Coax
- Power/Telecommand/Telemetry Interface : D-Sub Connector
- Telecommands : Power On/Off
- Telemetries : Power On/Off Status
- Input Voltage : 100 V
- Power Consumption : 0.2 W (Off) /12 W (On) / : 14W (Power-up)
- Mass : < 1.8 kg
- Natural Frequency : > 150 Hz
- Design Lifetime : 15 years
- Reliability : < 300 FIT @ 35°C
- RF Input Power Level
  - Highest operational : -45 dBm
  - Over drive : -30 dBm
- RF Output Power Level
  - Output Saturation : +29 dBm

Environmental Specifications

- Temperature
  - : Range -5°C to +60°C (Operating mode)
  - : Range -35°C to +70°C (Survival/Non-operating mode)
  - : -25°C (Cold start)
- Orbit : GEO



PAYLOAD INTERFACE UNIT

PIU is the on-board equipment used for relaying telecommands received from on-board computer to the Ku-Band and X-Band equipment respecting to the equipment interface. PIU is also tasked for collecting telemetries from the Ku-Band and X-Band Payload equipment and sending them to on-board computer.

Technical Specifications

- Controlled and monitored Payload equipment
  - Active Equipment
  - Switch Matrices
  - Antenna Deployment and Positioning Mechanism
- Redundancy : Internal Redundancy
- Satellite Platform Data Interface: MIL-STD-1553B
- Satellite Power Bus Interface : 100V DC
- Payload Equipment Interface : D-Sub Connectors
- Nominal Input Voltage : 100V± 3V
- Maximum Operational Voltage : 110V
- Low Voltage Turn-off : 85V± 3V

Environmental Specifications

- Temperature
  - : Range -20°C to +60°C (Operating mode)
  - : Range -35°C to +70°C (Survival/Non-operating mode)
- Orbit : GEO

X-BAND DOCON-L

X-Band Communication Payload and DOCON-L which is one of its critical units are being developed by ASELSAN indigenously.

X-Band DOCON-L performs frequency down-conversion, channel amplification and harmonic filtering functions on the X-Band signal.

Technical Specifications

- RF Input Frequency Band : 7900 - 8400 MHz
- RF Output Frequency Band : 7250 - 7750 MHz
- Operating Modes
  - Linear Mode : External Gain Adjustment
  - Limited Mode : Automatic Level Control
- RF Gain (Linear Mode) : 30-63 dB
- RF Input/Output Interface : SMA
- Power/Telecommand/Telemetry Interface : D-Sub Connector
- Power Voltage : 100V
- Power Consumption : 0.2 W (OFF) / 21 W (ON)
- Mass : < 3.12 kg
- Natural Frequency : > 150 Hz
- Life : 15 Year
- Reliability : < 275 FIT @ 35°C

Environmental Specifications

- Temperature
  - : Range -5°C to +60°C (Operating mode)
  - : Range -35°C to +70°C (Survival/Non-operating mode)
- Orbit : GEO

P: +90 (312) 592 10 00 | **F**: +90 (312) 354 13 02 | hbtmarketing@aselsan.com.tr