The **Flexible RF Digital Processor** product suite is the core solution for compact digitally processed satellite communication payloads.

This **reconfigurable software-based** product family enables significant **cost and mass savings** in comparison to conventional non-digital payloads while offering **enhanced functionalities**, such as on-board frequency and power flexibility, bandwidth optimization and support to business needs evolution throughout the mission lifetime.

A **scalable modular design** based on reliable building blocks allows for product adaptation to customer needs, spanning different frequency bands (UHF, L, S, C, Ku) and processed bandwidths up to 1 GHz per channel.

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**COMPETITIVE ADVANTAGES**

/// Flight proven compact modular and scalable design based on state-of-the-art Prodige product suite.

/// Simplified payload architecture with reduction of repeater hardware leading to mass and cost savings.

/// Ability to adapt to different communication bands by means of different RF front-end modules.

/// Resilience to market evolution and regulation changes due to over-the-air SW processing upgrade capability throughout the mission lifetime.

/// Frequency plan flexibility within the full frequency band spectrum.

/// User channel bandwidth and power allocation fully flexible on demand.

/// Additional useful bandwidth available to operators with respect to non-digital repeaters thanks to reduction of guard bands (~10% improvement).

/// Customizable repeater processing functions with a set of common functions readily available.
TYPICAL PERFORMANCES

GENERAL

- Mass: 12 kg (*)
- Size: 190 x 410 x 275 mm³ (*)
  (*): 1 channel configuration with 2:1 redundancy
- Primary bus voltage: 21V to 100V
- Power consumption: 81 mW/MHz
- Redundant TM/TC data interfaces
- TM/TC interface options:
  - CAN BUS
  - MIL-1553B
  - Space Wire

RF FRONT END

- Frequency bands
  - UHF
  - L band
  - S band
  - C band
  - Ku band

PROCESSED BANDWIDTH

- Up to 1 GHz per channel

SOFTWARE DEFINED PROCESSING

- In-flight upgradable SW
- Transparent & regenerative processing functions
  - AGC
  - Filtering
  - Multiplexing / de-multiplexing
  - Switching
  - Crypto
- Customizable functions

EXPERIENCE

- Prodige product suite used in 6 programs for 4 satellite operators:
  - Eutelsat, SES, Hisdesat and Hispasat

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