# General Description

The MxL865 is a low-power, single-chip Full-Spectrum Capture® (FSC®) satellite digital ODU IC that features five wide band inputs for LNBF applications. The MxL865, with an external splitter, can be used in MDU applications as well. In both configurations, the MxL865 supports up to 32 stacked output channels in a static configuration, and up to 24 stacked output channels in a dynamic configuration. The MxL865 integrates a host CPU microcontroller, FSK, and DiSEqC modems, and power management controllers. In each configuration, the MxL865 supports 950 MHz–2150 MHz IF output with flexible channel grid and bandwidth configurations.

All major supporting analog functions are incorporated into the MxL865, such as broadband input and output filters, RF gain blocks, channel filters, PLLs, and AGC functionality. With its high level of integration and low power consumption, the MxL865 enables a true single-chip satellite ODU solution for modern LNBs and MDU switches that require compact board design and low cost.

The MxL865 uses 1.8V and 1.1V dual supplies. The MxL865 is available in a small 10 mm x 10 mm footprint, 88-pin QFN package.
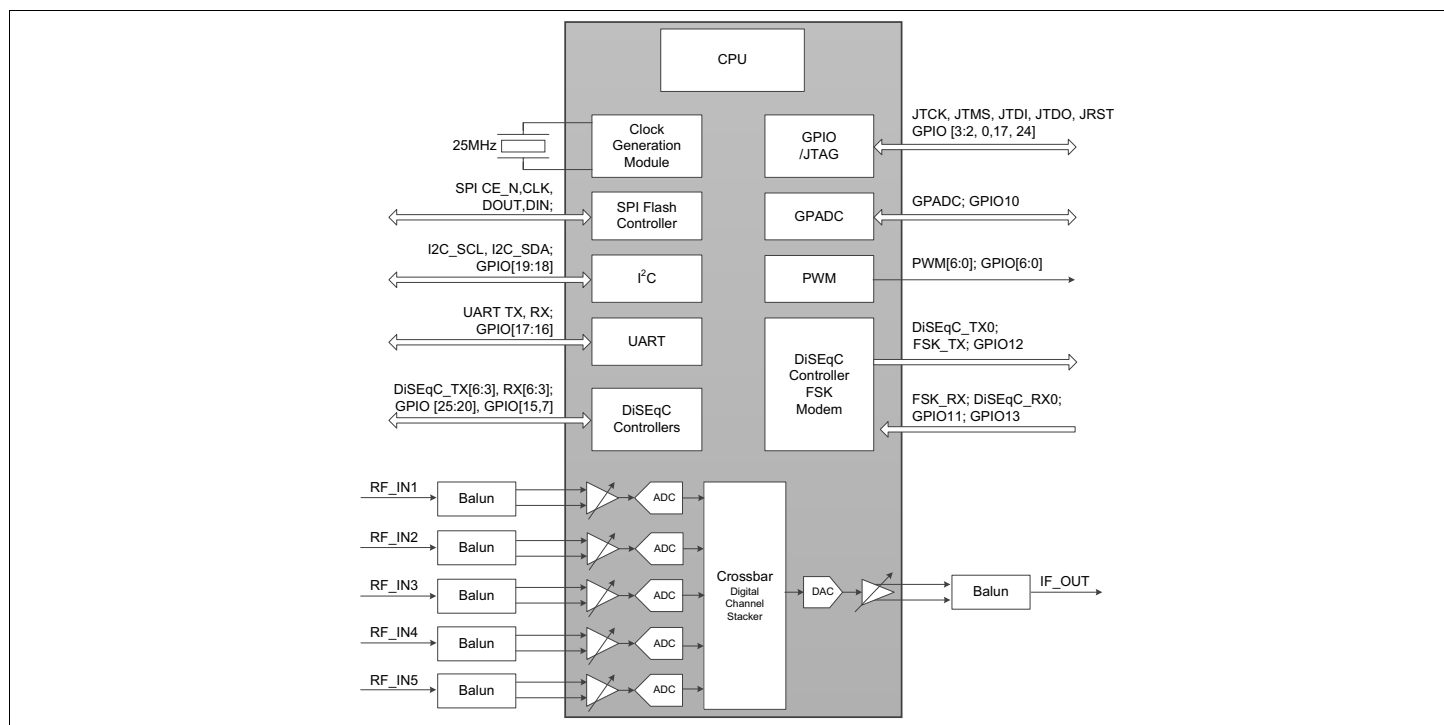
# Applications

Channel-stacking:

- LNBF
- MDU

# Features

- Low power:
  - Less than 4W typical case, with four RF inputs and an active IF output
  - Power scales with the number of active inputs and outputs
- Fully-integrated host 32-bit CPU microcontroller with Watchdog timers, FSK, and DiSEqC 2.x controllers:
  - Five DiSEqC interface controllers
  - One FSK modem
- Architecture:
  - FSC® digital crossbar
  - Five differential RF inputs and an IF output
  - Output tilt compensation
- Programmable channel grid and channel bandwidth
- Ability to provide channel spectrum analysis data through the FSK/DiSEqC
- Built-in temperature sensor
- Access to all on-chip functions using a standard API
- *JESS/EN50494/EN50607* compliant
- Built-in memories:
  - IRAM
  - DRAM
  - ROM
- Peripheral interfaces:
  - SPI
  - $I^2C$
  - GPIO
  - PWM
  - JTAG
  - UART

# Block Diagram



# Ordering Information

| Marketing Part Number | Ordering Part Number | Package | Dimensions | Shipping |
|---|---|---|---|---|
| MxL865 | MxL865-AL-T | SAWN QFN88 | 10 x 10 x 0.85mm$^3$ | Tray |
| MxL865 | MxL865-AL-R | SAWN QFN88 | 10 x 10 x 0.85mm$^3$ | Reel |

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