The éolane 169MHz reference design is a low-cost wireless and high performance solution for smart metering to be integrated in meters, repeaters and concentrators devices capable to operate in very constraint and harsh condition.

169 MHz Ref Design equipped with a low power MSP430 MCU from TI, an Analog Device Transceiver ADF 7021, a Skyworks PA module Sky66100

Wireless M-Bus standard EN13757-4 is the RF communication link between water, gas, heat, and electric meters and the data collecting devices widely accepted in Europe for smart metering and Advanced Metering Infrastructure applications.

**PRODUCT APPLICATION**

- **Industry**
  - Telemetry, VHF Sensors & Actuators, Smart City & Smart Building

- **Energy**
  - Smart Grid, Smart Metering (Gas, Water & Heat, AMR/AMI, WMbus

- **Telecoms**
  - VHF Transmitters, Receivers, Repeaters, Concentrators

- **Security**
  - Alarms, Asset Tracking

**MAIN FEATURES**

- Dimensions: 44mm*60mm
- Operating temperature: -40°C + 70°C
- Bidirectional communication with range up to 15Km
- Sensitivity up to -113dbm
- Battery life 15 years (Frame of 120 ms, 4 frames/day)
- Designed & Manufactured in France
TECHNICAL SPECIFICATION

Performance
- Range up to 15000m
- RF output power 27 dBm
- Sensitivity up to -113dBm
- Frequency band 169.4 MHz – 169.5 MHz
- Baud rate up to 2400 bits/s

Hardware
- Processor MSP430 16 bits Ultra Low Power
- 128KB Flash and 16KB RAM Memory
- Serial interface available (SPI/I2C/UART)
- 2x input in Digital On/Off or pulse configuration
- 2x logic output
- 1 SMA Antenna Input

Protocole & Norms
- Support N modes One Way (N1a to N1F) and Two way (N2a to N2F)
- WMBUS Compatible
- EN ETSI 300 220 Compliant (pre-certified)
- EN ETSI 301 489 Compliant (pre-certified)

Consumption & Autonomy (payload 8 bytes length)
- Power Supply 2.8 – 3.6 v
- Tx 270 ma @ 27 dBm and Rx 25 ma
- Sleep mode 5 uA
- Battery life 15 years (Frame of 120 ms, 4 frames/day)

GENERAL INFORMATION

Operating temperature : -40°C à +70°C
- Full SMD assembly

ADDITIONAL SERVICES

- Antenna solution
  - Antenna on SMA connector
  - Helix antenna
- Housing
  - IP6K9K solution
  - Optionnal shield on radio part
- Module integration
  - éolane Support in mechanical, electronic and software to customize the reference design
- Proof of Concept
  - éolane performs demonstrator kit according to customer needs. An modular evaluation board, designed by éolane, is available and contains sensor and interface to develop specific needs.
- BSP support for end customer application integration

- Antenna on SMA connector
- Helix antenna
- IP6K9K solution
- Optionnal shield on radio part
- Module integration
- éolane Support in mechanical, electronic and software to customize the reference design
- Proof of Concept
  - éolane performs demonstrator kit according to customer needs. An modular evaluation board, designed by éolane, is available and contains sensor and interface to develop specific needs.
- BSP support for end customer application integration

www.eolane.fr
Contacts : wireless@eolane.com