



## GENERAL DESCRIPTION

Semtech's SX1276/77/78 family provides ultra long range while maintaining low current consumption, making it optimal for numerous applications.

With Semtech's patented modulation technique the device can achieve sensitivity of over -140 dBm using a low cost crystal and bill of materials. The high sensitivity combined with the integrated +20 dBm power amplifier creates the highest link budget making it optimal for any application requiring range. This modulation technique also provides significant advantages in blocking and selectivity over FSK.

The devices also support high performance (G)FSK for WMBus, FCC Part 90, 15.4g, and other legacy modes. Semtech's technology overcomes a typical trade-off of performance versus current consumption. The devices deliver exceptional phase noise, selectivity, receiver linearity, and IIP3 for significantly lower current consumption than competing devices.

The devices cover the major ISM bands from 137 MHz to 1050 MHz. For ease of matching, low BOM cost, and higher performance the SX1276/77/78 family offers separate high band and low band support for applications wanting to cover dual bands for world-wide operation, dual band support, or security against future band allocation changes.

## APPLICATIONS

- ◆ Automated Meter Reading
- ◆ Wireless Sensor Networks
- ◆ Home and Building Automation
- ◆ Wireless Alarm and Security Systems
- ◆ Industrial Monitoring and Control

## KEY PRODUCT FEATURES

- ◆ 168 dB maximum link budget
- ◆ +20 dBm - 100 mW constant RF output vs. V supply
- ◆ +14 dBm high efficiency PA
- ◆ Programmable bit rate up to 300 kbps
- ◆ High sensitivity: down to -146.5 dBm
- ◆ Bullet-proof front end: IIP3 = -12 dBm
- ◆ 100 dB blocking immunity
- ◆ Low RX current of 10 mA, 200 nA register retention
- ◆ Fully integrated synthesizer with a resolution of 61 Hz
- ◆ FSK, GFSK, MSK, GMSK, LORA and OOK modulations
- ◆ Built-in bit synchronizer for clock recovery
- ◆ Sync word recognition
- ◆ Preamble detection
- ◆ 115 dB+ Dynamic Range RSSI
- ◆ Automatic RF Sense with ultra-fast AFC
- ◆ Packet engine up to 64 bytes with CRC
- ◆ Built-in temperature sensor and Low Battery indicator

## ORDERING INFORMATION

Part Number	Delivery	MOQ / Multiple
SX1276	T&R	3000 pieces
SX1277	T&R	3000 pieces
SX1278	T&R	3000 pieces