

## Product Overview

### AX5043: Ultra-Low Power Narrow-Band Sub GHz (27 - 1050 MHz) RF Transceiver

For complete documentation, see the data sheet.

The AX5043 is a true single chip, narrow-band, ultra-low-power ASK and FSK RF transceiver for the 27 MHz to 1050 MHz frequency bands. It offers the unique combination of ultra-low power consumption for transmit and receive operation combined with highest sensitivity and high selectivity. A link budget of 143 dB at 1 kbps is achieved, if the built-in forward error correction (FEC) is used this can be extended to 146 dB without extra external components. The AX5043 works perfectly down to 1 kbps in a 6.25 kHz channel.

An integrated voltage regulation system allows the direct use of batteries and short start-up times enable time- and energy-efficient protocols. Transmit power and receive characteristics do not change over the supply voltage range of 1.8 - 3.6 V.

The AX5043 supports FSK, MSK, 4-FSK, GFSK, GMSK, AFSK and ASK modulations. In transmit mode, all modulations are shaped. For FSK gaussian filters with BT=0.3 or BT=0.5 are available to meet the most stringent regulatory requirements. Power ramping can be configured without restrictions. Maximum output power level is 16 dBm.

#### Features

- Carrier frequency range 27 - 1050 MHz
- Ultra-low power
- Constant TX output power over the full VDD range of 1.8 - 3.6 V
- Fully autonomous lowest power wake-on-radio mode (500 nA)
- Packet RX/TX without microcontroller intervention

#### Benefits

- Wide frequency range to work with
- Achieves low power capability without sacrificing link budget or selectivity
- Transmit power and receive characteristics do not change over the supply voltage range
- Autonomously handles wake-on-radio cycling
- Supports a wide range of packet formats that are handled without microcontroller intervention.

#### Applications

- IOT (Internet of Things)
- Automated Meter Reading (AMR)
- Security Applications
- Building Automation
- Wireless Networks

#### Part Electrical Specifications

Product	Compliance	Status	Data Transmission Standard	Frequency Band (MHz)	Carrier Frequency (MHz)	Package Type
AX5043-1-TW30	Pb-free	Active	FM	27-1050	433 Mhz	QFN-28
	Halide free		GMSK		868 Mhz	
			ASK		169 MHz	
			GFSK			
			PSK			
			MSK			
			FSK			
			4-FSK			
AFSK						

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