SEMTECH SX1261 Wireless and RF Power LoRa RF Transceiver User Guide

Contents

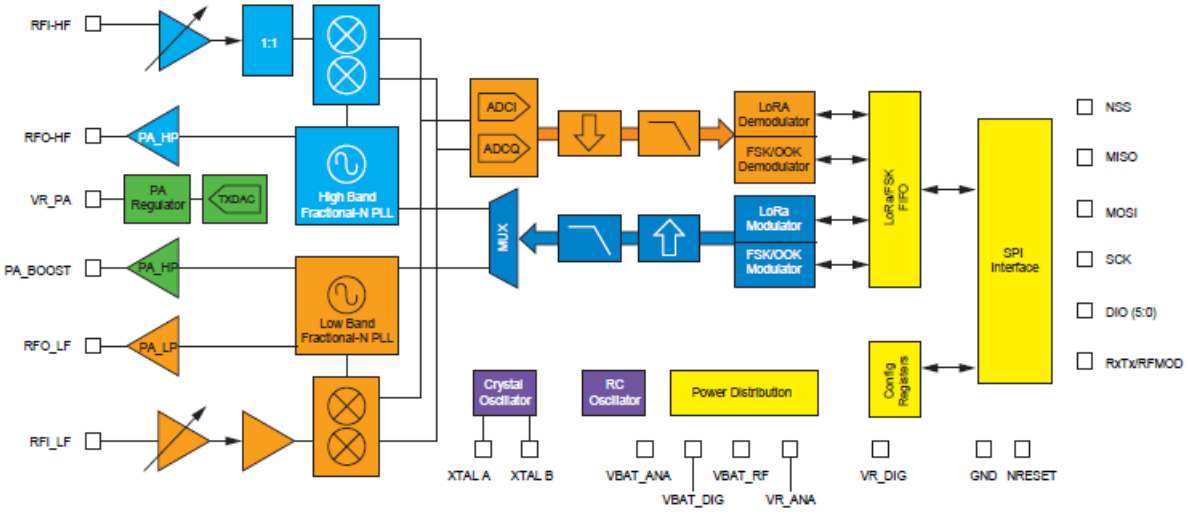
SEMTECH SX1261 Wireless and RF Power LoRa RF Transceiver

Ideal for eliminating repeaters, reducing infrastructure cost, extending battery lifetime, and improving network capacity

LoRa PRODUCTS

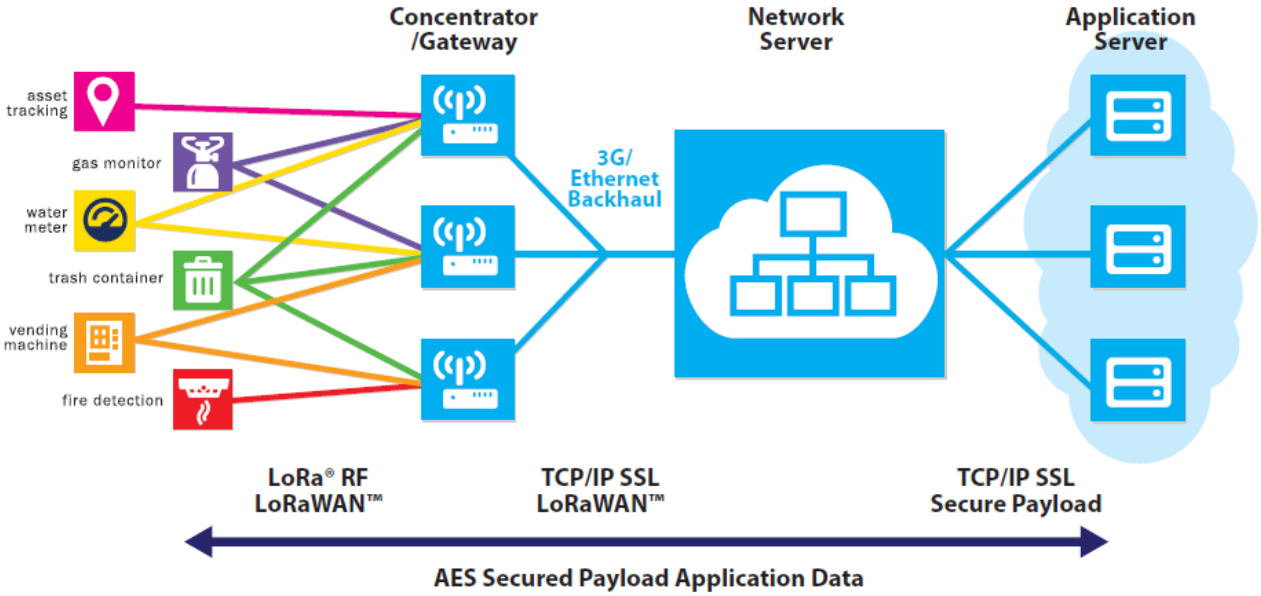
- Long range of up to 30 miles outdoor line of sight
- Deep indoor coverage for hard to reach areas
- Bi-directional communication link with adaptive data rates
- Low power sensors with extended battery lifetime of up to 20 years
  - 100nA sleep mode
  - 4.6mA active receive mode
- LoRaWAN™, IEEE 802.15.4g and WMBus compliant.
- GFSK and LoRa supported in a single device
- Scalable, multi-channel, high-capacity gateways powered by SX1301 and SX1308
- Available for any environment
- LoRa modulation offers 30dB improvement over FSK for co-channel interference rejection
- Programmable registers for maximum flexibility
- Footprint-compatible ICs for global coverage
- Supported by over 500 members of LoRa Alliance™ that defines the open LoRaWAN protocol
- Large and growing online developer community for LoRa-based products
- Public, semi-private and private networks available worldwide

SX1276 BLOCK DIAGRAM



LoRa Products							
Part Number	Frequency Range (MHz)	Link Budget (dB)	RXCurrent (mA)	FSK Max DR (kbps)	LoRa DR (kbps)	Max Sensitivity (dBm)	TX Power (dBm)
SX1261	150–960	163	4.6	300	0.018–62.5	-148	+15
SX1262	150–960	170	4.6	300	0.018–62.5	-148	+22
SX1268	410–810	170	4.6	300	0.018–62.5	-148	+22
SX1272	862–1020	158	10	300	0.3–40	-138	+ 20
SX1273	862–1020	150	10	300	1.7–40	-130	+ 20
SX1276	137–1020	168	11	300	0.018–40	-148	+ 20
SX1277	137–1020	158	11	300	1.7–40	-138	+ 20
SX1278	137–525	168	11	300	0.018–40	-148	+ 20
SX1279	137–960	168	11	300	0.018–40	-148	+20

The ultimate long-range, high capacity solution for IoT and M2M networks



KEY FEATURES OF SEMTECH'S LoRa WIRELESS RF TECHNOLOGY

- Long Range Penetrates in dense urban and deep indoor environments, connecting to sensors up to 30 miles away in rural areas
- Low Power Designed specifically for low power consumption extending battery lifetime up to 20 years
- High Capacity Supports millions of messages per basestation
- Geolocation Enables GPS free, low power tracking applications
- Standardized LoRaWAN specification ensures global interoperability among applications, IoT solution providers and telecom operators
- Secure Embedded end-to-end AES-128 encryption of data for optimal privacy and protection
- Low Cost Reduces costs three ways: infrastructure investment, operating expenses and end-node sensors

PICOCELL SOLUTIONS

- LoRa Picocell Platforms are designed for a variety of indoor applications
- SX1308 picocell IC is coupled with a SX1255 or SX1257 LoRa RF transceiver, and is expected to help bring low cost LoRaWAN networks to market for consumers and private enterprises

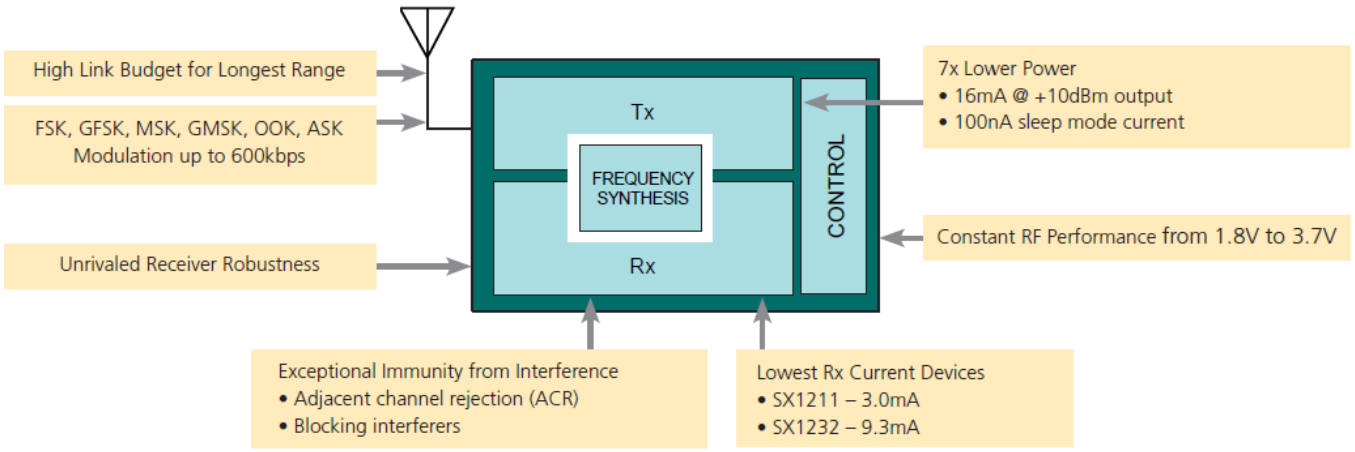
GATEWAY SOLUTIONS

- Multi-channel, multi-modem receiver including LoRa and FSK modems
- Inherent two-way communication
- Receives simultaneously different data rates on same channel

RF ICs and for Gateway and Picocells					
Part Number	Tx/Rx	Operating Temp. Range	LoRa Modem	FSK Modem	Capacity
SX1301	Tx/Rx	-40– 85°C	9	1	Varies by application
SX1308	Tx/Rx	0–70°C	9	1	Varies by application

RF Transceivers				
Part Number	Tx/Rx	Band (MHz)	Tx Power	NF
SX1257	Tx/Rx	860–1000	-20–8	7
SX1255	Tx/Rx	400–510	-20–8	7

Robust, Low-Power Communications For Next-Generation ISM-Band Applications



Complete Line of Semtech G/F/MSK & OOK RF ICs									
Part Number	Tx/Rx	Band (MHz)	Tx Power (dBm)	Modulation	Max Bit Rate	Rx Sensitivity (dBm)	Link Budget (dB)	Tx Current	Rx Current (mA)
SX1230	Tx	290–1020	-20 to +17	G/F/MSK & OOK	300kbps (FSK) 32.7kbps (OOK)	–	–	33mA @ 10dBm	–

SX1243	Tx	310–928	10	G/F/MSK & OOK	100kbps (FSK) 10kbps (OOK	–	–	15mA @ 10dBm	–
SX1239	Rx	290–1020	-20 to + 17	G/F/MSK & OOK	300kbps (FSK) 32.7kbps (OOK)	-120	–	–	16
SX1208	Tx/Rx	290–510	-18 to + 20	G/F/MSK & OOK	100kbps (FSK) 10kbps (OOK	-124	144	33mA @ 10dBm	16
SX1209	Tx/Rx	290–1020	-18 to + 20	G/F/MSK & OOK	300kbps (FSK) 32.7kbps (OOK)	-120	144	33mA @ 10dBm	16
SX1231	Tx/Rx	290–1020	-20 to + 17	G/F/MSK & OOK	300kbps (FSK) 32.7kbps (OOK)	-120	137	33mA @ 10dBm	16
SX1231H	Tx/Rx	290–1020	-20 to + 20	G/F/MSK & OOK	600kbps (FSK) 32.7kbps (OOK)	-120	140	120mA @ 20dBm	16
SX1232	Tx/Rx	860–1000	-20 to + 20	G/F/MSK & OOK	300kbps (FSK) 32.7kbps (OOK)	-123	143	120mA @ 20dBm	9.3
SX1236	Tx/Rx	137–1020	-20 to + 20	G/F/MSK & OOK	300kbps (FSK) 32.7kbps (OOK)	-123	143	120mA @ 20dBm	9.9
SX1233	Tx/Rx	290–1020	-20 to + 17	G/F/MSK & OOK	600kbps (FSK) 32.7kbps (OOK)	-120	137	33mA @ 10dBm	16

SX1235	Tx/Rx	862–1020	-20 to +20	G/F/MSK & OOK	300kbps (FSK)	-123	143	120mA @ 20dBm	9.3
SX1211	Tx/Rx	863–960	-8.5 to +12.5	FSK/OOK/ASK	200kbps (FSK) 32.7kbps (OOK)	-107	120	25mA @ 10dBm	3
SX1212	Tx/Rx	300–510	-8.5 to +12.5	G/F/MSK & OOK	800kbps (FSK) 32.7kbps (OOK)	-104	116.5	25mA @ 10dBm	3

New LoRa® — Sub GHz Radio Transceivers

Offer Best In Class Range in Any RF Environment
For Reliable, Low Data Date, Low Power Communications

SX1261, SX1262 AND SX1268 PRODUCTS
These devices are designed for multi-year battery life with just 4.6 mA of active receive current consumption. With support for LoRa® modulation for LPWAN use cases and (G)FSK modulation for legacy use cases, the devices are compatible with existing LoRaWAN networks and can support proprietary protocols.
The radio is suitable for systems targeting compliance with radio regulations including but not limited to ETSI EN 300 220, FCC CFR 47 Part 15, China regulatory requirements and the Japanese ARIB T-108. Continuous frequency coverage from 150 MHz to 960 MHz allows the support of all major sub-GHz ISM bands around the world.
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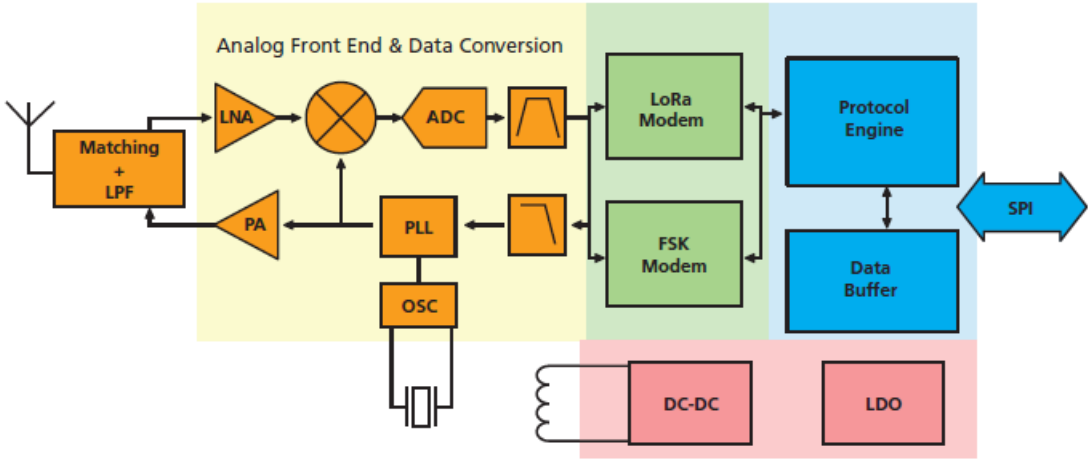

Part Number	Tx Power	Rx Current	Frequency Range	Package (mm)
SX1261IMLTRT	+15 dBm	4.6mA	150-960 MHz	QFN 4×4
SX1262IMLTRT	+22 dBm	4.6mA	150-960 MHz	QFN 4×4
SX1268IMLTRT	+22 dBm	4.6mA	410-810 MHz	QFN 4×4

APPLICATIONS

- Smart meters
- Supply chain and logistics (trackers)
- Building automation
- Agricultural sensors
- Smart City sensors
- Environmental sensors
- Healthcare
- Safety and security sensors
- Predictive maintenance
- Leak Detection

LONG RANGE

- High sensitivity down to -148 dBm
- +22 dBm output power with high efficiency PA
- 170 dB maximum link budget

SUPPORTED MODULATION

- LoRa – 18 bps up to 62.5 kbps
- (G)FSK/MSK – up to 300 kbps

LOW SYSTEM COST

- Minimal external BOM/matching
- Small size foot print, 24-pin 4×4
- Works with existing LoRaWAN gateways

LOW CURRENT

- <5 mA RX current consumption
- 25 mA TX @ +14dBm
- Integrated DC-DC and LDO

FLEXIBLE CONFIGURATION

- Simple command based interface
- Global frequency coverage
- Supports LoRaWAN and other protocols

2.4GHz Wireless RF Solution

The Low Power, Long Range Communication with Scalable Data Rate and Ranging Capability

SX1280 AND SX1281 PRODUCTS

SX1280 is the new best class long range, low power, advanced 2.4 GHz transceiver with ranging capability. The new Semtech 2.4GHz transceivers enable deep indoor communication in the 2.4 GHz band with the linearity to withstand heavy interference.

This makes it the ideal solution for robust and reliable wireless solutions. SX1280 is the first ISM band transceiver IC of its kind to integrate a time-of-flight functionality enabling 1 m accuracy, opening up application solutions to track and localize people, pets, drones, or objects while performing data communication at the same time.

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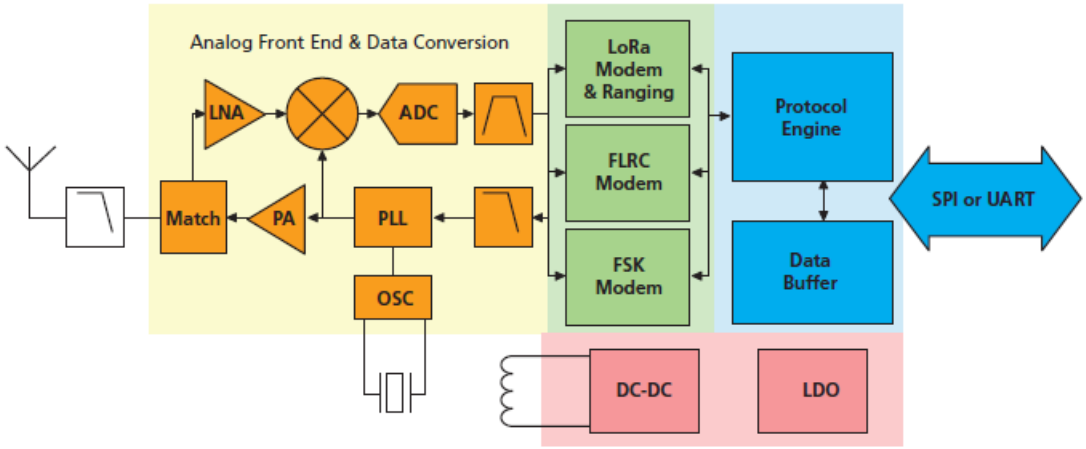
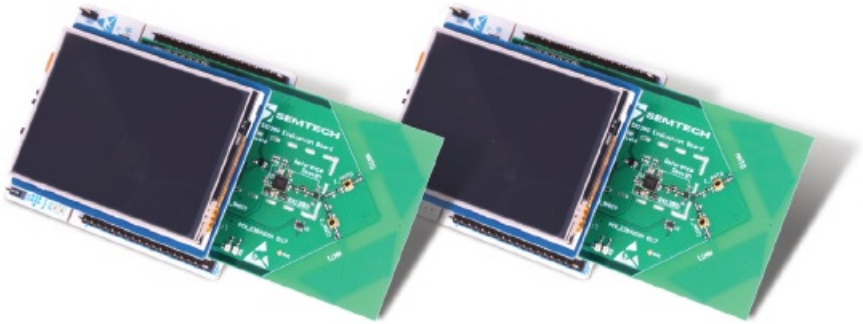


Part Number	LoRa	FLRC	GFSK	Ranging Engine
SX1280	ü	ü	ü	ü
SX1281	ü	ü	ü	

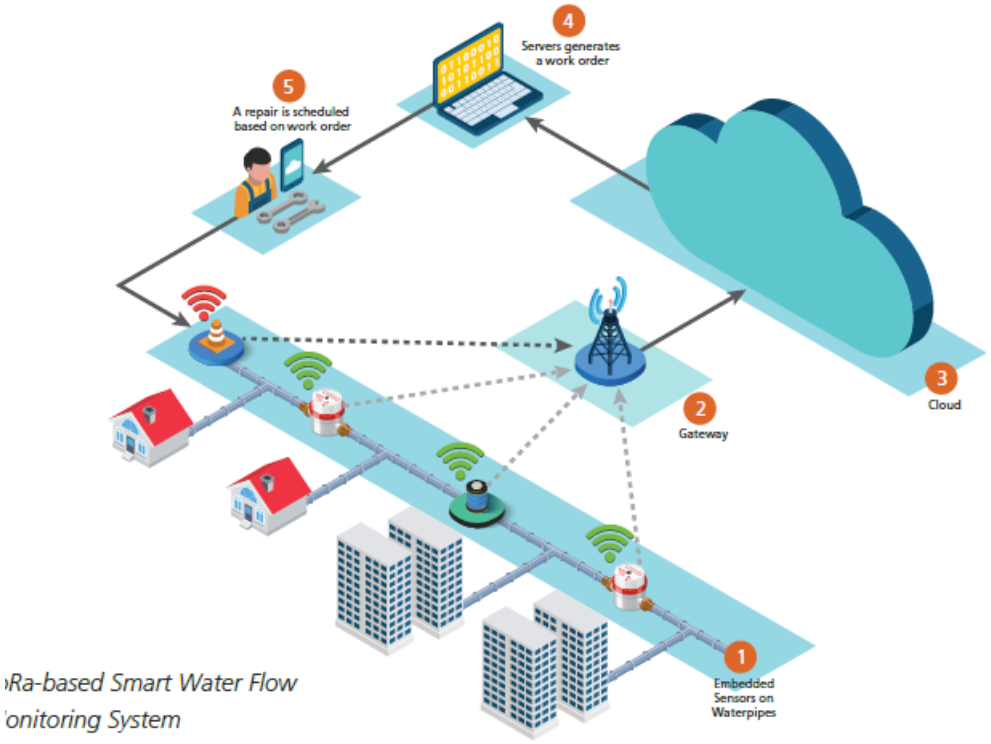
APPLICATIONS



- Home Automation & Appliances
- Radio Controlled Toys & Drones
- M2M, Industry 4.0 RF Solution
- Automotive KeyFobs Protection, Remote Control
- Tracking & Positioning Applications
- **LONG RANGE**
  - High sensitivity down to -132 dBm
  - +12.5 dBm output power with high efficiency PA
  - 144.5 dB maximum link budget
- **SUPPORTED MODULATION**
  - LoRa – 476 bps up to 200 kbps
  - FLRC – 260 kbps up to 1.3 Mbps
  - (G)FSK/MSK – up to 2 Mbps
  - BLE PHY Layer compatibility
- **LOW SYSTEM COST**
  - Minimal external BOM/matching
  - Package low foot print, 24-pin 4×4
- **LOW CURRENT**
  - <5 mA RX current consumption
  - 24 mA TX @ +12.5dBm
  - 215 nA sleep mode
- **RANGING ENGINE**
  - Time-of-flight functionality
  - +/- 1 meter accuracy (LoS)
  - Build-in ranging data filtering

Transform the Grid with LoRa-based Smart Meters and Smart Sensors

With over 20 years of experience providing RF communications and sensing ICs for battery-operated water and gas meters. Semtech offers the widest range of RF ICs for ultra long range, narrow-band, and wide-band machine-to-machine (M2M) communications.



- **High-Link Budget**
  - 30dB higher than competing devices when using a low- cost BOM
- **High Rx Sensitivity Solutions 7x Lower Power Consumption**
  - 100nA sleep
  - 2.5mA Rx
  - 27mA @ +13dBm Tx
- **Support for Major Wireless Communications Protocols**
  - LoRaWAN™
  - IEEE 802.15.4g
  - Wireless M-Bus
  - 6LoWPAN
- **Ultra-low Rx Current Consumption**
  - <3mA

	RF ICs for Smart Energy Meters and Smart Sensors				
	Part Number	Description	Link Budget (dB)	Rx Current (mA)	Evaluation Kit
SX1232		860–11020MHz Low Power G/FSK/OOK/ASK RF Transceiver	143	9.3	SX1232-32SKA868/915
	SX1272	860–11020MHz Long Range LoRa G/FSK Transceiver	158	10	SX1272DVK1BAS (868MHz) SX1272DVK1CAS (915MHz)
SX1273		860–11020MHz Long Range LoRa G/FSK Transceiver	150	10	SX1272DVK
	SX1276	138–11020MHz Long Range LoRa G/FSK Transceiver	168	9.9	SX1276DVK1IAS (169/868MHz) SX1276DVK1IAS (433/868MHz) SX1276DVK1IAS (490/915MHz)
SX1277		138–11020MHz Long Range LoRa G/FSK Transceiver	158	9.9	SX1276DVK
	SX1278	138–1510MHz Long Range LoRa G/FSK Transceiver	168	9.9	SX1276DVK
SX1279		138–1960MHz Long Range LoRa G/FSK Transceiver	168	9.9	SX1276DVK
	SX1231	290–11000MHz G/FSK/OOK/ASK RF Transceiver	140	16	SX1231SKB433/868/915
SX1233		290–11000MHz G/FSK/OOK/ASK RF Transceiver	140	16	SX1233-33SKA868/915
	SX1211	862–1960 MHz Low Power FSK/OOK/ASK RF Transceiver	125	3	SX1211SKA868/915
SX1212		310–510 MHz Low Power FSK/OOK/ASK RF Transceiver	122.5	3	SX1212SKA868/915
NEW	SX1261	150-960 MHz Long Range LoRa G/FSK Transceiver	163	4.6	SX1261DVK1BAS
	SX1262	150-960 MHz Long Range LoRa G/FSK Transceiver	170	4.6	SX1262DVK1CAS
	SX1268	410-810 MHz Long Range LoRa G/FSK Transceiver	170	4.6	SX1268DVK1GAS

Green Solutions for Smart Homes and Buildings

Semtech breaks the cost and quality of service entry barriers for smart, energy-efficient residential and commercial buildings with 7x lower power consumption and unrivaled RF link robustness.

INTERNET OF THINGS WITH LoRa®

- Security and Intruder
- Fire Detection
- Access Control
- Smart Meters
- Smart Thermostats
- Smart Lighting
- Signal Conditioning in Airflow, CO2 and CO Sensors

RF ICs for Residential and Commercial Building Applications			
Part Number	Description	Package (mm)	Evaluation Kit
SX1261	150-960 MHz Long Range LoRa G/FSK Transceiver	QFN 4×4	SX1261DVK1BAS
SX1262	150-960 MHz Long Range LoRa G/FSK Transceiver	QFN 4×4	SX1262DVK1CAS
SX1268	410-810 MHz Long Range LoRa G/FSK Transceiver	QFN 4×4	SX1268DVK1GAS
SX1280	2400MHz–2500MHz GFSK/LoRa/FLRC, BLE PHY, Ranging RF Transceiver	QFN 4×4	SX1280DVK1ZHP
SX1281	2400MHz–2500MHz GFSK/LoRa/FLRC, BLE PHY RF Transceiver	QFN 4×4	SX1280DVK1ZHP

SX1272	860–1020MHz Low-Power LoRa RF Transceiver	QFN 6×6	SX1272DVK1BAS (868MHz) SX1272DVK1CAS (915MHz)
SX1273	860–1020MHz Low-Power LoRa RF Transceiver	QFN 6×6	Use SX1272 kit (SX1272 is a superset)
SX1276	137–1020MHz Low-Power LoRa RF Transceiver	QFN 6×6	SX1276DVK1IAS SX1276DVK1JAS SX1276DVK1KAS
SX1277	137–1020MHz Low-Power LoRa RF Transceiver	QFN 6×6	Use SX1276 kit (SX1276 is a superset)
SX1278	137–510MHz Low-Power LoRa RF Transceiver	QFN 6×6	Use SX1276 kit (SX1276 is a superset)
SX1243	310MHz–1928MHz Low Cost FSK/OOK/ASK RF Transmitter	DFN 2×3	SX1243SKA433/868/915
SX1239	290MHz–11GHz FSK/OOK/ASK RF Receiver	QFN 5×5	SX1231SKB433/868/915
SX1231	290MHz–11GHz FSK/OOK/ASK RF Transceiver	QFN 5×5	SX1231SKB433/868/915
SX1232	868MHz & 915MHz FSK/OOK/ASK RF Transceiver	QFN 5×5	SX1232-32SKA868/915
SX1208	290MHz–1510MHz GFSK/GMSK/OOK RF Transceiver	QFN 5×5	–
SX1209	290MHz–1020MHz GFSK/GMSK/OOK RF Transceiver	QFN 5×5	–

Design Ultra-Low Power, Highly-Secure RKE and Active RFID Systems

Semtech offers highly-integrated, cost-effective, turn-key RF solutions for emerging wireless applications requiring ultra-low power consumption, very high link budgets and secure data transmission.

REMOTE KEYLESS ENTRY (RKE) SYSTEMS

- One-way and two-way, non-line-of-sight systems
- Garage door openers
- Car alarms and remote starters

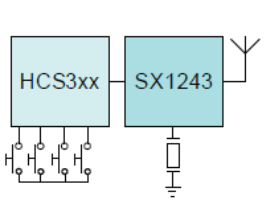
DASH7 SUPPORT FOR ACTIVE RFID SYSTEMS

- Container shipment and asset tracking systems
- Patient monitoring systems
- Social alarms

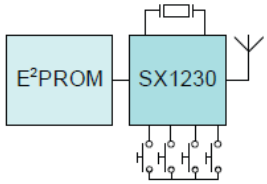
DESIGN SUPPORT TOOLS AND PARTNER SOLUTIONS

- Microchip RKE reference design
- Semtech wireless remote control energy harvesting reference design

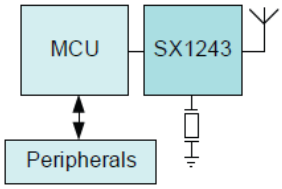
SEMTECH TURN-KEY RF SOLUTIONS BALANCE DESIGN COST AND FLEXIBILITY NEEDS (SX1243)



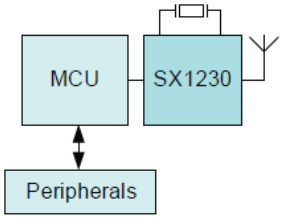
Rolling Code Reference Design



Static Payload Reference Design



Low-Cost Tx Solution



Fully Programable Digital Tx

RF ICs for Remote Keyless Entry and Active RFID Systems				
Part Number	Description	Application	Package (mm)	Evaluation Kit
SX1280	2400MHz–2500MHz GFSK/LoRa/FLRC, BLE PHY, Ranging RF Transceiver	2-way remote control + Relay attack security	QFN 4×4	SX1280DVK1ZHP
SX1281	2400MHz–2500MHz GFSK/LoRa/FLRC, BLE PHY RF Transceiver	2-way remote control	QFN 4×4	SX1280DVK1ZHP
SX1230	290MHz–11GHz FSK/OOK/ASK RF Transmitter	1-way remote control (MCU-less mode)	QFN 4×4	SX1230SKA433/868/915
SX1243	310MHz–1928MHz Low Cost FSK/OOK/ASK RF Transmitter	1-way remote control	DFN 2×3	SX1243SKA433/868/915
SX1239	290MHz–11GHz FSK/OOK/ASK RF Receiver	1-way remote control	QFN 5×5	SX1231SKB433/868/915
SX1231	290MHz–11GHz FSK/OOK/ASK RF Transceiver	2-way remote control	QFN 5×5	SX1231SKB433/868/915
SX1231H	290MHz–11GHz FSK/OOK/ASK RF Transceiver	2-way remote control	QFN 5×5	SX1231SKB433/868/915
SX1212	310MHz–1510MHz FSK/OOK/ASK RF Transceiver	DASH7 Technology	QFN 5×5	SX1212-DK7A433

Application-Specific RF Evaluation Kits

	Tx/Rx Kits with LoRa®				
	Part Number	Description	Frequency band	Kit contents	Evaluation Kit
	SX1261	Low-Power RF Transceiver 150–960MHz with LoRa Modem	150MHz–960MHz	2 SX1261 Demo units, PER	SX1261DVK1BAS

NEW	**SX1262**	Low-Power RF Transceiver 150–960MHz with LoRa Modem	150MHz–960MHz	2 SX1262 Demo units, PER	SX1262DVK1CAS
	SX1268	Low-Power RF Transceiver 410-810MHz with LoRa Modem	410MHz-810MHz	2 SX1268 Demo units, PER	SX1268DVK1GAS
	SX1272	Low-Power RF Transceiver 860–1020MHz with LoRa Modem	868MHz/915MHz	2 SX1272 Demo units, PER	SX1272DVK1BAS (868MHz) SX1272DVK1CAS (915MHz)
	SX1273	Low-Power RF Transceiver 860–1020MHz with LoRa Modem	868MHz/915MHz	2 SX1272 Demo units, PER	Use SX1272 kit (SX1272 is a superset)
	SX1276	Low-Power RF Transceiver 138–1020MHz with LoRa Modem	137MHz–1020MHz	2 SX1276 Demo units, PER	SX1276DVK1IAS (169MHz and 868MHz)
		Low-Power RF Transceiver 138–1020MHz with LoRa Modem	137MHz–1020MHz	2 SX1276 Demo units, PER	SX1276DVK1JAS (433MHz and 868MHz)
		Low-Power RF Transceiver 138–1020MHz with LoRa Modem	137MHz–1020MHz	2 SX1276 Demo units, PER	SX1276DVK1KAS (490MHz and 915MHz)

	SX1277	Low-Power RF Transceiver 138–1020MHz with LoRa Modem	137MHz–1020MHz	2 SX1276 Demo units, PER	Use SX1276 kit (SX1276 is a superset)
	SX1278	Low-Power RF Transceiver 138–510MHz with LoRa Modem	137MHz–510MHz	2 SX1276 Demo units, PER	Use SX1276 kit (SX1276 is a superset)

Application-Specific RF Evaluation Kits continued

	G/F/MSK & OOK Kits				
	Part Number	Description	Frequency band	Kit contents	Evaluation Kit
SX1211		Ultra-Low-Power RF Transceiver 862–960MHz	868MHz/915MHz	Single USB dongle	SX1211SKA868/SX1211SKA915

		Ultra-Low-Power RF Transceiver 862–960MHz	868MHz/915 MHz	2 USB dongle, PER	SX1211-11SKA868/SX1211-11SKA915
		Ultra-Low-Power RF Transceiver 862–960MHz	868MHz/915 MHz	1 SM module	SM1211E868/SM1211E915
	SX1212	Ultra-Low-Power RF Transceiver 310–510MHz Ultra-Low-Power RF Transceiver 310–510MHz Ultra-Low-Power RF Transceiver 310–510MHz Ultra-Low-Power RF Transceiver 310–510MHz	433MHz 433MHz 433MHz 433MHz	Dash7 dev kit Single USB dongle 2 USB dongle, PER 1 SM module	SX1212-DK7A433 SX1212SKA433 SX1212-12SKA433 SM1212E433
SX1231		Low-Power Integrated RF Transceiver 290–1000MHz	433MHz/868 MHz/ 915MHz	1 SM module	SM1231E433A/SM1231E868A / SM1231E915A
		Low-Power Integrated RF Transceiver 290–1000MHz	433MHz/868 MHz/ 915MHz	1 SM module + interface board	SX1231SKB433/SX1231SKB868/ SX1231SKB915
		Low-Power Integrated RF Transceiver 290–1000MHz	433MHz/868 MHz/ 915MHz	2 SM modules + interface boards	SX1231-31SKB433/SX1231-31SKB868/ SX1231-31SKB915
	SX1232	Low-Power Integrated RF Transceiver 868/915MHz	868MHz/915 MHz	2 SM modules + interface boards	SX1232-32SKA868/SX1232-32SKA915
		Low-Power Integrated RF Transceiver 290–1000MHz	868MHz/915 MHz	1 SM module	SM1233E868B/SM1233E915B

SX1233		Low-Power Integrated RF Transceiver 290–1000MHz	868MHz/915 MHz	1 SM module + interface board	SX1233SKA868/SX1233SKA915
		Low-Power Integrated RF Transceiver 290-1000MHz	868MHz/915 MHz	2 SM modules + interface boards	SX1233-33SKA868/SX1233-33SKA915
SX1239		Low-Power Integrated RF Receiver 290–1000MHz	433MHz/868 MHz/ 915MHz	1 SM module	SM1231E433A / SM1231E868A / SM1231E915A
		Low-Power Integrated RF Receiver 290–1000MHz	433MHz / 868 MHz / 915MHz	1 SM module + interface board	SX1231SKB433/SX1231SKB868 / SX1231SKB915
SX1243		Low-PWR Integrated RF Receiver 290–1000MHz	433MHz/868 MHz/ 915MHz	2 SM modules + interface boards	SX1231-31SKB433/SX1231-31SKB868/ SX1231-31SKB915
		Low-Cost, Low-Current Integrated Transmitter 310–928MHz	433MHz/868 MHz/ 915MHz	USB Dongle with SM module	SX1243SKA433/SX1243SKA868/ SX1243SKA915
NEW	**SX1280**	Low-Power RF Transceiver with GFSK, LoRa, FLRC, BLE PHY, Ranging	2400MHz -2500MHz	2 SX1280 Demo units, PER, Ranging	SX1280DVK1ZHP
	SX1281	Low-Power RF Transceiver with GFSK, LoRa, FLRC, BLE PHY	2400MHz -2500MHz	2 SX1281 Demo units, PER	SX1280DVK1ZHP

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Documents / Resources

	**SEMTECH SX1261 Wireless and RF Power LoRa RF Transceiver** [pdf] User Guide SX1261 Wireless and RF Power LoRa RF Transceiver, SX1261, Wireless and RF Power LoRa RF Transceiver, RF Power LoRa RF Transceiver, Power LoRa RF Transceiver, LoRa RF Transceiver, RF Transceiver, Transceiver

References

- Analog and Mixed-Signal Semiconductors | Semtech
- Locations | Company | Semtech Corporation | Semtech
- RF Wireless | LoRa Wireless Products | Semtech | Semtech
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