## WIRELESS SOLUTIONS

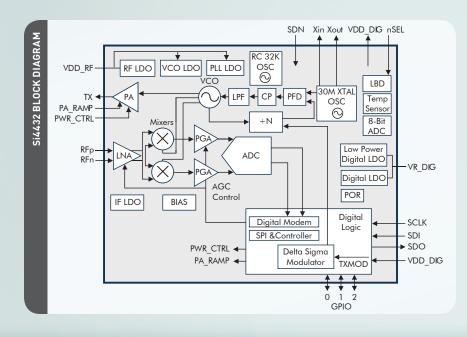
# EZRadio<sup>®</sup> and EZRadioPRO<sup>®</sup>

Complete family of transmitters, transceivers and receivers



### DESCRIPTION

Silicon Labs' family of EZRadio® and EZRadioPRO® single-chip ISM band transceivers, receivers and transmitters are highly integrated, low power, low cost solutions designed to support a wide range of wireless applications. The EZRadioPRO family features industry leading performance and an extensive set of advanced features to reduce overall system cost and complexity. The EZRadio family offers a complete solution for applications where cost and space are at a premium. EZRadio and EZRadioPRO support proprietary and standards-based point-to-point, star, and mesh networks.



#### EZRadioPRO FEATURES

- 240-960 MHz continuous frequency coverage
- Configurable output power up to +20 dB
- Up to 141 dB link budget for extended communication ranges
- Optimized low power modes to support extended battery life
- GFSK, FSK, 00K modulations
- Fast frequency-hopping support
- Configurable data packet handler
- Embedded antenna diversity algorithm
- Integrated low battery detector, temperature sensor, power-on-reset, general purpose ADC, and 32.768 KHz RC or XTAL
- Integrated 64-byte transmitter and receiver FIFOs

### EZRadio FEATURES

- Optimized one-way link solutions
- Highly integrated with minimal BOM
- Very easy design-in
- Crystal-less operation (Si401x family)
- Complete SoC solutions with integrated MCU (Si4010)
- Automatic antenna tuning
- Direct loop/IFA antenna support

#### APPLICATIONS

- Remote keyless entry (RKE)
- Automated meter readers (AMR)
- Aftermarket car alarms
- Remote controls, IR replacement/extension
- Wireless weather stations
- Home security and automation
- Garage and gate door openers
- Active RFID
- Baby monitors
- Sensor nodes
- Energy displays

# THE NEW STANDARD IN WIRELESS SOLUTIONS.



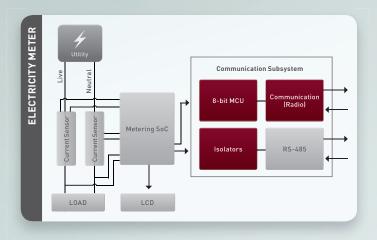
#### silabs.com/wireless

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## **Electricity Meter**

Electricity Meters measure the kilowatt hours consumed, the power factor of the load and the time of the electricity consumption to support multirate metering. The communications system in these meters requires reliability and range, which Silicon Labs provides with its EZRadioPRO embedded wireless transceivers, C8051F900 MCUs, Si84xx digital isolators and CP2400 LCD Controllers.



#### EZMac® Embedded Media Access Control Software

EZMac® media access control module is developed in C code for use with our ISM transceiver products and MCUs to create very low cost mesh networks. EZMac software provides designers a simplified interface to the physical radio layer that manages signal delivery and associated packets from the transmitter to the receiver and between nodes.

- Supports ISM band transceivers
- Internal baud rate generator
- 16 byte payload per packet
- Dedicated crystal oscillator for exact timing
- DQD (data quality detector) for FSK fast frequency hopping
- Configurable packet filtering
- Multiple error detection

#### Wireless Development Suite

The Wireless Development Suite (WDS) provides developers a comprehensive toolset to quickly and easily create and deploy efficient, robust and low-cost wireless applications. WDS can be used for demonstrating part capabilities, testing performance, and prototyping application examples, with little or no RF design and measurement experience.

Frequency band (* 433 MHz (* 868 MHz (* 915 MHz	Cystal frequency. C Standard 10HHz C Non standard 10 M	Beter Vision
Enable TX Register	Crystal load expansionce: 12.5 pF 💌	Configuration Setting Command 8018
Center frequency (Io) 435	MH2 PLL Inequency step (Fs): 2	Frequency Setting Command 5 HHz A700
Enable the receiver	synthesizer	w balley detector Power Management Comman
	• HHz LNA gain: Walk	Pint6 function  Interrupt Input  VDI output  900
Polarity of modulation: 10 + dt	▼ Deviation (dt) 15 ▼ kHz Pi	out: Preas V Transmitter Setting command
Cystal Dscillator Low Power M Phase Detector Delay Disable PLL Dithering		PLL Setting Conward Max 256 Mbps • CC67
Wake-Up Timer Low Duty-Cycl	e   Low Battery Detector   APC   Data Rate	Data Filter   FIFO and Reset   Syncron Pattern
The Wake-up time Power Management	r can be enabled by the st command. Time = M*2 B: 1 Time: 1	Wake-Up Timer Command:
M: 150	11. 1996.	
		Update needed >>> Update
Mt 150		

WIRELESS DEVELOPMENT SUITE

PART NUMBER	TYPE		ON SCHEME KBPS) (OOK)	FRE 315	QUENCY   434	BANDS (N 868	868 MHz 434 MHz SUPPLY		SUPPLY VOLTAGE (V)	SENSITIVITY (dBm)	PACKAGE		
Si4010	MCU +TX	100	50	27 - 960		10		1.8-3.6	_	MS0P10/S0IC14			
Si4012	TX	100	50	27 - 960			1	0	1.8-3.6	—	MSOP10/SOIC14		
Si4021	TX	115	512		•	•	•	6	8	2.2-5.4	—	TSSOP16	
Si4022	TX	115	_			•	•	6	8	2.2-3.8	—	TSSOP16	
Si4311	RX	10	_	•	•					2.7-3.6	-104	QFN20	
Si4312	RX	_	10	•	•			_	—	2.7-3.6	-110	QFN20	
Si4313	RX	256	40	•	•	•	•	_			-118/-107	QFN20	
Si4322	RX	256	-			•	•			2.2-3.8	-104	TSSOP16	

## EZRadio Universal ISM Band RF ICs

## EZRadioPRO Radio with Enhanced Features

PART NUMBER	ТҮРЕ		ON SCHEME KBPS) (OOK)	FREQUENCY RANGE (MHz)			RX CURRENT (mA)	TX CURRENT (mA) 0 dBm +11 dBm +13 dBm 20 dBm				PACKAGE	
Si4030	ΤX	256	40	900-960	-8 to +13	-	_	-	18	-	30	-	QFN20
Si4031	ΤX	256	40	240-930	-8 to +13	-	_	-	18	-	30	-	QFN20
Si4032	ΤX	256	40	240-930	+1 to +20	-	_	-	_	35	-	85	QFN20
Si4330	RX	256	40	240-960	_	-121	-110	18.5	-	-	_	_	QFN20
Si4430	TRX	256	40	900-960	-8 to +13	-121	-110	18.5	18	-	30	-	QFN20
Si4431	TRX	256	40	240-930	-8 to +13	-121	-110	18.5	18	-	30	-	QFN20
Si4432	TRX	256	40	240-930	+1 to +20	-121	-110	18.5	-	35	-	85	QFN20



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