

# WIRELESS PRODUCT SELECTOR GUIDE

SPRING 2013



SPRING 2013

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Engineering for a mixed-signal world.

# Product Selector Tables

## Wireless Products

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### Ember ZigBee ICs

| PART NUMBER | FLASH (kB) | RAM (kB) | DATA RATE | FREQ. RANGE (MHz) | SENS.            | ADJ CHANNEL REJECTION (15.4) | ALT CHANNEL REJECTION (15.4) | 802.11g REJECTION +12/-13 MHz | TX POWER              | TOTAL LINK BUDGET | DEEP SLEEP CURRENT | RX CURRENT       | TX CURRENT              | CRYSTAL FREQ. | VOLTAGE (V) | PACKAGE |
|-------------|------------|----------|-----------|-------------------|------------------|------------------------------|------------------------------|-------------------------------|-----------------------|-------------------|--------------------|------------------|-------------------------|---------------|-------------|---------|
| EM351       | 128        | 12       | 250 kbps  | 2400-2500         | -102 dBm (boost) | 35 dB                        | 46 dB                        | 36 dB                         | -55 to +8 dBm (boost) | 110 dB (boost)    | 400 mA (no timer)  | 26.5 mA (normal) | 31 mA (normal @ +3 dBm) | 24 MHz        | 2.1 to 3.6  | QFN48   |
| EM357       | 192        | 12       | 250 kbps  | 2400-2500         | -102 dBm (boost) | 35 dB                        | 46 dB                        | 36 dB                         | -55 to +8 dBm (boost) | 110 dB (boost)    | 400 mA (no timer)  | 26.5 mA (normal) | 31 mA (normal @ +3 dBm) | 24 MHz        | 2.1 to 3.6  | QFN48   |

### EZRadio® Universal ISM Band RF ICs

| PART NUMBER | TYPE    | MODULATION SCHEME<br>(MAX kbps) |     | FREQUENCY BANDS (MHz) |     |     |     | OUTPUT POWER MAX <sup>(dBm)</sup> |                 | SUPPLY<br>VOLTAGE (V) | SENSITIVITY<br>(DBM) | PACKAGE       |
|-------------|---------|---------------------------------|-----|-----------------------|-----|-----|-----|-----------------------------------|-----------------|-----------------------|----------------------|---------------|
|             |         | FSK                             | OOK | 315                   | 434 | 868 | 915 | 868 MHz<br>BAND                   | 434 MHz<br>BAND |                       |                      |               |
| Si4010      | MCU +TX | 100                             | 50  | 27 - 960              |     |     |     | 10                                |                 | 1.8-3.6               | —                    | MSOP10/SOIC14 |
| Si4012      | TX      | 100                             | 50  | 27 - 960              |     |     |     | 10                                |                 | 1.8-3.6               | —                    | MSOP10/SOIC14 |
| Si4313      | RX      | 256                             | 40  | •                     | •   | •   | •   |                                   |                 | 1.8-3.6               | -118/-107            | QFN20         |
| Si4355      | RX      | 500                             | 120 | •                     | •   | •   | •   |                                   |                 | 1.8-3.6               | -116                 | QFN20         |
| Si4455      | TRX     | 500                             | 120 | •                     | •   | •   | •   | 12                                | 13              | 1.8-3.6               | -116                 | QFN20         |

### EZRadioPRO® Enhanced Feature Universal ISM Band RF ICs

| PART NUMBER | TYPE | MODULATION SCHEME (MAX kbps) |     | FREQUENCY RANGE (MHz) | OUTPUT POWER RANGE (DBM) | SENSITIVITY (dBm) |              | RX CURRENT (mA) | TX CURRENT (dBm) |     |     |     | PACKAGE |
|-------------|------|------------------------------|-----|-----------------------|--------------------------|-------------------|--------------|-----------------|------------------|-----|-----|-----|---------|
|             |      |                              |     |                       |                          | 2.0 kbps FSK      | 4.8 kbps OOK |                 | 0                | +11 | +13 | +20 |         |
| Si4030      | TX   | 256                          | 40  | 900-960               | -8 to +13                | —                 | —            | —               | 18               |     | 30  |     | QFN20   |
| Si4031      | TX   | 256                          | 40  | 240-930               | -8 to +13                | —                 | —            | —               | 18               |     | 30  |     | QFN20   |
| Si4032      | TX   | 256                          | 40  | 240-930               | +1 to +20                | —                 | —            | —               |                  | 35  |     | 85  | QFN20   |
| Si4060      | TX   | 1000                         | 120 | 142-1050 Major Bands  | -40 to +13               | —                 | —            | —               |                  | 18  |     |     | QFN20   |
| Si4063      | TX   | 1000                         | 120 | 142-1050 Major Bands  | -20 to +20               | —                 | —            | —               |                  |     |     | 85  | QFN20   |
| Si4330      | RX   | 256                          | 40  | 240-960               | —                        | -121              | -110         | 18.5 mA         |                  |     |     |     | QFN20   |
| Si4362      | RX   | 1000                         | 120 | 142-1050 Major Bands  | —                        | -124              | -112         | 10/13 mA        |                  |     |     |     | QFN20   |
| Si4430      | TRX  | 256                          | 40  | 900-960               | -8 to +13                | -12               | -110         | 18.5 mA         | 18               |     | 30  |     | QFN20   |
| Si4431      | TRX  | 256                          | 40  | 240-930               | -8 to +13                | -121              | -110         | 18.5 mA         | 18               |     | 30  |     | QFN20   |
| Si4432      | TRX  | 256                          | 40  | 240-930               | +1 to +20                | -121              | -110         | 18.5 mA         |                  | 35  |     | 85  | QFN20   |
| Si4438      | TRX  | 500                          | 120 | 425 -525              | -20 to +20               | -121              | -110         | 14 mA           |                  |     |     | 75  | QFN20   |
| Si4460      | TRX  | 1000                         | 120 | 142-1050 Major Bands  | -40 to +13               | -124              | -112         | 10/13 mA        |                  | 18  | 25  |     | QFN20   |
| Si4461      | TRX  | 1000                         | 120 | 142-1050 Major Bands  | -30 to +16               | -124              | -112         | 10/13 mA        |                  |     | 31  |     | QFN20   |
| Si4463      | TRX  | 1000                         | 120 | 142-1050 Major Bands  | -20 to +20               | -124              | -112         | 10/13 mA        |                  |     |     | 85  | QFN20   |
| Si4464      | TRX  | 1000                         | 120 | 119-960 Banded        | -20 to +20               | -124              | -112         | 10/13 mA        |                  |     |     | 85  | QFN20   |

## Wireless MCUs

| PART NUMBER | FLASH MEM. | MHz | RAM (kB) | DIG. I/O | COMM.                          | FSK/GFSK (kbps) | OOK (kbps) | OUTPUT POWER (dBm) | 2/4.8 KBPS SENS. | TX CURRENT (mA)<br>+11/+20 (dBm) |       | TIMERS (16-BIT) | PWM/PCA | INT. OSC | ADC                       | COMP. | OTHER            | PACKAGE |
|-------------|------------|-----|----------|----------|--------------------------------|-----------------|------------|--------------------|------------------|----------------------------------|-------|-----------------|---------|----------|---------------------------|-------|------------------|---------|
| Si1020      | 128 kB     | 25  | 8448     | 53       | I <sup>2</sup> C, 2x SPI, UART | 256             | 40         | +1 to +20          | -121/-110        | 85 mA                            | —     | 4               | 6       | ±2%      | 12-bit, 16-ch., 75 ksp/s  | 2     | 128 LCD Segments | LGA85   |
| Si1024      | 128 kB     | 25  | 8448     | 53       | I <sup>2</sup> C, 2x SPI, UART | 256             | 40         | -8 to +13          | -121/-110        | 17 mA                            | 30 mA | 4               | 6       | ±2%      | 12-bit, 16-ch., 75 ksp/s  | 2     | 128 LCD Segments | LGA85   |
| Si1030      | 128 kB     | 25  | 8448     | 53       | I <sup>2</sup> C, 2x SPI, UART | 256             | 40         | +1 to +20          | -121/-110        | 85 mA                            | —     | 4               | 6       | ±2%      | 12-bit, 16-ch., 75 ksp/s  | 2     | —                | LGA85   |
| Si1034      | 128 kB     | 25  | 8448     | 53       | I <sup>2</sup> C, 2x SPI, UART | 256             | 40         | -8 to +13          | -121/-110        | 17 mA                            | 30 mA | 4               | 6       | ±2%      | 12-bit, 16-ch., 75 ksp/s  | 2     | —                | LGA85   |
| Si1021      | 64 kB      | 25  | 8448     | 53       | I <sup>2</sup> C, 2x SPI, UART | 256             | 40         | +1 to +20          | -121/-110        | 85 mA                            | —     | 4               | 6       | ±2%      | 12-bit, 16-ch., 75 ksp/s  | 2     | 128 LCD Segments | LGA85   |
| Si1025      | 64 kB      | 25  | 8448     | 53       | I <sup>2</sup> C, 2x SPI, UART | 256             | 40         | -8 to +13          | -121/-110        | 17 mA                            | 30 mA | 4               | 6       | ±2%      | 12-bit, 16-ch., 75 ksp/s  | 2     | 128 LCD Segments | LGA85   |
| Si1031      | 64 kB      | 25  | 8448     | 53       | I <sup>2</sup> C, 2x SPI, UART | 256             | 40         | +1 to +20          | -121/-110        | 85 mA                            | —     | 4               | 6       | ±2%      | 12-bit, 16-ch., 75 ksp/s  | 2     | —                | LGA85   |
| Si1035      | 64 kB      | 25  | 8448     | 53       | I <sup>2</sup> C, 2x SPI, UART | 256             | 40         | -8 to +13          | -121/-110        | 17 mA                            | 30 mA | 4               | 6       | ±2%      | 12-bit, 16-ch., 75 ksp/s  | 2     | —                | LGA85   |
| Si1000      | 64 kB      | 25  | 4352     | 22       | I <sup>2</sup> C, SPI, UART    | 256             | 40         | +1 to +20          | -121/-110        | 35 mA/85 mA                      | —     | 4               | 6       | ±2%      | 10-bit, 18-ch., 300 ksp/s | 2     | CRC; RTC         | QFN42   |
| Si1002      | 64 kB      | 25  | 4352     | 22       | I <sup>2</sup> C, SPI, UART    | 256             | 40         | -8 to +13          | -121/-110        | —                                | 30 mA | 4               | 6       | ±2%      | 10-bit, 18-ch., 300 ksp/s | 2     | CRC; RTC         | QFN42   |
| Si1004      | 64 kB      | 25  | 4352     | 19       | I <sup>2</sup> C, SPI, UART    | 256             | 40         | -8 to +13          | -121/-110        | —                                | 30 mA | 4               | 6       | ±2%      | 10-bit, 15-ch., 300 ksp/s | 2     | CRC; dc-dc; RTC  | QFN42   |
| Si1022      | 32 kB      | 25  | 8448     | 53       | I <sup>2</sup> C, 2x SPI, UART | 256             | 40         | +1 to +20          | -121/-110        | 85 mA                            | —     | 4               | 6       | ±2%      | 12-bit, 16-ch., 75 ksp/s  | 2     | 128 LCD Segments | LGA85   |
| Si1026      | 32 kB      | 25  | 8448     | 53       | I <sup>2</sup> C, 2x SPI, UART | 256             | 40         | -8 to +13          | -121/-110        | 17 mA                            | 30 mA | 4               | 6       | ±2%      | 12-bit, 16-ch., 75 ksp/s  | 2     | 128 LCD Segments | LGA85   |
| Si1032      | 32 kB      | 25  | 8448     | 53       | I <sup>2</sup> C, 2x SPI, UART | 256             | 40         | +1 to +20          | -121/-110        | 85 mA                            | —     | 4               | 6       | ±2%      | 12-bit, 16-ch., 75 ksp/s  | 2     | —                | LGA85   |
| Si1036      | 32 kB      | 25  | 8448     | 53       | I <sup>2</sup> C, 2x SPI, UART | 256             | 40         | -8 to +13          | -121/-110        | 17 mA                            | 30 mA | 4               | 6       | ±2%      | 12-bit, 16-ch., 75 ksp/s  | 2     | —                | LGA85   |
| Si1001      | 32 kB      | 25  | 4352     | 22       | I <sup>2</sup> C, SPI, UART    | 256             | 40         | +1 to +20          | -121/-110        | 35 mA/85 mA                      | —     | 4               | 6       | ±2%      | 10-bit, 18-ch., 300 ksp/s | 2     | CRC; RTC         | QFN42   |
| Si1003      | 32 kB      | 25  | 4352     | 22       | I <sup>2</sup> C, SPI, UART    | 256             | 40         | -8 to +13          | -121/-110        | —                                | 30 mA | 4               | 6       | ±2%      | 10-bit, 18-ch., 300 ksp/s | 2     | CRC; RTC         | QFN42   |
| Si1005      | 32 kB      | 25  | 4352     | 19       | I <sup>2</sup> C, SPI, UART    | 256             | 40         | -8 to +13          | -121/-110        | —                                | 30 mA | 4               | 6       | ±2%      | 10-bit, 15-ch., 300 ksp/s | 2     | CRC; dc-dc; RTC  | QFN42   |
| Si1023      | 16 kB      | 25  | 4352     | 53       | I <sup>2</sup> C, 2x SPI, UART | 256             | 40         | +1 to +20          | -121/-110        | 85 mA                            | —     | 4               | 6       | ±2%      | 12-bit, 16-ch., 75 ksp/s  | 2     | 128 LCD Segments | LGA85   |
| Si1027      | 16 kB      | 25  | 4352     | 53       | I <sup>2</sup> C, 2x SPI, UART | 256             | 40         | -8 to +13          | -121/-110        | 17 mA                            | 30 mA | 4               | 6       | ±2%      | 12-bit, 16-ch., 75 ksp/s  | 2     | 128 LCD Segments | LGA85   |
| Si1033      | 16 kB      | 25  | 4352     | 53       | I <sup>2</sup> C, 2x SPI, UART | 256             | 40         | +1 to +20          | -121/-110        | 85 mA                            | —     | 4               | 6       | ±2%      | 12-bit, 16-ch., 75 ksp/s  | 2     | —                | LGA85   |
| Si1037      | 16 kB      | 25  | 4352     | 53       | I <sup>2</sup> C, 2x SPI, UART | 256             | 40         | -8 to +13          | -121/-110        | 17 mA                            | 30 mA | 4               | 6       | ±2%      | 12-bit, 16-ch., 75 ksp/s  | 2     | —                | LGA85   |
| Si1010      | 16 kB      | 25  | 768      | 15       | I <sup>2</sup> C, SPI, UART    | 256             | 40         | +1 to +20          | -121/-110        | 35 mA/85 mA                      | —     | 4               | 6       | ±2%      | 12-bit, 11-ch., 75 ksp/s  | 2     | CRC; RTC         | QFN42   |
| Si1012      | 16 kB      | 25  | 768      | 15       | I <sup>2</sup> C, SPI, UART    | 256             | 40         | -8 to +13          | -121/-110        | —                                | 30 mA | 4               | 6       | ±2%      | 12-bit, 11-ch., 75 ksp/s  | 2     | CRC; RTC         | QFN42   |
| Si1014      | 16 kB      | 25  | 768      | 15       | I <sup>2</sup> C, SPI, UART    | 256             | 40         | -8 to +13          | -121/-110        | —                                | 30 mA | 4               | 6       | ±2%      | 12-bit, 11-ch., 75 ksp/s  | 2     | CRC; dc-dc; RTC  | QFN42   |
| Si1011      | 8 kB       | 25  | 768      | 15       | I <sup>2</sup> C, SPI, UART    | 256             | 40         | +1 to +20          | -121/-110        | 35 mA/85 mA                      | —     | 4               | 6       | ±2%      | 12-bit, 11-ch., 75 ksp/s  | 2     | CRC; RTC         | QFN42   |
| Si1013      | 8 kB       | 25  | 768      | 15       | I <sup>2</sup> C, SPI, UART    | 256             | 40         | -8 to +13          | -121/-110        | —                                | 30 mA | 4               | 6       | ±2%      | 12-bit, 11-ch., 75 ksp/s  | 2     | CRC; RTC         | QFN42   |
| Si1015      | 8 kB       | 25  | 768      | 15       | I <sup>2</sup> C, SPI, UART    | 256             | 40         | -8 to +13          | -121/-110        | —                                | 30 mA | 4               | 6       | ±2%      | 12-bit, 11-ch., 75 ksp/s  | 2     | CRC; dc-dc; RTC  | QFN42   |

# Hardware and Software Support

FIND THE TOOLS YOU NEED TO HELP WITH YOUR ENTIRE PROJECT [www.silabs.com/wireless](http://www.silabs.com/wireless)

## Sub-GHz EZRadio Development Support

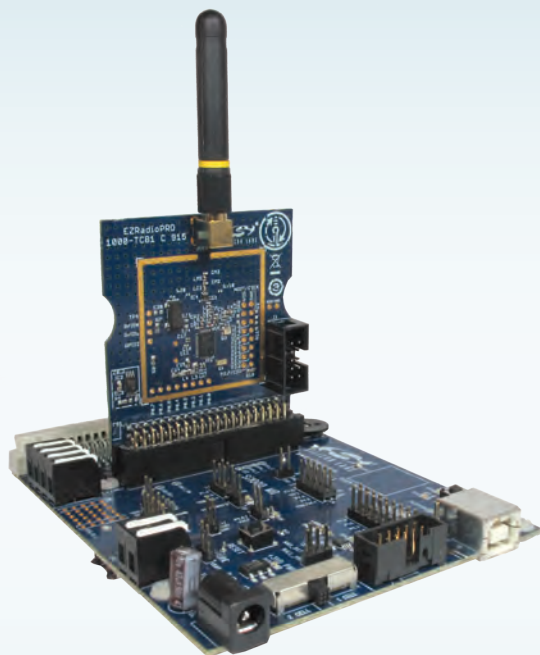
Silicon Labs offers complete tools to help designers throughout the entire project. The EZRadio®, EZRadioPRO® and wireless solutions offer hardware and software platforms to easily set up and configure, compile and debug a project. Full documentation and a broad range of third-party compilers and development tools are available. Software stacks provide networking support for multi-node metering networks. Software simulation tools can estimate power consumption and determine expected battery life.

Complete development/prototyping system includes the following:

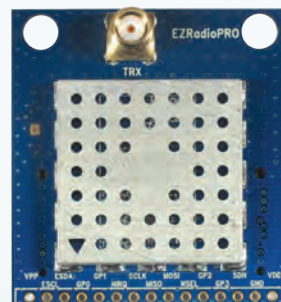
- Prototyping/demonstration board
- USB adapter for in-system programming and debugging
- Silicon Laboratories IDE
- MCU configuration wizard



Si4431/  
C8051F342  
EZRadioPRO®  
USB DONGLE



Si1000 TARGET BOARD  
WITH EZRadio® TEST CARD



Si4463 915 MHz  
RF PICO CARD



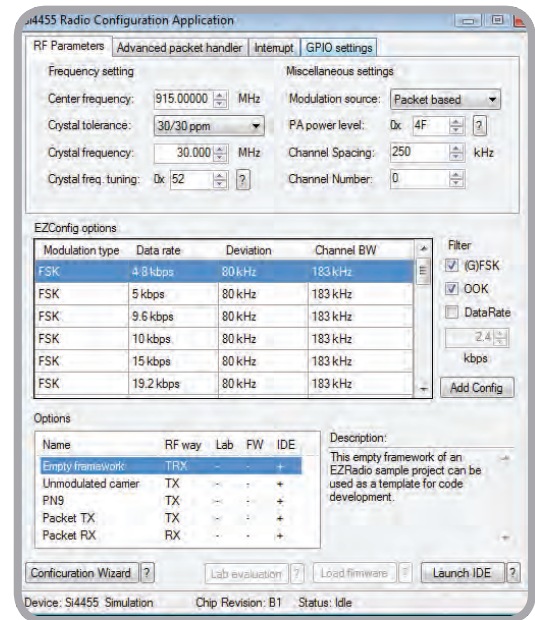
Si4355/Si4010 ONE-WAY  
SUB-GHz KEY FOB TO LED  
RECEIVER STICK

## Wireless Development Suite

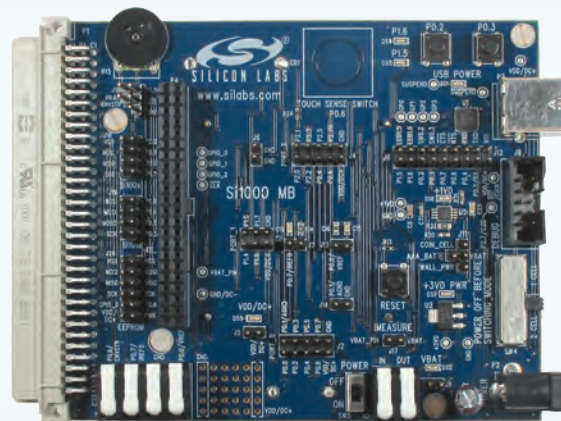
The Wireless Development Suite (WDS) provides developers a comprehensive toolset to quickly and easily create and deploy efficient, robust and low-cost wireless applications. WDS can be used for demonstrating part capabilities, testing performance, and prototyping application examples, with little or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

To easily set up the EZRadio products, Silicon Labs offers the EZConfig setup tools within our Wireless Development Suite software. The EZConfig tool provides recommended settings for the most common application configurations. These settings have been optimized by Silicon Labs and verified for performance. [www.silabs.com/WDS](http://www.silabs.com/WDS)

- Supports a family of TX, RX and TRX test cards
- Device config, save, and restore
- Custom scripting API
- Online device documentation
- Terminal window
- PC interface to evaluation boards



**Si4010 EZRadio®  
KEY FOB TRANSMITTER**



**Si1000 WIRELESS MCU  
TARGET BOARD**



**EZRadio® Si4010/Si4355  
ONE-WAY AES  
DEVELOPMENT KIT**

## Development Kits

FIND THE EVALUATION TOOLS AND REFERENCE DESIGNS TO HELP YOU GET STARTED: [www.silabs.com/wireless-devkits](http://www.silabs.com/wireless-devkits)

### Wireless MCU Development Kits

| PART NUMBER      | DESCRIPTION                             | PRICE |
|------------------|-----------------------------------------|-------|
| Si1000DK         | Si1000 Wireless MCU Development Kit     |       |
| Si1010DK         | Si1010 Wireless MCU Development Kit     |       |
| Si1020-915-A-SDK | Si1020 915 MHz Software Development Kit |       |
| Si1020-915-A-DK  | Si1020 915 MHz Wireless Development Kit |       |
| Si1024-868-A-SDK | Si1024 868 MHz Software Development Kit |       |
| Si1024-868-A-DK  | Si1024 868 MHz Wireless Development Kit |       |

### Wireless MCU Development Kit Test Cards

| PART NUMBER     | TYPE                | FREQUENCY | ANTENNA CONFIGURATION                        | PRICE |
|-----------------|---------------------|-----------|----------------------------------------------|-------|
| 1000-TCB1 C 915 | Si1000 TRX Testcard | 915 MHz   | Single Switch Antenna Rev c/B1; +20 dBm      |       |
| 1000-TCB1 C 470 | Si1000 TRX Testcard | 470 MHz   | Single Switch Antenna Rev c/B1; +20 dBm      |       |
| 1002-TCB1 D 868 | Si1002 TRX Testcard | 868 MHz   | Single Tied Antenna Rev c/B1; +13 dBm        |       |
| 1002-TCB1 D 434 | Si1002 TRX Testcard | 470 MHz   | Single Tied Antenna Rev c/B1; +13 dBm        |       |
| 1004-TCB1 D 868 | Si1004 TRX Testcard | 868 MHz   | Single Tied Antenna Rev d/B1; +13 dBm, dc-dc |       |
| 1004-TCB1 D 434 | Si1004 TRX Testcard | 434 MHz   | Single Tied Antenna Rev d/B1; +13 dBm, dc-dc |       |
| 1010-TAB1 C 915 | Si1010 TRX Testcard | 915 MHz   | Single Switch Antenna Rev c/B1; +20 dBm      |       |
| 1010-TCB1 C 470 | Si1010 TRX Testcard | 470 MHz   | Single Switch Antenna Rev c/B1; +20 dBm      |       |
| 1012-TAB1 D 868 | Si1012 TRX Testcard | 868 MHz   | Single Tied Antenna Rev d/B1; +13 dBm        |       |
| 1012-TAB1 D 434 | Si1012 TRX Testcard | 434 MHz   | Single Tied Antenna Rev d/B1; +13 dBm        |       |
| 1014-TAB1 D 868 | Si1014 TRX Testcard | 868 MHz   | Single Tied Antenna Rev d/B1; +13 dBm, dc-dc |       |
| 1014-TAB1 D 434 | Si1014 TRX Testcard | 434 MHz   | Single Tied Antenna Rev d/B1; +13 dBm, dc-dc |       |

### Wireless MCU Development Kit Pico Cards

| PART NUMBER        | FREQUENCY | DESCRIPTION                                 | PRICE |
|--------------------|-----------|---------------------------------------------|-------|
| UPPI1020GM-A-915EK | 915 MHz   | Si1020-GM 915 +20 dBm T/R switch pico board |       |
| UPPI1024GM-A-868EK | 868 MHz   | Si1024-GM 868 +13 dBm direct tie pico board |       |
| UPPI1024GM-A-434EK | 434 MHz   | Si1024-GM 434 +13 dBm direct tie pico board |       |

### Ember ZigBee Development Kits

| PART NUMBER        | DESCRIPTION                                                                                                 | PRICE |
|--------------------|-------------------------------------------------------------------------------------------------------------|-------|
| EM35x-DEV          | EM351 and EM357 Development Kit with 30-day trial license for IAR Embedded Workbench for ARM                |       |
| EM35x-DEV-IAR      | EM351 and EM357 Development Kit with a full standalone Cortex-M3 licence for IAR Embedded Workbench for ARM |       |
| EM35x-NCP-ADD-ON-S | Network co-processor development with an existing EM35x Development kit                                     |       |

## EZRadio Development Kits

| PART NUMBER      | DESCRIPTION                                                                    | PRICE |
|------------------|--------------------------------------------------------------------------------|-------|
| 4010-KFOBDEV-434 | Si4010/Si4355 Key Fob Development Kit; 434 MHz Frequency                       |       |
| 4010-KFOBDEV-868 | Si4010/Si4355 Key Fob Development Kit; 868 MHz Frequency                       |       |
| 4010-KFOBDEV-915 | Si4010/Si4355 Key Fob Development Kit; 915 MHz Frequency                       |       |
| 4010-AESK1W-315  | Si4010/Si4355 One-Way AES Development Kit; 315 MHz Frequency                   |       |
| 4010-AESK1W-434  | Si4010/Si4355 One-Way AES Development Kit; 434 MHz Frequency                   |       |
| 4010-AESK1W-868  | Si4010/Si4355 One-Way AES Development Kit; 868 MHz Frequency                   |       |
| 4010-AESK1W-915  | Si4010/Si4355 One-Way AES Development Kit; 915 MHz Frequency                   |       |
| 4012-LCDK1W-434  | Si4355 One-Way LCD Development Kit; 434 MHz Frequency                          |       |
| 4012-LCDK1W-915  | Si4355 One-Way LCD Development Kit; 915 MHz Frequency                          |       |
| EZR-LEDK1W-434   | Si4010/Si4355 One-way Sub-GHz Key Fob to LED Receiver Stick; 434 MHz Frequency |       |
| EZR-LEDK1W-868   | Si4010/Si4355 One-way Sub-GHz Key Fob to LED Receiver Stick; 868 MHz Frequency |       |
| EZR-LEDK1W-915   | Si4010/Si4355 One-way Sub-GHz Key Fob to LED Receiver Stick; 915 MHz Frequency |       |
| EZR-LEDK2W-434   | Si4455 Two-way Sub-GHz Key Fob to LED Receiver Stick; 434 MHz Frequency        |       |
| EZR-LEDK2W-868   | Si4455 Two-way Sub-GHz Key Fob to LED Receiver Stick; 868 MHz Frequency        |       |
| EZR-LEDK2W-915   | Si4455 Two-way Sub-GHz Key Fob to LED Receiver Stick; 915 MHz Frequency        |       |
| EZR-LCDK2W-434   | Si4455 Two-way LCD Development Kit; 434 MHz Frequency                          |       |
| EZR-LCDK2W-868   | Si4455 Two-Way LCD Development Kit; 868 MHz Frequency                          |       |
| EZR-LCDK2W-915   | Si4455 Two-Way LCD Development Kit; 915 MHz Frequency                          |       |
| RF-to-USB-RD     | Two board RF to USB Reference Design                                           |       |

## EZRadioPRO Development Kits

| PART NUMBER  | DESCRIPTION                                                | PRICE |
|--------------|------------------------------------------------------------|-------|
| 4060-868-PDK | Si4060 One-way Wireless Development Kit; 868 MHz Frequency |       |
| 4063-915-PDK | Si4063 One-way Wireless Development Kit; 915 MHz Frequency |       |
| 4438-490-PDK | Si4438 Wireless Development Kit; 490 MHz Frequency         |       |
| 4461-868-PDK | Si4461 Wireless Development Kit; 868 MHz Frequency         |       |
| 4463-915-PDK | Si4463 Wireless Development Kit; 915 MHz Frequency         |       |

## EZRadioPRO Development Kit Test Cards

| PART NUMBER       | TYPE                | FREQUENCY | ANTENNA CONFIGURATION                                                        | PRICE |
|-------------------|---------------------|-----------|------------------------------------------------------------------------------|-------|
| 4060-PCE10B868-EK | Si4060 TX Testcard  | 868 MHz   | +10 dBm, TX only                                                             |       |
| 4063-PCE20B915-EK | Si4063 TX Testcard  | 915 MHz   | +20 dBm, TX only                                                             |       |
| 4362-PRXB868-EK   | Si4362 RX Testcard  | 868 MHz   | -126 dBm, RX only                                                            |       |
| 4362-PRXB915-EK   | Si4362 RX Testcard  | 915 MHz   | -126 dBm, RX only                                                            |       |
| 4438-PCE20D490-EK | Si4438 TRX Testcard | 490 MHz   | +20 dBm, Single antenna implemented without RF switch for China applications |       |
| 4461-PCE14D868-EK | Si4461 TRX Testcard | 868 MHz   | +14 dBm, Single antenna implemented without RF switch                        |       |
| 4463-PCE20C915-EK | Si4463 TRX Testcard | 915 MHz   | +20 dBm, Single antenna implemented with RF switch                           |       |
| 4063-PSQ20B169-EK | Si4063 TX Testcard  | 169 MHz   | + 20 dBm, TX only                                                            |       |
| 4060-PCE10B434-EK | Si4063 TX Testcard  | 434 MHz   | +10 dBm, TX only                                                             |       |
| 4362-PRXB169-EK   | Si4362 RX Testcard  | 169 MHz   | -126 dBm, RX only                                                            |       |
| 4362-PRXB434-EK   | Si4362 RX Testcard  | 434 MHz   | -126 dBm, RX only                                                            |       |
| 4463-PSQ20D169-EK | Si4463 TRX Testcard | 169 MHz   | +20 dBm, Single antenna implemented without RF switch                        |       |

|                    |                     |         |                                                                                                      |  |
|--------------------|---------------------|---------|------------------------------------------------------------------------------------------------------|--|
| 4460-PCE10D434-EK  | Si4460 TRX Testcard | 434 MHz | +10 dBm, Single antenna implemented without RF switch                                                |  |
| 4463-PCE20B915-EK  | Si4463 TRX Testcard | 915 MHz | +20 dBm, Separate TX and RX designed for lab testing<br>(not recommended for range testing)          |  |
| 4463-PCE20C460-EK  | Si4463 TRX Testcard | 460 MHz | +20 dBm, Single antenna implemented with RF switch                                                   |  |
| 4463PCE20C868SE-EK | Si4463 TRX Testcard | 868 MHz | +20 dBm, Single antenna implemented with RF switch, SAW filter, TCXO,<br>for ETSI Cat 1 applications |  |
| 4463PSQ20C169SE-EK | Si4463 TRX Testcard | 169 MHz | +20 dBm, Single antenna implemented with RF switch, SAW filter, TCXO,<br>for ETSI Cat 1 applications |  |
| 4463-PSQ27F169-EK  | Si4463 TRX Testcard | 169 MHz | +27 dBm, Single antenna implemented with RF switch and<br>low cost external amplifier                |  |
| 4463-PCE27F868-EK  | Si4463 TRX Testcard | 868 MHz | +27 dBm, Single antenna implemented with RF switch and<br>low cost external amplifier                |  |
| 4463-PCE30E915R-EK | Si4463 TRX Testcard | 915 MHz | +30 dBm high power design with RFMD FEM                                                              |  |
| 4460-PCE30E915S-EK | Si4460 TRX Testcard | 915 MHz | +30 dBm high power design with Skyworks FEM                                                          |  |
| 4463-PCE20A915-EK  | Si4463 TRX Testcard | 915 MHz | +20 dBm used to evaluate the embedded Antenna Diversity algorithm                                    |  |
| 4432-T-B1 A 915    | Si4432 TRX Testcard | 915 MHz | Two antennas mounted at 90°; used to evaluate the<br>embedded antenna diversity algorithm            |  |
| 4432-T-B1 B 915    | Si4432 TRX Testcard | 915 MHz | Separate TX and RX designed for lab testing<br>(not recommended for range testing)                   |  |
| 4432-T-B1 C 915    | Si4432 TRX Testcard | 915 MHz | Single tied antenna implemented with RF switch                                                       |  |
| 4432-T-B1 C 868    | Si4432 TRX Testcard | 868 MHz | Single tied antenna implemented with RF switch                                                       |  |
| 4432-T-B1 B 470    | Si4432 TRX Testcard | 470 MHz | Separate TX and RX designed for lab testing<br>(not recommended for range testing)                   |  |
| 4432-T-B1 C 470    | Si4432 TRX Testcard | 470 MHz | Single tied antenna implemented with RF switch                                                       |  |
| 4432-T-B1 D 470    | Si4432 TRX Testcard | 470 MHz | Single tied antenna implemented with RF switch                                                       |  |
| 4431-T-B1 B 868    | Si4431 TRX Testcard | 868 MHz | Separate TX and RX designed for lab testing<br>(not recommended for range testing)                   |  |
| 4431-T-B1 D 868    | Si4431 TRX Testcard | 868 MHz | Single tied antenna implemented without RF switch                                                    |  |
| 4431-T-B1 B 434    | Si4431 TRX Testcard | 434 MHz | Separate TX and RX designed for lab testing<br>(not recommended for range testing)                   |  |
| 4431-T-B1 D 434    | Si4431 TRX Testcard | 434 MHz | Single tied antenna implemented without RF switch                                                    |  |
| 4430-T-B1 B 950    | Si4430 TRX Testcard | 950 MHz | Separate TX and RX designed for lab testing<br>(not recommended for range testing)                   |  |
| 4430-T-B1 D 950    | Si4430 TRX Testcard | 950 MHz | Single Antenna implemented without RF switch                                                         |  |
| 4330-T-B1 B 434    | Si4430 RX Testcard  | 434 MHz | Single tied antenna                                                                                  |  |
| 4330-T-B1 B 470    | Si4430 RX Testcard  | 470 MHz | Single tied antenna                                                                                  |  |
| 4330-T-B1 B 868    | Si4430 RX Testcard  | 868 MHz | Single tied antenna                                                                                  |  |
| 4330-T-B1 B 915    | Si4430 RX Testcard  | 915 MHz | Single tied antenna                                                                                  |  |
| 4330-T-B1 B 950    | Si4430 RX Testcard  | 950 MHz | Single tied antenna                                                                                  |  |
| 4032-T-B1 B 915    | Si4430 TX Testcard  | 915 MHz | Single tied antenna                                                                                  |  |
| 4032-T-B1 B 470    | Si4430 TX Testcard  | 470 MHz | Single tied antenna                                                                                  |  |
| 4031-T-B1 B 868    | Si4430 TX Testcard  | 868 MHz | Single tied antenna                                                                                  |  |
| 4031-T-B1 B 434    | Si4430 TX Testcard  | 434 MHz | Single tied antenna                                                                                  |  |

# Hardware and Software Support

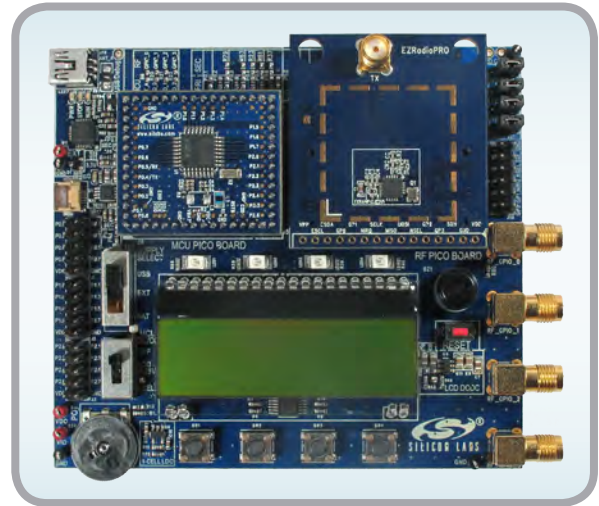
FIND THE TOOLS YOU NEED TO HELP WITH YOUR ENTIRE PROJECT [www.silabs.com/wireless-devkits](http://www.silabs.com/wireless-devkits)

## Wireless Development Tools

Silicon Labs offers an easy to use development platform featuring a small motherboard with modular RF and MCU Pico boards and an integrated LCD with necessary connectors for rapid prototyping and development. The MSC-F930-PDK provides a standalone demonstration platform and software development platform for wireless devices together with the Wireless Development Suite (WDS).

The MSC-F930-PDK supports all of the following:

- MCU code and firmware development (IDE, configuration wizard, example codes, etc.)
- RF design and optimization (Wireless Development Suite support, automatic board detection and firmware download, sample RF code, run-time PHY interface, etc.)



## ZigBee Development Tools

The EM35x development environment dramatically shortens design cycles by joining sophisticated network development and debugging tools. It begins with the silicon-based packet trace port, a collection of minimally-intrusive hardware debugging features on the EM35x system-on-chip (SoC) and network co-processor (NCP). Debug adapters bridge the packet trace port to the developer's PCs via an Ethernet connection, where the Desktop Network Analyzer enables rapid development and debugging. The Ember AppBuilder is an easy-to-use graphical tool providing the fastest path to certifiable products using ZigBee standard public application profiles. Bundles of these tools and development boards are available for each of the Ember ZigBee chipsets.

[www.silabs.com/zigbee-devkits](http://www.silabs.com/zigbee-devkits)

## EM35x Series Development Kit

(EM35X-DEV or EM35X-DEV-IAR)

Customers starting new ZigBee SoC projects should choose the EM35x Development Kit as their starting point.

There are two variants:

- EM35X-DEV with a 30-day trial license of IAR Embedded Workbench for ARM
- EM35X-DEV-IAR includes a full standalone Cortex-M3 licence for IAR Embedded Workbench for ARM

An IAR EWARM license (P/N: EM35X-DEV-UPG-IAR) for use with the EM35x development kit may be purchased separately.



# Silicon Labs Online Utilities

FIND THE TOOLS YOU NEED TO HELP WITH YOUR ENTIRE PROJECT [www.silabs.com/online-utilities](http://www.silabs.com/online-utilities)

## Wireless Chip Selector

The Silicon Labs' wireless product selector online utility helps identify the right wireless product for the application. Simply make the selections that best describe the design, and the appropriate product with all supporting documentation, development software and hardware will be displayed. Enter the design specifications below and in less than a minute we'll match you to the right wireless product for the project. You will receive product match(es), data sheet(s), application notes, development hardware and software.

[www.silabs.com/wireless-chip-selector](http://www.silabs.com/wireless-chip-selector)

- 1 Standard/certification
- 2 Frequency spectrum
- 3 One-way or two-way link

In less than a minute, we'll match you to the right wireless product for your project!

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Answer Summary:

1) Please select the appropriate standard:

- ☐ FCC (e.g. US market)
- ☐ ARIB (e.g. Japan market)
- ☐ ETSI (e.g. Europe market)
- ☐ China
- ☐ Brazil

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| Competitor Part Number | Competitor Name   | Silicon Labs Part Number | Description                                        | Availability | Buy Online                 |
|------------------------|-------------------|--------------------------|----------------------------------------------------|--------------|----------------------------|
| CC1100                 | Texas Instruments | CC1100                   | 2.4 GHz ISM 802.15.4 compliant transceiver and MCU | Available    | <a href="#">Buy Online</a> |
| CC1100P                | Texas Instruments | CC1100P                  | 2.4 GHz ISM 802.15.4 compliant transceiver and MCU | Available    | <a href="#">Buy Online</a> |
| CC1100P-1              | Texas Instruments | CC1100P-1                | 2.4 GHz ISM 802.15.4 compliant transceiver and MCU | Available    | <a href="#">Buy Online</a> |
| CC1100P-2              | Texas Instruments | CC1100P-2                | 2.4 GHz ISM 802.15.4 compliant transceiver and MCU | Available    | <a href="#">Buy Online</a> |
| CC1100P-3              | Texas Instruments | CC1100P-3                | 2.4 GHz ISM 802.15.4 compliant transceiver and MCU | Available    | <a href="#">Buy Online</a> |

## Cross-Reference Utility

Silicon Labs' cross reference utility allows you to type in a competitor's part number (full or partial) and if we have a cross-match, our part number pops up. Results are automatically filtered as you type and can be exported to excel so you can e-mail or save results.

[www.silabs.com/cross-reference](http://www.silabs.com/cross-reference)

Battery Type:

Discharge Profile:

Simulation:

## Battery Life Estimator

The Battery Life Estimator is an easy-to-use web-based calculator that gives designers a quick and easy way to understand the discharge characteristics of different system configurations to help optimize low-power applications. You can also download the software to your desktop. [www.silabs.com/batterycalculator](http://www.silabs.com/batterycalculator)

Silicon Labs' products are designed and manufactured to ISO 9001, ISO 14001 and ISO/TS 16949 standards.



**ISO 9001**

Quality Management System  
Design and Manufacture of Integrated Circuits  
Certificate Registration No: 951 08 4762



**ISO 14001**

Environmental Management System  
Design and Manufacture of Integrated Circuits  
Certificate Registration No: 951 09 4998



**ISO/TS 16949**

Quality Management System for  
Manufacture of Integrated Circuits and Related  
Products for Automotive Applications  
Certificate Registration No.: 12 111 33114 TMS  
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**Mixed Sources**

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