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Unigen™

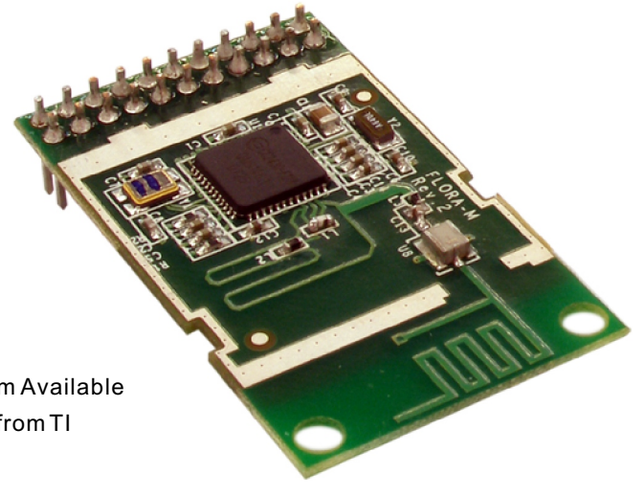
Solutions for a Real Time World

Flora IEEE 802.15.4 Wireless Modules

The Flora Wireless modules feature Texas Instruments CC2430 System-on-Chip. This processor is capable of supporting both the IEEE 802.15.4 MAC and Zigbee stack from Texas Instruments. The System-on-Chip includes a fully qualified IEEE 802.15.4 radio and embedded 8051 microcontroller. The Unigen module comes in two styles; the UGWY154HP33A has a PCB trace antenna, the UGWY154HP33 has a mini-coax GSC U.FL connector for external antennas. Beyond IEEE 802.15.4 network applications, the CC2430 is an outstanding low-power Direct Sequence Spread Spectrum (DSSS) radio with proven immunity from common 2.4 GHz band interference sources. The combination of DSSS and CSMA/CA techniques are optimized for low-power applications with long sleep cycles, infrequent bursts of information and efficient binding.

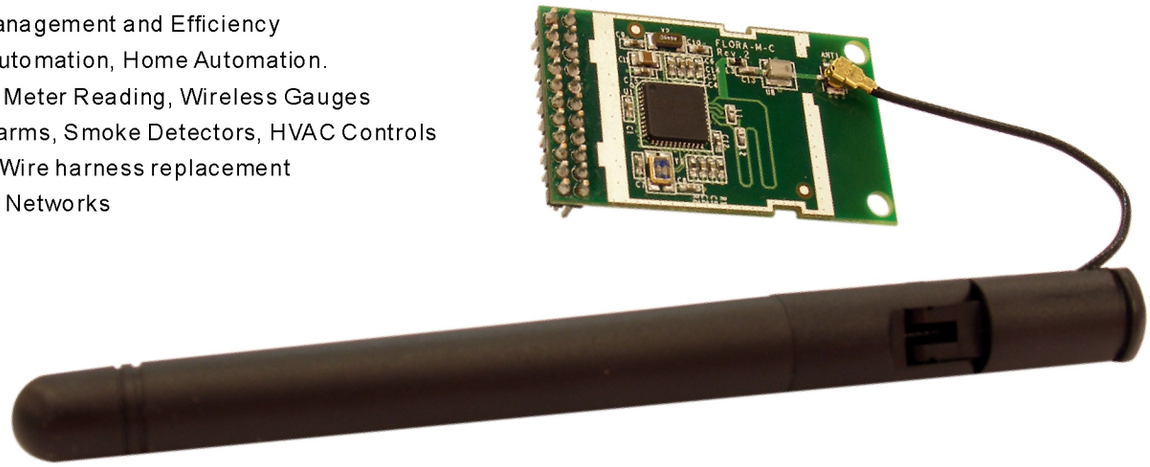
Features and Benefits

★ 2.4 GHz IEEE 802.15.4 compliant RF transceiver
★ DSSS Direct Sequence Spread Spectrum
★ CSMA/CA Hardware Support
★ Excellent Receiver sensitivity and robustness
★ Low Power; 500 nA Sleep mode
★ Low Power 27 mA Rx Active Mode
★ High Performance 8051 Core
★ 128 kB on board Flash 8 kB RAM
★ AES 128 Encryption
★ 19 Digital I/O pins
★ Small Size 24 x 39 x 3 mm
★ High quality Local Oscillator for optimal radio sensitivity
★ Adaptor Board for TI SmartRF04EB Development System Available
★ Zigbee Stack and IEEE MAC software readily available from TI



Applications

★ Zigbee Mesh Networks; Coordinators, Routers and End points
★ Interoperability with Zigbee Compliant Devices
★ IEEE 802.15.4 Point-to-Point and Point-to-Multi-Point networks, FFD & RFD
★ Energy Management and Efficiency
★ Building Automation, Home Automation.
★ Automatic Meter Reading, Wireless Gauges
★ Burglar Alarms, Smoke Detectors, HVAC Controls
★ Robotics, Wire harness replacement
★ 6LoWPAN Networks



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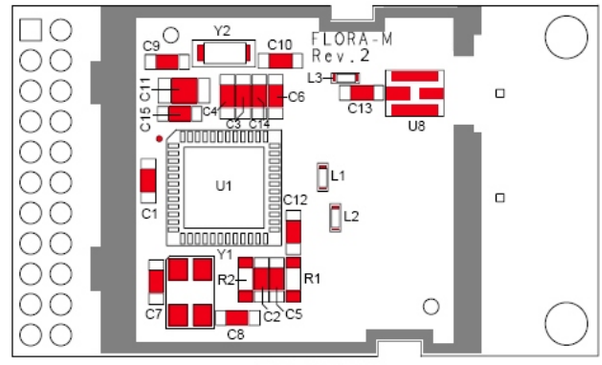
Parameter	Module Spec
Antenna Flora-M	PCB Trace
Antenna Flora-M-C	GSC U.FL
Crystal Drift	±20 ppm/°C
Crystal Frequency	38 MHz ±20 ppm
GPIO Pins (including SPI)	19
Header Orientation	Mirrored (down)
Header Pins	2 x 11
Header Type	2 mm pitch through hole
Interface	SPI
Lead Free	RoHS 6
Mating Connector	Digi-Key A36220-ND
Moisture Sensitivity Level	MSL 2
MTBF	50,000 Hrs
Order Code TI Adaptor	UGWTI154ADAPTER
Order Code with PCB Antenna	UGWY154HP33A
Order Code with U.FL Antenna	UGWY154HP33
Size height with header	9 mm
Size height without header	3 mm
Size PCB	24 x 39 mm
Supply Voltage	2.0 to 3.6 VDC

Parameter	Chip Spec
Data Rate MAX	250 kBPS
Line Power MCU Active	10 mA
Line Power Rx Max	27 mA
Line Power Sleep	500 nA
Line Power Tx Max	25 mA
Number of Channels	16
Range LOS	50 meter
RF Frequency Band	2400 to 2483 Mhz
RF Power MAX	0 dBm
RF Sensitivity	-92 dBm
Temp Range	-40 to + 85 °C



TOP VIEW

PIN SIGNAL	PIN SIGNAL
1 VDD	2 P2_2
3 P2_1	4 P2_0
5 P1_7/MISO	6 P1_6/MOSI
7 P1_5/SCLK	8 P1_4/CS*
9 P1_3	10 P1_2
11 P1_1	12 P1_0
13 RESET*	14 P0_0
15 P0_1	16 P0_2
17 P0_3	18 P0_4
19 P0_5	20 P0_6
21 GND	22 P0_7

NOTE:

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