Anaren Integrated Radio (AIR)

Low-power RF modules, firmware & development tools that make it easy to 'go wireless'

A20737 Module Series

The A20737C is a low cost surface-mount radio module featuring *Bluetooth*® Smart technology that incorporates the Broadcom ultra-low-power BCM20737 SoC, 24MHz crystal, a U.FL connector for an external antenna and an EEPROM, all in one package measuring: 11x13x2.5mm. The module is Globally certified*, and is *Bluetooth* SIG qualified.

* Global certification is an ongoing process, please call for confirmation regarding your specific locations



A20737C

Features

General:

- 2.4-GHz RF transceiver incorporating *Bluetooth* Smart technology
- 1.7 to 3.6V operation
- Operating temperature –40˚C to +85˚C**
- Integrated ARM Cortex-M3 microprocessor core
- 512-Kbit EEPROM
- Programmable output power up to +3dBm
- Low Current Consumption (3.3V)
  - 25mA in Rx
  - 17mA in Tx @ -1dBm
  - 20mA in Tx @ +3dBm
- Typical sleep current 2µA @ 3.3V
- Excellent receiver sensitivity, -94dBm average with <1% BER
- Infrared modulator
- 10-Bit auxiliary ADC with nine analog channels
- Support for secure OTA updates
- Integrated LDO
- Supports SPI, I^2C, PWM, UART and GPIO peripheral interfaces
- RoHS Compliant
- Shielded package
- U.FL Connector
- LGA Footprint
- Small package size: 11mm x 13mm x 2.5mm
- Approximate weight 0.5 grams

** The operating temperature spec for Broadcom chipset is –30˚C to +85˚C but module passed BLE standards when limited testing was done from –40˚C to 85˚C.

Module Development Kit:

- Available as a *Multi-Sensor Development* Kit including access to Anaren's innovative and exclusive online development tool, *Atmosphere*
- The *Atmosphere* tool enables the creation of all the embedded code and target mobile device applications needed to wirelessly connect and communicate to an embedded Anaren *Bluetooth* Smart module

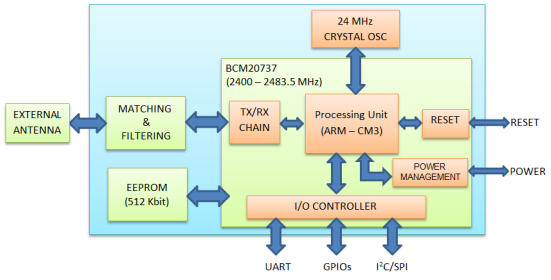
Benefits

- Minimal RF engineering experience necessary
- Minimal *Bluetooth* Smart experience necessary
- Easy to implement, short design cycle when utilizing Anaren's *Atmosphere* development tool
- No additional "Intentional Radiator" certification required (FCC 15.247, IC RSS-210, EN 300 328)
  FCC ID: X7J-A14070701
  IC: 8975A-A14070701
- Minimal real estate required
- Only requires a 2 layer Host PCB implementation
- No additional harmonic filtering required
- 100% RF-tested in production

Applications

Industrial controls and monitoring, remote controls, home/building automation, lighting systems, low power wireless sensor networks, and consumer electronics, sports monitoring, health & wellness

Block diagram



PLEASE NOTE:

- Additional information on Anaren's exclusive development tool, *Atmosphere* can be found at https://atmosphere.anaren.com
- Additional information on the Broadcom WICED Smart can be found in the company's website at http://www.broadcom.com/products/wiced

This member of the AIR family of wireless solutions is supported by Anaren's *Atmosphere* online development tool and features semiconductor technology from Broadcom.

Anaren, Inc. | 6635 Kirkville Road | East Syracuse, NY 13057
800.411.6596 | www.anaren.com/air | AIR@anaren.com

Anaren® What'll we think of next?®

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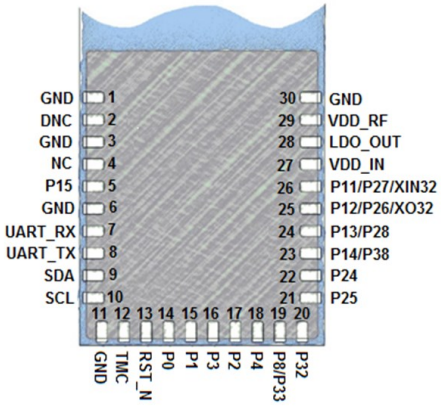
Product overview

The A20737C is a high-performance, FCC & IC certified and ETSI-compliant module featuring *Bluetooth*® Smart technology that incorporates the Broadcom BCM20737 SOC in one of the industry's smallest packages (11 x 13 x 2.5 mm). The module incorporates an EEPROM, 24MHz crystal and the required RF matching and filtering for regulatory compliance. The modules operate in the global unlicensed 2.4GHz ISM/SRD frequency band. These radio modules are ideal for achieving low power wireless connectivity without having to deal with extensive protocol, RF design and regulatory compliance, allowing quick time to market. The modules are 100% RF-tested to provide consistent performance.

The A20737C has a RoHS-compliant ENIG finish and is packaged in 36-piece matrix trays or on 500-piece tape & reel for high-volume automated manufacturing.

Pin diagram

Viewed from top side



Where applicable:

NC = "NO Connection"
Pin is NOT connected internally.

DNC = "Do Not Connect"
Pin reserved for internal use, ensure mating footprint pads are isolated.

GND = "Ground"
Connect the maximum number possible (minimum one for proper operation).

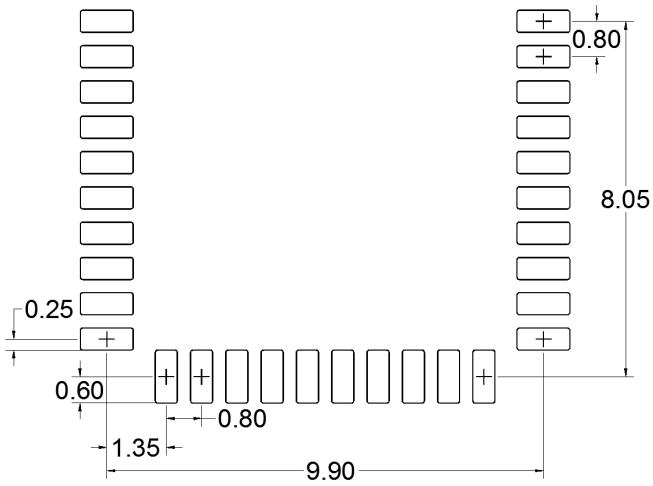


MSL 3



Caution! ESD sensitive device. Precautions should be used when handling the device in order to prevent permanent damage.

Layout information



Footprint (PWB) all measurements are in millimeters

See product User's Manual for detailed information.

Nomenclature

A20737AGR

1 2 3 4

A	Manufacturer	Anaren
1	Chip series	20737
2	Form factor	A = Internal Antenna, C = Connector
3	Application	G = General
4	Packaging	R = Reel, M = Matrix Tray

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This member of the AIR family of wireless solutions is supported by Anaren's *Atmosphere* online development tool and features semiconductor technology from Broadcom.

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