ATOLL SOLUTIONS

AT1020-256

Bluetooth Low Energy Module

Overview

- Based on Qualcomm CSR1020 Bluetooth Low Energy SoC
- Ultra-low power Bluetooth Low Energy Radio v4.2 specification compliant (Upgradable to 5.0)
- 16-bit RISC MCU, 256 KB SPI FLASH, 80 KB RAM, 192 KB ROM, 60 KB OTP
- -90.5 dBm Rx sensitivity
- +4 dBm RF transmit power. No external power amplifier or Tx/Rx switch required
- GAP, L2CAP, Security Manager, Generic Attribute Protocol, Attribute Profile, Bluetooth Low Energy technology profile support
- Qualcomm CSR MESH Compatible (Future upgrade to SIG MESH)
- Supported by Qualcomm® Bluetooth® Low Energy toolset and applications
- "Blank" Module: User can Develop Own Unique Application Codes Based on CSR1020 SoC
- Antenna: PCB Antenna
- Input voltage 3.6 V to 1.8 V
- Dimension: 18.91mm x 15.25mm x 2.7mm

Applications

- Bluetooth Low Energy Technology:
  - HID: keyboards, mice, touchpads, advanced remote controls with voice activation
  - Sports and fitness sensors: heart rate, runner/cycle speed and cadence
  - Health sensors: blood pressure, thermometer and glucose meters
  - Mobile accessories: watches, proximity tags, alert tags and camera controls
  - Smart home: heating, switching and lighting control
- Qualcomm® Mesh Connectivity: Internet of Things control

Device Specification

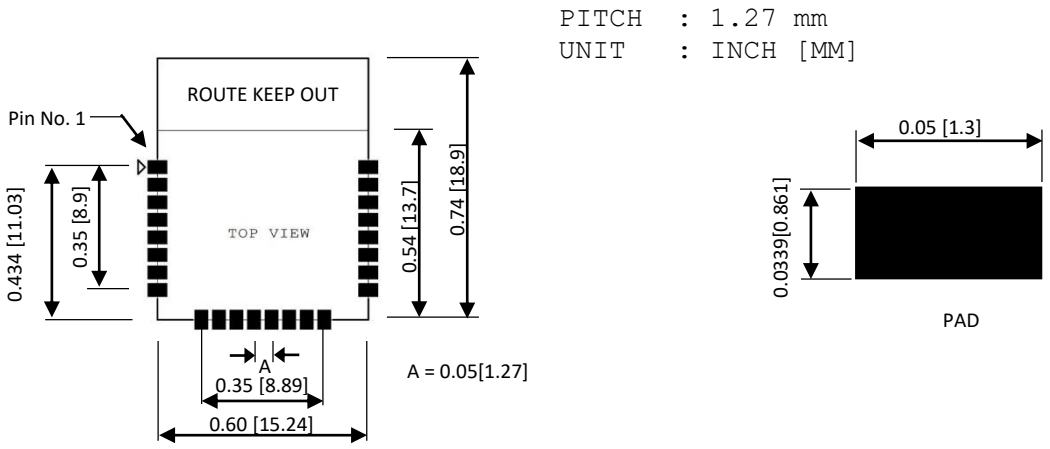
- Up to 11 Programmable general-purpose PIO controllers
- 10-bit ADC & 1 analogue AIO
- 5 PWM modules with 3D shutter control
- SPI interface
- I^2C controller
- UART interface
- Digital microphone, I^2S port for PCM I/O & G.722 Codec
- IR Encoder

AT1020-256 module

Power Consumption

Power Consumption	Typical	Unit
Bluetooth BLE function – Sleep Mode (Chip)	1.6	uA
Bluetooth BLE function – Peak (TX / RX) (Chip) (average)	5	mA

Recommended Foot print



Pin Configuration

Pin	Pin Name
1	ANTENNA PIN
2	GND_3
3	I2S_WS/PIO_13
4	SCL/PIO_12
5	SDA/PIO_11
6	PIO_10
7	UART_RX/PIO_9
8	UART_TX/PIO_8

Pin	Pin Name
9	AIO
10	GND_2
11	VBAT
12	VBAT1
13	RESERVED
14	RESERVED
15	VDD_+PADS
16	GND_1

Pin	Pin Name
17	RESERVED
18	PIO_14
19	SPI_PIO#_SE
20	DEBUG_SPI_CLK/PIO_0
21	DEBUG_SPI_CSB/PIO_1
22	DEBUG_SPI_MOSI/PIO_2
23	DEBUG_SPI_MISO/PIO_3
24	RESERVED

Further Information

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Bluetooth certification is in process