

Soontai IoT Modules



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STT10010 Bluetooth Module

- Complete power-optimized stack, including Controller and Host
 - GAP – Central, Peripheral, Observer, or Broadcaster (Including Combination Roles)
 - ATT/GATT – Client and Server
 - SMP – AES-128 Encryption and Decryption
 - L2CAP
- Multiple Configuration Options
 - Single-Chip Configuration, Allowing Applications to Run on CSR1010
 - Network Processor Interface for Applications Running on an External Microcontroller.



STT10010 is a Single Mode Bluetooth® Low Energy Profile Module, which utilizes CSR1010 - CSROR new generation Bluetooth® low energy chipset. The module in a 23.88 x 26.67x 5 mm small form factor included CR2032 battery is equipped with on PCB antenna which is designed specifically for the rapid development of cost-effective Bluetooth® low energy applications.

STT10010 is compatible with the latest iOS and Android phones. Bluetooth® device developers can now easily build BLE Profile Compliant devices.



STT10010 Bluetooth Module Specifications

Frequency Range	2.402GHz ~ 2.485GHz
Radio type	IEEE 802.15
Data Rate	24Mbps
Output Power	20dBm (100mW), RF power adjustable
Sensitivity	-91dBm @ 11Mbps: 11b
Power Consumption	Deep Sleep: 5 μ A (Typical) RX / TX mode: 20mA @ peak current (typ)
Dimension	23.88(L) x 26.67(W) x 5(H) mm
Weight	3.5g
Operating Tempture	-20 $^{\circ}$ C ~ +75 $^{\circ}$ C
Storage Tempture	-30 $^{\circ}$ C ~ +85 $^{\circ}$ C
Humidity	5%~98% non-condensing



STT11010 Bluetooth Module

- Complete power-optimized stack, including Controller and Host
 - GAP – Central, Peripheral, Observer, or Broadcaster (Including Combination Roles)
 - ATT/GATT – Client and Server
 - SMP – AES-128 Encryption and Decryption
 - L2CAP
- Multiple Configuration Options
 - Single-Chip Configuration, Allowing Applications to Run on CSR1010
 - Network Processor Interface for Applications Running on an External Microcontroller.



STT11010 is a Single Mode Bluetooth® Low Energy Profile Module, which utilizes CSR1010 - CSROR new generation Bluetooth® low energy chipset. The module in a 26.67 x 23.38 x 5mm small form factor included CR2032 battery is equipped with on PCB antenna which is designed specifically for the rapid development of cost-effective Bluetooth® low energy applications.

STT11010 is compatible with the latest iOS and Android phones. Bluetooth® device developers can now easily build BLE Profile Compliant devices.



STT11010 Bluetooth Module Specifications

Standard	IEEE 802.15 BLE 4.0 single mode
Frequency Range	2.402GHz ~ 2.485GHz
Radio type	IEEE 802.15
Data Rate	24Mbps
Output Power	20dBm (100mW), RF power adjustable
Sensitivity	-91dBm @ 11Mbps: 11b
Power Consumption	Deep Sleep: 5 μ A (typ) RX / TX mode: 20mA@ peak current (typ)
Dimension	26.67(L) x 23.38(W) x 5(H) mm
Weight	4.5g
Operating Tempature	-20 $^{\circ}$ C ~ +75 $^{\circ}$ C
Storage Tempature	-30 $^{\circ}$ C ~ +85 $^{\circ}$ C
Humidity	5%~98% non-condensing



STT20010 WiFi Module

- Supports 4x4 4SS 11ac wave2 MU-MIMO and 160MHz channels
- MU-MIMO configurations of
 - 4 users: 4*1ss
 - 3 users: 2*1ss + 1*2ss or 3*1ss
 - 2 users: 2*2ss or 1*1ss + 1*2ss or 2*1ss
- Support 5, 10, 20, 40, 80, 80+80 and 160MHz channels
- Embedded 32-bit RISC microprocessor
- 4T4R with support of up to 1733Mbps PHY rate
- Configurable 4x4/3x3 or 2x2n+2x2 ac DBDC
- Support external PA/LNA/TRSW design
- Proprietary LTE coexistence over UART
- WoWLAN via GPIO (client mode), supports Host Sleep (AP mode)



STT20010 is a WiFi Mini PCIe Module based on Mediatek MT7615 WiFi single chip which supports 1733 Mbps PHY rate. It fully complies with IEEE 802.11ac and IEEE 802.11 a/b/g/n standards, offering feature-rich wireless connectivity at high standards, and delivering reliable, cost-effective throughput from an extended distance.

Optimized RF architecture and baseband algorithms provide superb performance and low power consumption. Intelligent MAC design deploys a high efficient offload engine and hardware data processing accelerators which completely offloads Wi-Fi task of the host processor. MT7615 is designed to support standard based features in the areas of security, quality of service and international regulations, giving end users the greatest performance any time and in any circumstance.

MT7615 supports concurrent dual-band operation at 5GHz and 2.4GHz band (DBDC, Dual-Band-Dual-Concurrent). It enables diversified applications that require one link at 2.4GHz band, and the other at less crowded 5GHz band simultaneously.

With the advent of 802.11ac, multiuser MIMO (MU-MIMO) is defined. MT7615 supports MU-MIMO with different configurations. An AP is able to use its antenna arrays to transmit multiple frames to different clients at the same time and over the same frequency spectrum.

Soontai® STT20010 WiFi Module Specifications

Standards	Wireless IEEE 802.11 ac/b/g/h (4Tx4R)
Frequency Range	US, Canada : 2.412GHz ~ 2.462GHz (ch 1~ch11) EU, Japan : 2.412GHz ~ 2.472GHz (ch1~ch13) 5.15GHz ~ 5.875GHz
RF Data Rate	IEEE 802.11ac 1733Mbps@TX/RX, IEEE 802.11a/n 600Mbps@TX/RX IEEE 802.11a/g 108Mbps, IEEE 802.11b 22Mbps IEEE 802.11ac up to 1733Mbps
Output Power	11b : 20dbm+/- 1.5dbm @ 11Mbps, 11g : 18dbm+/- 1.5dbm @ 54Mbps 11g/n : 18dbm+/- 1.5dbm @MCS7, HT20, 17dBm@MCS7, HT40 11a : 16dBm+/- 1.5dbm @ 54Mbps 11a/n : 15dbm+/- 1.5dbm @MCS7, HT20, 13dBm@MCS7, HT40 11ac HT20 : 12dBm +/- 1.5dbm @MCS8, 11ac HT40 : 12dBm +/- 1.5dbm @MCS9 11ac HT80 : 12dBm +/- 1.5dbm @MCS9
Sensitivity	11b : -89dBm@11Mbps, 11g : -76dBm@54Mbps 11g/n : -74dBm@HT20,MCS7, -66dBm@HT40,MCS7 11a : -75Bm@54Mbps 11a/n : -73dBm@HT20,MCS7, -71dBm@HT40,MCS7, 11ac : -57dBm+/-2dBm @HT20 MCS8 11ac : -54dBm+/-2dBm @HT40 MCS9 11ac : -51dBm+/-2dBm @HT80 MCS9
Antenna	External Antenna Connector (IPEX) / Internal Chip Antenna
Software	Security : 64/128-bit WEP Encryption, WPA, WPA2 Driver : Linux
Operating Voltage	DC 3.3V±5%
Operating Tempature	0°C~ +70°C
Storage Tempature	-20°C~ +85°C
Operating Humidity	10%~90% non-condensing



STT21010 WiFi Module

- Built with proprietry power MMICs
- 2.4GHz for reliable and demanding all IoT, POS, and Industrial PC applications
- Compatible with wireless IEEE 802.11 ac/b/g/n standard with data rates up to 867Mbps
- Complies with wireless IEEE 802.11 ac/b/g/n standards
- Increases wireless coverage 6 times further*
- Supports WMM, WMM-PS (IEEE 802.11e QoS standard)
- Supports 64/128-bit WEP, WPA (TKIP with 802.1x), WPA2 (AES with IEEE 802.1x) for high security level
- Supports operating system : Windows 2000/XP/Vista, Windows 7/8/9/10, MAC 10.4.x and above & Linux, Android



STT21010 is a WiFi Mini PCIe Module based on Mediatek MT7612E which is a highly integrated single chip with 2.4 / 5GHz dual bands 802.11 a/b/g/n/ac and provides the highest PHY rate up to 867Mbps, offering feature-rich wireless connectivity and reliable throughput from an extended distance.

Optimized RF architecture and baseband algorithms provide superb performance and low power consumption. MT7612E integrates PA/LNA such that the number of the external components is reduced to minimum. Intelligent MAC design deploys a high efficient DMA engine and hardware data processing accelerators which offloads the host processor.

The MT7612E supports the 802.11i security standard and implements hardware acceleration for TKIP, CCMP and WAPI. The device also supports 802.11e QoS for video, voice, and multimedia applications.

Soontai® STT21010 WiFi Module Specifications

Standards	Wireless IEEE 802.11 ac/b/g/h (2Tx2R)
Frequency Range	US, Canada : 2.412GHz ~ 2.462GHz (ch 1~ch11) EU, Japan : 2.412GHz ~ 2.472GHz (ch1~ch13)
RF Data Rate	IEEE 802.11ac 867Mbps@TX/RX, IEEE 802.11a/n 300Mbps@TX/RX IEEE 802.11a/g 54Mbps, IEEE 802.11b 11Mbps IEEE 802.11ac up to 867Mbps
Output Power	11b : 20dBm+/- 1.5dbm @ 11Mbps, 11g : 18dBm+/- 1.5dbm @ 54Mbps 11g/n : 18dBm+/- 1.5dbm @MCS7, HT20, 17dBm@MSC7, HT40 11a : 16dBm+/- 1.5dbm @ 54Mbps 11a/n : 15dbm+/- 1.5dBm @MCS7, HT20, 13dBm@MSC7, HT40 11ac HT20 : 12dBm +/- 1.5dbm @MSC8, 11ac HT40 : 12dBm +/- 1.5dbm @MSC9 11ac HT80 : 12dBm +/- 1.5dbm @MSC9
Sensitivity	11b : -89dBm@11Mbps, 11g : -76dBm@54Mbps 11g/n : -74dBm@HT20,MCS7, -66dBm@HT40,MCS7 11a : -75Bm@54Mbps 11a/n : -73dBm@HT20,MCS7, -71dBm@HT40,MCS7, 11ac : -57dBm+/-2dBm @HT20 MCS8 11ac : -54dBm+/-2dBm @HT40 MCS9 11ac : -51dBm+/-2dBm @HT80 MCS9
Antenna	External Antenna Connector (IPEX) / Internal Chip Antenna
Software	Security : 64/128-bit WEP Encryption, WPA, WPA2 Driver : Windows XP/2000/Vista, Windows7/8/10, Linux, Mac
Operating Voltage	DC 5V±5%
Operating Tempture	0°C~ +50°C
Storage Tempture	-20°C~ +70°C
Operasting Humidity	10%~90% non-condensing



STT22010 WiFi Module

- MT7620 Chipset with MII, 2 Ethernet, USB, PCI-E, UART, SPI, JTAG, I2C, I2S, GPIOs
- Flash 8MB(16MB optional), DDR2 64MB(128MB optional), SD card slot for memory
- Boot up from Flash
- Data Rate up to 300Mbps
- Support MESH, OpenWRT, OpenMESH



This product supports AP/Bridge mode. Ideal device for multi-purpose installation to share wireless connections. Supporting 64/128-bits WEP, TKIP, WPA,WPA2 and WPS, helps protect your data and privacy during transmission. This module could be mounted on system board like IPTV, STB, Media Player, Femto,XDSL, Cable Modem, Industrial PC, Ethernet Switch, Printer Server, Connected TV....



STT22010 WiFi Module Specifications

Standards	IEEE 802.11 b/g/h
Wireless LAN	2T2R mode MIMO
Memory	Flash 16MB, DDR2 128MB
Antenna	IPEX Connector x 2
Interface	SDx1, RJ45x2, USB type A female, I2C, I2S, PCM, JTAG
Pins Interface	USBx1 (Host mode), UARTx1, I2C, I2S, PCI-E, MII, SPI, GPIOs, VCC/GND
Frequency Range	802.11 b/g 2.4~2.484GHz 802.11n 2.4~2.484GHz and 5.15~5.85GHz (subject to local regulations)
RF Data Rate	802.11b : 1, 2, 5 11Mbps 802.11g : 6, 9, 12, 18, 24, 36, 48, 54Mbps 80211n : 6.5, 13, 19.5, 26, 39, 52, 58.5, 65, 150, 300Mbps
Transmit Power Average Power +/2dBm	11n HT40 MCS7 : +16dBm 11b : +20dBm 11gn : +23dBm
Receiver Sensitivity	11g/n : -66dBm @HT40,MCS7 11gn : -67Bm @HT20, MCS15 11g : -72dBm @54Mbps 11b : -80dBm @11Mbps
Operating Power	DC 12V, 1A
Power Output	DC 5V, 1A for the second device
Certifications	FCC/CE by request

STT23010 WiFi Module

- Support Boot up from Flash
- Data Rate up to 150Mbps
- Security : 64/128-bit WEP, TKIP, WAP, WPA2, AES, WPS
- Multi-mode : AP/Client



STT23010 is a small-size 3.5 x 4.5cm, 802.11n AP board that achieves a data rate up to 150Mbps. with high performance MIPS CPU 580MHz speed..

By supporting 64/128-bits WEP, TKIP,WPA, WPA2,AES and WPS, helps to protect your data and privacy during transmission.

This module could be mounted on system board like IPTV, STB, Media Player, Femto, XDSL, Cable Modem, Industrial PC, Ethernet Switch, Printer Server, Connected TV, Smart Phone and Portable CPE For WiMAX/LTE.

Also WiFi IP camera, WiFi storage function embedded.



STT23010 WiFi Module Specifications

Standards	IEEE 802.11 b/g/h
Wireless LAN	1T1R mode 150Mbps
Frequency Range	2.4 ~ 2.4835GHz (subject to local regulations)
Nubber of Selectable Ch.	USA, Canada (FCC) : 11 channels (2.412GHz~2.462GHz) Europe (CE) : 13 channels (2.412GHz~2.472GHz) Japan (TELEC) : 14 channels (2.412GHz~2.4835GHz)
RF Data Rate	802.11n : up to 150Mbps 802.11b : 1, 2, 5, 11Mbps 80211g : 6, 9, 12, 18, 24, 36, 48, 54Mbps
Transmit Power	11n HT40 MCS7 : +13dBm 11b CCK : +18dBm 11g OFDM : +15dBm
Receiver Sensitivity	-66dBm @HT40,MCS7 -73dBm @54Mbps -86dBm @11Mbps
Operating Power	DC 3.3V 300mA, DC 1.2V 300mA (LDO), DC 5V 350mA (above are the peak, average is like 5V 200mA, depend on the system design)

Thank you



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