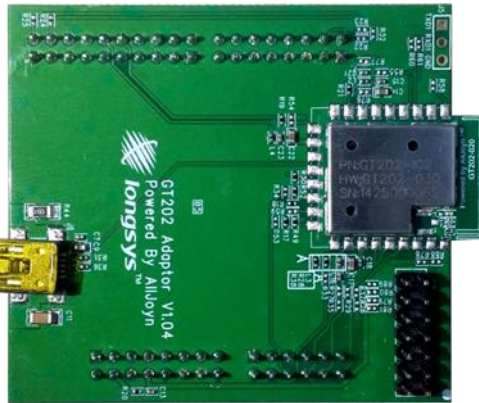


GT202 Kit Product Brief V1.00

General Description

GT202 Kit is consisted of a Longsys GT202 module and GT202 Adaptor which is suitable for the Freescale Freedom Development Platform and Arduino Development Platform.



Arduino/Freedom interface board to connect existing micro controller development platform (eq Freescale K22F based FRDM-K22F120M Freedom Development Platform) using a standardized connectors.



The Longsys GT202 module is an intelligent platform for the Internet of Everything. It contains a Qualcomm Atheros QCA4002 chip. The QCA4002 is a single chip system on a chip (SoC) 1x1 802.11 b/g/n device optimized for low-power embedded applications with single-stream capability for both Tx and Rx. This complete networking platform enables customers to add full-featured Wi-Fi to a wide variety of products with minimal development effort and cost. It supports a network stack along with SSL security, enabling full-featured internet connectivity and reliable information exchange in a small, low-cost system.

The GT202 provides two host interfaces for connecting to local system controllers. A UART-based host interface can be used for rapid development and deployment of simple data streams between the local device and the internet cloud. A SPI slave interface is available for applications that require more advanced connectivity to the network. GT202 kit is the development platform which includes an

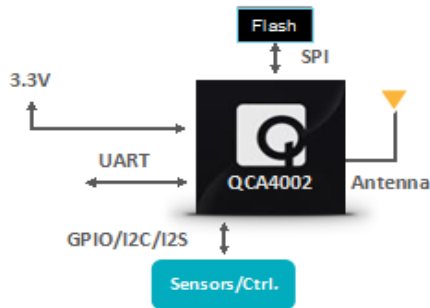
Typical application:

- Household appliances
- Gaming consoles
- Handheld terminals
- Embedded wireless products
- Security monitoring Device
- Industrial control
- Home automation

GT202 module can be configured to support UART serial link to a host CPU. This enables a host CPU and a remote device to establish a point-to-point communication link over WLAN using a UART serial link to the host CPU.

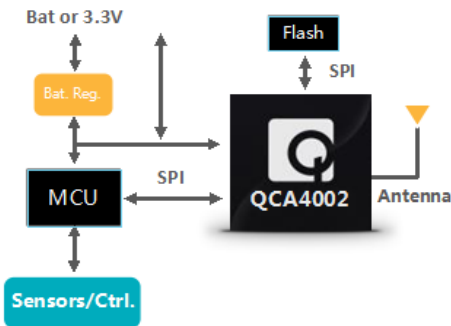
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Serial to Wi-Fi SoC Solution



GT202 module can be configured to support SPI slave interface to a host CPU as well. In this mode, GT202 can get full network functionalities.

MCU Attach Full network offload



Application Program Interface

APIs provided by Qualcomm Atheros enable flexible host application customization. The firmware is written, owned, controlled, and maintained by Qualcomm Atheros, whereas the reference host software is supplied for system integrator to create application-specific host software, or even to use without modification.

Note: If system integrator leverages the Qualcomm Atheros host software components, ultimately the system developer is responsible for the host software on their platforms, OSes, and interconnects.

IPv4/IPv6 Networking

The QCA4002 includes a TCP/IP and UDP offload capability. This capability can reduce memory

requirements on a host MCU by up to 100 KBytes and also free up CPU cycles. The IP stack is a simultaneous IPv4/IPv6 stack with a BSD-like interface to simplify porting and integration with common embedded operating systems. The supported features of the QCA4002 (support for DHCP, multicast, and ARP) include:

- ARP
- Forwarding
- Fragmentation/reassembly (supported with limitation)
- IPv4/v6 header processing
- UDP/TCP socket support
- DHCP v4
- Neighbor discovery
- Broadcast/multicast
- Path MTU discovery
- Address auto-configuration
- Multicast
- TCP zero-copy feature

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Warranty

- One Year

Certifications

- CE
- FCC
- ROHS compliant

Hardware Description

- GT202 Module Size: 24 x 18 x 2.5 mm (height is 3.6mm when a coax cable is plugged into the U.FL connector)
- Freedom/Arduino interface card Size: 57.5x 64.5 x1 mm (202 module is not included at height)
- Operating voltage: 3.3 V \pm 10%
- Operating humidity: 20-70%
- Operating temperature range:
 - Industrial: -40°C ~ +85°C
 - Commercial: -10°C ~ +65°C
- RF connector: U.FL of Hirose
- Connector on GT202 module: SMD-Pad connector - 26 Pads
- Host interface: UART, SPI
 - SPI slave: Allows simplified connection to local host MCU. Host driver and programming API available from Qualcomm Atheros.
 - UART interface: Supports AT style command set.

Wireless Specification

- Standard supported: IEEE802.11b/g/n @2.4 GHz
- Frequency: 2.412 to 2.484GHz
- Channels: up to 13 channels

Performance Specification

- Host data rates
 - UART: 115200, 8, n, 1, with actual data rate to 100k bps
 - SPI: up to 10 Mbps

Protocols

- Internet protocols: IPv4/IPv6, TCP/UDP, ARP/NDP, DHCPv4, ICMPv6
- Security protocols: WPS, WPA, WPA2, WAPI, WEP, TKIP

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GT202 Pin Assignment

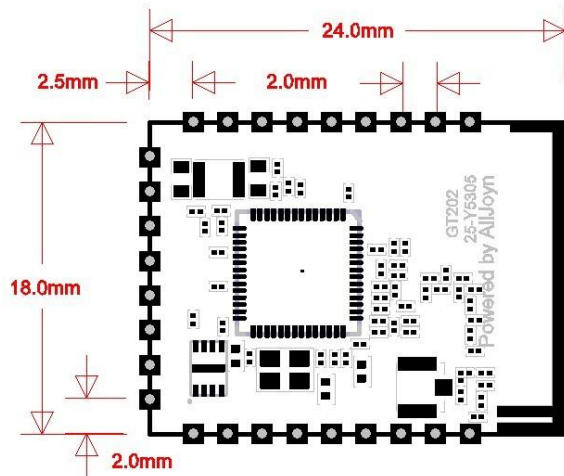
Signal Name	Pin	Description
USB_DP	12	USB device / manufacturing test and configuration interface
USB_DN	13	
CHIP_PWD#	19	Power down control signal; setting this pin low forces the module in to its lowest power state
TDO	1	GPIO with multiplexed functions.
TCK/I2C_CLK	2	
UART1_TXD/I2S0_BCK/TM	3	
UART1_RXD/I2S0_MCK/TMS	4	
I2C_DATA/TDI	7	
SPI_CLK/SD_CLK/I2S1_MCK	8	
SPI_MISO/SD_D0/I2S1_WS/JTAG_EN	10	
SPI_INT/SD_D1/I2S1_SDO	14	
SD_D2/I2S1_SDI/HM0	15	
SPI_MOSI/SD_D3/I2S1_BCK	16	
SPI_CS/SD_CMD/HM1	17	
UART0_CTS	21	
I2S0_WS	22	
UART0_RTS	23	
UART0_TXD/I2S1_SDI	24	
UART0_RXD/I2S1_SDO/T_RST	25	
GND	5	Ground
	9	
	18	
	26	
VDDIO_SDIO	6	3.3V supply for SDIO
3.3V	11	Analog 3.3 V supply
DVDD_GPIO	20	VDDIO 3.3 V supply for GPIOs

Freedom/Arduino interface

Signal Name	Pin	Description
CHIP_PWD#	J2.2	Power down control signal; setting this pin low forces the module in to its lowest power state
TCK/I2C_CLK	J2.20	
UART1_TXD/I2S0_BCK/TM	J5.1	
UART1_RXD/I2S0_MCK/TMS	J5.2	
I2C_DATA/TDI	J2.18	
SPI_CLK/SD_CLK/I2S1_MCK	J2.12	
SPI_MISO/SD_D0/I2S1_WS/JTAG_EN	J2.10	
SPI_INT/SD_D1/I2S1_SDO	J1.16	
SD_D2/I2S1_SDI/HM0	J3.6	
SPI_MOSI/SD_D3/I2S1_BCK	J2.8	
SPI_CS/SD_CMD/HM1	J2.6	
UART0_CTS	J3.8	
I2S0_WS	J3.10	
UART0_RTS	J3.12	
UART0_TXD/I2S1_SDI	J1.2	
	J3.4	
UART0_RXD/I2S1_SDO/T_RST	J1.4	
	J3.2	
GND	J5.3	Ground
	J2.14	
	J4.12	
3.3V	J4.4	3.3V supply Analog 3.3 V supply
	J4.8	

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Mechanical View for GT202 module



GT202 kit Ordering Information

Part Number	Description
GT202 KIT-IB1-4	Industrial standard,GT202 Hardware version is 020,Firmware version is R3.0.1.7 Adaptor Hardware version is 040
GT202 KIT-IC2-4	Industrial standard, GT202 Hardware version is 030,Firmware version is R3.0.2.14 Adaptor Hardware version is 040

Freedom/Arduino Interface Card Mechanical Drawing

