Wireless LAN (WLAN) UART Serial Port Module OWS451

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Getting Started Video

View the Getting Started tutorial video that shows a connectBlue Wireless LAN / WLAN module using a Starter Kit & Configuration PC-program.

Network Access Message:
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Key features

The Wireless LAN UART Serial Port Module 451 has UART interface and fully embedded TCP/IP stack and driver. It is developed for industrial, medical and demanding applications providing state of the art low power features and dual-band support for both 2.4GHz and the full 5GHz radio band. The module is presented as a serial port/UART to the host. Raw serial data is sent to the module, which will package the data into TCP/UDP packages and transmit via Wireless LAN.The module minimizes the work needed to implement Wireless LAN (IEEE 802.11a/b/g/n) in a device as it provides all hardware, type approval, EMC certification etc.

- Supports 802.11a/b/g/n
- Dual-band radio, 2.4GHz and 5GHz
- 2.4GHz channels 1-13
- 5GHz channels 36-165 (U-NII band 1, 2, 2e, 3)
- 802.11n space time block code for extended range and throughput
- High Speed UART interface
- Radio type approved for Europe, US, Japan and Canada (R&TTE, FCC, MIC, IC)
- Compliant with EMC standards
- Industrial temperature range -40 to +85°C*
- Low power consumption
- Security support: Enterprise, WPA2-PSK, WPA-PSK, PEAP, LEAP, EAP-TLS, WEP64/128
- Quality of Service: 802.11e and WMM
- Ad-hoc and infrastructure mode
- Internal or dual external antennas

Technical data

Wireless Standard

Wireless LAN (WLAN)

Standard Specification

Conforms to 802.11a/b/g/e/i/h/j, drafts 802.11k/r, single-stream 802.11n standards and WMM

Radio

Internal antenna (range & max output power incl. antenna): 400m & 20dBm
External antenna (range & max output power incl. antenna): 400m & 20dBm
802.11a/b/g/n (single stream n) dual band, 65 Mbit/s
2.4 GHz channels: 1-13
5 GHz channels: 36-165 (U-NII Band 1, 2, 2e, 3)

Type Approvals

Europe (ETSI R&TTE)
US (FCC/CFR 47 part 15 unlicensed modular transmitter approval)
Canada (RSS IC)
Japan, 2.4 GHz only (MIC - formerly TELEC)

Interface

UART Logic Level
Via external transceiver, RS232 and RS422/485 option
Max baudrate: 1.5 M
Support for non-standard baud rates
Flow control: CTS/RTS or none
Full modem signaling

Features

Throughput: 500 kbps
All software embedded in the module (TCP/IP stack and serial port adapter application)
Configurable via AT commands (via Wireless LAN or serial port)
Max number of slaves: 7 (point-to-point, point-to-multipoint)
Security:

- Enterprise modes
- WPA-PSK, WPA2-PSK
- PEAP, LEAP
- EAP-TLS
- 802.11i
- WEP64/128
- TKIP, AES (CCMP)

Quality of Service (QoS):

- 802.11e
- WMM

Android Support
iPhone/iPad support
DHCP server/client
DNS resolver
Integrated baseband and MAC processing
Advanced power management
802.11n space time block code support
Regulatory domain support
Antenna receive diversity: single internal or dual external
TCP/UDP protocol support
TX power calibration
Link adaptation
Fragmentation
DTIM based power management
DHCP server and client
DNS-resolver
Fast roaming
LLDP

Power

Power supply voltage: 3.3 - 5.5 VDC
Current consumption (minimum): 7 mA @3.3V
Current consumption (average Tx): 180 mA @3.3V

Connectors

Board-to-board connector
Solder land pads
6-pin JST connector (optional)

Mechanical

Operating temperature: -40°C to +85°C*
Machine mountable
Mounting holes
Dimensions: 23x36x3 mm
Weight: 3.7g

Certifications and Compliance

R&TTE Directive 1999/5/EC:

- EN 300 328
- EMC Directive: 89/336/EEC: EN 301 489-1, EN 301 489-17, EN 61000-6-2
- Safety Compliance: 2006/95/EC, IEC 60950-1, EN 60950-1

Medical Electrical Equipment:

- IEC 60601-1-2 (for single antenna configurations)

Article numbers

Starter kit:

cB-OWS451i-04-B
OWS451i-04 Starter Kit with USB

- OWS451i-04 module
- USB Module Adapter (installs virtual COM-port)
- USB extension cable
- Configuration software.

Modules:

cB-OWS451i-04
OEM Wireless LAN SPA 451 with integrated antenna, board-to-board connector and solder pads.

cB-OWS451i-06
OEM Wireless LAN SPA 451 with integrated antenna, board-to-board connector, solder pads and JST connector.

cB-OWS451x-04
OEM Wireless LAN SPA 451 with connector for external antenna, board-to-board connector and solder pads.

cB-OWS451x-06
OEM Wireless LAN SPA 451 with connector for external antenna, board-to-board connector, solder pads and JST connector.

Accessory kit for evaluation, to be combined with an OWS451 module:

cB-ACC-41 (USB kit):
USB Module Adapter (installs virtual COM-port), USB extension cable, configuration software.

* *JST version limited to -25°C to +85°C*

Where to buy

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