



Serial-to-Wi-Fi Software

Complete turn-key application for GainSpan’s Wireless GS1010 SOC

PRODUCT OVERVIEW

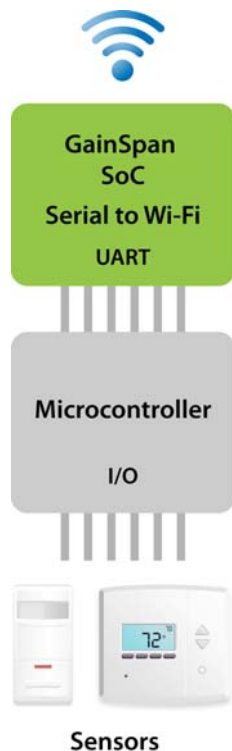
GainSpan’s Serial to Wi-Fi (S2W) embedded software allows an external microcontroller to access a Wi-Fi® network via a serial connection to the GainSpan SOC by issuing ‘AT’ commands over the serial interface.

The S2W embedded software enables faster time to market for new or legacy products that need to add Wi-Fi capability to their designs. No development is required on the GainSpan SOC which minimizes code development to generating the GainSpan AT command set on the microcontroller.

The GainSpan AT command set supports the full range of capabilities provided by the underlying GainSpan Embedded Platform Software, including scanning and reporting SSIDs, power management and over the air firmware upgrades. DHCP and DNS server support allows the node to easily interact with existing infrastructure and the internet.

The application software on the external microcontroller can make use of stored profiles that are used automatically after reset, simplifying the design of the application software.

The S2W software can be evaluated by using the GainSpan Evaluation Kit. For applications that need to add or modify the AT command set, the GainSpan Software Development Kit (SDK) can be used to customize the S2W source code.



BENEFITS INCLUDE:

- Simple AT commands for configuration and data communication
- Wi-Fi networking for any device with a micro-controller and a serial interface
- Quick development cycles enables fast time to market
- Simple commands for scanning, and joining Wi-Fi networks for seamless integration into existing networks
- Enables years of battery life through dynamic power management

KEY FEATURES INCLUDE:

UART interface:

- Hardware flow control
- Up to 921 Kbps data rate

802.11 b/g connection

- Infrastructure or ad hoc mode

802.11i security:

- WPA2-PSK, WPA, WEP

Network connections (TCP/IP/UDP)

- TCP/UDP client and server modes
- Up to 16 separate connections
- DNS lookup
- Static IP or DHCP

Firmware upgrades

- Over the air firmware upgrade

Power management

- Deep Sleep
- Standby (lowest power state)
- Wakeup periodically or on ALARM event

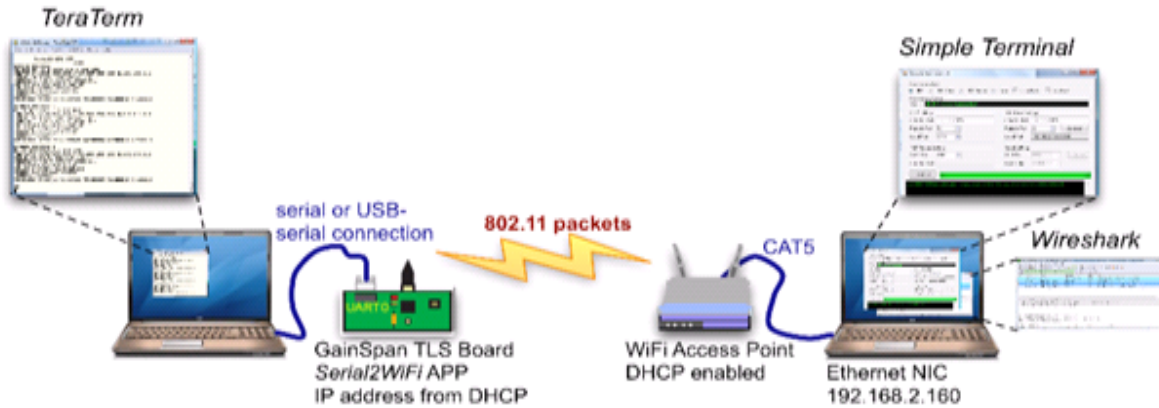
Storing multiple profile

- Enables auto-connection from reset

Ping and trace route

- Determine hops to remote server





Evaluate Serial2Wi-Fi using the GainSpan Evaluation Kit

PARTIAL LIST OF SERIAL TO WI-FI (S2W) 'AT' COMMANDS:

UART INTERFACE:

- SET UART PARAMETERS
- ENABLE HARDWARE FLOW CONTROL
- SET TIMEOUT VALUES

PROFILE MANAGEMENT:

- SAVE PROFILE n
- LOAD PROFILE n
- MAKE PROFILE n DEFAULT PROFILE
- RESTORE PROFILE n TO FACTORY DEFAULT

WI-FI INTERFACE:

- SET/QUERY MAC ADDRESS
- SCAN
- ASSOCIATE
- DISASSOCIATE
- SET OPERATING MODE
- ENABLE RADIO
- SET POWER LEVEL

SECURITY:

- ENABLE SECURITY OPTIONS
- SET SECURITY CREDENTIALS
- COMPUTE AND STORE PASSPHRASE

NETWORK INTERFACE:

- SET NETWORK PARAMETERS
- ENABLE DHCP
- SET DNS SERVER ADDRESS
- DNS LOOKUP

CONNECTION MANAGEMENT:

- CONNECT TO TCP CLIENT
- START TCP SERVER
- OPEN UDP CLIENT SOCKET
- START UDP SERVER
- SET AUTOCONNECTION PARAMETERS
- ENABLE AUTOCONNECTION
- QUERY CONNECTION INFO
- CLOSE CONNECTION(S)

POWER MANAGEMENT:

- ENABLE DEEPSLEEP
- ENTER STANDBY FOR x DURATION
- ENABLE BATTERY CHECK

SERVICES:

- PING ADDRESS
- TRACE ROUTE TO ADDRESS
- START/STOP PERFORMANCE MONITORING
- UPGRADE FIRMWARE