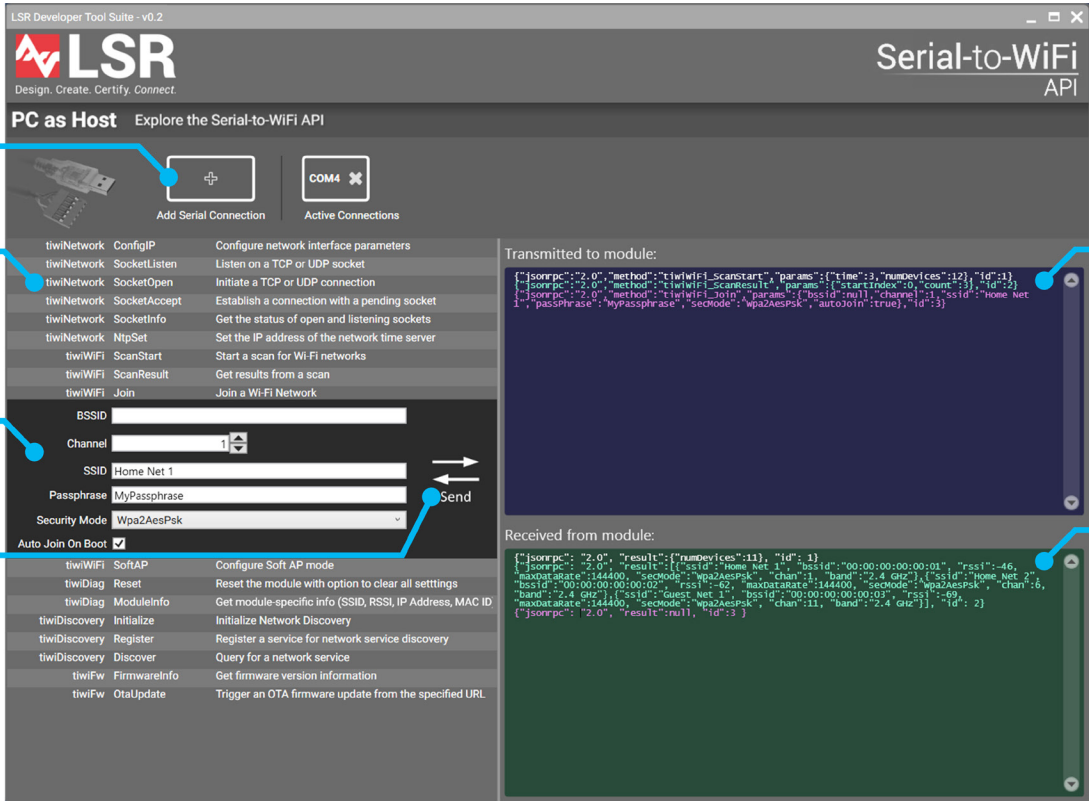


## Serial-to-WiFi

### PC as Host Tool - Quick Start Guide



**Click to Select a Serial Port**

**API Commands Sorted by Profile**

Profile	Command	Description	
tiwiNetwork	ConfigIP	Configure network interface parameters	
	SocketListen	Listen on a TCP or UDP socket	
	SocketOpen	Initiate a TCP or UDP connection	
	SocketAccept	Establish a connection with a pending socket	
	SocketInfo	Get the status of open and listening sockets	
	NtpSet	Set the IP address of the network time server	
	tiwiWiFi	ScanStart	Start a scan for Wi-Fi networks
		ScanResult	Get results from a scan
	tiwiWiFi	Join	Join a Wi-Fi Network
	tiwiWiFi	SoftAP	Configure Soft AP mode
Reset		Reset the module with option to clear all settings	
ModuleInfo		Get module-specific info (SSID, RSSI, IP Address, MAC ID)	
Initialize		Initialize Network Discovery	
Register		Register a service for network service discovery	
Discover		Query for a network service	
FirmwareInfo		Get firmware version information	
OtaUpdate		Trigger an OTA firmware update from the specified URL	

**Click Commands to Expand Parameter Fields**

**Click to Send the Command**

**Commands Sent to the Wi-Fi Module Display Here**

```
{
  "jsonrpc": "2.0",
  "method": "tiwiWiFi_scanStart",
  "params": {
    "time": 3,
    "numDevices": 12,
    "id": 1
  }
}
{
  "jsonrpc": "2.0",
  "method": "tiwiWiFi_scanResult",
  "params": {
    "startIndex": 0,
    "count": 3,
    "id": 2
  }
}
{
  "jsonrpc": "2.0",
  "method": "tiwiWiFi_join",
  "params": {
    "bssid": "aa:aa:aa:aa:aa:aa",
    "channel": 11,
    "ssid": "Home Net",
    "passPhrase": "MyPassphrase",
    "secMode": "wpa2AesPsk",
    "autoJoin": true,
    "id": 3
  }
}
```

**Responses From the Wi-Fi Module Display Here**

```
{
  "jsonrpc": "2.0",
  "result": {
    "numDevices": 11,
    "id": 1
  }
}
{
  "jsonrpc": "2.0",
  "result": [
    {
      "bssid": "Home Net",
      "rssi": -46,
      "maxDataRate": 144400,
      "secMode": "wpa2AesPsk",
      "chan": 11,
      "band": "2.4 GHz"
    },
    {
      "bssid": "Guest Net 1",
      "rssi": -62,
      "maxDataRate": 144400,
      "secMode": "wpa2AesPsk",
      "chan": 6,
      "band": "2.4 GHz"
    },
    {
      "bssid": "Guest Net 2",
      "rssi": -69,
      "maxDataRate": 144400,
      "secMode": "wpa2AesPsk",
      "chan": 11,
      "band": "2.4 GHz"
    }
  ],
  "id": 2
}
{
  "jsonrpc": "2.0",
  "result": true,
  "id": 3
}
```

LSR's Serial-to-WiFi development kit features the TiWi-C-W. The Serial-to-WiFi firmware for TiWi-C-W is controlled by a host MCU (or in this case a PC with a Serial-to-WiFi adapter) by way of ASCII JSON-RPC commands. These commands are human readable and make for easy troubleshooting during development. Once the module is configured and a socket is open to a remote host, the module switches into "Pass-thru Mode" and allows the host to directly tunnel bytes to/from the remote host. When the connection terminates, the module automatically re-enters JSON-RPC mode. Entry and exit from JSON-RPC command mode is indicated to the host MCU by the state of a handshake pin.

The LSR PC as Host tool provides a convenient way for engineers to learn the Serial-to-WiFi API commands available in the TiWi-C-W Serial-to-WiFi firmware. API commands are listed in an expandable table on the left, each providing the fields necessary to instruct the Wi-Fi module to perform a particular action such as scanning for Wi-Fi networks, joining a Wi-Fi network, opening a socket connection, etc.

To get started, click the + button to add a new serial port connection. Select the lower of the two COM ports associated with the USB to Serial adapter attached to the dev kit, and specify the baud rate as 115200 (default for Serial-to-WiFi firmware). Once connected, you can click a command to expand the view and type in parameters. Click "Send" to send the command. When sending the command, the JSON-RPC text being sent to the Wi-Fi module will appear in the blue terminal window. If the module is connected, its response will appear shortly thereafter in the green terminal window. You can use this approach to learn the available Wi-Fi commands and exercise the capabilities of the Wi-Fi module.

Once you are comfortable with the commands for controlling the Wi-Fi module, you can connect your own host MCU to the host interface (UART1) on the dev kit and begin utilizing Wi-Fi in your own designs! An easy way to get started is to copy and paste the JSON-RPC commands from the PC as Host tool right into your host MCU code.