

# Product Brief: SPB437

## WiFi 6, 802.11ax/ac/a/b/g/n, Bluetooth5 Module

PRELIMINARY

### Super Compact and High-Performance WiFi 6 Connectivity Module

With the SPB437 developers are targeting a wide range of applications with high performance and small footprint applications including

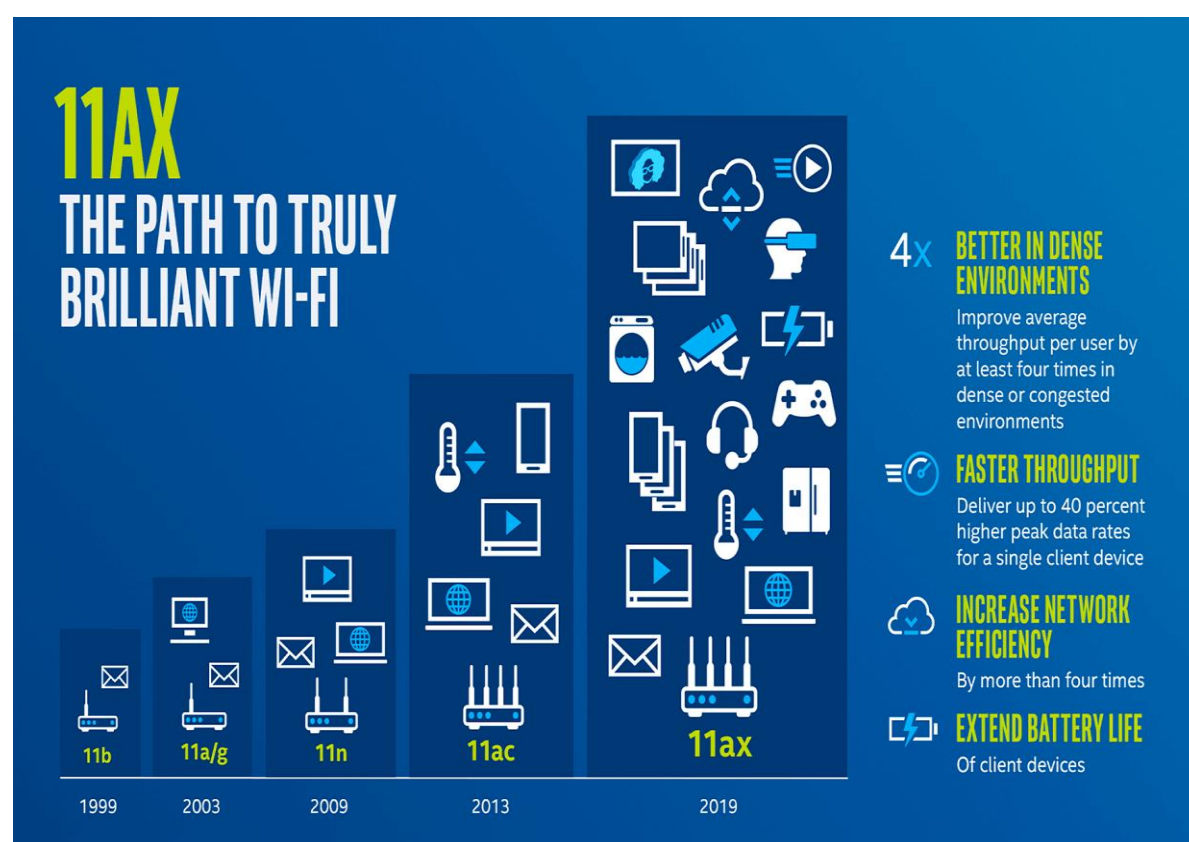
Smart home systems including home security and control, monitor systems and energy control.

Consumer electronic devices such as wearables, IP-radio, cameras, wireless speakers and IP audio devices

Industrial control and monitor systems, renewable energy systems and medical applications

SPB437 is a complete WiFi 6/Bluetooth 5 module with integrated EMC shield, ready for onboard integration in a hosted environment. SPB437 enables a cost efficient ultra-low power, high performance and feature rich client solution. It provides up to 1.658 Gbit/s data rate when operating in concurrent 2x2 MIMO configuration in both the 2.4 GHz and the 5 GHz bands

This highly integrated solution is optimized for customer applications running on a Linux host.



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### SPB437 Module

Concurrent Dual WiFi 6 and Bluetooth Multiradio for Internet of Things, Wearables, Gaming, Medical and Smart Home



### SPB437 WiFi6 2x2 concurrent dual Wi-Fi Module

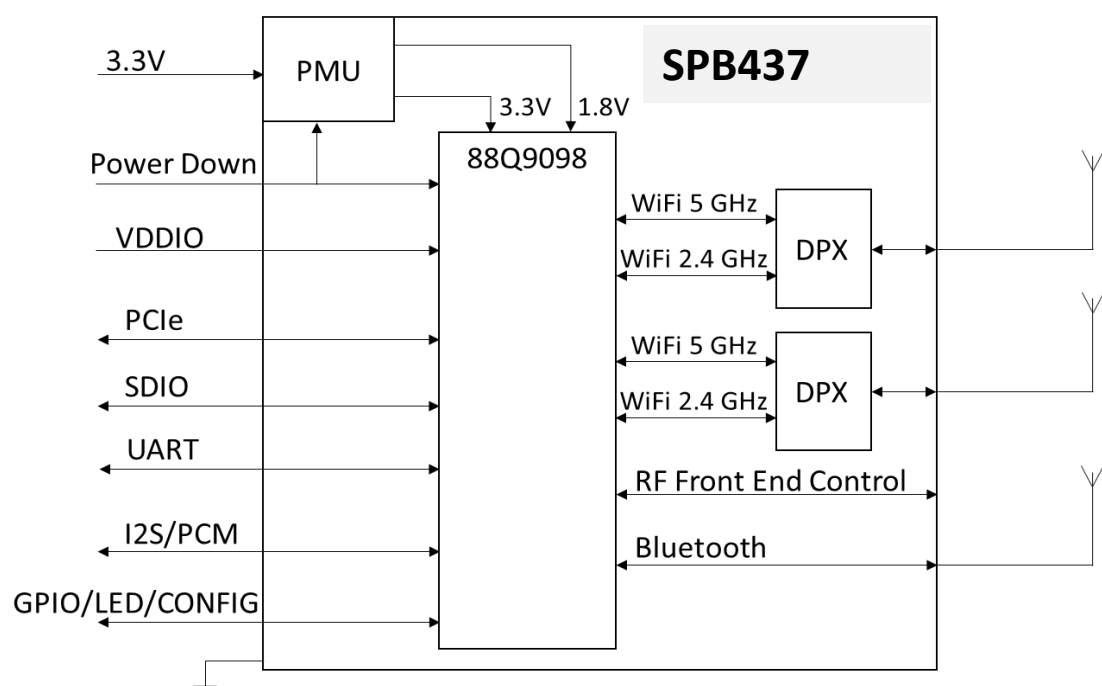
#### KEY FEATURES:

- Support for 802.11 ax/ac/a/b/g/n
- Dual band 2.4/5 GHz
- 2x2 MU-MIMO, 1024 QAM
- M.2 2230 Module, 22x30mm
- Industrial temp -40 to +85°C
- Single supply, 3.3V
- Concurrent WiFi 6 and WiFi 5
- Data Rates:
  - Up to 1.2 Gbps with 802.11ax on 80 MHz channel at 5 GHz and dual spatial streams
  - Up to 458 Mbps using 2.4 GHz PHY simultaneously with 5 GHz and Bluetooth
- Supports 802.11d/e/h/i/k/r/u/v/w/z/mc
- WPA2, WPA3 encryption
- Bluetooth 5.3 including LE long range and 2 Mbps
- No external components
- Low power consumption including sleep and standby modes
- Supporting STA, AP and P2P simultaneous operation
- Supports Bluetooth-WLAN coexistence and ISM-LTE coexistence
- Simultaneous WLAN and Bluetooth operation including BLE
- Extensive DMA hardware support for data flow to reduce CPU load.
- Advanced power management for optimum power consumption at varying load.
- External interfaces 4-bit SDIO 3.0 for WLAN/Bluetooth or PCIe for WLAN and UART for Bluetooth
- PCM/I2C audio interface for Bluetooth
- On-board High Frequency High Precision Oscillator 40MHz
- RoHS Compliant

# Product Brief Next Generation SPB437 WiFi 6, 802.11ax/ac/a/b/g/n, Bluetooth5 Module

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## Block Diagram



## Software

The SPB437 driver implements and reuses tools and interfaces that are de-facto standard in Linux and Android systems.

## Evaluation Package

SPB437 design is supported by the EVK HDA437-PCIe development board in PCIe card format  
[support.hd-wireless.com](http://support.hd-wireless.com)

## Distribution

H&D Wireless products are available through global distribution channels. Contact your H&D Wireless Sales representative or visit the webpage

## For additional information

[sales@hd-wireless.se](mailto:sales@hd-wireless.se)

[support.hd-wireless.com](http://support.hd-wireless.com)

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## SPB437Module

<b>Standards Support</b>	802.11ax/ac/a/b/g/n, Bluetooth 5
<b>Frequency Band</b>	Dual 2.4 and 5GHz bands
<b>Data rates</b>	Up to 1.6 Gbps with 802.11ax/n
<b>Hardware interfaces</b>	PCIe, 4-bit SDIO 3.0, HS-UART,
<b>WLAN functions, QoS</b>	Power save modes, automatic roaming, Ad-hoc, Soft AP, Wi-Fi Direct and Infrastructure mode
<b>Wireless Security</b>	WPA3, WEP 64 and 128bit with TKIP processing (WPA). AES/CCMP (WPA2). Enhanced AES. AES/CMAC in 11w. WAPI.
<b>Dimensions</b>	M.2 2230 Module, 22x30mm
<b>Output power</b>	802.11ax 12dBm 802.11ac 16dBm 802.11n 17dBm Bluetooth 7dBm
<b>Supply Voltage</b>	3,0 to 3,47V
<b>Operating Temp.</b>	Industrial: -40 to + 85°C

## Order options:

SPB437-N No LTE coexistence filter mounted

SPB437-L LTE coexistence filter mounted

Order information, **X** = N or L depending on filter option  
 See data sheet for details.

Part No.	Description
SPB437-XA-1	M.2 2230 Key E module using PCIe Host interface for WLAN and UART for BT, 3.3V IO, in ESD bag
SPB437-XA-3	M.2 2230 Key E module using PCIe Host interface for WLAN and UART for BT, 3.3V IO, on Tray
SPB437-XB-1	M.2 2230 Key E module using PCIe Host interface for WLAN and UART for BT, 1.8V IO, in ESD bag
SPB437-XB-3	M.2 2230 Key E module using PCIe Host interface for WLAN and UART for BT, 1.8V IO, on Tray
EVK HDA437-PCIe	Development board for SPB437platform, PCIe card format incl pair of antennas