Accelerate® -
Connectivity Modules for the Digital World
Most versatile, secure and future-proof module family

H&D Wireless

Product Brief: SPB611
Wi-Fi 6, 802.11ax/ac/a/b/g/n, Bluetooth5 Module

PRELIMINARY

Super Compact and High-Performance Wi-Fi 6 Connectivity Module

With the SPB611 developers are targeting a wide range of applications with high performance and small footprint applications including
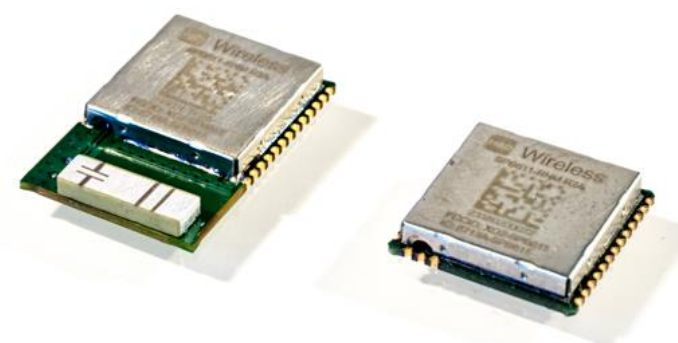
Smart home systems including home security and control, monitor systems and energy control.

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

SPB611 is a complete WiFi 6/Bluetooth 5 module with integrated EMC shield, ready for onboard integration in a hosted environment. SPB611 enables a cost efficient ultra-low power, high performance and feature rich client solution. It provides up to 600 Mbit/s data rate.

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

SPB611

SPB611 WiFi6 1x1 module / SDIO Interface

KEY FEATURES:

- Full support for 802.11a/b/g/n/ac/ax
- Dual band 2.4/5 GHz
- 802.15.4 radio supporting Thread and Zigbee mesh networks
- Industrial temp -40 to +85°C
- Single supply, 3.3V
- Up to 600 Mbps with 802.11ax on 80 MHz channel
- Supports 802.11d/e/h/i/k/r/u/v/w/z/mc
- WPA2, WPA3 encryption
- Bluetooth 5.2 including LE long range and 2 Mbps
- No external components except decoupling on power supply
- Single antenna
- Low power consumption including sleep and standby modes
- Supporting STA, AP and P2P simultaneous operation
- Internal coexistence between WiFi/Bluetooth
- External coexistence interface to external radio such as LTE
- Extensive DMA hardware support for data flow to reduce CPUload.
- Advanced power management for optimum power consumption
- External interface is SDIO for WLAN and UART for Bluetooth
- PCM/I2C audio interface for Bluetooth
- On-board High Frequency High Precision Oscillator 40MHz
- Small footprint 14 x 14 mm (196 mm2) 41-pin
- RoHS Compliant

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Product Brief Next Generation SPB611
WiFi 6, 802.11ax/ac/a/b/g/n, Bluetooth5 Module

PRELIMINARY
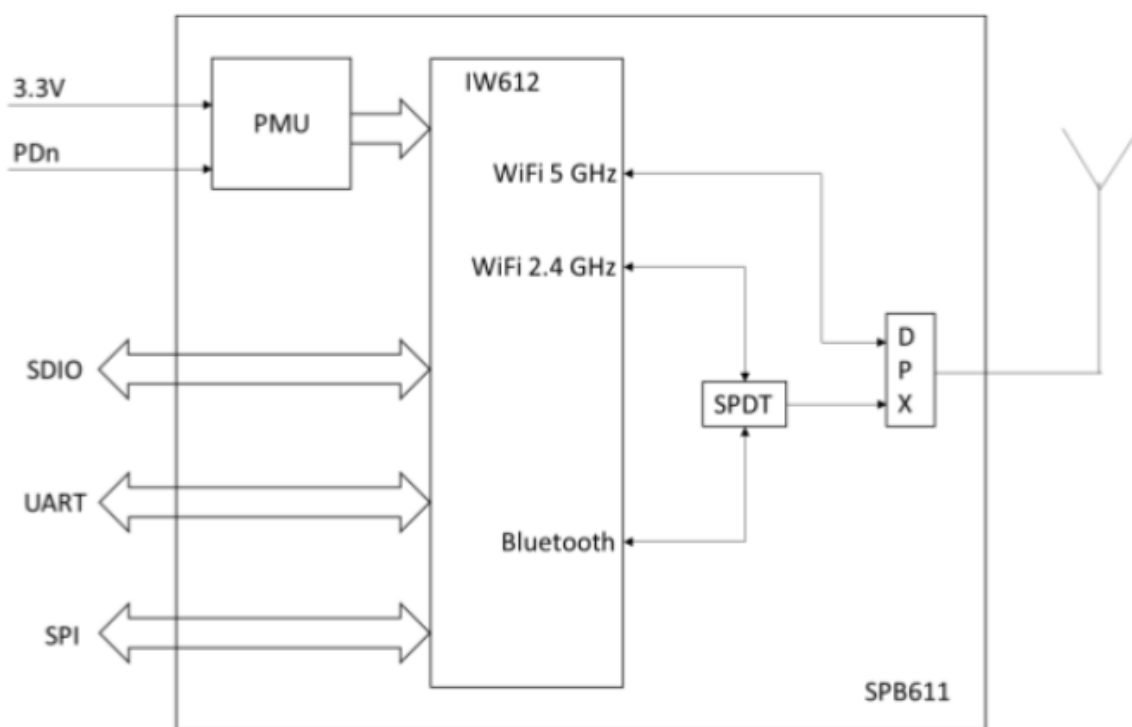
Block Diagram SPB611

Figure 2-1: Block Diagram

Software

The SPB611driver implements and reuses tools and interfaces that are de-facto standard in Linux and Android systems.

Evaluation Package

SPB611 design is supported by the HDA 611 development board in SD card format or M2 2230 key E-card
support.hd-wireless.com

Distribution

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

For additional information please contact
sales@hd-wireless.se
support.hd-wireless.com
www.hd-wireless.se

SPB611Module

Standards Support	802.11ax/ac/a/b/g/n, Bluetooth 5
Frequency Band	Dual 2.4 and 5GHz bands
Data rates	Up to 600Mbps
Hardware interfaces	4-bit SDIO 3.0, HS-UART,
WLAN functions, QoS	Power save modes, automatic roaming, Ad-hoc, Soft AP, Wi-Fi Direct and Infrastructure mode
Wireless Security	WPA3, WEP 64 and 128bit with TKIP processing (WPA). AES/CCMP (WPA2). Enhanced AES. AES/CMAC in 11w. WAPI.
Dimensions	14x14 x 2,5 mm
Output power	802.11ax 12 dBm 802.11ac 14 dBm 802.11n 15 dBm Bluetooth 7dBm
Supply Voltage	3.3V +/- 5%
Operating Temp.	Industrial: -40 to + 85°C

Order information

SPB611-	Part number	Antenna	802.15.4	LTE-Filter	Chip
SPB611-	RNDM	no	no	yes	IW611
SPB611-	RLDM	no	no	no	IW611
SPB611-	BNDM	yes	no	yes	IW611
SPB611-	BLDM	yes	no	no	IW611
SPB611-	RNTM	no	yes	no	IW612
SPB611-	BNTM	yes	yes	no	IW612

Packaging

Order number ending	Package
-1	ESD Bag
-2	Tape&Reel

Table 2-2 Order information to delivery package

Development Kits

Order Nr.	Host Interface Wi-Fi	Host Interface Bluetooth	Host Interface 802.15.4	Description
HDA611-S	SDIO	UART (pin header)	SPI (pin header)	Development kit for SPB611 platform, on SD-card
HDA611-M	PCIe	UART	SPI	Development board for SPB611 platform, on M2 format key E