GETTING THE BEST OUT OF Wi-Fi 6 AND 7 WITH NXP FEICS

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APRIL 2022



PUBLIC

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NXP VALUE PROPOSITION IN WLAN FRONT-END ICS AND MODULES FOR MOBILE

Delivering the right products

- System Co-design with major WLAN chipset platform makers.
- Full portfolio of low & high band FEIC solutions in various package options.
- Ready for the future with QUBiC5 SiGe technology and WiFi 6+7 FEIC development.
- Maximum application flexibility with single channel FEMs.

System solutions and expertise

- Qualified on major SOC platforms.
- Ease of application with minimal external components on PCB.
- QUBiC5 SiGe technology enables monolithic product for smallest application footprint.
- Single channel FEMs enable optimal PCB and antenna lay-out, providing best RF performance.

Advanced technology and manufacturing

- In-house SiGe development. High supply flexibility.
- NXP tunes its in house technology to application specific needs.
- Best-in-class manufacturing stability with sub-PPM level quality.
- Only supplier of monolithic CSP FEICs for 2.4 & 5.8 GHz.



THE WI-FI 6 DIFFERENCE

Wi-Fi 6 delivers technical advancements over previous generations of Wi-Fi with several key features that enable significant increases in network capacity, power efficiency and performance.



Wi-Fi 6E is adding up to 1.2 GHz of extra spectrum



WI-FI 6 POSES ADDITIONAL CHALLENGES ON THE RF FRONT END

Increasing amounts of Wi-Fi enabled devices use dedicated Front End Modules (FEMs) to boost performance

- Deliver higher RF power to the antenna to increase transmission range
- Allow for reliable use of complex modulation formats, increasing data throughput

Key challenge that NXP addresses: delivering high output power and linearity while consuming as little power and PCB area as possible



NXP A TRUSTED SUPPLIER OF WI-FI FEIC SOLUTIONS



Portfolio and Featured Products





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MOBILE WLAN FEIC PORTFOLIO OVERVIEW

	Туре	Frequency band	WiFi Standard	Functionality	Package	dimensions	Schedule
Single FEM	<u>WLAN7102C</u>	5GHz	WiFi 6	PA + SW + LNA w. Pdet	Quad Flat Non-leaded	2 x 2 mm	Production
	<u>WLAN7202C</u>	5/6GHz	WiFi 6E	PA + SW + LNA w. Pdet	Quad Flat Non-leaded	2 x 2 mm	Production
	<u>WLAN7205C</u>	5/6GHz	WiFi 6E	PA + SW + LNA w. Pcplr	Quad Flat Non-leaded	2 x 2 mm	Production
	<u>WLAN7207C</u>	5/6GHz	WiFi 6E / 7	PA + SW + LNA w. Pcplr	Quad Flat Non-leaded	2 x 2 mm	Production
	WLAN7209C	5/6GHz	WiFi 6E	PA + SW + LNA w. Pcplr	Quad Flat Non-leaded	2 x 2 mm	Production
	<u>WLAN7207H</u>	2.4GHz	BT / WiFi 6	PA + SW + LNA w. Pcplr	Quad Flat Non-leaded	2.4 x 2 mm	Production
	WLAN7209H	2.4GHz	BT / WiFi 6	PA + SW + LNA w. Pcplr	Quad Flat Non-leaded	2.4 x 2 mm	Production



	WLAN8101C	5GHz	WiFi 6	PA + SW + LNA w. Pcplr	POD SOT2022-1	3 × 4 mm	Production
	<u>WLAN8101H</u>	2.4GHz	BT / WiFi 6	PA + SW + LNA w. Pcplr	POD SOT2022-1	3 × 4 mm	Production
2	<u>WLAN8201C</u>	5/6GHz	WiFi 6E	PA + SW + LNA w. Pcplr	POD SOT2022-1	3 × 4 mm	Production



FEIC	WLAN7002CC	5GHz	WiFi 6	PA + SW + LNA w. Pcplr	Chip Scale	CSP	Production
	WLAN7002HC	2.4GHz	BT / WiFi 6	PA + SW + LNA w. Pcplr	Chip Scale	CSP	Production
	WLAN7201CC	5/6GHz	WiFi 6E / 7	PA + SW + LNA w. Pcplr	Chip Scale	CSP	Production
	WLAN7201HC	2.4GHz	BT / WiFi 6	PA + SW + LNA w. Pcplr	Chip Scale	CSP	Production
	WLAN7202CC	5/6GHz	WiFi 6E / 7	PA + SW + LNA w. Pdet	Chip Scale	CSP	Production





WLAN7207C WI-FI 7 FEIC IN 2X2 QFN PROVEN AND QUALIFIED PART CONTINUING FOR WI-FI 7

WLAN7207C



Application Diagram



Description

Fully integrated RF front-end IC for Wi-Fi 6E with high linearity and low-power modes in a 2 x 2 mm HWFLGA16 package

Main features

- 5G EVMdyn = -45 dB, 802.11be, MCS 13, EHT80, Po = 14.5 dBm
- 6G EVMdyn = -44 dB, 802.11be, MCS 13, EHT80, Po = 14.5 dBm
- 6.5GHz EVMdyn = -45dB. 802.11be, MCS13, EHT320, Po = 9dBm
- Full band 5.150 GHz to 7.125 GHz
- High-power efficiency
- Integrated RF decoupling capacitors for all VCC and control pins
- Requires no external matching components, DC free RF ports except for the antenna port (on-chip ESD coil)
- 3 TX operation modes per band
- 2 RX operation modes enabling gain step between LNA mode and Bypass mode
- IO levels supporting 1.2 V and 1.8 V logic interface up to 2.1 V of max input level
- Integrated power coupler

Applications

- Wi-Fi 6E support
- Smartphones, tablets, netbooks, and other portable computing devices
- Module applications for embedded systems

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WLAN7207H 2.4 GHZ Wi-Fi 6 + BLUETOOTH FEIC IN 2.4X2.0 QFN

WLAN7207H



Application Diagram



Description

Fully integrated 2.4 GHz Wi-Fi 6 FEIC with high linearity and low-power modes in a 2 x 2.4 mm package

Main features

- EVMdyn = -46 dB, 802.11ax, MCS 10/11, HE40, Po = 14.5 dBm
- High-power efficiency
- Requires no external matching components
- AC coupled RF ports except for the ANT port, and BT port (on-chip ESD coil)
- 3 TX operation modes enabling flexibility for power efficiency adaptation
- Integrated BT PA
- Integrated TX power coupler

Applications

- Wi-Fi 6 support
- Smartphones, tablets, netbooks, and other portable computing devices
- Module applications for embedded systems

WLAN7202C 5-7 GHZ FEIC IN 2X2 QFN WITH POWER DETECTOR

WLAN7202C



Application Diagram



Description

Fully integrated 5-7 GHz band front-end IC for Wi-Fi 6E with high linearity and low-power modes in a 2 x 2 mm QFN package

Main features

- 5G EVMdyn = -43.5 dB, 802.11ax, MCS 10/11, HE80, Po = 14.5 dBm
- 6G EVMdyn = -45 dB, 802.11ax, MCS 10/11, HE80, Po = 14.5 dBm
- Full band 5.150 GHz to 7.125 GHz
- High-power efficiency
- Integrated RF decoupling capacitors for all VCC and control pins
- Requires no external matching components, DC free RF ports except for the antenna port (on-chip ESD coil)
- TX operation mode per band
- 2 RX operation modes enabling gain step between LNA mode and Bypass mode
- IO levels supporting 1.2 V and 1.8 V logic interface up to 2.1 V of max input level
- Integrated logarithmic power detector

Applications

- Wi-Fi 6E support
- Smartphones, tablets, netbooks, and other portable computing devices
- Module applications for embedded systems



WLAN7205C 5-7 GHZ Wi-Fi 6E/7 FEIC IN 2X2 QFN

WLAN7205C



Application Diagram



Description

Fully integrated Wi-Fi 7 RF front-end IC with high linearity and low-power modes in a 2 x 2 mm HWFLGA16 package

Main features

- 5G EVMdyn = -44 dB, 802.11be, MCS 13, EHT80, Po = 14.5 dBm
- 6G EVMdyn = -44 dB, 802.11be, MCS 13, EHT80, Po = 14.5 dBm
- Full band 5.150 GHz to 7.125 GHz
- High-power efficiency
- Integrated RF decoupling capacitors for all VCC and control pins
- Requires no external matching components, DC free RF ports except for the antenna port (on-chip ESD coil)
- 3 TX operation modes per band
- 2 RX operation modes enabling gain step between LNA mode and Bypass mode
- IO levels supporting 1.2 V and 1.8 V logic interface up to 2.1 V of max input level
- Integrated power coupler

Applications

- Wi-Fi 6E and Wi-Fi 7 support
- Smartphones, tablets, netbooks, and other portable computing devices
- Module applications for embedded systems



WI-FI 7 DELIVERING THE NEXT LEVEL OF PERFORMANCE



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