



Connectivity solutions for V2X and in-vehicle entertainment applications

## NXP® 88W8987 802.11ac wave 2 1x1 Wi-Fi® Dual Band with Bluetooth® 5 SoC

The 88W8987xA automotive-grade system-on-chip (SoC) integrates the latest solutions for in-car Wi-Fi, Bluetooth 5 and 802.11p for advanced vehicle-to-vehicle (V2V) and vehicle-to-infrastructure (V2I) capabilities.

### PRODUCT OVERVIEW

The 88W8987xA family of automotive wireless SoCs is a highly integrated IEEE® 802.11ac (Wave-2)/ IEEE 802.11p transceiver and Bluetooth 5 single-chip footprint compatible combo solution, specifically designed to support the speed, reliability, and quality requirements of 1609.x/ wireless access in vehicular environments (WAVE)/dedicated short-range communications (DSRC) systems, in-vehicle infotainment systems and secure wireless gateway systems.

Key features of the family of SoCs include:

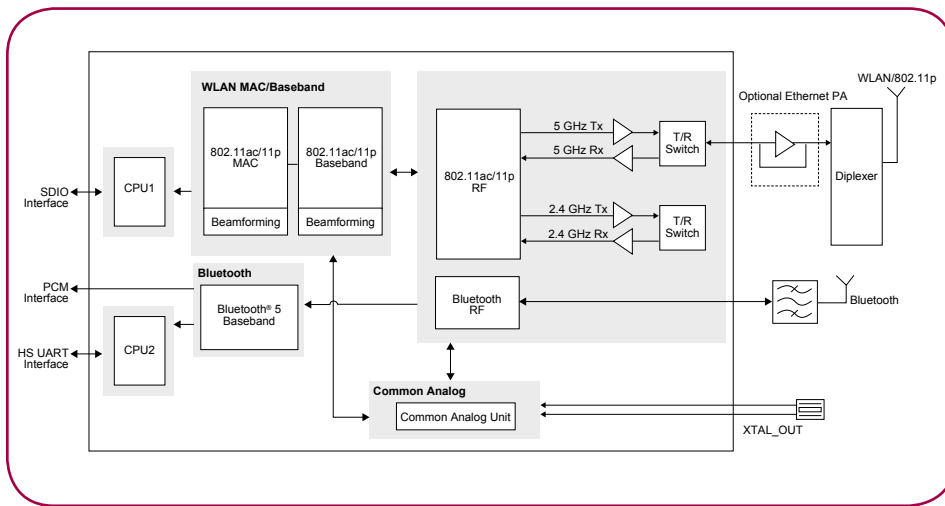
- ▶ IEEE 802.11ac (wave2) / IEEE 802.11p WAVE
- ▶ Bluetooth 5
- ▶ 2-antenna configuration for best in class Wi-Fi/Bluetooth coexistence
- ▶ AEC-Q100 Grade 2 Qualification (-40 °C to +105 °C)
- ▶ 68-pin 8 x 8 mm QFN with wettable flanks

### TARGET APPLICATIONS

- ▶ In-vehicle infotainment
- ▶ Telematics
- ▶ V2X
- ▶ Secure connected gateway



## 88W8987 BLOCK DIAGRAM



## KEY FEATURES AND BENEFITS

Features	Benefits
General Features	<ul style="list-style-type: none"> <li>Virtual Dual MAC feature for simultaneous and power-efficient operation in 2.4 GHz and 5 GHz to support applications</li> <li>Independent download and reset of IEEE® 802.11ac/ IEEE 802.11p and Bluetooth® firmware and functions</li> <li>Digital audio interfaces (PCM) for voice applications</li> </ul>
Wi-Fi®	<ul style="list-style-type: none"> <li>IEEE 802.11ac (Wave-2) with data rates up to 433 Mbit/s</li> <li>20/40/80 MHz channel bandwidth</li> <li>256 QAM (MCS 8, 9) support using LDPC</li> <li>Dual-band internal PAs and integrated T/R switches</li> <li>IEEE 802.11mc for distance and range finding</li> </ul>
802.11p	<ul style="list-style-type: none"> <li>10 MHz channel bandwidth</li> <li>Integrated direct-conversion architecture eliminates need for external SAW filter</li> <li>Enhanced channel and pilot tracking for best-in-class receive performance under Doppler and Fading conditions</li> <li>Internal PA with power control (external PA also supported)</li> </ul>
Bluetooth	<ul style="list-style-type: none"> <li>Bluetooth Class 1/ Class 2 operation</li> <li>Full master and slave piconet and scatternet support</li> </ul>
Bluetooth 5	<ul style="list-style-type: none"> <li>LE Privacy 1.2 and secure connection</li> <li>LE Data length and advertising length extension</li> <li>2 Mbit/s LE</li> <li>Direction finding—Connectionless angle of departure (AoD)</li> <li>Direction finding—Connection-oriented angle of arrival (AoA)</li> </ul>
Host Interfaces	<ul style="list-style-type: none"> <li>SDIO 3.0 interface (4-bit SDIO and 1-bit SDIO) transfer modes at full clock range up to 208 MHz</li> <li>High-Speed UART interface (for Bluetooth only)</li> </ul>

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