



XR 802.11ac Radio Board Description

100-0161-00X Radio

Do not distribute.

Summary of hardware design which includes chipsets, interfaces and antenna solutions.

802.11a/b/g/n/ac PCI Express Radio

Modular 3x3, 3 Stream

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Modular 2x2, 2 Stream

Hardware Design Specification

Project Headline

The XR 802.11ac Radio is a member of the XR family of multiple radio access points. The Xirrus Array includes multiple 802.11a/b/g/n/ac 3-chain, 3-stream radio cards, CPU, Gig Ethernet up-link and Service Port. This hardware specification covers the radio board hardware design. The 2x2 radio uses the same PCB but one chain is de-populated.

General Description

The Xirrus 802.11ac MIMO radio boards are based on the Atheros QCA9890 single chip solution. The QCA9890 is used in the Xirrus XR family of arrays. Xirrus Wi-Fi Arrays integrate 2, 4, 8 or 16 dual band radios coupled to a high-gain directional antenna system. These radios are plugged into a CPU which has an onboard multi-gigabit switch, controller, firewall, threat sensor and spectrum analyzer all built on a modular chassis. The radios support legacy 802.11a/b/g as well as 802.11n and the latest 11ac technology. The radio has 3 transmit chains and 3 receive chains with up to 3 spatial streams in 2.4/5GHz mode making it a 3x3 solution. A de-populated version is also available, taking a 3x3 PCB and depopulating the third chain to make a 2x2 (with maximum of 2 spatial streams).

Each radio board is made up of a power supply, Atheros chip (MAC/BB and PHY), EEPROM, 40MHz crystal, RF Front End, 3 SMK RF switches and 3 high-gain, dual band antennas. This radio is loosely based on three Atheros designs, CUS223 (5GHz Radio), XB141 (2.4GHZ Radio) and XB140 (Dual band FEM).

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