



Lantq™ XWAY™ WAVE300

Carrier-Grade Wireless LAN

Extended Reach

- Full 3x3 Multiple-Input-Multiple-Output (MIMO) system
- Advanced Maximum Likelihood decoder algorithms
- Integrated beam-forming technologies
- LDPC forward-error-correction
- Smart Antenna Selection

Robust Technology

- Content and Channel Aware Quality-of-Service (QoS) algorithms
- Optimum channel selection (OCS) when detecting disturbers
- Seamless channel switching
- Zero-Packet-Loss algorithm

Flexible

- Available in Dual-Band, 2.4GHz and 5 GHz variants
- Interfaces via PCI or PCIe to host processor
- „Thick MAC“ architecture allows low CPU usage on host processor

Reference Packages

- ADSL Router / Gateway with ARX100
- VDSL Router / Gateway with VRX200
- Gigabit Ethernet Dual-Band Concurrent WLAN Router with GRX100/200
- Video-Bridge System
- Standalone mPCI card
- Standalone mPCIe card

The XWAY™ WAVE300 802.11n chipset provides advanced WLAN technologies especially targeting applications requiring enhanced reach and radio coverage while maintaining links with a minimum or even zero-packet-error rate requirement.

With its versatile interface, the XWAY™ WAVE300 can be connected to any host processor featuring either a PCI, mPCI or PCIe interface.

The integrated „Thick MAC“ architecture offloads the main processor by executing all real-time and processor intensive operations on chip. At the same time a powerful 3x3 maximum likelihood processor enables up to 300Mbps throughput and its integrated beam forming technology to cover locations that had been dark spots with other WLAN solutions.

The combination of such baseband technologies combined with a smart detection of disturbers allows a preemptive, seamless and content-aware switching to interference-free channels without introducing link breaks or packet-errors.

With such a robust and extended reach WLAN solution, resulting systems are ready for the upcoming UDP multicast streaming of several simultaneous HD-IPTV contents as well as other advanced services like multimedia content sharing and network storage.

Applications

- ADSL and VDSL WLAN Routers
- ADSL and VDSL Gateways / IADs with WLAN
- Gigabit-WLAN Routers
- Video-Bridges, Set-Top Boxes, Digital TVs

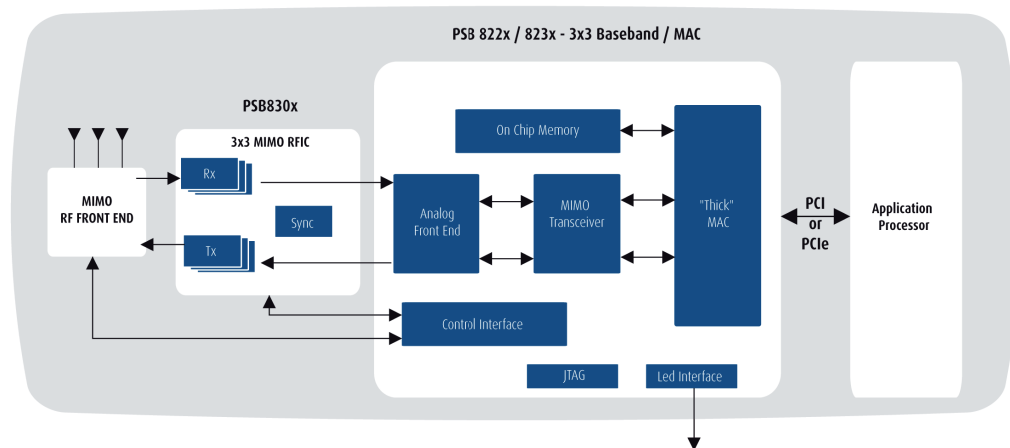
General Features

- PHY transmission rates of up to 300 Mbps
- Fully compliant with the IEEE 802.11n
- Backward compatibility with 802.11 a/b/g
- Up to 3x3 MIMO with two spatial streams (2SS)
- Supports 20 MHz and 40 MHz bandwidth
- Single band 2.4GHz, single band 5GHz and dual band variants
- Enhanced MAC performance with more than 200 Mbps effective throughput („goodput“) using Frame Aggregation and QoS
- Automatic QoS prioritizes voice, online games, peer-to-peer and HD video
- Wi-Fi Protected Setup (WPS) support
- Virtual Access Point / MBSSID with up to four SSIDs
- Built-in mini PCI or PCI Express Host Interface

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Block Diagram System Solution



Technical Specifications

Frequency Band	PSB 8221/31 Dual Bands 2.4GHz, 5GHz PSB 8222/32 Single Band 2.4GHz PSB 8223/33 Single Band 5GHz
Network Standard	802.11n, 802.11a/b/g Wi-Fi alliance 802.11n certified
Data Rates	802.11a - 6 to 54 Mbps, 802.11b - 1 to 11 Mbps, 802.11g - 6 to 54 Mbps, 802.11n - Up to 300 Mbps
Modulation Schemes	Orthogonal Frequency Division Multiplexing (OFDM) - BPSK, QPSK, 16QAM, 64QAM Direct Sequence Spread Spectrum (DSSS) - DBPSK, DQPSK, CCK
Channel Code (FEC)	Advanced LDPC in addition to Convolution Code
Security	Compatible with 802.11i, 64 bit and 128 bit Key WEP, AES, TKIP, WPA, WPA2 WPA-EAP, EAP-TLS, EAP-TTL S/M SCHAP v2, PEAPv1/EAP-GTC, EAP-SIM
QoS	Compatible with 802.11e, EDCA/EDCA with Admission Control, HCCA(HW Ready), Fast Link Adaptation, Optimal Channel Selection
Host Interface	PSB 822x - PCI 2.3, mini PCI, PSB 823x - PCIe
Wi-Fi Protected Setup	PIN and Push Button method, Enrollee, Registrar, AP roles
Peripheral Interface	GPIOs, LEDs
Operating Voltage	PSB 822x/3x 1.2V +/- 5%, I/O 3.3V +/- 10%
Package	PSB 822x (PCI, mPCI) - 196 pin LFBGA, 12 X 12mm, 0.8mm pitch PSB 823x (PCIe) PCI Express - 144 pin LFBGA, 10 X 10mm, 0.8mm pitch



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