INT6400/INT1400 Chipset
- HomePlug® AV MAC & PHY plus ADC and DAC in a 196-contact LFBGA, Pb-free package
- MII (Host & PHY) interface
- Supports 1024/256/64/16/8-QAM, QPSK, BPSK and ROBO Modulation Schemes
- 128-bit AES Link Encryption with key management for secure powerline communications
- Windowed OFDM with noise mitigation based on patented line synchronization techniques improves data integrity in noisy conditions
- Dynamic channel adaptation and channel estimation maximizes throughput in harsh channel conditions
- Advanced Turbo Code Forward Error Correction (France Telecom – TDF – Groupe des écoles des télécommunications Turbo codes patents license)

INT6400 MAC/PHY IC
- ToS, CoS and IP Port Number Packet Classifiers
- Supports IGMP managed multicast sessions
- RoHS Compliant: 15x15 mm, 196 LFBGA Package
- Programmable-gain Rx/Tx

INT1400 AFE IC
- Tx Filter, programmable-gain line driver, programmable-gain Rx amplifier
- Differential coupling
- RoHS Compliant: 5x5 mm, 32 QFN Package
- Companion to INT6400

Combining Powerline with Atheros' rich portfolio of WLAN and Ethernet products, we are transforming networking in the digital home with unified Wi-Fi/PLC/Ethernet gateways, and with dynamic meshed networks employing the nimble combination of Wi-Fi and Powerline adapters throughout the home. The combination of these great connectivity technologies will enable a new class of networking for consumer electronics, computing as well as mobile devices in the home that benefit users with added capacity, flexibility, reliability and ease-of-deployment.

Technology Overview
Atheros is committed to addressing the dramatically expanding connectivity requirements of the digital home. The INT6400 is a third-generation HomePlug AV-based solution that delivers carrier-grade broadband communications over both power lines and coax.

For consumers and service providers using powerline, INT6400 technology enables fast, wired networking within a home using the home’s existing electrical wiring. It can also be used over coax, providing last-mile broadband access in multi-dwelling units.

Product Overview
- Third-generation HomePlug AV-based powerline two-chip solution
- High-performance cost-down solution

The Atheros INT6400/INT1400 HomePlug AV chipset solution is comprised of the INT6400 Medium Access Controller (MAC)/Physical layer (PHY) IC and the INT1400 AFE/Line Driver IC. The Atheros HomePlug AV transceiver is optimized for multi-media streaming applications and is fully compliant with the HomePlug AV standard to reliably deliver up to 200 Mbps PHY rate over powerline wiring.

In addition to the complete MAC and PHY, the INT6400 includes an Ethernet Media Independent Interface (MII) and an external Synchronous Dynamic Random Access Memory (SDRAM) interface. In addition, the INT6400 includes the Analog-to-Digital (A/D) and Digital-to-Analog (D/A) converters required for analog interface to the INT1400 AFE/Line Driver IC. The INT1400 AFE/Line Driver IC includes a Tx filter, a programmable-gain line driver and a programmable-gain Rx amplifier. The programmability of these amplifiers opens up new and important signal optimization functionality.
INT6400
HomePlug AV Chipset

RD6400-ETH
Reference Design Highlights
• HomePlug AV Wall Adapter Reference Design
• Based on 3rd-generation HomePlug AV compliant INT6400/INT1400 Chipset
• 200 Mbps PHY rate

INT6400 MAC/PHY Transceiver
• Optimized for multi-media streaming applications
• HomePlug AV compliant
• Supports MII (Host & PHY) interfaces
• Supports SDRAM Memory
• Support EuP Low Power Directive

INT1400 AFE/Line Driver IC
• Companion to the INT6400 MAC/PHY IC
• Includes Tx Line Driver
• Tx amplifier offers programmable gain control
• Includes Rx Programmable Gain Amplifier

Atheros Communications is a leading developer of semiconductor system solutions for wireless and other network communications products. Atheros combines its wireless and networking systems expertise with high-performance radio frequency (RF), mixed signal and digital semiconductor design skills to provide highly integrated chipsets that are manufactured on low-cost, standard complementary metal-oxide semiconductor (CMOS) processes. Atheros technology is used by a broad base of leading customers, including personal computer, networking equipment and consumer device manufacturers.

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