

INT6300



HomePlug AV High-speed Powerline Solution



HomePlug® AV
200Mbps PHY

Features

- Single-IC HomePlug® AV MAC, PHY and AFE
- MII (Host & PHY) MBI, PCI and MPEG-TS Management and Multimedia interfaces
- Co-existence with HomePlug 1.0 Nodes
- HomePlug AV PHY: 200 Mbps OFDM@1024-QAM
- 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*)
- HomePlug AV MAC: TDMA and priority-based CSMA/CA channel access schemes maximize efficiency and throughput
- Integrated Quality of Service (QoS) Enhancements: contention-free access, four-level priority based contention access, and multi segment bursting
- ToS, CoS and IP Port Number Packet Classifiers
- Supports IGMP managed multicast sessions
- 256-contact LFBGA, Pb-Free package
- Green Standard (ROHS) Compliant
- Low Power Design



Benefits

2nd Generation IC reduces:

- Board space
- Complexity
- Costs

The INT6300 is Intellon's 2nd generation HomePlug AV IC. Along with the MAC and PHY, the INT6300 includes the AFE. The integration of these blocks into one IC reduces total costs by reducing parts count, board space and assembly costs. Other internal improvements to the processing sections speed data flow and reduce latency.

The INT6300 IC is HomePlug AV standard-compliant to deliver a 200 Mbps physical layer bit rate, which supports multi-channel SD and HD digital video distribution, along with other data traffic, throughout the home.

The INT6300 HomePlug AV MAC utilizes a mix of Contention Free Period (CFP) accesses with Time Division Multiple Access (TDMA) transmissions and priority based Contention Period (CP) accesses with Carrier Sense Multiple Access with Collision Avoidance (CSMA/CA) transmissions. Reliable delivery of packets is ensured through the use of Selective Acknowledgement (SACK) and Automatic Repeat reQuest (ARQ).

Intellon HomePlug AV Product Development Tools

- RD6300-ETH Adapter Ref. Des.
- RD6300-PCI Mini-PLC Ref. Des.
- RD6300-Wall Wall Adapter Ref. Des.
- SDK6300 Software Devel. Kit
- HDK6300 Hardware Devel. Kit
- PTS6000/6300 Production Test System
- Schematics, BOMs, Gergers

Intellon Development Tools reduce costs and shorten time to market!

Intellon: The World Leader in Powerline Networking

- ✓ Leading contributor to HomePlug AV specification
- ✓ Patented technology chosen as the basis for HomePlug 1.0
- ✓ Complete HomePlug 1.0 and AV solutions from a single supplier
- ✓ World leader in HomePlug IC sales and product enablement
- ✓ Most real-world experience in powerline networking



Intellon Corporation

5100 West Silver Springs Blvd.
Ocala, FL 34482
(352) 237-7416
(352) 237-7616 (Fax)

San Jose Office

1731 Technology Dr., Ste 560
San Jose, CA 95110
(408) 501-0320
(408) 501-0323 (Fax)

Toronto Office

144 Front Street West, Suite 600
Toronto, Ontario M5J 2L7
CANADA
(416) 217-0451
(416) 217-0459 (fax)

www.intellon.com

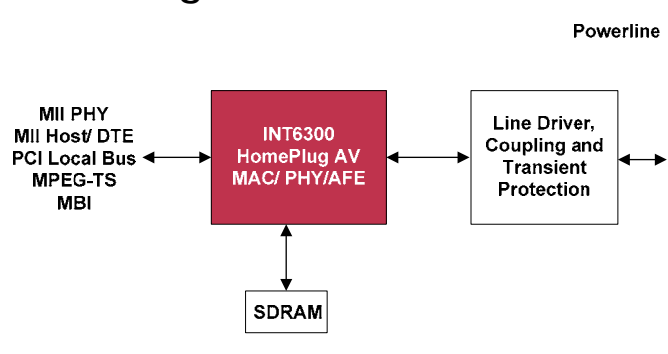


Periodic TDMA allocations provide guaranteed QoS for isochronous data such as high-definition (HD) and standard-definition (SD) digital video. HomePlug AV products provide quasi-error free delivery of TDMA streams while maintaining tight control of latency and jitter. TDMA allocations adapt with changing channel conditions and traffic profiles to ensure applications maintain the required QoS. TDMA transmissions during the TDMA increase the MAC efficiency by eliminating collisions. CSMA/CA during the CP facilitates delivery of asynchronous traffic by avoiding collisions and by providing priority resolution for differentiated services.

The HomePlug AV standard defines the mapping of the eight 802.1p access priority levels. The INT6300 is designed to provide efficient end-to-end delivery of broadcast quality HD and SD video streams over the harsh power-line environment.

The HomePlug AV PHY combats impairments including deep attenuation notches, noise sources, and multi-path fading by using windowed OFDM, Turbo Convolutional Codes, precise channel adaptation, and noise mitigation based on AC line cycle synchronization.

Functional Diagram



Target Applications

Just plug it in!

- High Definition (HD) and Standard Definition (SD) video distribution
- TV over IP (IPTV)
- Backbone for Wi-Fi, UWB and Wireless USB
- Higher data rate broadband sharing
- Shared broadband internet access
- Audio and video streaming and transfer
- Expanding the coverage of wireless LANs
- Voice over Internet Protocol (VoIP)
- PC files and applications sharing
- Printer and peripheral sharing
- Network and online gaming
- Security cameras

Ordering Information: Part Number INT6300TR (lead-free on tape and reel) Lead-free is the only package option.

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