

G.hn chipsets, self install home entertainment networks over all wires, coax, phonline and power line



Sigma's breakthrough G.hn CG5200 family of chipsets enables a complete self-install home entertainment network for distribution of Triple Play and IPTV over all existing wires in the home: power line, coax and phone line.

FEATURES

- Optimized for IPTV and Multicast systems or video and audio traffic
- PHY rate up to 1 Gbps per medium, up to 3Gbps aggregated over all media
- Plug & Play solution – auto configuration; self-install over all three media
- Support with ITU-T G.hn standards (G.9960/1/2/3/4) over all existing wires: power line, coax, and phone line
- Supports HomePNATM 3.1 (ITU-T G.9954 standard)
- Coexistence with HomePlug® AV/IEEE P1901
- G.hn MIMO over power line - enables usage of power-line as a multiple input multiple output (MIMO) channel, thus extending coverage, improving the network's immunity to noise and delivering higher throughput
- Supports simultaneous connection to multiple media to allow auto medium selection for optimal coverage and throughput
- Can operate without external memory
- Supports enhanced algorithms for dynamic topology detection and routing
- Relaying/repeater of data and IPTV streams
- Advanced coordination and coexistence mechanisms enabling neighboring networks

With CG5200 end-users enjoy unprecedented convenience and flexibility because every power outlet, coaxial outlet and phone jack in the home becomes a network connectivity point on the same mesh network. Traffic can seamlessly be delivered from one medium to another.

CG5200 G.hn family provides unparalleled, full-home coverage over power line with G.hn MIMO technology.

The CG5200 G.hn chipsets are optimized for IPTV distribution and advanced multicast systems. The chipsets were designed to be easily embedded within broad range of products such as connected TVs, DVRs, Thin client Set-top boxes, OTT, Gateways, Blue ray DVDs and any other equipment for multimedia and entertainment making the connected home a reality.

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POWERING THE NEW DIGITAL HOME:

SET-TOP BOXES

CONSUMER ELECTRONICS

AV NETWORKS

HOME CONTROL

COMMERCIAL SYSTEMS



CG5200 Series

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Sigma's CG5200 G.hn family ensures unprecedented levels of consistency and reliability, making it the ideal solution for embedding into G.hn-enabled consumer electronics devices, gateways and set-top boxes for whole-home networking of multiple HD and 3DTV video streams. It provides more throughput than any legacy technology by supporting a 1 Gbps physical layer (PHY) bit rate for multimedia and data distribution over a single medium and up to 3 Gbps by simultaneously using all three wires inside the home. The CG5200 family comprises of integrated media access control (MAC) and PHY transceivers the CG5211, CG5221 and CG5231. These flexible digital engines incorporate enhancements for IPTV applications. The transceivers interface with an external analog front-end (AFE), the CG5213 and CG5233 according to the designated product.

Devices that use the CG5200 will deliver to end-users the highest Quality of Experience (QoE) due to the chipset's network level and device level QoS. The chipsets are optimized for IPTV applications to deliver multiple streams of high definition TV (HDTV) video content, 3DTV video traffic, audio content, Voice over Internet Protocol (VoIP), data, gaming and other applications that are highly QoS-sensitive.

Over power line, the CG5210, CG5220 and CG5230 chipsets offer unmatched performance and the most robust solutions. The CG5210 and CG5220 are both MIMO (multiple input, multiple output) and SISO (single input, single output) capable where CG5230 is optimized for SISO based products. The MIMO feature which uses all three wires in the power outlet – phase, neutral, and ground enables the best delivery of IPTV traffic over power lines, even in the presence of surge protectors, circuit breakers and across multiple phases.

The CG5210 enables smooth migration from HPNA 3.1 (G.9954) to G.hn over coax and phone line. With CG5210, the same product can auto configure or remotely manage to work as G.hn or HPNA 3.1.

	CG5210	CG5220	CG5230
Digital Chip	CG5211	CG5221	CG5231
Analog Chip	CG5213 or CG5233	CG5213	CG5233
G.hn Modes of Operation	Power Line MIMO and SISO, Coax Cable and Phone Wire	Power Line MIMO and SISO	Power Line SISO
Max Bandwidth	100 MHz	80 MHz	80 MHz
Performance	Ultra	Ultra	Ultra
Enhanced Coverage	Ultra	Ultra	Very High
Embedded IP Stack, TR69	•	•	•
HPNA 3.1 (ITU-T G.9954)	•	-	-
Auto Medium Selection	•	-	-
Coexistence with HPAV/P1901	•	•	•
External Memory Support	Optional DDR3	Optional DDR3	Optional DDR3
G.hn to Z-Wave® bridge support	•	•	•
Interfaces	GMII, RGMII, MII, UART, SPI	GMII, RGMII, MII, UART, SPI	GMII, RGMII, MII, UART, SPI
Advanced Power Save	•	•	•

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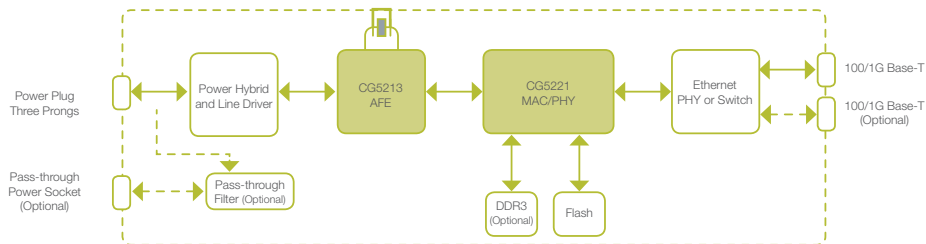
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Features

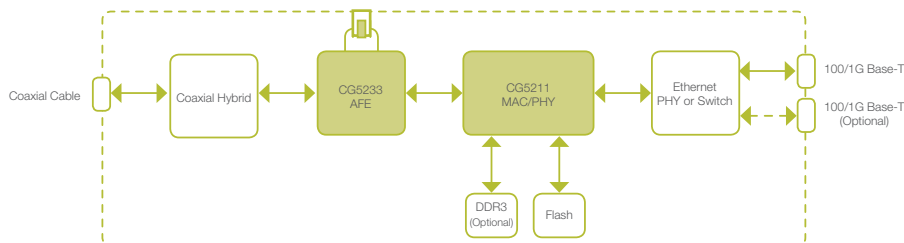
- Guaranteed Quality of Service (QoS), prioritized and parameterized
- Device Level QoS
- Supports IPv6, IPv4. Manages multicast using IGMP v1-3 and MLD v1-2
- 128-bit AES encryption with key management
- Instant security. Also supports legacy push button-based security mechanism
- Support for Broadband Forum's remote management and diagnostics based on TR-069
- Remote and local firmware upgrade
- Fully configurable device able to integrate customized functionality
- Quick system troubleshooting using built-in diagnostic tools and APIs
- Signal quality LED indication
- Environmentally-friendly technology - integrates innovative features for reduced energy consumption
- Green and RoHS compliant packaging
- CG5211, CG5221, and CG5231, 225 Pin HSBGA
- CG5213 and CG5233, 88 Pin QFN
- Full development package and turnkey reference designs enable fast time-to-market

SYSTEM IMPLEMENTATION EXAMPLES:

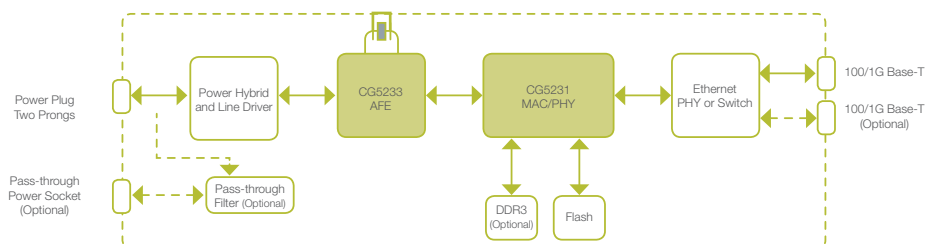
Ethernet Over Power Line Bridge, MIMO (CG5220 Based)



Ethernet Over Coaxial Cable Bridge (CG5210 Based)



Ethernet Over Power Line Bridge, SISO (CG5230 Based)



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BENEFITS:

- Self install even by a novice customer, no need for professional installation
- Guaranteed reliable whole home coverage even in homes with thick walls and multiple floors results in increased customer satisfaction and cuts maintenance expenditures
- Consistent user experience and improved immunity to interference for reliable HD picture quality
- Simple management, unified set of APIs, management and diagnostic tools for all media
- No need to hold double inventory; the same solution can support all media
- No need to run new wires; G.hn operates over existing power line, coax and phone line
- Instantly secure the home network without the hassle of SSID and other cumbersome mechanisms
- Enables fast and cost-effective troubleshooting via advanced local/remote diagnostic tools
- Easy to be embedded, enables all consumer electronics products in a home can be part of the same mesh network
- Enables a smooth and seamless migration from HomePNA™ technology to G.hn on coax
- Delivers optimal coverage and throughput without any need for user intervention
- Quick customization and product differentiation via optimized software API

- Fast integration and time-to-market enabled by full development package and turnkey reference designs, including board layout, manufacturing diagnostic tools, documentation and more

APPLICATIONS:

- 3D, High definition (HD) and standard definition (SD) in-home video distribution, multi-room DVR
- IPTV applications
- Voice over IP (VoIP)
- Shared broadband internet access
- PC file and application sharing
- Security and surveillance (home monitoring)
- Home health care
- Gaming
- Z-Wave® coverage extender

PRODUCTS:

- Connected TVs
- Set-top boxes, thin clients and consumer electronics products
- Residential gateways (RG)
- Optical network terminals (ONTs)
- Home audio and home theater systems
- Network-attached storage devices (NAS)
- IP cameras
- PCs
- Video game consoles
- VoIP adaptors
- Ethernet to G.hn bridges
- G.hn to Z-Wave® bridges

ORDERING INFORMATION:

- Chipsets
 - G5211A-CBE3, CG5221A-CBE3, CG5231A-CBE3 G.hn digital MAC and PHY ICs
 - CG5213B-INE3, CG5233B-INE3 G.hn analog front-end ICs
- Reference designs
 - CG5210H2EC Ethernet-over-coax bridge
 - CG5220HEPM Ethernet-over-powerline MIMO bridge
 - CG5230HEPS Ethernet-over-powerline SISO Bridge
- Development package
 - CG5200-HDK hardware development kits
 - CG5200-SDK software development kits
 - CG5200-PTS production test setup

ABOUT SIGMA DESIGNS

Sigma Designs is a leading provider of system-on-chip (SoC) solutions used to deliver entertainment and control throughout the home:

Media Processing, Smart TV, Video Encoding, Home AV Networking, Video Processing, Home Control

These SoCs are supported with board-level reference designs, sophisticated system software, and technical documentation to form a complete solution for a variety of set-top boxes, smart TVs, consumer electronics, AV network devices, and home control systems.

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