

Gigabit G.hn Transceiver for Networking over Anywire (Powerlines, Phone Lines, and Coaxial Cable)

OVERVIEW

Evaluation Kits

| | |
|---------|----------------|
| DW920 | Powerline EVK |
| DCP962C | Coax EVK |
| DCP962P | Phone Line EVK |

Supporting ICs

| | |
|------------------------|---------------------------------------|
| 88LX5152 | DBB for Powerline |
| 88LX5153/ 88LX5153A | DBB for Coax/ Powerline/Phone Line |
| 88LX2720 | AFE for Powerline |
| 88LX2730 | AFE for Coax/Phone Line |
| 88LX2741 | AFE for Coax/Powerline/ Phone Line |

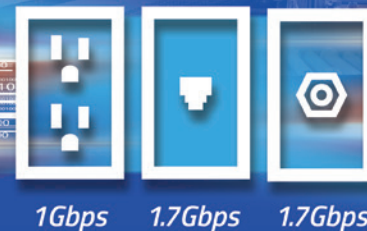
FEATURES

- Coaxial Cable Performance
 - Max. throughput 1.7Gbps
- Phone Line (Twisted Pair) Performance
 - Max. throughput 1.7Gbps
- Powerline Performance
 - Max. throughput 1.0Gbps
- Data Interfaces
 - RGMII (1G)
 - SGMI (1G/2.5G)
- ITU-T Compliant with G.9960/61/62/63/64
- Commercial and Industrial temperature range
- 88LX5152 / 88LX5153 / 88LX5153A
 - 10mm x 10mm BGA186
- 88LX2720 / 88LX2730 / 88LX2741
 - 4mm x 4mm QFN28

BENEFITS

- Faster net throughput versus competing solutions
- Spirit SDK (Software Development Kit) enables customized solutions with fast time-to-market
- End-to-end 128-bit AES CCMP encryption enables added security
- LDPC forward error correction, and other enhanced features enable reliable data delivery and robust performance in noisy environments

Gigabit Speeds Over Existing Wires



The MaxLinear G.hn Wave-2 Product Family provides high-speed networking capabilities over any wired medium including powerlines, phone lines/twisted-pair and coax cables. With physical data rates up to 2Gbps, the MaxLinear G.hn Wave-2 platform is the fastest G.hn solution in the industry.

The G.hn Wave-2 product family is compliant with the latest version of the ITU-T G.hn standard (Recommendations G.9960, G.9961, G.9962, G.9963 and G.9964). It also includes support for 200MHz coaxial; 200MHz phone line SISO, 100MHz phone line MIMO; and 100MHz powerline MIMO. By using MaxLinear G.hn Wave-2 solutions, system designers can build products that easily achieve HomeGrid Forum certification for G.hn compliance.

This networking solution achieves gigabit performance and includes three options for G.hn digital baseband (DBB) processor (88LX5152, 88LX5153 and 88LX5153A) and three options for G.hn analog front end (AFE) (88LX2720, 88LX2730, and 88LX2741). The product family provides system designers the flexibility to mix and match footprint-compatible components to address multiple G.hn applications in the consumer, broadband, industrial and security segments.

G.hn Wave-2 Networking Products

APPLICATIONS

- Home Networking & Broadband
 - Gateways, Routers, STBs, WiFi Extenders
- Factory Automation
- Smart Buildings
 - Smart Elevators, Door Security Systems
- Smart Grid and Smart Metering
- Smart Cities
 - Security Cameras, Intelligent Street Lights

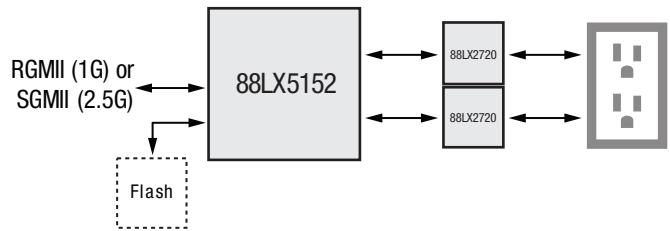
The G.hn baseband processors include the G.hn PHY (physical layer), G.hn DLL (data link layer), embedded CPU for control and management purposes, embedded memory and two Ethernet interface options: either RGMII (1 Gbps) or SGMII (1Gbps and 2.5Gbps).

The G.hn AFEs provide programmable transmit and receive paths optimized for each physical medium, with 88LX2720 supporting powerline applications; 88LX2730 supporting coax cables and twisted-pair applications; and 88LX2741 supporting powerline, coax cable and twisted-pair applications over the industrial temperature range.

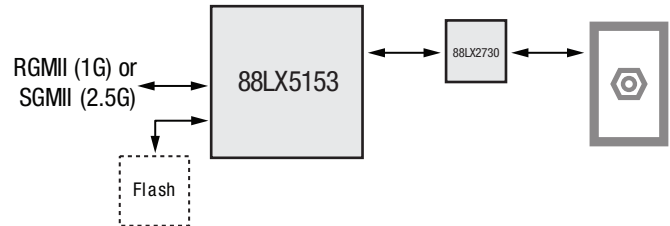
MaxLinear provides several turn-key software packages (codenamed Spirit) that enable customers to quickly go to market with a fully functional product that meets key requirements such as IPv4/IPv6 support, QoS, TR-069 management, IGMP/MLD snooping and HomeGrid Forum certification. Customers can also use the Spirit SDK to develop customized applications that run on the embedded CPU.

An evaluation kit is available for each wired medium; powerline, phone line/twisted-pair and coaxial cable. These kits include everything needed to evaluate the real world performance of our industry leading G.hn technology.

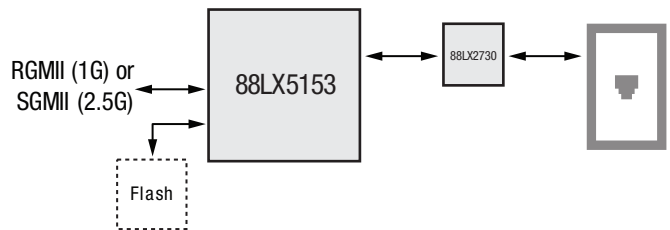
Powerline MIMO (100MHz)



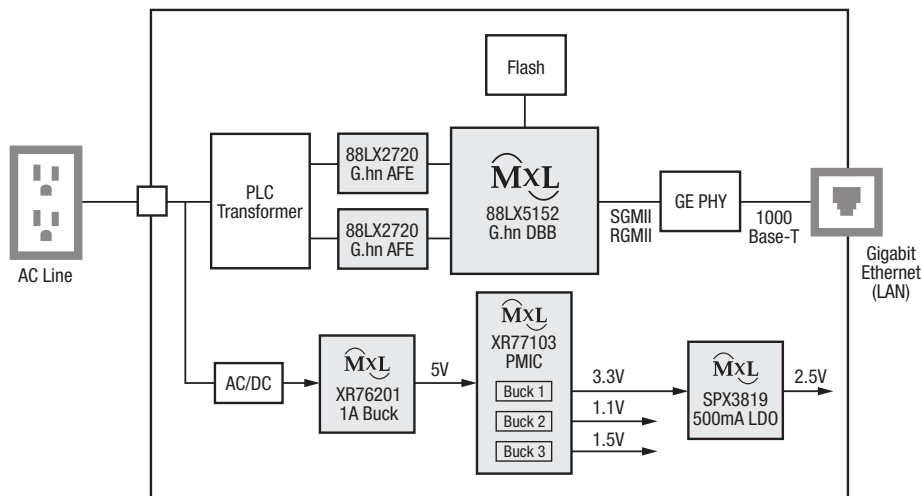
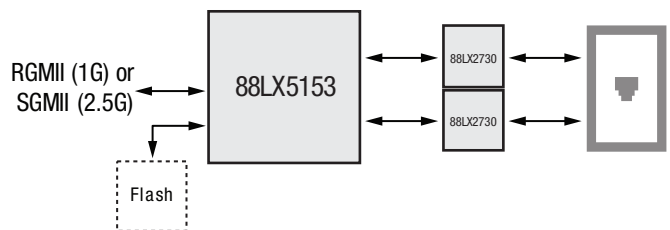
Coax (200MHz)



Phone Line SISO (200MHz)



Bonded Phone Line MIMO (100MHz)



Application Example: Powerline/Ethernet Adapter

G.hn Wave-2 Networking Products

G.hn Wave-2 Networking Products

| Part Number | Function | Ch. | Physical Medium | Supported G.hn Profiles | Max Net Throughput (Gbps) | Data Interfaces | Ordering Part Number ⁽¹⁾ | Temp Range ⁽²⁾ (°C) | Package ⁽³⁾ (mm) |
|-------------|------------------|-----|-----------------|--------------------------|---------------------------|-----------------------------|-------------------------------------|--------------------------------|-----------------------------|
| 88LX5152 | Baseband | 2 | Powerline | MIMO 100MHz, SISO 100MHz | 1 | RGMII (1G), SGMII (1G/2.5G) | 88LX5152A0-BUU2C000 | 0 to 70 | 10 x 10 BGA-186 |
| 88LX5153 | Baseband | 2 | Powerline | MIMO 100MHz, SISO 100MHz | 1 | RGMII (1G), SGMII (1G/2.5G) | 88LX5153A0-BUU2C000 | 0 to 70 | 10 x 10 BGA-186 |
| | | | Phone Line | SISO 200MHz, MIMO 100MHz | 1.7 | | | | |
| | | | Coaxial | Coaxial 200MHz | 1.7 | | | | |
| 88LX5153A | Baseband | 2 | Powerline | MIMO 100MHz, SISO 100MHz | 1 | RGMII (1G), SGMII (1G/2.5G) | 88LX5153A0-BUU2I000 | -40 to 85 | 10 x 10 BGA-186 |
| | | | Phone Line | SISO 200MHz, MIMO 100MHz | 1.7 | | | | |
| | | | Coaxial | Coaxial 200MHz | 1.7 | | | | |
| 88LX2720 | Analog Front End | 1 | Powerline | MIMO 100MHz, SISO 100MHz | N/A | N/A | 88LX2720A0-NYC2C000 | 0 to 70 | 4 x 4 QFN-28 |
| 88LX2730 | Analog Front End | 1 | Coaxial | SISO 200MHz | N/A | N/A | 88LX2730A0-NYC2C000 | 0 to 70 | 4 x 4 QFN-28 |
| | | | Phone Line | SISO 200MHz, MIMO 100MHz | N/A | | | | |
| 88LX2741 | Analog Front End | 1 | Powerline | MIMO 100MHz, SISO 100MHz | N/A | N/A | 88LX2741A0-NYC2I000 | -40 to 85 | 4 x 4 QFN-28 |
| | | | Coaxial | SISO 200MHz | N/A | | | | |
| | | | Phone Line | SISO 200MHz, MIMO 100MHz | N/A | | | | |

1. Refer to individual product pages on www.maxlinear.com, for most up-to-date Ordering Information.

2. Ambient temperature range.

3. Lead-free, visit www.maxlinear.com for additional information on Environmental Rating.

G.hn Wave-2 Networking Evaluation Kits

| Eval Kit | Physical Medium | Supported G.hn Profiles | Max Net Throughput | Data Interfaces | Baseband Chip Used | Analog Front-End Used | Kit Ordering Number ⁽¹⁾ | # of Boards in Kit | Temp Range (°C) |
|----------|--------------------------|--------------------------|--------------------|-----------------|--------------------|-----------------------|------------------------------------|--------------------|-----------------|
| DW920 | Powerline (100-240V AC) | MIMO 100MHz, SISO 100MHz | 1000Mbps | 1000Base-T | 88LX5152 | 88LX2720 (2x) | RD-HNPLC-2DW920KIT01 | 2 | 0-40 |
| DGP962C | Coaxial (F-Connector) | Coaxial 200MHz | 1700Mbps | 1000Base-T, SFP | 88LX5153 | 88LX2730 | RD-HNCOAX2DGP962CKIT | 2 | 0-40 |
| DGP962P | Phone Line (RJ-11/RJ-45) | MIMO 100MHz, SISO 200MHz | 1700Mbps | 1000Base-T, SFP | 88LX5153 | 88LX2730 (2x) | RD-HNPH2DGP962KIT-01 | 2 | 0-40 |

1. Refer to individual product pages on www.maxlinear.com, for most up-to-date Ordering Information.



Visit www.maxlinear.com and register for a myMxL account to access G.hn documentation and design tools

G.hn Wave-2 Networking Evaluation Kits (Continued)



Powerline Networking Evaluation Kit #DW920



Coaxial Networking Evaluation Kit #DCP962C



Phone Line Networking Evaluation Kit #DCP962P



Corporate Headquarters:
5966 La Place Court
Suite 100
Carlsbad, CA 92008
Tel.: +1 (760) 692-0711
Fax: +1 (760) 444-8598
www.maxlinear.com

The content and information contained in this document is furnished for informational or general marketing purposes only, is subject to change without notice, and should not be construed as a commitment by MaxLinear, Inc. MaxLinear, Inc. assumes no responsibility or liability for any errors, inaccuracies, or incompleteness that may appear in the informational content contained in this guide.

Reproduction, in part or whole, without the prior written consent of MaxLinear, Inc. is prohibited. MaxLinear, the MaxLinear logo, and any MaxLinear trademarks; MxL, Full-Spectrum Capture, FSC, G.now, and AirPHY are all trademarks of MaxLinear, Inc. or one of MaxLinear's subsidiaries in the U.S.A. and other countries. Other company trademarks and product names appearing herein are the property of their respective owners.

© 2020 MaxLinear, Inc. All rights reserved.