G.hn Industrial IoT Networking System

Transforms Existing Wiring into a High-Speed Networking System

OVERVIEW

Evaluation Kit
DMI920 Multi-Medium, Multi-Interface IIoT EVK

Supporting ICs
88LX5153A DBB
88LX2741 AFE

FEATURES

- Evaluation Kit Contents:
  - Two G.hn adapters and accessories
  - Multi-medium EVK transmits data over:
    - AC or DC powerlines
    - Twisted pair
    - Coax cable

BENEFITS

- Transports high-speed IP data over new or existing Powerlines, Twisted Pair, or Coax
- G.hn network backbone delivers IP data to local network of Industrial IoT endpoint devices through Ethernet, USB, RS-485, RS-232, etc.

APPLICATIONS

- Smart Buildings
  - Smart Elevator Control, Building Entry/Access Control, Building Security and Surveillance, Smart Parking System Control, Data Backbone
- Smart Cities
  - Security Cameras, Intelligent Street Lights, Smart Fuel Dispenser Systems, Fire Alarm Control Panels, Smart parking
- Broadband Home Networking & Access
  - Gateways, Routers, STBs
- Factory Automation
- Smart Grid and Smart Metering

The MaxLinear G.hn Industrial IoT Networking System provides high-speed networking capabilities over any wired medium, including AC or DC powerlines, phonelines/twisted pair and coax cables. The MaxLinear G.hn Wave-2 platform is the fastest G.hn solution in the industry with gigabit+ network throughput.

Performance Summary

<table>
<thead>
<tr>
<th>Physical Medium</th>
<th>Supported G.hn Profiles</th>
<th>Max Net Throughput (Gbps)</th>
<th>Data Interfaces</th>
</tr>
</thead>
<tbody>
<tr>
<td>Powerline</td>
<td>MIMO 100MHz, SISO 100MHz</td>
<td>1</td>
<td>RGMII (1G), SGMII (1G/2.5G)</td>
</tr>
<tr>
<td>Twisted Pair</td>
<td>SISO 200MHz, MIMO 100MHz</td>
<td>1.7</td>
<td></td>
</tr>
<tr>
<td>Coaxial</td>
<td>Coaxial 200MHz</td>
<td>1.7</td>
<td></td>
</tr>
</tbody>
</table>

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

G.hn Spirit Grid software supports a large-scale, multi-hop network of up to 250 nodes in a single network domain. Spirit Grid’s self-organize-network (SON) feature enables autonomous device installation and configuration, optimal signal path selection, and network self-healing capabilities. It can also auto-configure the client to simultaneously perform the repeating function, which eliminates the need for a dedicated repeater that is typically needed by other broadband powerline technologies.

Multi-Hop Network

Network Controller
Repeater/EP
End Point

Multi-Interface

GbE
USB
RS232/RS485

GPY115
88LX5153A
SP336E Multi-protocol Transceiver
XR22800
USB to Ethernet Bridge

Fast Ethernet PHY
MII
SGMII
UART

G.hn Wave-2 BBP

88LX2741
G.hn AFE

88LX2741
G.hn AFE

Flash

G.hn Coax/Phone

G.hn PLC

DC or AC Power
[500-240V/50-60Hz]

Line Trap Filter

Multi-Medium

GbE
USB
RS232/RS485

G.hn Coax
G.hn Phone
G.hn PLC

DMI920 G.hn Industrial IoT EVK

The DMI920 Evaluation Kit is MaxLinear’s G.hn industrial IoT multi-medium, multi-interface EVK. It combines the G.hn transceiver solution with MaxLinear’s pre-programmed 3-Output PMIC (XR77103-GR12), 1G Ethernet PHY (GPY115), USB to Ethernet Bridge (XR22800), and SP336E multi-protocol transceiver.

This turnkey EVK allows customers to quickly evaluate G.hn over coax, twisted pair, or powerline with various interfaces including Gigabit Ethernet, RS-485, RS232 and USB.
## G.hn Wave-2 Industrial IoT Networking Products

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Function</th>
<th>Ch.</th>
<th>Physical Medium</th>
<th>Supported G.hn Profiles</th>
<th>Max Net Throughput (Gbps)</th>
<th>Data Interfaces</th>
<th>Ordering Part Number(1)</th>
<th>Temp Range(2) (°C)</th>
<th>Package(3) (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>88LX5153A</td>
<td>Baseband</td>
<td>2</td>
<td>Powerline</td>
<td>MIMO 100MHz, SISO 100MHz</td>
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<td>RGMII (1G), SGMII (1G/2.5G)</td>
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<td>-40 to 85</td>
<td>10 x 10 BGA-186</td>
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<td></td>
<td></td>
<td>Twisted Pair</td>
<td>SISO 200MHz, MIMO 100MHz</td>
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<td></td>
<td></td>
<td>Coaxial</td>
<td>Coaxial 200MHz</td>
<td>1.7</td>
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<tr>
<td>88LX2741</td>
<td>Analog Front End</td>
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<td>Powerline</td>
<td>MIMO 100MHz, SISO 100MHz</td>
<td>N/A</td>
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<td>88LX2741A0-NYC2I000</td>
<td>-40 to 85</td>
<td>4 x 4 QFN-28</td>
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<tr>
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<td></td>
<td>Twisted Pair</td>
<td>SISO 100MHz, MIMO 100MHz</td>
<td>N/A</td>
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<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Coaxial</td>
<td>SISO 200MHz</td>
<td>N/A</td>
<td></td>
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</tr>
</tbody>
</table>

2. Ambient temperature range.

## G.hn Wave-2 Industrial IoT Networking Evaluation Kit

<table>
<thead>
<tr>
<th>Eval Kit</th>
<th>Physical Medium</th>
<th>Baseband Chip Used</th>
<th>Analog Front-End Used</th>
<th>Max Net Throughput</th>
<th>Supported G.hn Profiles</th>
<th>Data Interfaces</th>
<th>Kit Ordering Number(1)</th>
<th># of Boards in Kit</th>
<th>Temp Range(2) (°C)</th>
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</thead>
<tbody>
<tr>
<td>DMI920</td>
<td>Powerline (0-400Vrms), Twisted Pair, Coax</td>
<td>88LX5153A</td>
<td>88LX2741 (2x)</td>
<td>1000Mbps</td>
<td>Powerline MIMO 100MHz / SISO 100MHz; Twisted-Pair 200MHz SISO / 100MHz MIMO</td>
<td>1000Base-T</td>
<td>RD-GRID-2DMI920KIT-01</td>
<td>2</td>
<td>0-40</td>
</tr>
</tbody>
</table>

1. Visit [www.maxlinear.com/dmi920](http://www.maxlinear.com/dmi920) for most up-to-date Ordering and Environmental Information.
2. Ambient temperature range.

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