SmartWave 1000

OVERVIEW

High-Performance G.hn & i.MX8M Module

We define our SmartWave 1000 module as a data transmission and device control solution designed to meet the needs of the most demanding applications. Our product combines MaxLinear's G.hn Wave 1 technology and NXP's powerful i.MX8M processor to offer a complete and robust solution.

MaxLinear G.hn Wave 1 Technology

Integrated into the base of our system, G.hn Wave 1 technology enables high-speed and reliable data transmission over the power line. This not only simplifies installation and reduces the necessary cabling but also ensures a stable and efficient connection.

NXP i.MX8M Processor

At the heart of our system is the i.MX8 processor from NXP, known for its high performance and efficiency. This processor is responsible for managing the position of the connected cameras, processing the captured images, and ensuring smooth data transmission. Its capability to handle multiple tasks simultaneously makes it an ideal choice for applications requiring intensive data processing.

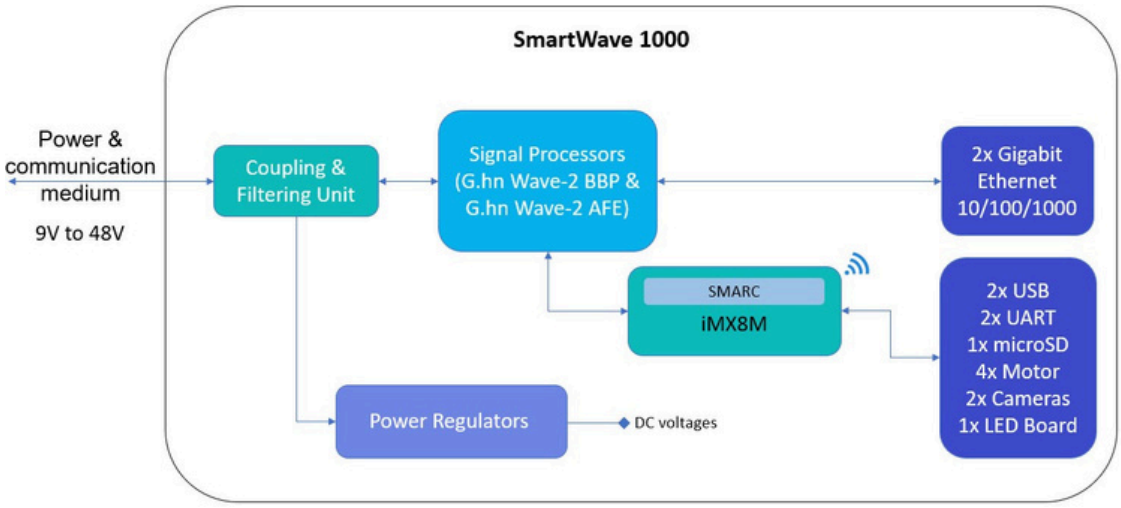
LIST OF MODEL

Model	Processor	Frequency	WIFI / Bluetooth	Ethernet	RAM Memory	Flash Memory	NAND Flash	G.hn PLC
SmartWave 1000	iMX8M-Quad	1.3 GHz	Yes	x1	1.5 GB	4 GB	No	Yes
SmartWave 1000	iMX8M-Quad	1.3 GHz	No	x1	1.5 GB	4 GB	No	Yes
SmartWave 1000	iMX8M-Quad	1.3 GHz	Yes	x1	3 GB	8 GB	No	Yes
SmartWave 1000	iMX8M-Quad	1.3 GHz	No	x1	3 GB	8 GB	No	Yes

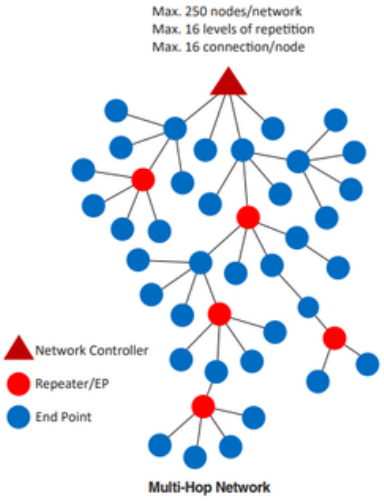
TECHNICAL SPECIFICATIONS

Processor	**NXP iMX8M Dual/Quad** **Clock:** 1.3 GHz **CPU:** 2 or 4 ARM Cortex-A53 **Low Power co-processor:** Cortex-M4
G.hn	**Digital Baseband:** MaxLinear G.hn Wave-1 digital baseband processor (88LX3142) **Analog Front End:** MaxLinear G.hn Wave-1 analog front end (88LX2718)
Memory	**RAM (Processor):** 1 to 4 GB LPDDR4 **Flash (Processor)**: 4 to 64 GB eMMC **EEPROM (Processor):** Serial I2C 32 Kb **RAM (G.hn):** Integrated DDR3 **Flash (G.hn):** 32Mb SPI
2D/3D Graphics Accelerator	**GPU:** Vivante GC7000Lite (Support: OpenGL ES 3.0, OpenGL 3.0, OpenCL 1.2, OpenVG 1.0, Vulkan, EGL 1.4, DirectX 11)
Camera Interface	**2 x** MIPI-CSI, 4-lanes
Video	**Decode:** 4Kp60 High Dynamic Range (H.265, VP9), 4Kp30 (H.264), 1080p60 (MPEG2, MPEG4p2, VC1, VP8, AVS/AVS+, H.263, DivX)
Network	**Ethernet:** 1x 10/100/1000 Mbps **WiFi:** Certified 802.11 b/g/n (Access Point: Yes) **Bluetooth:** 4.2 + BLE+ NFC
Antena	**Internal:** WiFi/Bluetooth and Bluetooth/NFC antenna
External Interfaces	**Jumpers:** Reset and Configuration **Led:** Module status and external board LED **1 x** Micro-SD card connector **1 x** RTC Battery connector **2 x** USB **2 x** Serial UART 6-pin header **2 x** Stepper motor control **1 x** SMARC
OS Support	Distributions **(Processor):** Ubuntu 16.04, Yocto 2.3, Debian Linux Kernel **(Processor):** 4.9 **Firmware (G.hn):** Wave-1 G.hn Spirit
Power Supply	**Power connectors:** From 12 V to 50 V
Thermal	**Industrial temperature:** -40°C to +80°C
Dimensions	**BASE SMARC size**: 142,00 mm x 90,00 mm **Small SMARC size:** 82,00 mm x 50,00 mm

BLOCK DIAGRAM



Wave-1 G.hn SPIRIT GRID



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.

APPLICATIONS

G.hn Wave-1 powerline, twisted pair,

or coaxial cable networking.

Smart elevator control.

Fire alarm control panel.

Smart parking system control.

Smart fuel dispenser system.

Building entry/access control.

Building security and surveillance.

Smart building data backbone.

ORDENING INFORMATION

Model	Reference	Description
SmartWave 1000	SmartWave 1000	Blend of power line communication G.hn Wave-1 and NXP's powerful i.MX8M processor, Wifi/Bluetooth/NFC, Ethernet x1, UART x2 , Cameras MIPI-CSI, 4-lanes x2, Stepper motor control x2, External board LED control.

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