



dLAN® Green PHY Module

- dLAN®-Module enables fast integration of powerline technology
- fully integrated Green PHY network controller with a lot of features like fast Ethernet, UART, USB, SPI and I²C
- availability of status information and device configuration via open API (Application Programming Interface)

dLAN® Green PHY Module

smart integration of powerline communication

The devolo dLAN® Green PHY Module is ideal for implementation in any electronic device in the area of IoT (Internet of Things). This area includes domestic Heating, Ventilation and Air Conditioning (HVAC) as well as industrial applications like production robots and chargers for e-mobility. Green PHY offers a seamless integration for connected homes as well as for novel industrial machine-to-machine (M2M) applications.

- Networking – The connection of different hosts becomes more and more important in the age of connectivity. We offer a cost efficient technology which allows you to integrate your device quickly onto your existing network.
- Standard according to IEEE - The dLAN® Green PHY Module is compatible to IEEE 1901 which ensures long term availability of your new product.
- HomePlug Green PHY – The compatibility to other devices incorporated in your network is guaranteed by the standard.
- Green PHY enables quick charge of vehicles according to ISO/IEC 15118.

In the area of e-mobility, the green PHY module allows the implementation of quickly charging the batteries. The usage of the open standard fits perfectly to smart-energy applications, sensor solutions and automotive designs. They can be engineered very quickly and efficiently. As an additional benefit the dLAN® Green PHY Module operates with less energy consumption compared to traditional PLC devices and fulfills requirements from industrial applications.

- The robustness of the data transmission, the enhanced temperature range, the compact dimensions and universal interfaces allow an easy integration onto any electric device.
- Design-In Support – The engineering team of devolo is at your service in the event of any question from the initial design to the accreditation of the new product.
- A software development kit (SDK) and an appropriate evaluation board are available to integrate the green PHY technology fast in your product. This rapid prototyping technique results in a shorter time to market by realizing your idea!

dLAN

Protocol	Communication over Powerline-Standard HomePlug Green PHY, which is compatible to HomePlug AV Specification and IEEE 1901 Standard.
Voltage (PLC) or alternatively	240 & 120 V(AC); 24 V(AC) & (DC) Coax- or Pair-wire
Characteristics	Supports „robust OFDM“ ROBO-modus

Module's chips

module's voltage	3.3 Volt
PLC Chip	QCA 7000
Flash-Memory	16 Mbit CMOS
µProcessor	NXP1758 ARM Cortex-M3
internal memory	512 kB Flash / 64 kB SRAM
frequency	100 MHz

Interfaces

PLC	PLC Data und zero-crossing information.
Network	10/100 Mbit Ethernet-PHY
USB	USB 2.0 Interface
I ² C; SPI	Sensors and Actors, external Chips
UART; CAN	(industrial) busses based on RS485, RS422 or RS232
GPIO; AD/DA	switches, LEDs, dials, indicators
Debugging	SWD, JTAG, UART

Standards

IEEE 1901 HomePlug
ISO/IEC 15118-3 charge columns

Software

GreenPHY Chip	Official QCA Firmware;
ARM µProcessor	FreeRTOS / C
Development tools	(LPC/MCU)-Xpresso – Eclipse based IDE
- IDE	Software includes driver and examples of different sensors and actors
- SDK	Software available on github: https://github.com/devolo/dlan-greenphy-sdk
- ARM Debug	Cortex compatible, e.g. LPC-Link/Link2

Features

Range (up to)	Power line (PLC):	300 Meter
	Two-wire/telephone line:	400 Meter
	Coax- / antenna cable:	600 Meter
Data rate (up to)	10 Mbps	
Encryption	128 Bit AES	
Power consumption	< 1,5 Watt	
Dimensions	39.4 mm x 43.2 mm x 16.09 mm	
Temperature operation	-40 to +70 °C @ <90% humidity, not condensing	
storing	-40 to +150 °C @ <90% humidity, not condensing	

Distribution

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