

SIG40 - UART Communication Over Battery Power Lines

Description

The SIG40 is an innovative transceiver for digital communication over battery-power lines. It allows the powerline to be used both for power and communication eliminating wires used for control and data. The SIG40 uses a unique multiplex digital signaling technology that overcomes the powerline noisy conditions.

The SIG40 saves node costs and increases the network capacity, reduce the harness size and increase reliability. A sleep mode enables power saving. Wakeup messages on DC line awaken remote devices.

The powerline new physical layer is useful for a wide range of Automotive, Avionics, Industrial applications such as sensor readings, actuator activation, doors, seats, mirrors, climate control, lights, Truck-Trailer, etc. The SIG40 contains a UART host interface, modem, line driver and ceramic filter interface.

The device operates as a DC Powerline transceiver that replaces the RS232 or LIN transceivers and eliminates the Data wire. Its 57.6kbps data rate triples the LIN transfer rate. The SIG40 network consists of a Master and Slaves. Each SIG40 device operates also as a Slave in a multiplex network. Multiple networks may operate over the same wire using different carrier frequencies. The SIG40 activates ISL40 smart DC powerline slaves.

Applications

- Truck-Trailer sub-bus
- Door module
- Climate control network
- Front and back Lights
- Sensors Actuators network
- Entertainment control
- Batteries management
- Green Energy management
- Security Monitoring

Features

- Several selectable Carrier frequencies 4.5MHz - 6.5MHz
- Selectable bit rate between 19.2 Kbps to 57.6 Kbps.
- Eliminates data wires and transceiver.
- Operates over wide range of noisy power supply / battery lines.
- Byte oriented communication.
- Sleep Mode for low power consumption.
- Allows Master – Slave multiplex networks
- Several independent networks can operate over the same wire using different carrier frequencies.
- SOP 20 pin package

Figure 1 - SIG40 Pinout

1	HDO	RxOn	20
2	INH	TxOn	19
3	HDI	DTxO	18
4	nSleep	Gnd	17
5	HDC	RxP	16
6	nReset	RxN	15
7	Wake	Vcc	14
8	InterfHop	OscIn	13
9	VccPLL	OscOut	12
10	MF0nF1	GndPLL	11

Figure 2 - SIG40 Fire Safety network example

