Sun Digital Systems Inc.

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Ethernet communication on ordinary 12V power distribution wire

Sun Digital Systems Powerline Communications (SDS-PLC) products deliver conducted 100Mbps Ethernet IEEE 802.3 communication to any point along power wire. The same wire delivers both the network electrical energy and the conducted communication signal. Power is provided by existing 12DC power wiring in a vessel, vehicle, RV or fixed based system. Dedicated conditioned power delivers communication range of hundreds of meters.

No new wiring or Ethernet cables needed so installation is quick, and simple, **without drilling holes**.

Applications

- PC to PC network to any Ethernet ready device
- TV or closed-circuit video display with camera control
- Appliance status and control
- Engine room monitor
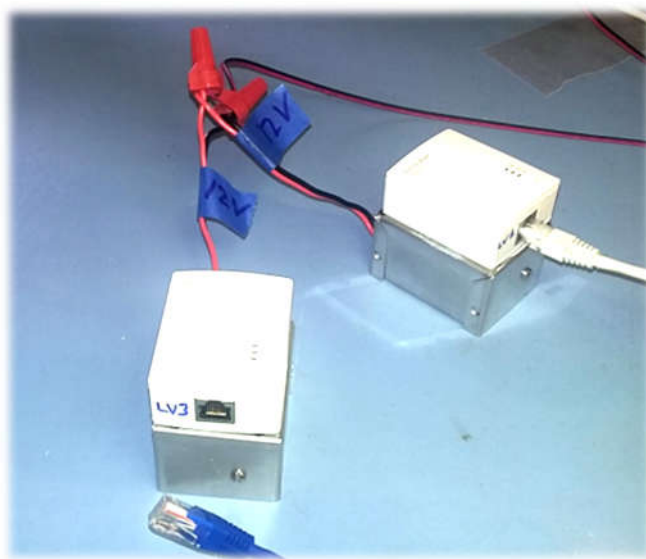- Backup or extend WiFi networks

Features

- Ethernet 100Mbps wired communication without installing new wire or Ethernet cable
- Compatible with wireless communication, WiFi
- 12VDC operation in vessel, vehicle or RV
- Simple multi drop network to dozens of locations along the wire pair without Ethernet Hubs
- No configuration required, plug and play
- Self-managed, automatic encrypted network security
- Password protected AES encrypted data, optional
- Multiple private channels available on one wire pair

Benefits

- No need to drill holes for Ethernet cables
- May use existing wiring
- Compatible with any Ethernet device
- Extend the range of WiFi networks
- May bridge to WiFi or other radio networks
- RJ45 connector for simple network interface

SDS_PLC-Eth100 Starter Kit: Ethernet communications bridged across a typical 12Volt power distribution wire using two adapter modules.   Version A shown below.

Higher voltage, 24V and 36V versions available in 2019.

Price List:

Starter Kit for a two node network, SDS_PLC-Eth100 as show above: $280

Each additional SDS_PLC-Eth101 adapter module (adds one node): $130

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SDS PLC Ethernet Communications

SDS_PLC-Eth100 is a transparent communications network requiring no management or configuration. Simply connect two units to 12 Volt power and an Ethernet network is established automatically. Connect each unit to an Ethernet ready device using the provided RJ45 cables and bidirectional transparent communications is ready to go.

Password Protection - Multiple Networks

For added security the user may decide to further protect the network data by assigning a unique secret password during installation. Only nodes with the same password will access that networks data. Multiple independent networks may be configured on the same wire pair using different passwords. Each network will share the available 100Mbps bandwidth. A 500Mbps network product will be available in 2018.

A user may input an 8 to 64-character password that generates a secret initialization vector for 128 bit Advanced Encryption Standard (AES) data encryption.   Once the password is entered into system it cannot be read back. Alternatively, a physical pushbutton procedure will also generate a random network password automatically. Adding and deleting password protected nodes is accomplished using the same simple one button procedure.

SDS-PLC-Eth100 conducted communications may be the primary or a secondary communication system. It may be used to create a data distribution backup channel for wireless WiFi networks or to extend the range of WiFi or created a secondary redundant data channel independent from wireless communications. **Network redundancy and fault detection methods are easily implemented.**

SDS_PLC-Eth100 shown with 12VDC cable and plug.

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