

Application Note-001

CSE-M53 PoE Interface

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Sollae Systems
<http://www.sollae.co.kr>

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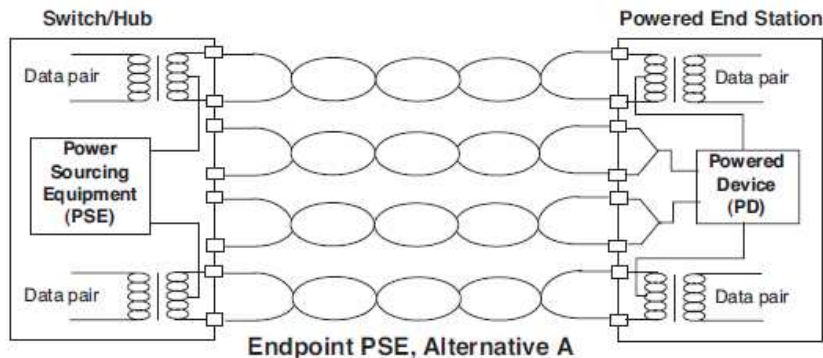
PoE

PoE(Power Over Ethernet) is a standard which supplies DC power to a device via Ethernet cable. It is defined in the IEEE802.3af and IEEE802.3at. By supplying power from an Ethernet cable, devices can be installed very easily without additional power cable.

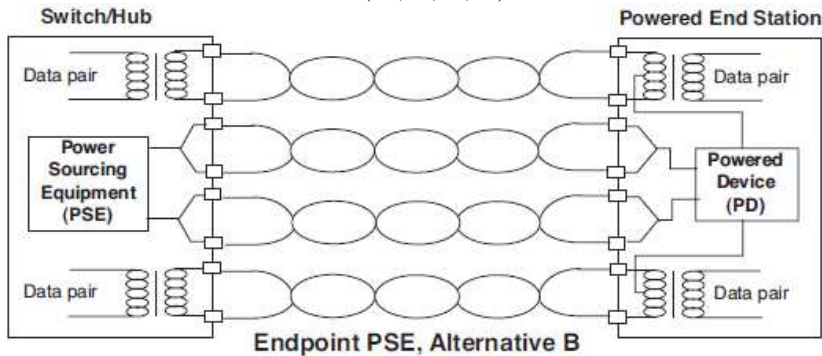
PSE(Power Sourcing Equipment) is a switch which supplies power via Ethernet cable, and PD(Powered Device) is a device which gets power from the PSE via Ethernet cable.

PD can be powered in the 3 ways as followed:

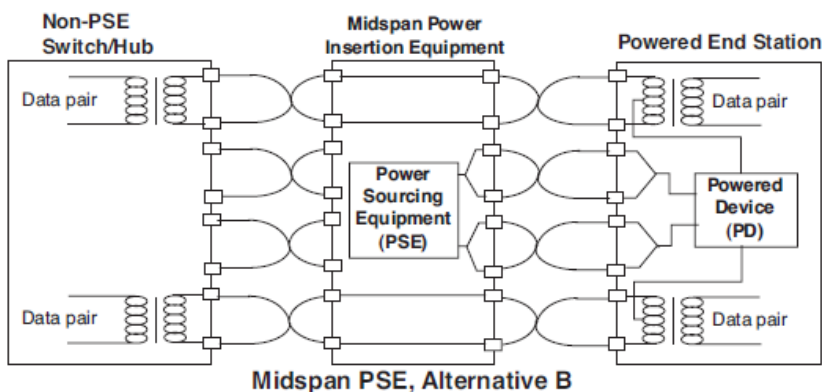
- From the Ethernet signal line (#1,#2,#3,#6)



- From the unused Ethernet line (#4,#5,#7,#8)



- From the midspan
A midspan Power Insertion Equipment can be used for a non-PoE switch.



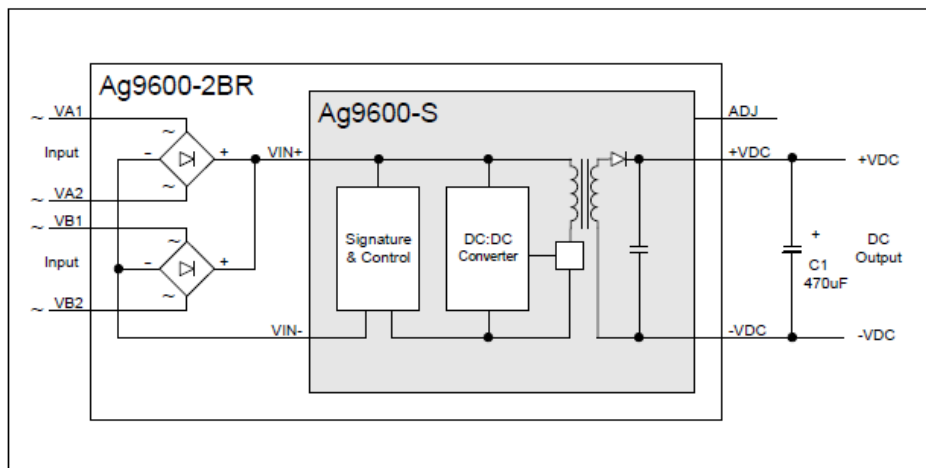
3 PoE Interface

3.1 Main Parts

3.1.1 DC/DC Converter

An Ag9605-2BR of Silvertel is used as a DC/DC converter in this application. Its main features are followed:

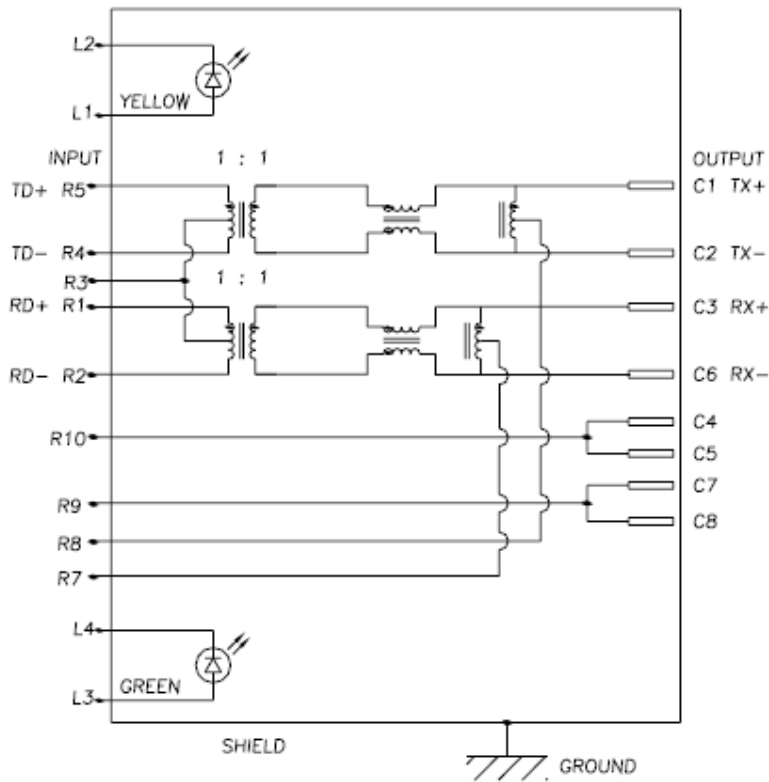
- IEEE802.3af compliant
- Small SIL package size – 56mm x 14mm
- Low Cost
- Input voltage range 36V ~ 57V
- Minimal (low cost) external components required
- Short-circuit protection
- 5V Output (Fine Adjustable)
- Two Bridge Diodes Embedded
- 1500V isolation (input to output)
- Silvertel “design-in” assistance



For more information, please refer to the datasheet.

3.1.2 RJ-45 Connector

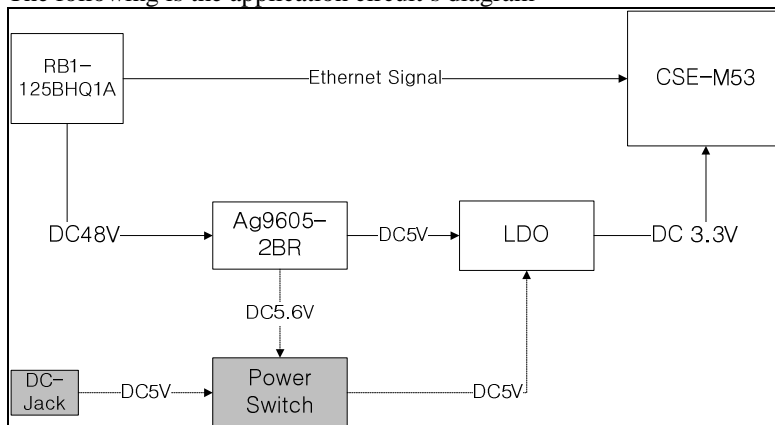
An UDE's RB1-125BHQ1A is used for an RJ-45(pulse-transformer embedded) connector. The following is its embedded circuit.



For more information, please refer to the datasheet.

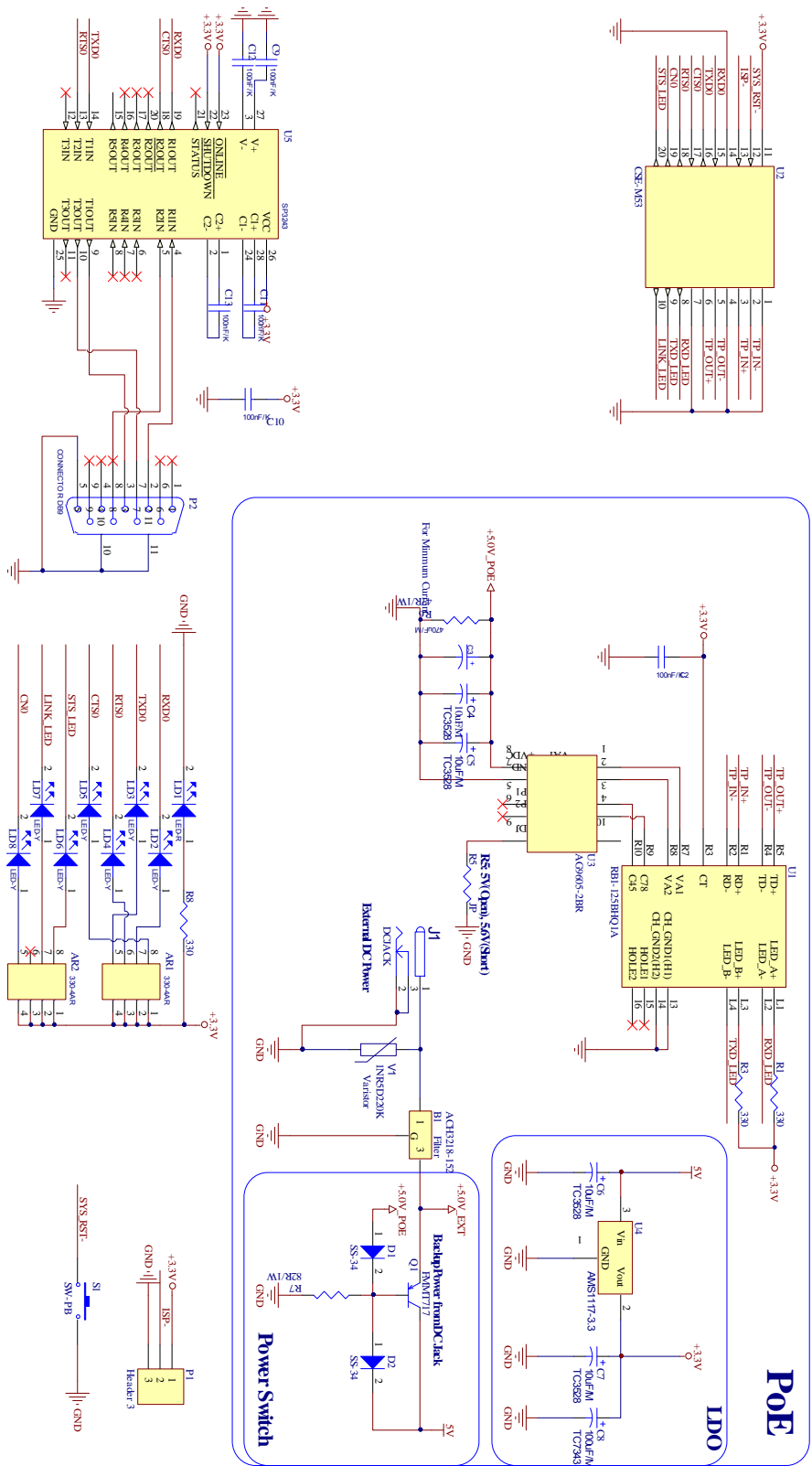
3.2 Application Circuit Diagram

The following is the application circuit's diagram



The DC-Jack and Power Switch is an optional back-up power. The CSE-M53 is powered from the PoE normally. But it is powered from the DC-jack when PoE power is failed, for example, the Ethernet cable is unplugged.

4 Application Schematic



5 Revision History

Date	Version	Comments
Aug. 31. 2011	1.0	Initial Release