

This application note shows how to connect a Silver Telecom - Power over Ethernet (PoE) module to 1000BASE-T (Gigabit) Ethernet.

Differing from 10BASE-T and 100BASE-T, 1000BASE-T uses all four cable pairs for simultaneous transmission in both directions. Therefore magnetics are required in the (10/100BASE-T) spare pair for the additional data pairs and to add and extract the power.

Note: The current (lower) power version of PoE is IEEE802.3af, this does not allow power to be applied to both pairs at the same time. A higher power version IEEE802.3at, does allow both pairs to be powered at the same time, but it is not ratified yet (as of 1st November 2007). Pre-standard equipment, such as the Ag5000, is being released to minimise the delay in the introduction enhanced product performance.

Dual input modules with internal bridge rectifiers

Silver Telecom manufacture PoE modules that have dual inputs with internal bridge rectifiers, these include –

Ag9000 Series

Ag8000 Series

Figure 1 shows how to connect these modules to support 1000BASE-T Ethernet.

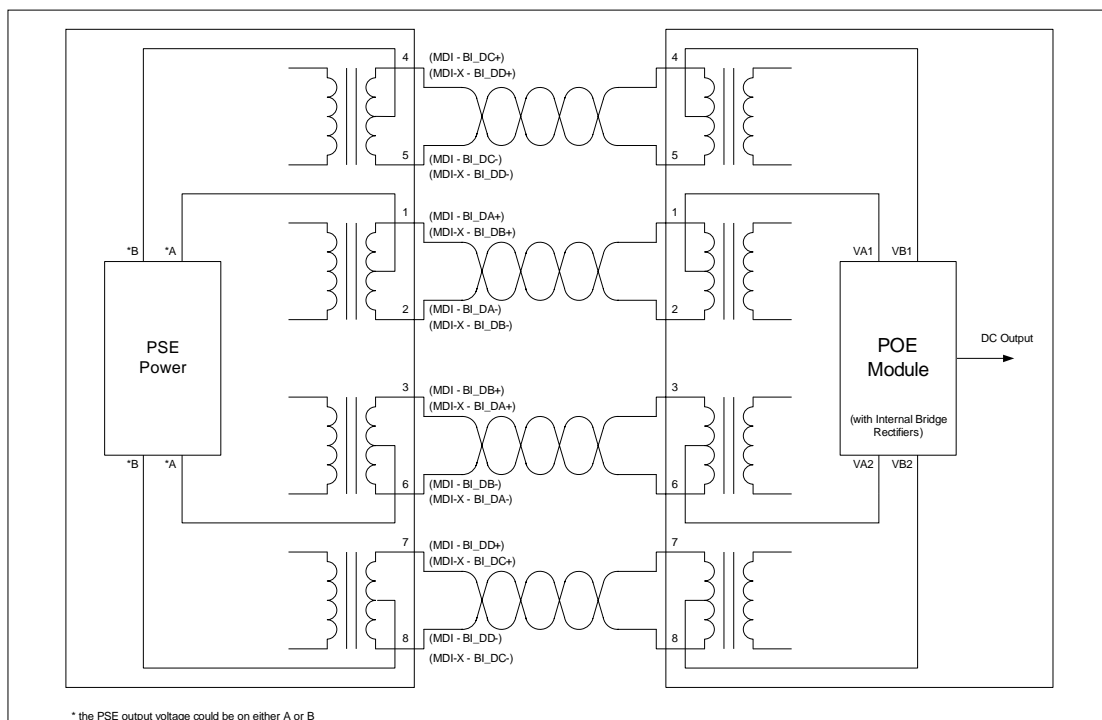


Figure 1

Single input modules without internal bridge rectifiers

Silver Telecom also manufacture PoE modules that have single input without internal bridge rectifiers, these include –

- Ag8100 Series
- Ag8200 Series
- Ag9200 Series

Figure 2 shows how to connect these modules to support 1000BASE-T Ethernet.

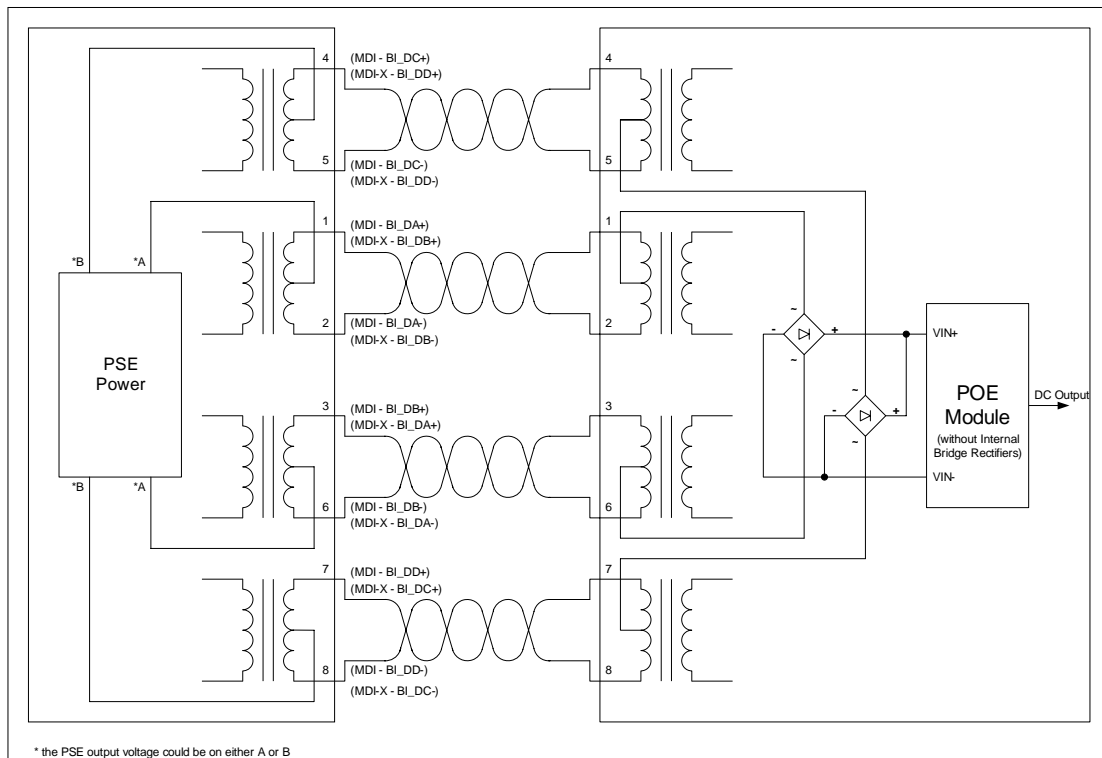


Figure 2

Dual input modules without internal bridge rectifiers

In addition to the above Silver Telecom manufacture PoE modules that have dual inputs without internal bridge rectifiers, these include –

Ag5000 Series

Figure 2 shows how to connect these modules to support 1000BASE-T Ethernet.

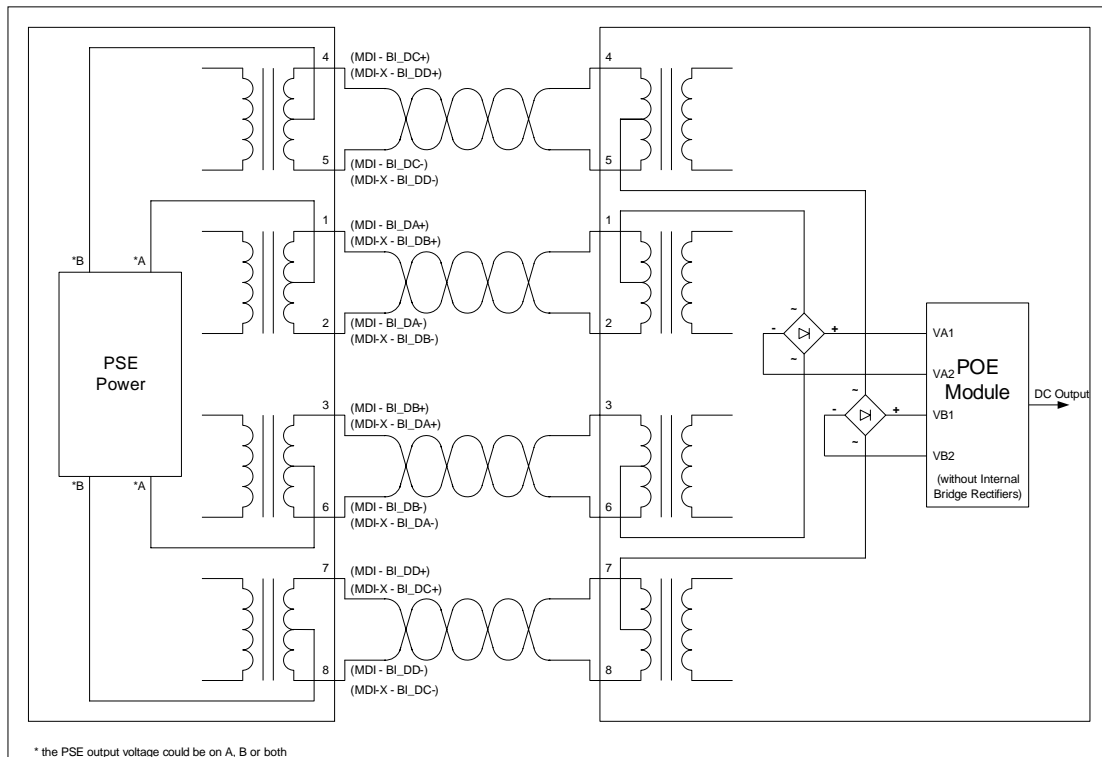


Figure 3

Magnetics

There are several manufacturers that make 1000BASE-T transformers that support PoE. It is very important that the transformer complies with one of the following standards $\leq 15.4W$ - IEEE802.3af or $> 15.4W$ - IEEE802.3at.

Please contact Silver Telecom for more information.