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 to add and extract the power.

**Dual input modules with internal bridge rectifiers**

Silver Telecom manufacture PoE modules that have dual inputs with internal bridge rectifiers.

Figure 1 shows how to connect these modules to support 1000BASE-T Ethernet.
Single input modules without internal bridge rectifiers

Silver Telecom also manufacture PoE modules that have a single input without internal bridge rectifiers.

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

*Figure 2* [Diagram showing connection of modules]
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.

Figure 3 shows how to connect these modules to support 1000BASE-T Ethernet.

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 <= 15.4W - IEEE802.3af or > 15.4W - IEEE802.3at.

Please contact Silver Telecom for more information.