This application note details how to connect two Ag9000 outputs in series to increase the output voltage available to the Powered Device (PD). A simple way of achieving this is by connecting two Ag9000 module outputs in series as shown in Figure 1.

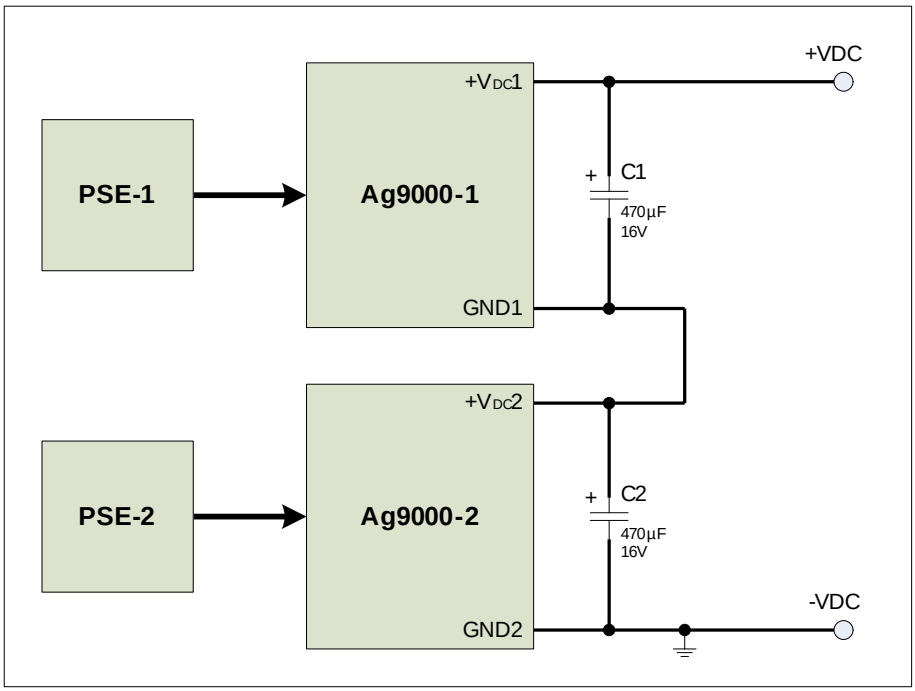

Figure 1: Simple Series Connection

If you require 24V 1A then both Ag9000-1 and Ag9000-2 would be Ag9120-S modules. But if you require 9V 1.8A then both Ag9000-1 and Ag9000-2 would be Ag9050-S modules and the adjust pin used to drop both outputs to 4.5V.

If PSE-2 is disconnected then the output voltage (–VDC to +VDC) = the output voltage of Ag9000-1 – 0.6V. If PSE-1 is disconnected then the output voltage (–VDC to +VDC) = the output voltage of Ag9000-2 – 0.6V.

Alternatively you may require both positive and negative rails in your application. Once again this can simply be done by connecting the outputs in series as shown in Figure 3.

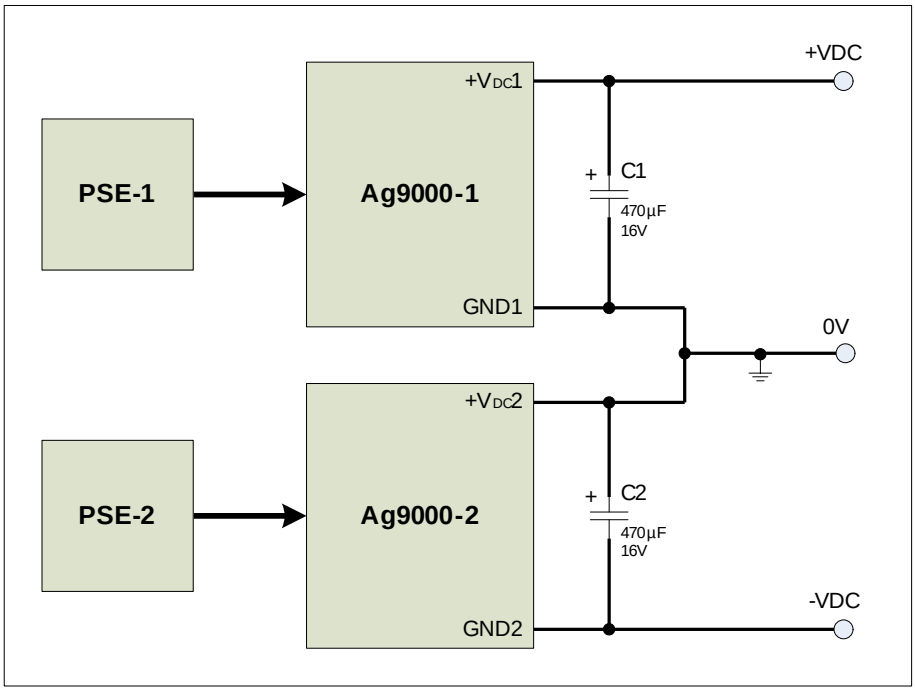

Figure 2: Positive and Negative Output

In Figure 1 and Figure 2 each Ag9000 is driven from separate Power Sourcing Equipment (PSE), Figure 3 show how an Endspan (or EndPoint PSE) and Midspan (PSE) can be configure to supply power through a single Cat5 ethernet cable.

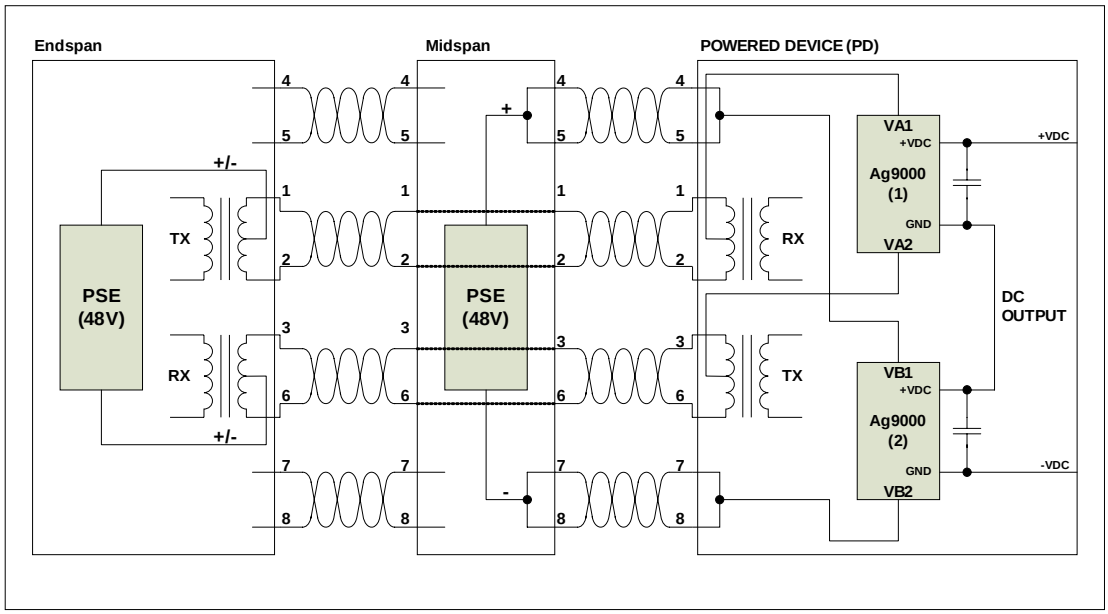

Figure 3: Using a Midspan with Endspan

There are manufactures that produce high power Midspan equipment that can supply the power on both the data pair and the spare pair simultaneously. An example of this equipment is a PD-8001 Midspan manufactured by PowerDsine™ which can be connected as shown in Figure 4.

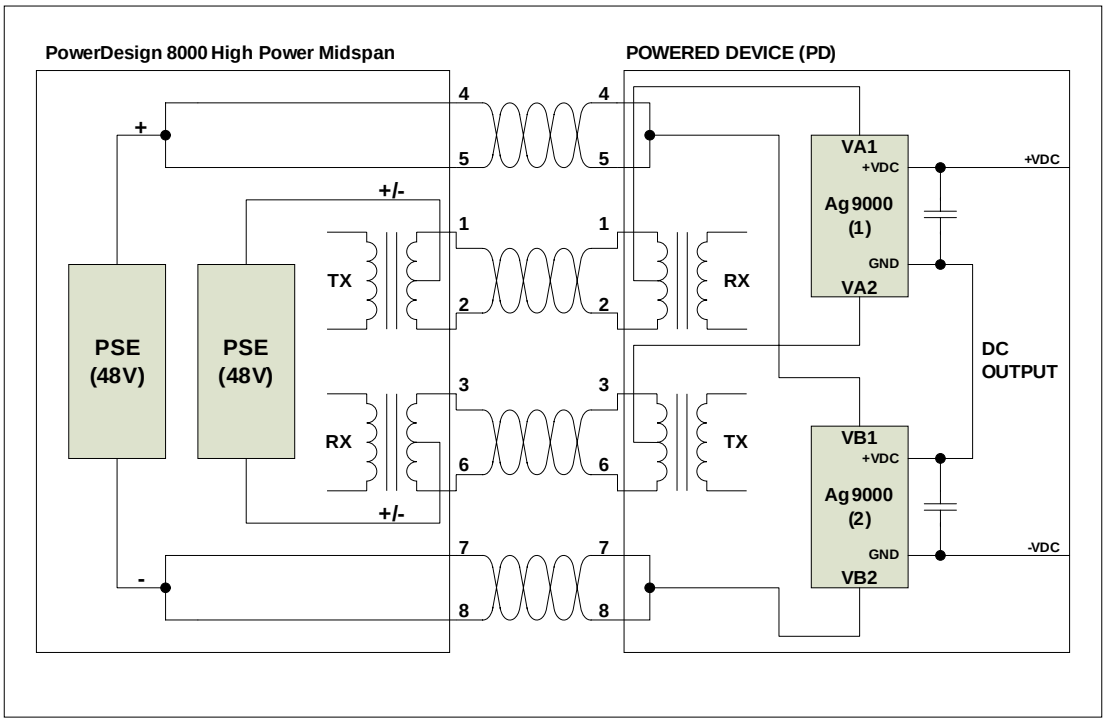

Figure 4: High Power Midspan