

*Silver*  
TELECOM

**POE 30W Evaluation  
Board User Manual**

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### 3 Introduction

This manual is intended to be a guide to using the “EVALPOE30W” evaluation board with Silver Telecom Powered Device (PD) modules.

The EVALPOE30W evaluation board can be powered using the spare pair in the CAT5e cable (pins 4 & 5 and pins 7 & 8), or over the data pair through on-board magnetics within J2 (MJF11U2NNA8-VB110 from E & E Magnetic Products Ltd).

### 4 Board Description

The EVALPOE30W evaluation board will work with the following products: -

Ag5000

Ag5100

The input data and power is supplied to the board through connector J2. The data is passed through to the peripheral equipment via J1, with the power from the PD module is supplied via J3 to J7 (see Figure 1).

#### 4.1 Input Selection

The EVALPOE30W evaluation board has on-board bridge rectifiers to ensure the correct input polarity is applied to the PD.

The Ag5000 has built-in dynamic input selection and will automatically detect which of the inputs (or both) are supplying power to the board.

Unlike the Ag5000 the Ag5100 only has a single input, so will only accept power from one input, the data pair or the spare pair (not both at the same time).

There are two LED's that indicates which input is applying the power: -

LED1	-	Data Pair
LED2	-	Spare Pair

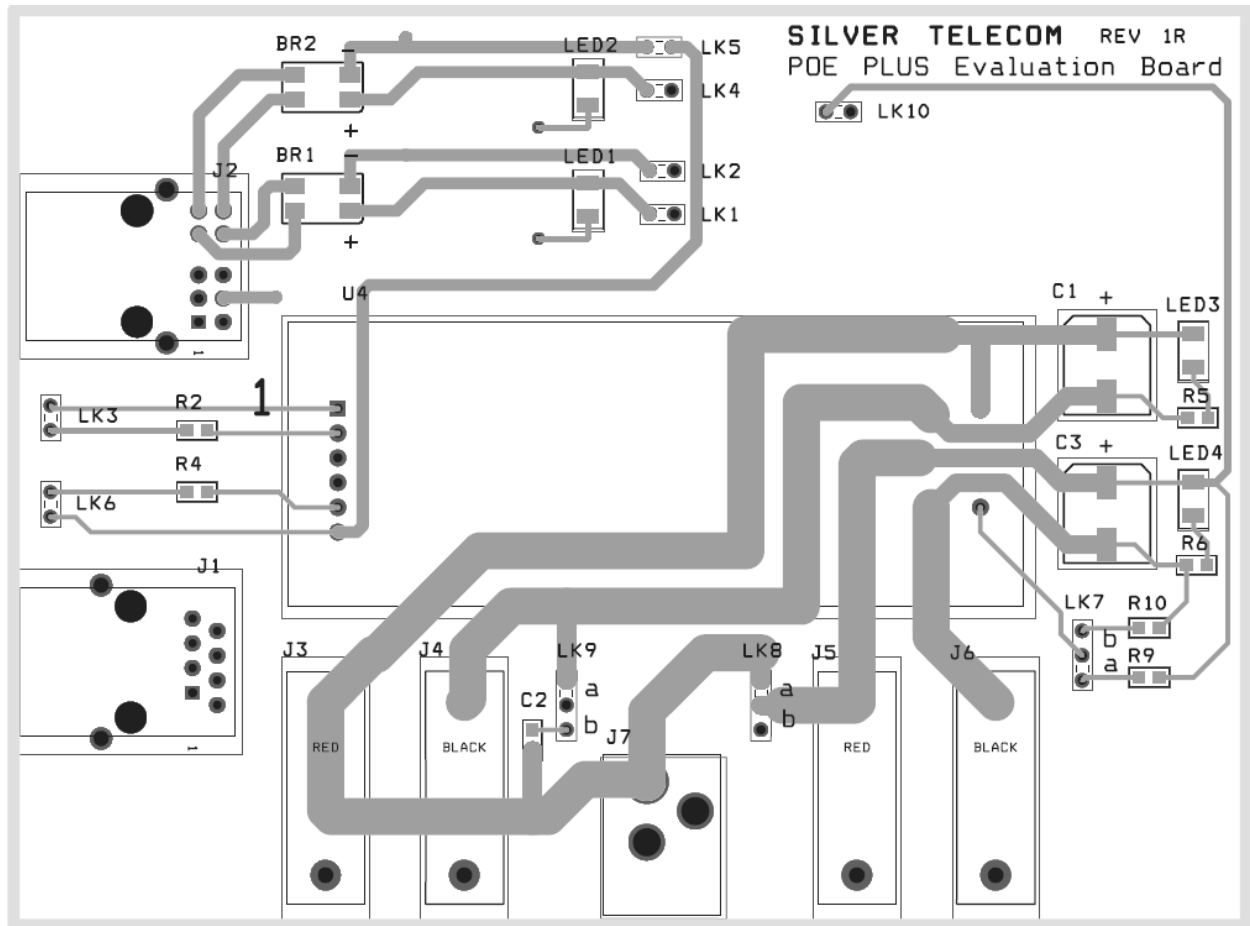


Figure 1: Board Layout

## 4.2 Class Programming

Within the IEEE802.3af specification there is an option for setting the power classification. R2 and R4 are 249R to set the class programming to CLASS 3, these can be applied by simply adding links LK3 and LK6 Resistors.

### 4.3 PD Output Selection

The PD modules have two DC outputs that must be connected in parallel or in series, the EVALPOE30W board output connections are shown in Table 1: -

Output	Connections	
0V 1	J6	J7 (Outer)
VOUT 1	J5	
0V 2	J4	
VOUT 2	J3	J7 (Centre)

Table 1: Output Connections

The outputs cannot be run independently so the EVALPOE30W board has output selector links LK8 and LK9. For parallel outputs both of these links must be in position “a” - VOUT1 connected to VOUT 2 and 0V 1 connected to 0V 2. For series outputs both links must be in position “b” – VOUT 1 connected to 0V 2.

The DC10 connector J7 delivers a nominal 12V when the outputs are in parallel and 24V when the outputs are in series (see Table 1 for connections).

### 4.4 Output adjustment

The primary output (VOUT 1 – 0V 1) has an ADJ pin, which allows the output voltage to be increased or decreased from its nominal value. The secondary output (VOUT 2 – 0V 2) will track the adjusted primary output voltage.

The EVALPOE30W board has an adjust link LK7 and two resistors R9 (18K) and R10 (0R) which allows the output to be adjusted to its maximum and minimum values.

To reduce the output voltage (to its minimum) connect a link to LK7 position “a”, to increase the output voltage (to its maximum) connect a link in position “b”. If the output voltage needs to be set to a different value (within the adjustment range) then connect a resistor instead of a (0R) link.

## 4.5 Minimum Load

The PD module requires a minimum load of 200mA to maintain normal operation. The EVALPOE30W board if fitted with a 200mA load which can be applied by fitting LK10. If the external load connected to the board always exceeds 200mA, then this link does not need to be fitted.

## 5 Typical Set-up

Figure 2 shows the basic set up using the POE evaluation board with a High Power Midspan or Endspan.

The equipment required: -

- Midspan or Endspan PSE (Power Sourcing Equipment)\*
- Peripheral (or Test) Equipment
- CAT5e cables
- Output power cable
- Mains cable

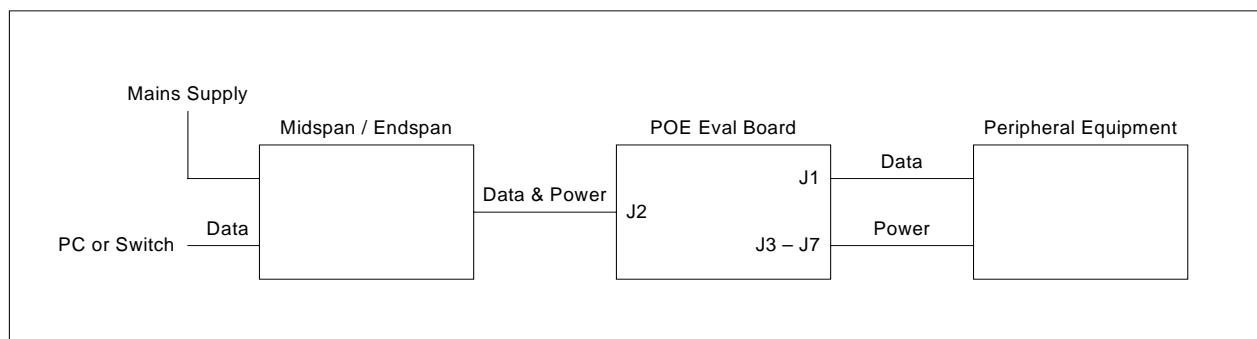


Figure 2: Basic set-up

\* Because the Ag5100 only has a single input it is important that the PSE used should have a single output e.g. Phihong "POE30U-560". The Ag5000 will work from a single input (on either pairs) or a dual input with equipment like the Microsemi "PD8000" series.

## 6 Using the Board

### 6.1 Typical Application

Figure 3 shows an example set-up using an Ag5000 powered by a Microsemi PD8001 Midspan and supplying +12V to a Vivotek PZ6122 (or PZ6112) ethernet camera.

The PC ethernet port is connected to the data input of the PD8001 (PSE) via a short Cat5e patch cable. The Data & Power output from the PD8001 is connected to the input of the EVALPOE30W evaluation board (J2) via a CAT5e crossover cable. The data output of the EVALPOE30W evaluation board is connected to the data port of the ethernet camera via a short CAT5e patch cable. The +12V (parallel configuration) power output from the EVALPOE30W evaluation board (J7) connects to the dc input of the Vivotek PZ6122 ethernet camera.

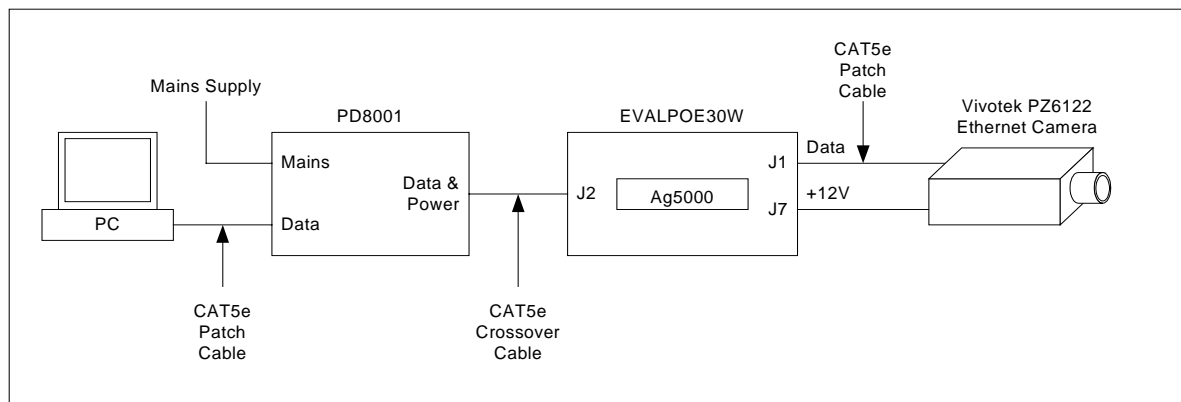


Figure 3: Example set-up

## 6.2 EVALPOE30W Evaluation Board Schematic

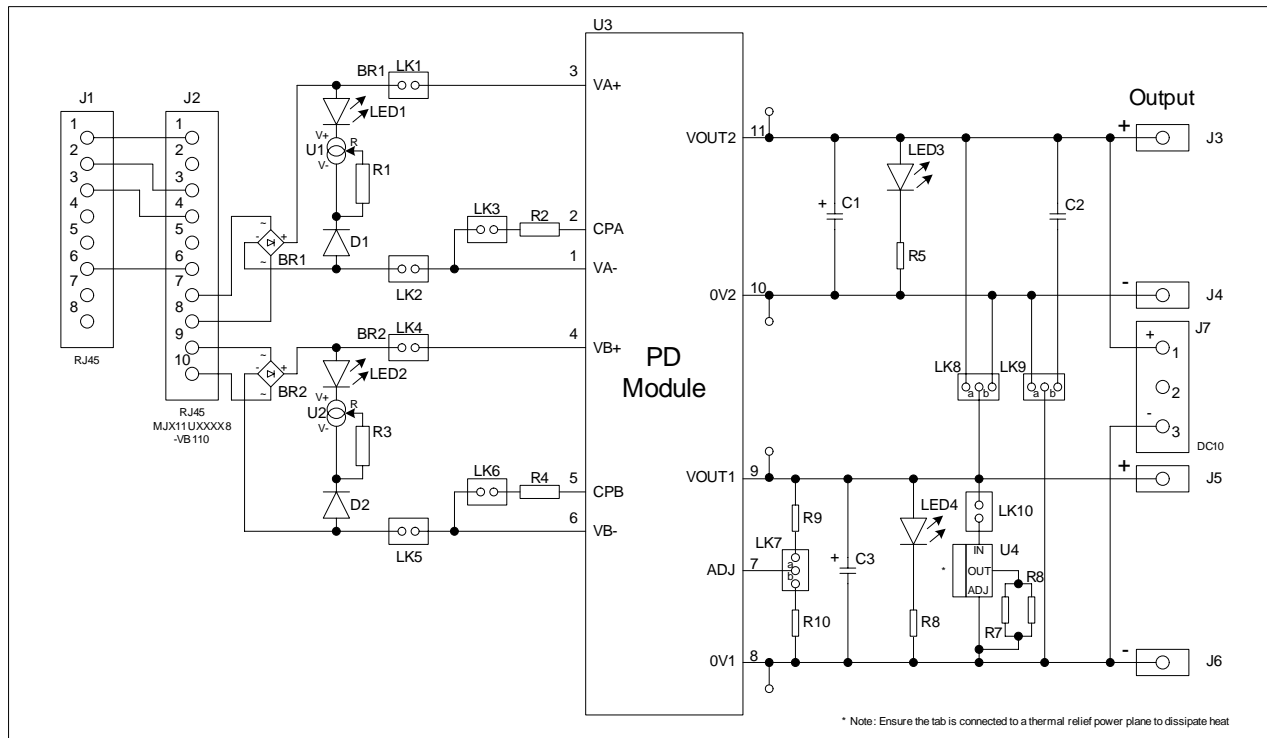


Figure 4: Power Supply set-up