Silvertel

Ag9330 Evaluation Board
User Manual

Rev 1.0 – July 2012

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3   Introduction

This manual is intended to be a guide to using the "EVALAG9330 evaluation board" with a Silvertel Ag9330 Powered Device (PD) module.

4 Board Description

The data is supplied to the EVALAG9330 board through connector J1 and is passed through to the peripheral equipment via J2.

The EVALAG9330 board is design to handle 10/100/1000BASE-T Ethernet data rates.

The EVALAG9330 board can be powered by using Power over Ethernet (PoE) or by using the auxiliary (AUX) power supply inputs.

The output power from the PD module to the peripheral equipment is supplied via J4 or J3 & J5 (see Figure 1). When the PD module output is on - LED1 will be illuminated.
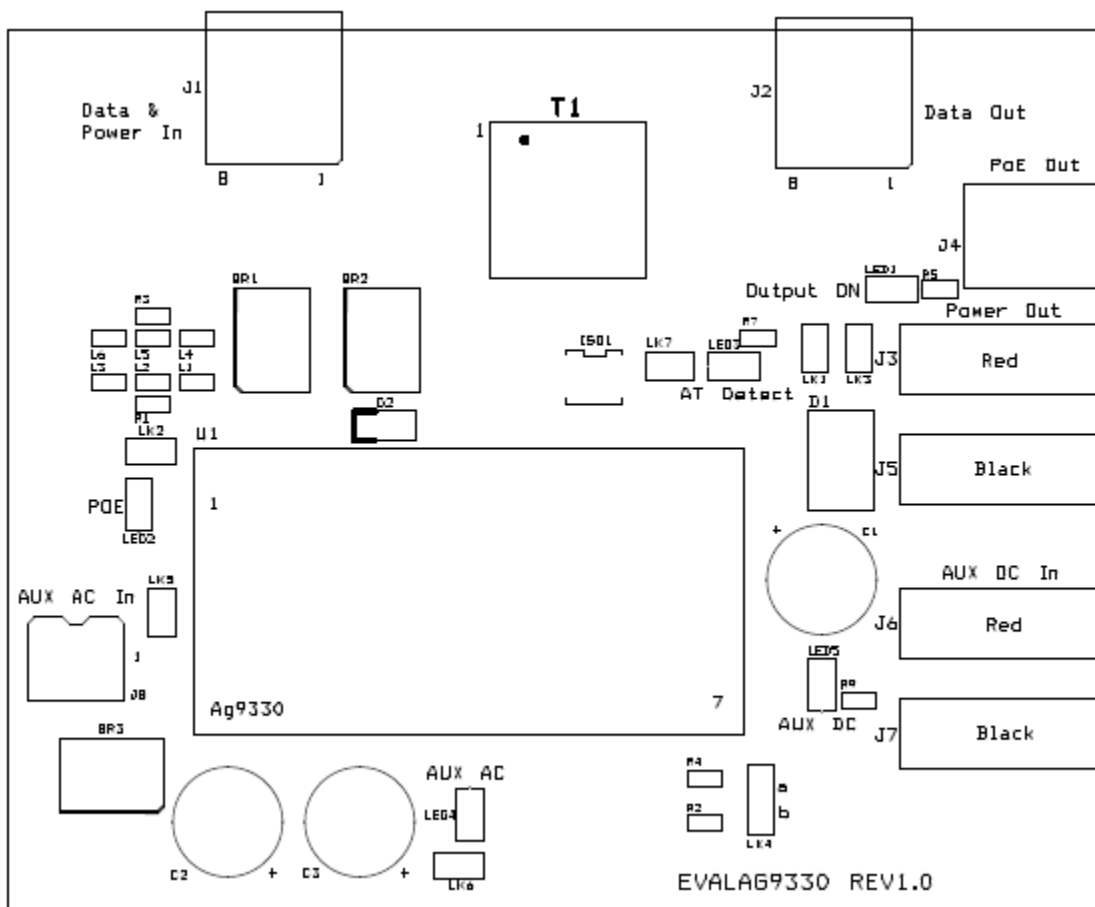
Figure 1: Board Layout

4.1 Input Selection

The EVALAG9330 evaluation board can be powered using PoE through J1. PoE can either apply power pins 4 & 5 and pins 7 & 8, or it can apply the power over pins 1 & 2 and pins 3 & 6. The EVALAG9330 evaluation board is compatible with both of these methods.

The PoE power is extracted from the centre taps of T1, which is IEEE802.3at compliant (749022015 from Wurth). If LED2 is illuminated then there is power on one of the PoE inputs.

If PoE in not available, the Ag9330 can be powered from one of the two auxiliary inputs.

The first auxiliary input can be connected to an ac power supply (20Vac to 40Vac) via the AUX AC connector J8 .If LED4 is illuminated then there is power on the AUX AC input.

Note: LED2 also illuminates if a valid AUX AC Input is present.

The second auxiliary input can be connected to a dc power supply (7Vdc to 15Vdc) via J6 (positive) & J7 (negative). If LED5 is illuminated then there is power on the AUX DC input.

4.2 Class Programming

The Ag9330 is internally set to Class 4, when the module is connected to an IEEE802.3at compliant PSE, LED 3 "AT Detect" will be illuminated.

4.3 Data Output

The output data is transmitted from the evaluation board via J2.

4.4 Output Adjustment

The output voltage of the Ag9330 can be adjusted by connecting the ADJ pin to either the -VDC or the +VDC pins. LK4 can be used to adjust the output voltage (see Figure 1).

On the EVALAG9330 evaluation board R2 and R4 are fitted with a 0 Ohm link to give maximum adjustment, see the output adjustment section in the datasheet for more information.

With LK4 fitted in position "a" (centre to top) the output voltage will increase.

With LK4 fitted in position "b" (centre to bottom) the output voltage will decrease.

4.5 Power Output

The Ag9330 output is connected directly to J4, it is also gated to J3 (and J5) through D1 (Schottky Diode). This is used in conjunction with the AUX DC input J6 & J7, see Figure 2 below.
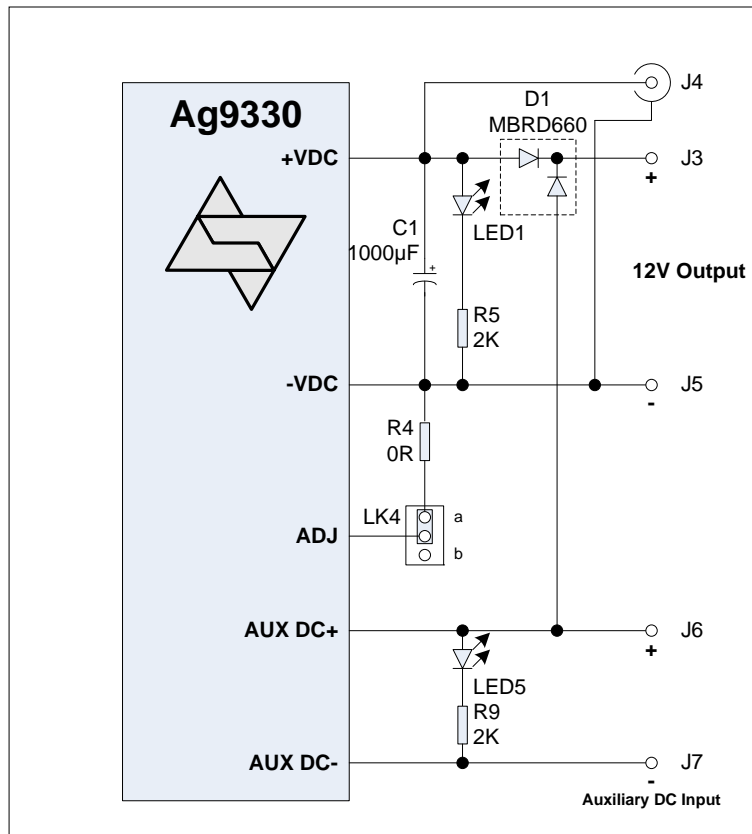

Figure 2: Output Power Configuration

LED1 is illuminated when the Ag9330 output is ON.
LED5 is illuminated when the AUX DC input is present.

4.6 PoE Only Output Configuration

If the auxiliary DC input is not used, D1 can be bypassed by using LK1 and LK3, connecting the Ag9330 output directly to J3. But it is important that these links are left open when the auxiliary DC input is used.
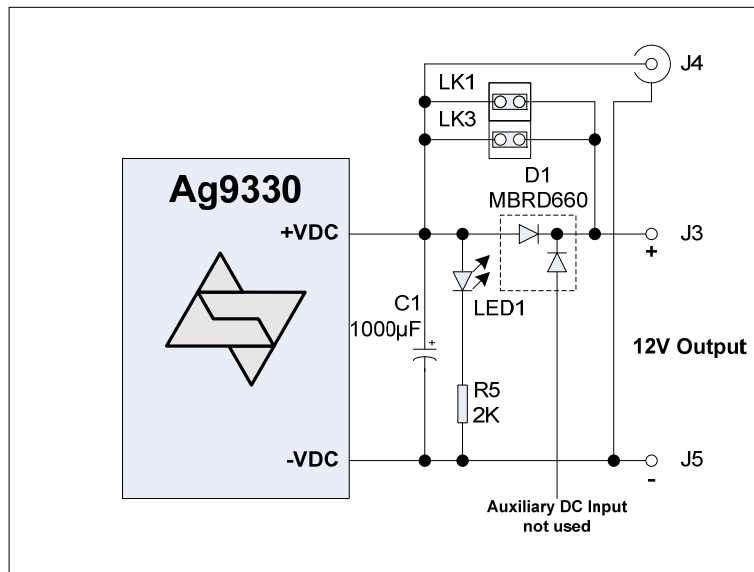

Figure 3: Output Power Configuration with D1 Bypassed

5 Equipment Required

Figure 4 shows the full set up using the EVALAG9330 board to supply data and power to an Ethernet camera.

The equipment required: -

- ➢ PC
- ➢ EVALAG6100 Board
- ➢ EVALAG9330 Board
- ➢ Power Supply (50Vdc to 58Vdc)
- ➢ 24Vac Supply
- ➢ 12Vdc Supply
- ➢ Ethernet Camera
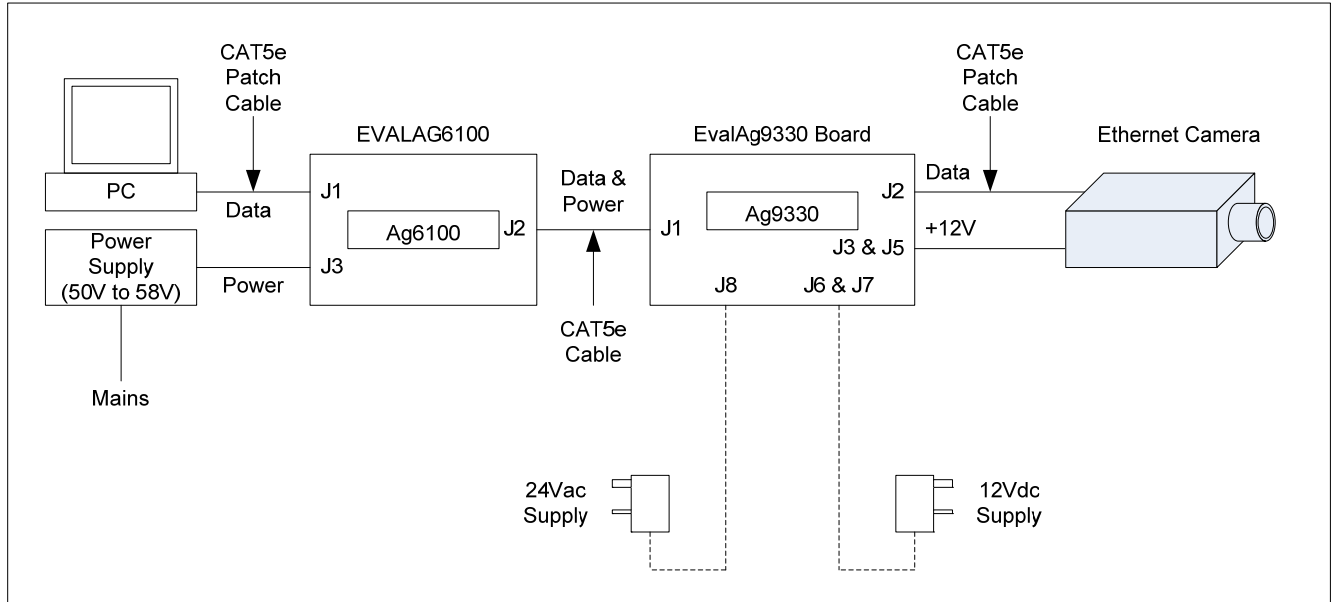- ➢ CAT5e Cables
- ➢ 12V Camera Cable

Figure 4: Full Test Set-up Using Ethernet Camera

6 Using the Board

Figure 4 shows the full test set-up using an EVALAG9330 board and an EVALAG6100 board supplying +12V to an Ethernet camera.

The PC ethernet port is connected to the data input of the EVALAG6100 board (J1) via a short Cat5e patch cable. The Data & Power output from the EVALAG6100 board (J2) is connected to the input of the EVALAG9330 board (J1) via a CAT5e cable. The data output of the EVALAG9330 board (J2) is connected to the data port of the ethernet camera via a CAT5e cable. The (+12V) power output from the EVALPOE board is connected to the dc input of the ethernet camera.

By connecting a 12Vdc power supply to the EVALAG9330 via J6 & J7, the EVALAG9330 board can now be used to demonstrate the back-up function if the PSE fails to supply power.

The AC auxiliary input can be demonstrated by disconnecting the power supply to the EVALAG6100 board and connecting the 24Vac power supply to the EVALAG9330 board (J8). Once again connecting a 12Vdc power supply to the EVALAG9330 as described above, will demonstrate the back-up function if the 24Vac power supply fails.

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