

Silver
TELECOM

**Ag2120 Evaluation Board
User Manual**

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1 Introduction

This manual is intended to be a guide to using the “Ag2120: Fully Featured PSTN Interface”.

The Ag2120 evaluation board has been designed to work with the Ag1170 evaluation board and will a CODEC board. Examples of the different set-ups that can be used are shown within this user manual.

2 Board Description

The Ag2120 evaluation board can be set at either +5V or +3V, the Ag2120 will work at either of these voltages.

The board has two device sockets, one for the single-in-line (SIL) and one for the dual-in-line (DIL). Do not attempt to plug in both variant at the same time.

The evaluation board has two 25-way D-Type connectors (CN1 socket and CN2 plug) these can be used to connect this board to other evaluation boards. There is also an RJ11 connector J3 to connect the line and a power connector CN6 to connect to the power pack (included in the evaluation kit).

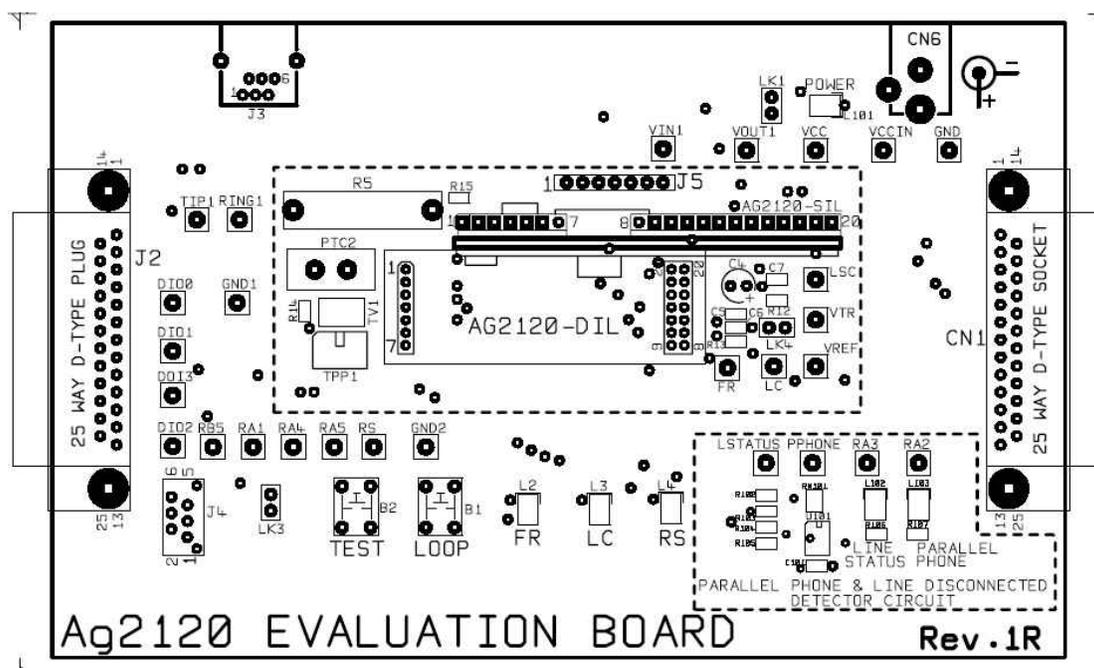


Figure 1

2.1 Board Power

The Ag2120 is powered by the on-board power supply, the power socket CN6 accepts an input voltage* range of 7.5V to 9V, the supply needs to be capable of supply to 1 Amp. The Ag2120 evaluation kit has a power pack included, but if a different power supply is going to be used then it is important that it meets the above criteria and the centre pin is positive (+).

- * The power input is polarity protected and the on-board regulator provides the supply rail for the Ag2120 and the additional board circuitry.

2.2 Ag2120 Power Options

To set the board to +5V - LK1 is not fitted and for +3.3V - LK1 must be fitted.

2.3 Ag2120 Impedance Programming

When using the Ag2120, the impedance module must be fitted to the evaluation board (J5).

A 600R impedance module is supplied at standard with the Ag2120 evaluation kit, but other variants are available upon request. They can be provided to match various Network and Terminal Impedances, see the Ag2120 data sheet for more information.

3 Getting Started

3.1 Equipment Required

Figure 2 shows a basic set up using a single Ag2120 evaluation board connected to the line.

The equipment required: -

- PSU 7.5V @ 1 Amp (supplied)
- (PSTN) Line

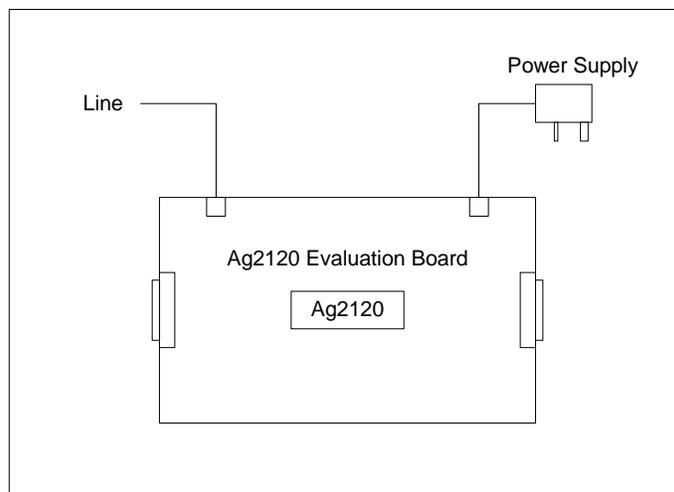


Figure 2: Basic set-up

4 Using the Board

4.1 Power On Conditions

When the Ag2120 evaluation board is powered, the board will default to the conditions shown in Table 1 (idle state).

Input Pin	LED Status
LC = Logic 0	Power = ON FR = OFF * LC = OFF RS = OFF LINE STATUS = OFF PARALLEL PHONE = OFF

Table 1: Default Condition

* If the line is reversed or disconnected the FR LED will be ON.

4.2 Seizing and Releasing the Line

To Seize the line (take the Ag2120 off-hook) press and release the "LOOP" button, the "LC" LED will switch ON. To Release the line (put the Ag2120 on-hook) press and release the "LOOP" button, the "LC" LED will switch OFF.

4.3 Line Test

The Ag2120 evaluation board has a “TEST” button, that when pressed shows the status of the (PSTN) Line.

If the Line is not connected then the “LINE STATUS” warning LED will illuminate. If there is a parallel phone connected that is off-hook, then the “PARALLEL PHONE” warning LED will illuminate (this LED will also illuminate if the Line voltage is too low).

During normal operation both LED will remain off when the “TEST” button is pressed.

5 Using an Ag2120 and Ag1170 Evaluation Boards

5.1 Set-up Conditions

The Ag2120 evaluation board can be connected to an Ag1170 evaluation board as shown in Figure 3.

The boards can be operated with a single power supply, in figure 3 the power supply is connected to board “A”. Because the Ag1170 draws more supply current than the Ag2120, therefore this is the optimum configuration.

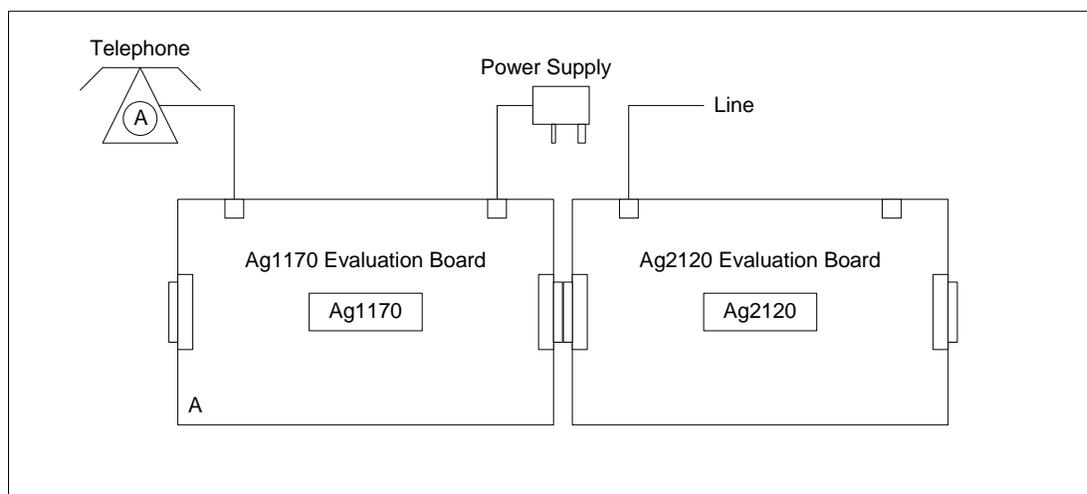


Figure 3: Connecting an Ag1170 and Ag2120 Evaluation Boards

5.2 Ringing the Phone

If an external call is made to the “Line” connected to the Ag2120 evaluation board, this board will signal the Ag1170 board and telephone “A” will ring. When telephone “A” goes off-hook, the ringing will automatically stop and the Ag1170 board will instruct the Ag2120 board to seize the line (accepting the call).

5.3 Making a Call

If both evaluation boards are in their idle state, when telephone “A” goes off-hook the dial tones should be audible.

To make a call dial the number required from telephone “A” and when the connection is made the ring tone (or engaged tone) will be heard. When the far end phone goes off-hook the audio paths will be connected, if the audio level is too high (at the far end) then LK4 can be fitted to reduce this by 6dB.

6 Using the Ag2120 and Ag1170 via a CODEC board

6.1 Set-up Conditions

The Ag2120 evaluation boards can be connected to an Ag1170 evaluation board via a CODEC board as shown in Figure 4. Each board can be operated independently as shown in section 4.

The boards can be operated with a single power supply in figure 4 the power supply is connected to board “A”. Because the Ag1170 draws the most power supply current, therefore this is the optimum configuration.

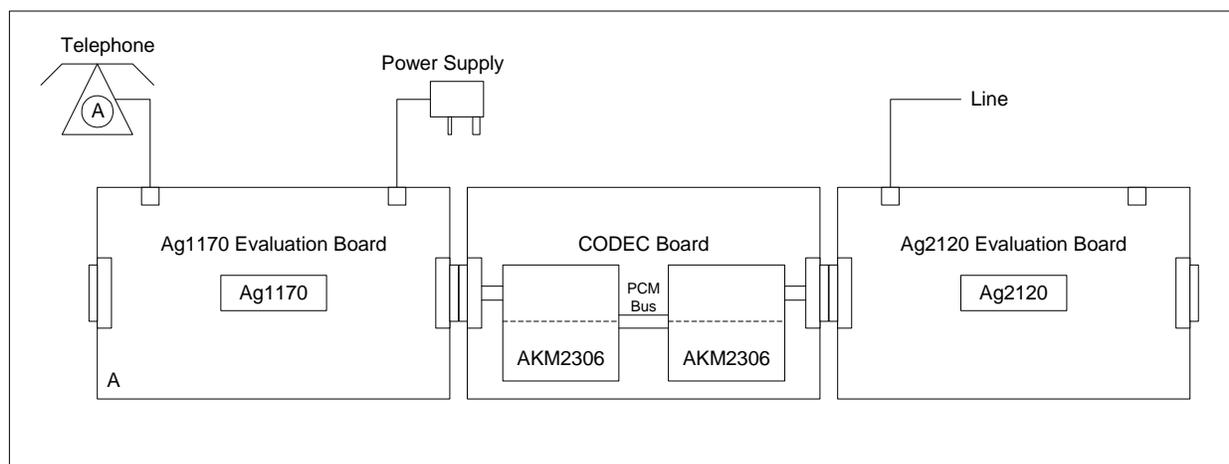


Figure 4: Connecting an Ag1170, Ag2120 and CODEC Boards

6.2 Operation

The operation of the Ag2120 evaluation board when used with the Ag1170 and CODEC board is no different from that detailed in Section 5.

In this application the Ag2120 and Ag1170 boards use channel 0 of the CODEC board (time slot 0). The CODEC board has two channels (0 and 1) in this case channel 1 is not used. But by default there will be data present on the PCM bus for this channel (in time slots 1). This channel can be muted or powered down by using the selector switches on the CODEC board, see the CODEC Board User Manual for details.

7 Circuit Schematic and Software

The circuit schematic for the Ag2120 evaluation board and the control software is available from Silver Telecom Ltd upon request.