



IPC-500 selective call decoder PCBs, SC-350 and SC-500I

Introduction

This service bulletin affects the users of:

- the IPC-500 and IPC-500B telephone interconnect units fitted with the selcall decoder PCB type SC-350
- all IPC-500C units, up to serial number DO503, fitted with selcall decoder PCB type SC-500I

All IPC-500/B/C telephone interconnect units contain a data filter that is used in the IPC-500 selcall decoder PCBs. To improve the performance of the data filter, a number of capacitors on the PCBs should be replaced.

Symptom

The IPC-500 telephone interconnect units may not respond to all incoming selective calls due to excessive noise interference.

Action

A number of existing capacitors will need to be replaced with capacitors of the appropriate value, as listed in Table 1 and illustrated in Figures 2, 3 and 4. Alignment of the FSK signal filter and the FSK decoder must be checked.

Equipment

The following equipment is required:

- oscilloscope (CRO)
- frequency counter
- alignment tool (non-metallic)

Table 1: New capacitor values

| Circuit reference | Capacitor values | Codan Part Number |
|-------------------|------------------|-------------------|
| C22 | 22n | 46-42200-524 |
| C23 | 68n | 46-46800-521 |
| C25 | 3n9 | 46-33900-524 |

Replacing the components of the IPC-500

- Disconnect the power from the transceiver.
- Disconnect the IPC-500 unit from the transceiver.
- Remove the screws from the top cover of your IPC-500 unit and remove the cover.
- Locate the selcall decoder PCB, which is positioned at the centre of the motherboard, and remove the 3 retaining screws securing it to the motherboard (see Figure 1).

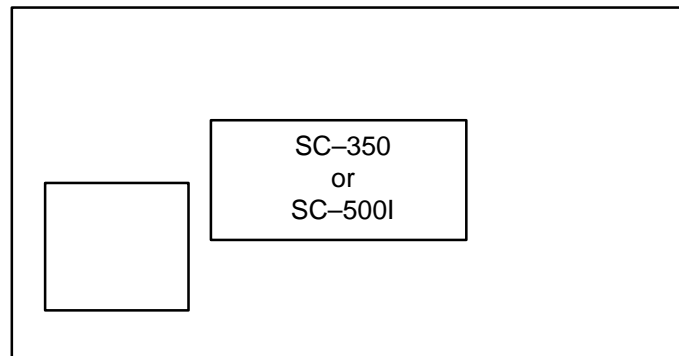


Figure 1: Location of the selcall decoder PCB on the motherboard

The PCB is specific to the type of IPC-500 unit:

- If you have an IPC-500 or an IPC-500B unit, the selcall decoder PCB that needs to be modified is SC-350, part number PC-B-030.4
 - If you have an IPC-500C unit, the selcall decoder PCB that needs to be modified is SC-500I, part number 08-PA100
- Disconnect the ribbon cable loom from the selcall decoder PCB.
 - Remove the PCB from the motherboard.
 - Locate and remove the capacitors C22, C23 and C25 from the PCB using a vacuum desoldering station (see Figures 2, 3 and 4).

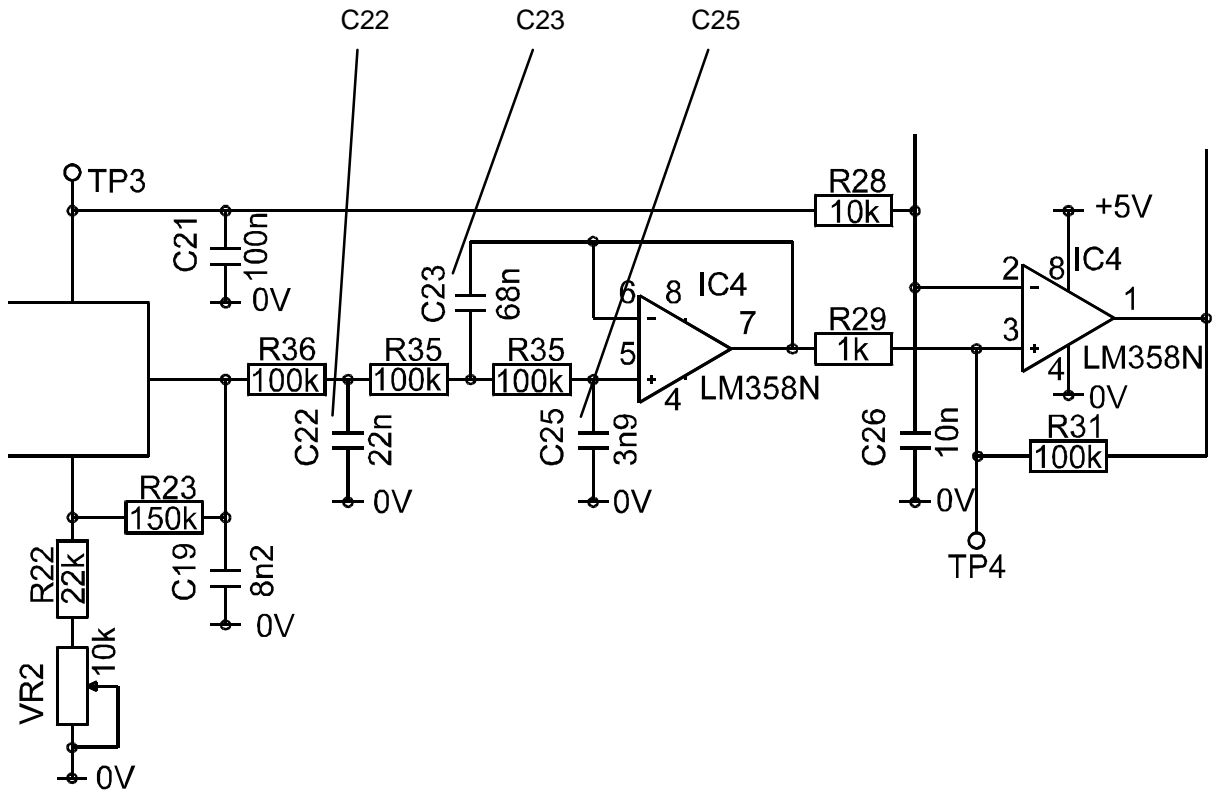


Figure 2: Circuit diagram with the correct capacitors in position

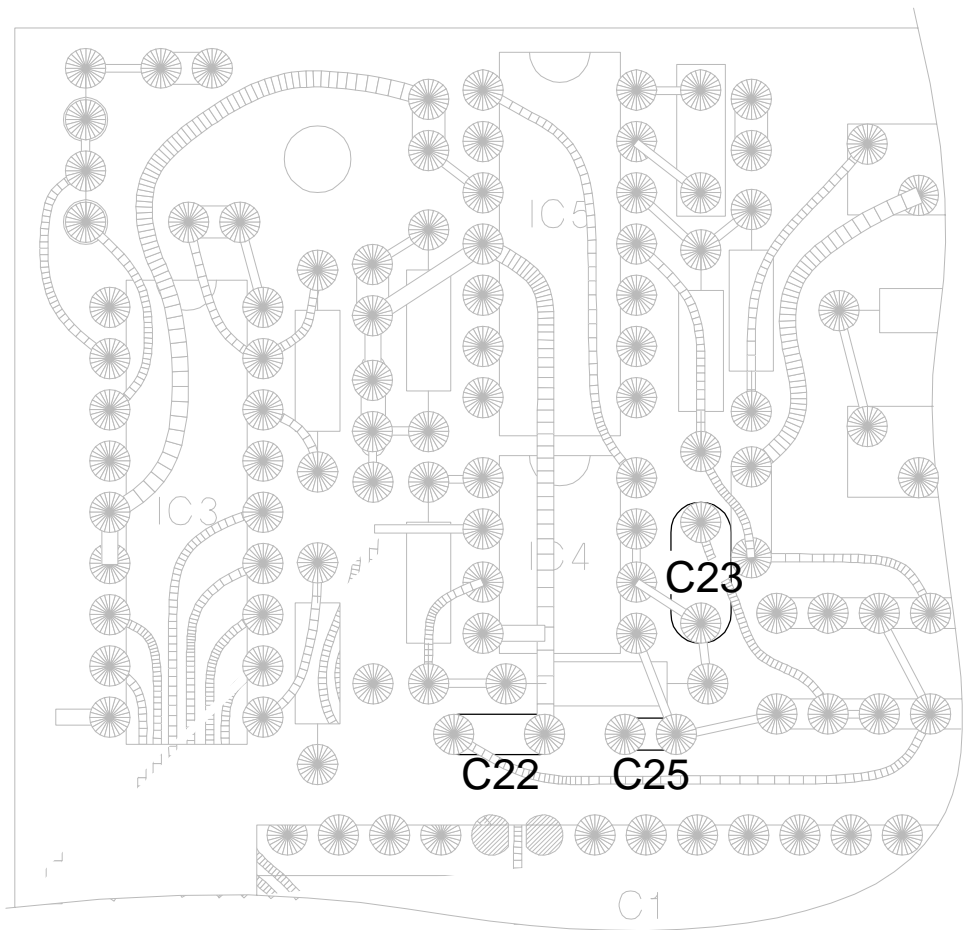


Figure 3: Assembly diagram of the SC-350 with the correct capacitors in position



A metallic adjustment tool loads the oscillator, so remove the tool before measuring the frequency accurately.

FSK decoder alignment

- Set the CRO sensitivity to 0.5 V/cm with DC coupling.
- Connect a x1 CRO probe to:
 - TP3 (or R28 lead closest to the edge of the board) of SC-500I. Centre the CRO display on the horizontal centre line, then move the CRO probe to TP4 (or R31 lead closest to centre of board), or
 - Pin 10 of IC5 (or R28 lead closest to the edge of the board) of SC-350. Centre the CRO display on the horizontal centre line, then move the CRO probe to pin 3 of IC 4 (or R31 lead closest to the centre of the board).
- Set the CRO time base to 10 ms per division.
- Send a selcall to the IPC-500C from another transceiver.
- While the selcall signal is in progress, adjust VR2 on PCB so that the sine wave signal excursions (approximately 1.5 V P-P) are equal on both sides of the horizontal centre line.
- Replace the top cover of the IPC-500 unit and secure it into position with the screws.
- Reconnect the IPC-500 telephone interconnect unit to the transceiver.
- Reconnect the power to the transceiver.
- Test that the system is operating correctly.



If you have any problems with this procedure, contact your Codan representative.