

6 CONDUCTED EMISSION DATA

6.1 Tests of the worst case configuration

The conducted tests are performed with a receiver in quasi-peak mode.

	Frequency (MHz)	Measured* (dB μ V)	Limit (dB μ V)
neutral	0.89	38	48
	1.3	38	
	2.8	39	
	3.6	39	
	4.4	38	
	17.3	36	
line	0.89	39	48
	1.3	37	
	2.8	40	
	3.6	39	
	4.4	39	
	17.3	37	

* All readings are quasi-peak

Test Personnel:

Tester Signature *G. Meccia* Date December 17, 1997
Typed/Printed Name Giuseppe MECCHIA

7 RADIATED EMISSION DATA (Frequency range 30 MHz- 2GHz)

7.1 Tests of the worst case configuration

The following data list the significant emission frequencies, measured levels, correction factors (including cable and antenna corrections), the corrected reading, plus the limit. Field strenght calculation is given in paragraph 7.2.

Judgement: Passed by 1.5 dB

Frequency (MHz)	Polarity (V/H)	Receiver* Reading (dB μ V)	Correction Factor (dB/m)	Corrected Reading (dB μ V/m)	3 Meter Limit (dB μ V/m)
86.4	V	19.4	11.6	31	40
199.9	H	20.8	19.2	40	43.5
209.9	H	26.9	15.1	42	43.5
333.3	H	21.9	19.1	41	46
466.5	H	15.8	23	38.8	46
800	H	11	28.1	39.1	46

* In the frequency range 30 MHz - 1 GHz all readings are quasi-peak, with an IF bandwidth of 120 kHz.

Note: no emission detected in the frequency range 1 to 2 GHz.

Test Personnel :

Tester Signature *G. Meccia* Date December 12, 1997

Typed/Printed Name Giuseppe MECCHIA

7.2 Field Strength Calculation

7.2.1 The field strength is calculated by adding the Antenna and the Cable Factor to the measured reading. The basic equation with a sample calculation is as follows:

$$FS = RA + AF + CF$$

where

FS = Field Strength

RA = Receiver Amplitude

AF = Antenna Factor

CF = Cable Attenuation Factor

Assume a receiver reading of 19.4 dB μ V is obtained. The Antenna and Cable Factors of 11.6 dB/m are added, giving a field strength of 31 dB μ V/m. The 31 dB μ V/m value was mathematically converted to its corresponding level in μ V/m.

$$FS = 19.4 + 11.6 = 31 \text{ dB}\mu\text{V/m}$$

$$\text{Level in } \mu\text{V/m} = \text{Common Antilogarithm } [(31 \text{ dB}\mu\text{V/m})/20] = 35.5 \mu\text{V/m}$$

8 PHOTOS OF THE EUT's

The following photos are attached :

- Fig. 8.1 PC overall front view**
- Fig. 8.2 PC overall rear view**
- Fig. 8.3 PC internal left side view with metal panel removed**
- Fig. 8.4 Motherboard Intel Redwood - Components side**
- Fig. 8.5 Motherboard Intel Redwood - Foil side**
- Fig. 8.6 IF 2060 interconnection board - Components side**
- Fig. 8.7 IF 2060 interconnection board - Foil side**
- Fig. 8.8 IF 2082 SAF-TE board - Components side**
- Fig. 8.9 IF 2082 SAF-TE board - Foil side**
- Fig. 8.10 Power Supply Unit ASTEC model SA 302 - 3515. Overall view**
- Fig. 8.11 Power Supply Unit ASTEC model SA 302 - 3515. Components Side**
- Fig. 8.12 Power Supply Unit ASTEC model SA 302 - 3515. Foil Side**

3 SYSTEM TEST CONFIGURATION

3.1 Justification

The system was configured for testing in a typical fashion (as a customer would normally use it). The EUT provided with two Intel Pentium® II processors with MMX™ Technology operating at 300 MHz was subjected to preliminary scan investigation with the monitor set in the highest available resolution modes of 1024 x 768 / 75 Hz, non interlaced and 1280 x 1024 / 87 Hz, interlaced (the highest available non-interlaced and interlaced resolution modes). The monitor was investigated as powered from the wall outlet .

Data attached to this report refer to the measurements conducted with the monitor set in the highest resolution graphic mode of 1024 x 768 / 75 Hz, non interlaced; this was found to be the worst case configuration.

In order to activate the PCI bus, the following board has been plugged:

- **SCSI controller AMI Series 428** (FCC ID.: IUESER428).

3.2 EUT Exercise Software

The EUT exercise program used during radiated and conducted testing was designed to exercise the various system components in a manner similar to a typical use. The software, contained on a 3-1/2 inch disc, was inserted into drive A and is auto-starting on power-up. Once loaded, the program sequentially exercises each system component in turn. The sequence used is: an H is printed on the monitor, speaker beeps, mass storage devices exercised (on both PC and PEM), plotter and printer print an H. The complete cycle takes about 2 seconds and is repeated continuously. As the keyboard and mouse are strictly input devices, no data is transmitted to them during test. They are, however, continuously scanned for data input activity. The PC was also operating in multimedia mode: sound from CD to headset. Finally the EUT was sending data frames to a remote Personal Computer through LAN.

3.3 Special Accessories

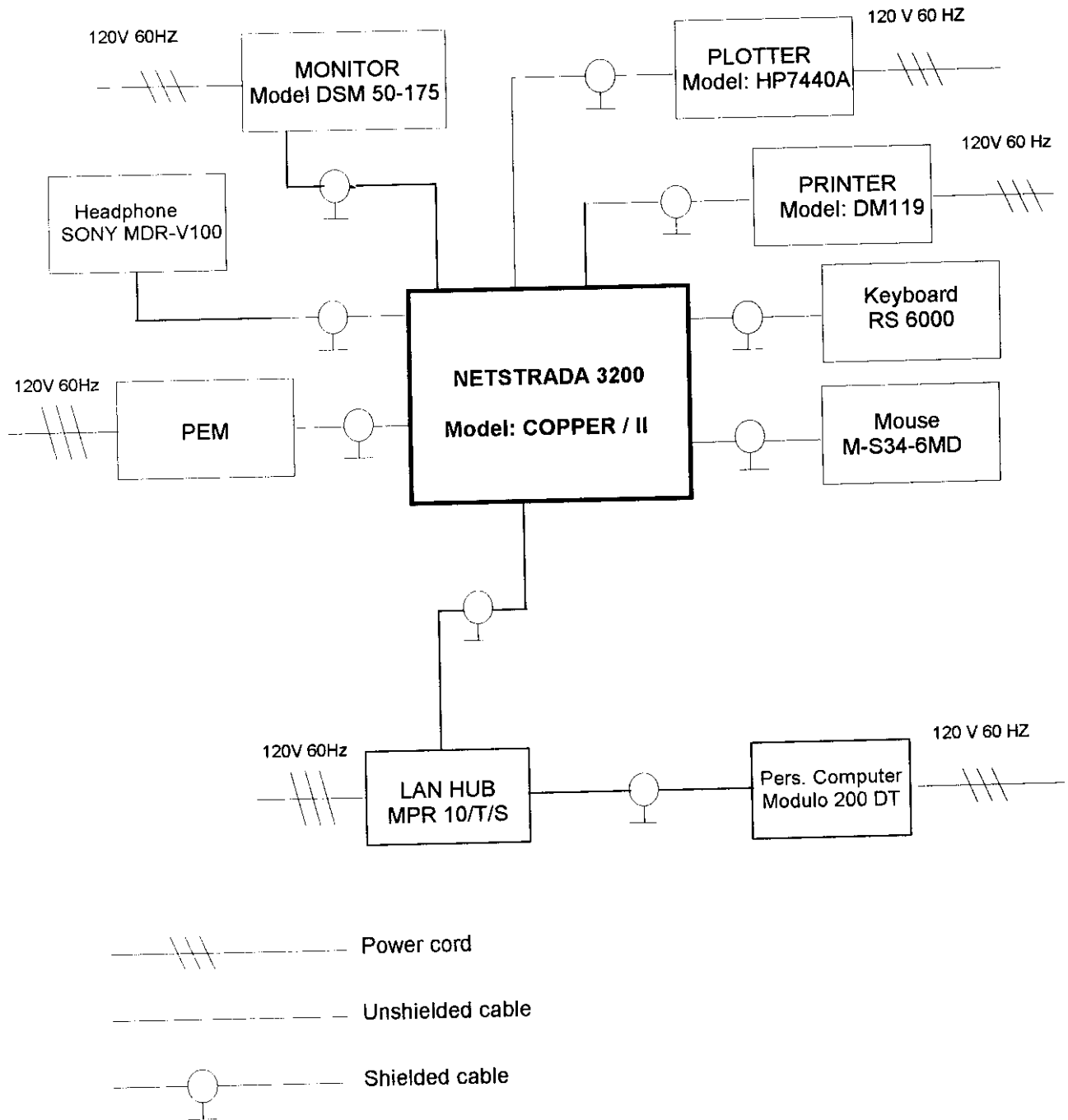
As shown in the Figure 3.1, all interface cables used for compliance testing are shielded as normally supplied by the vendors. These cable model and part numbers are marketed with the peripherals to the end user, and appear on the related product price list supplied to the customers. All cable connectors feature integral metal hoods for shielding.

3.4 Equipment Modifications

To achieve compliance to Class B levels, no changes were made during compliance testing.

3.5. Configuration of the Tested Systems

Figure 3.1 - Configuration of the Tested System



5 CONDUCTED AND RADIATED MEASUREMENT PHOTOS

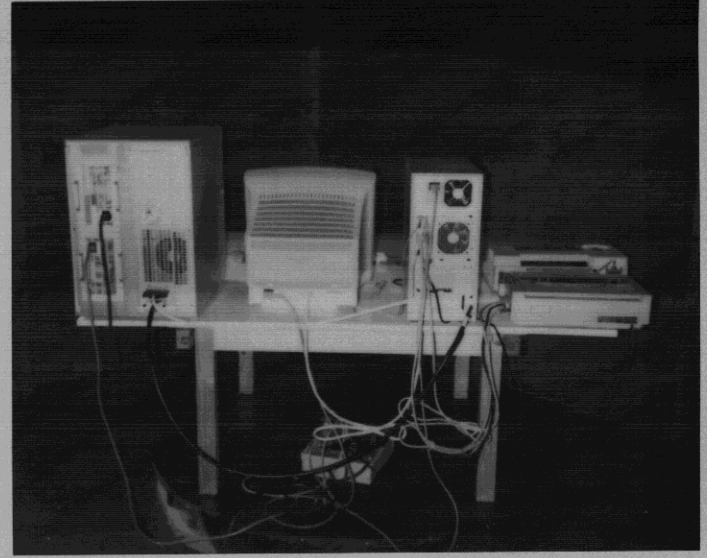
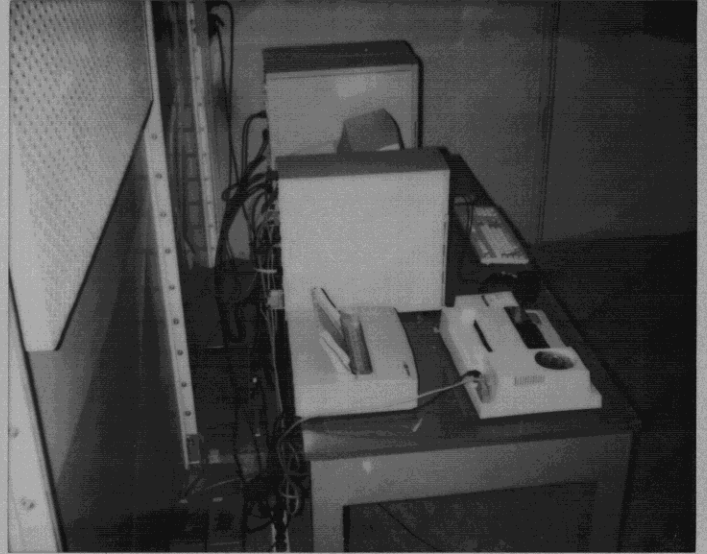
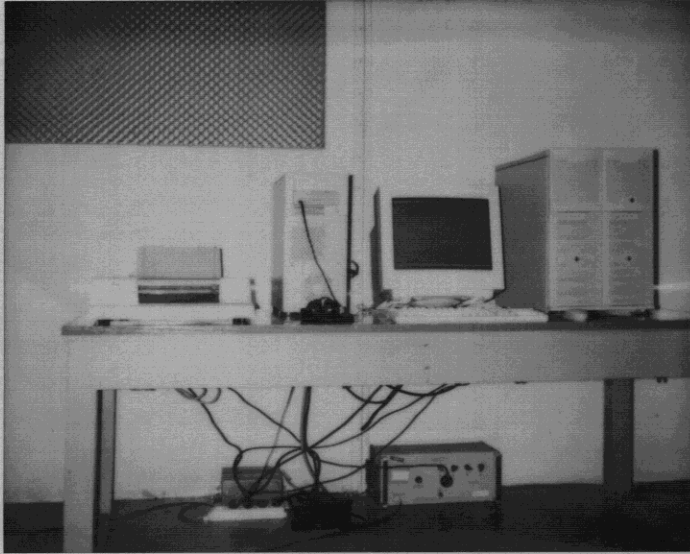




Fig. 8.1 PC overall front view



Fig. 8.2 PC overall rear view

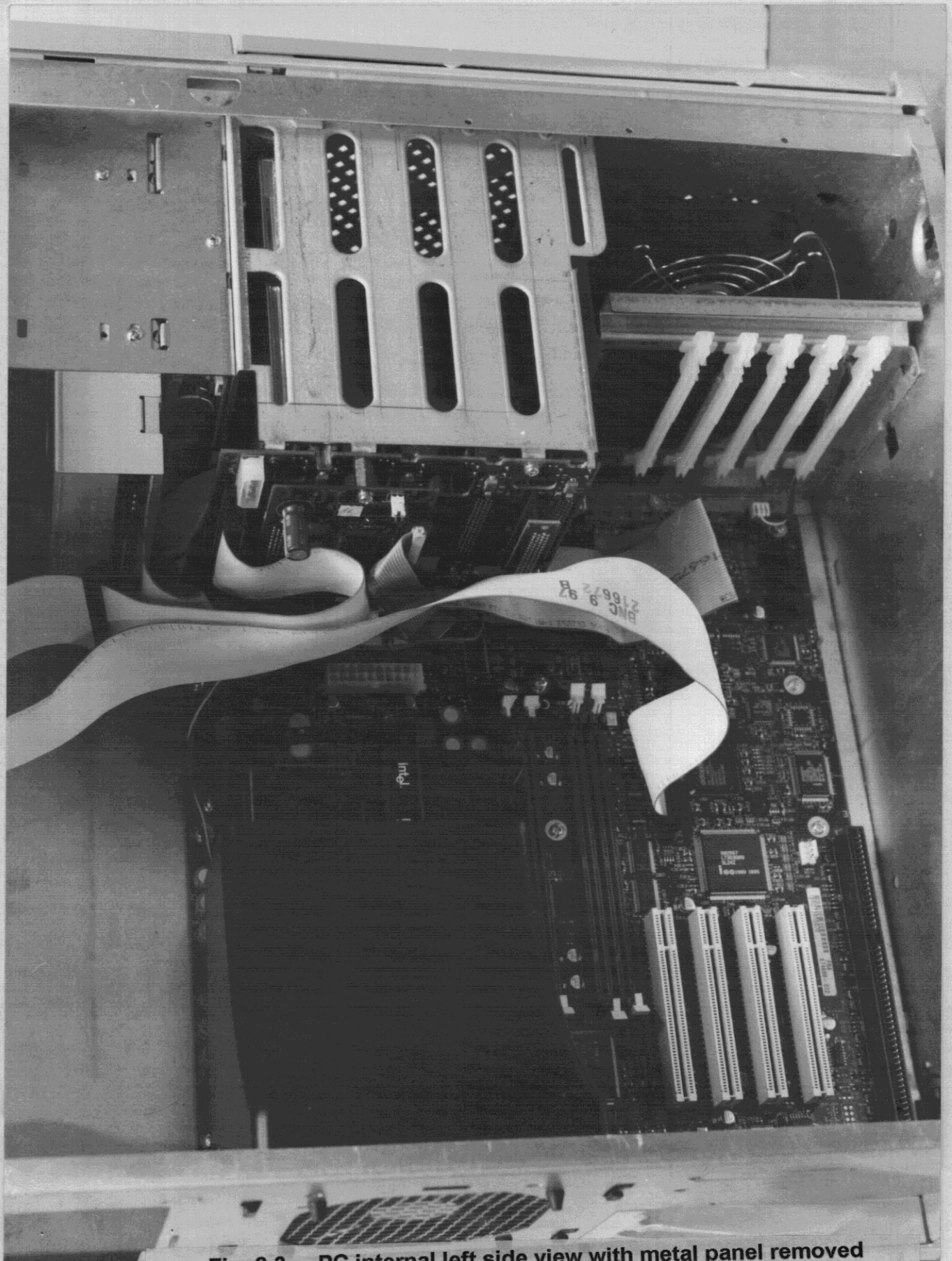


Fig. 8.3 PC internal left side view with metal panel removed

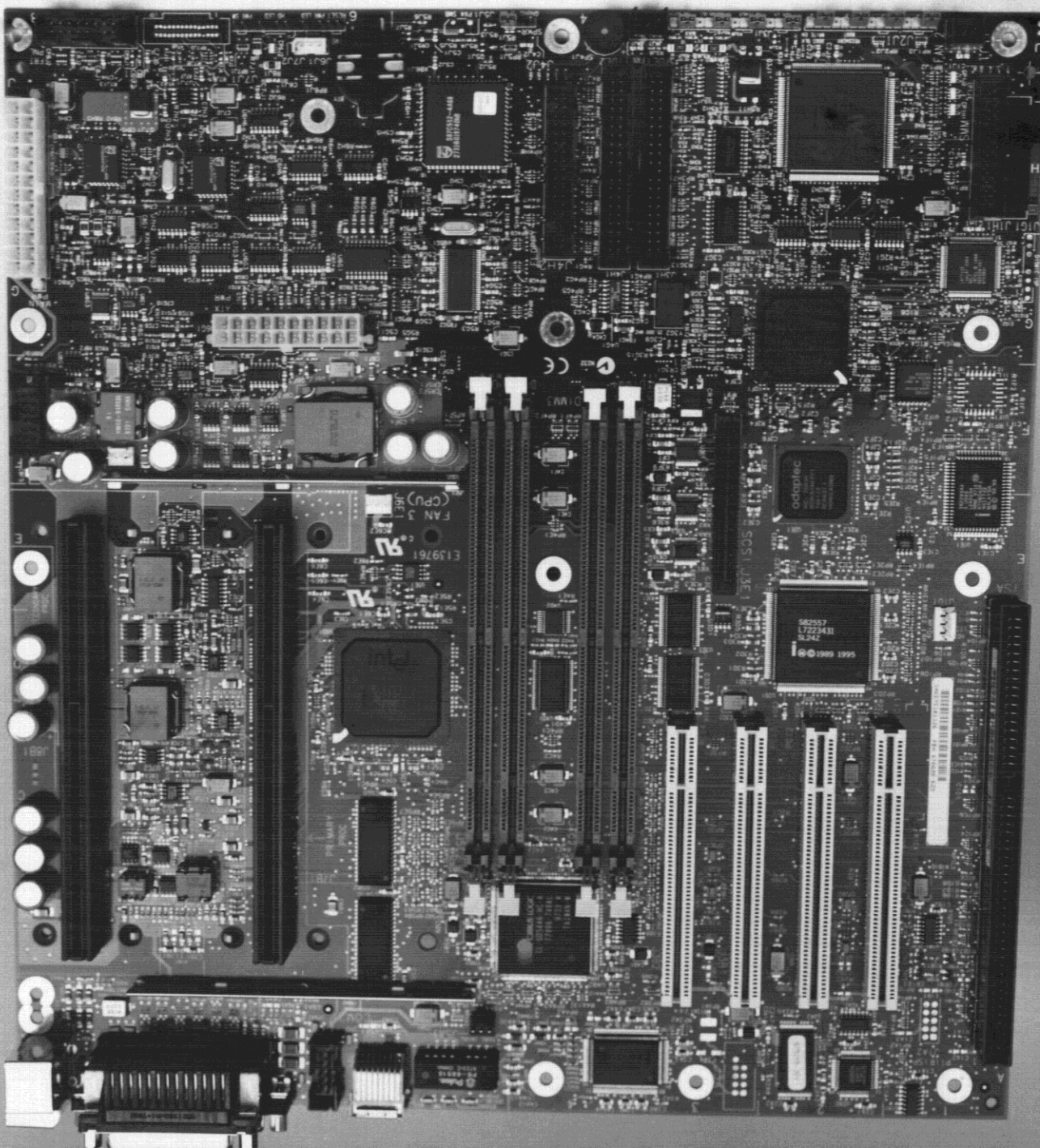


Fig. 8.4 Motherboard Intel Redwood - Components side

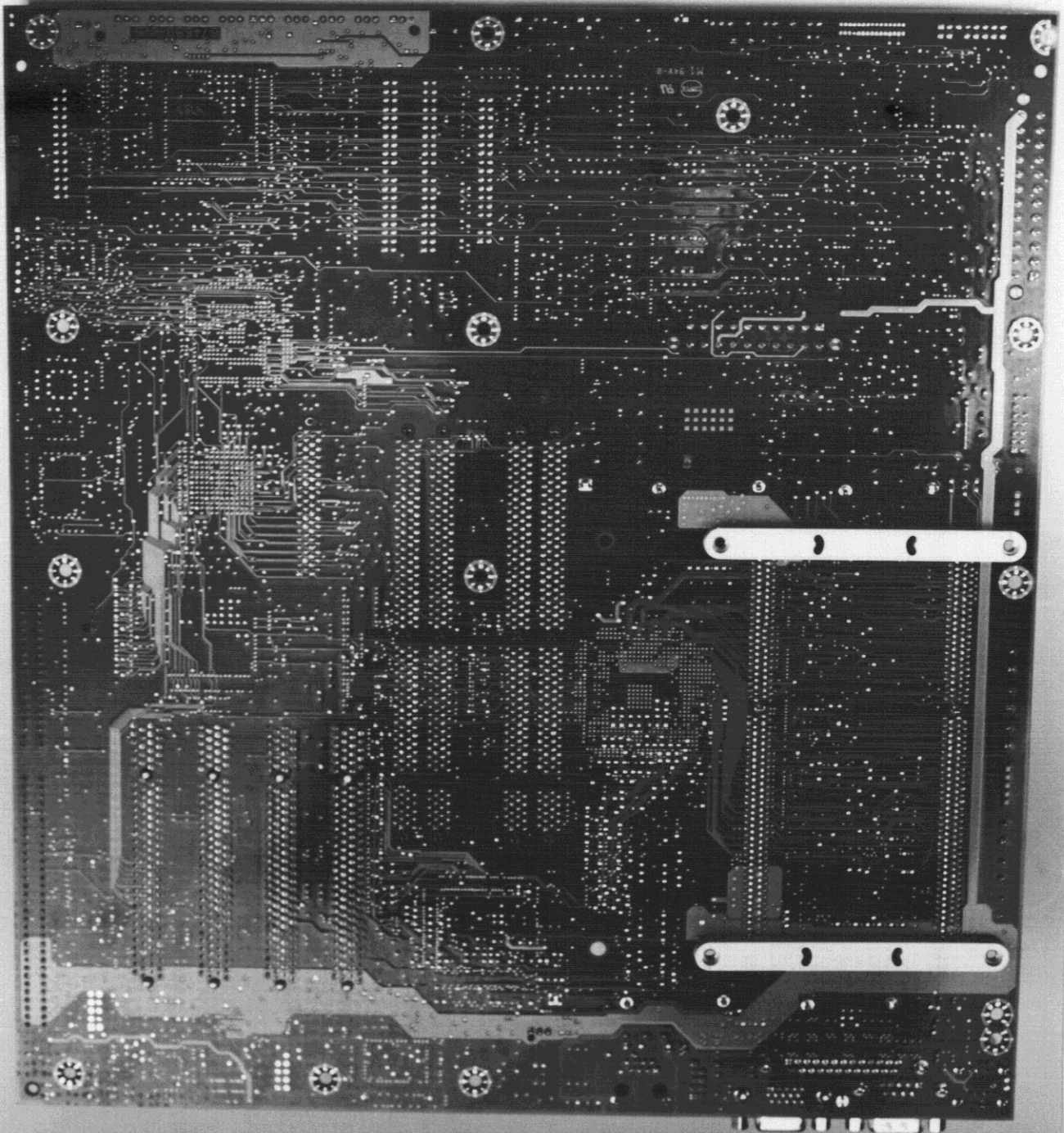


Fig. 8.5 Motherboard Intel Redwood - Foil side

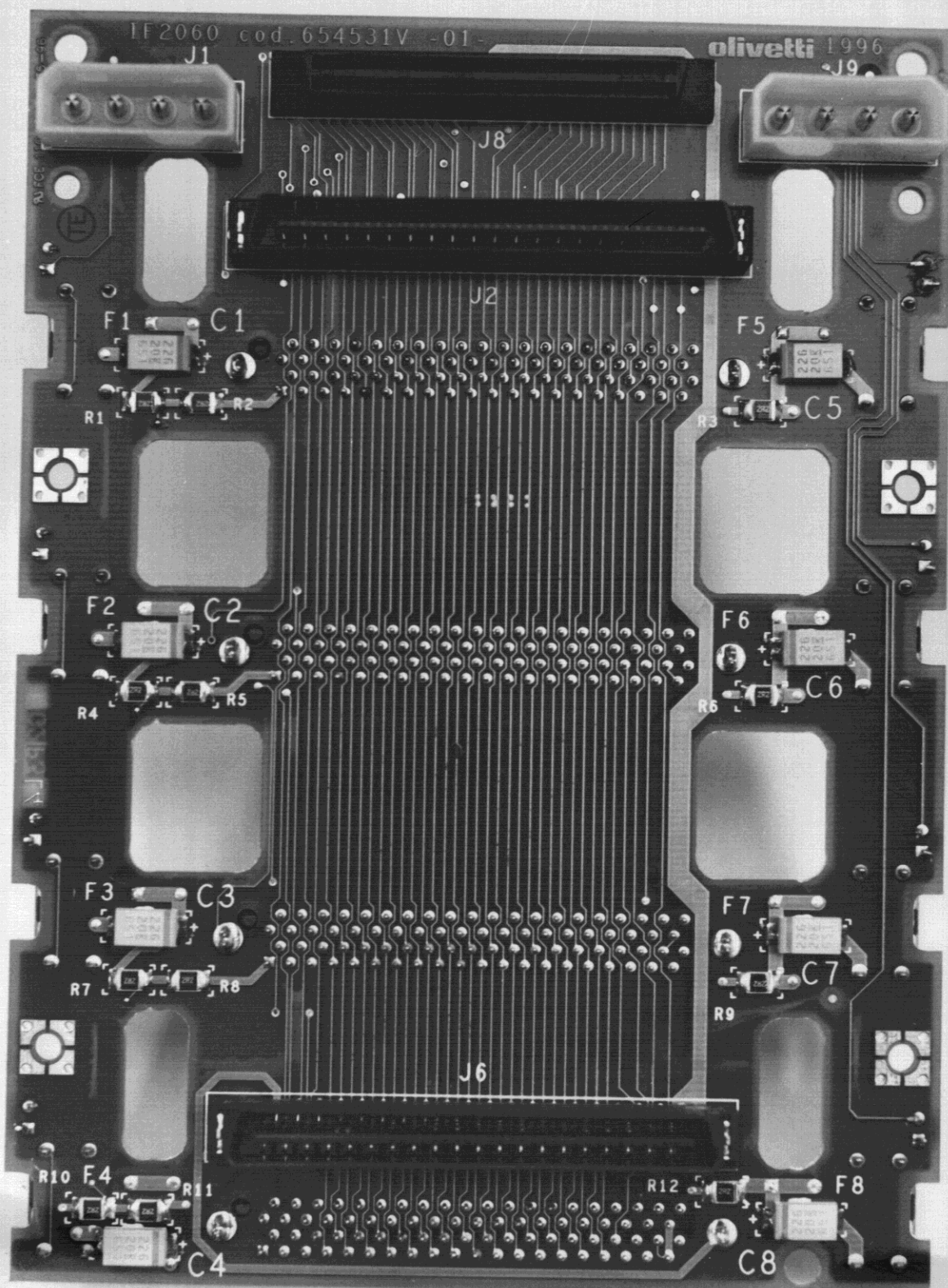


Fig. 8.6 IF 2060 interconnection board - Components side

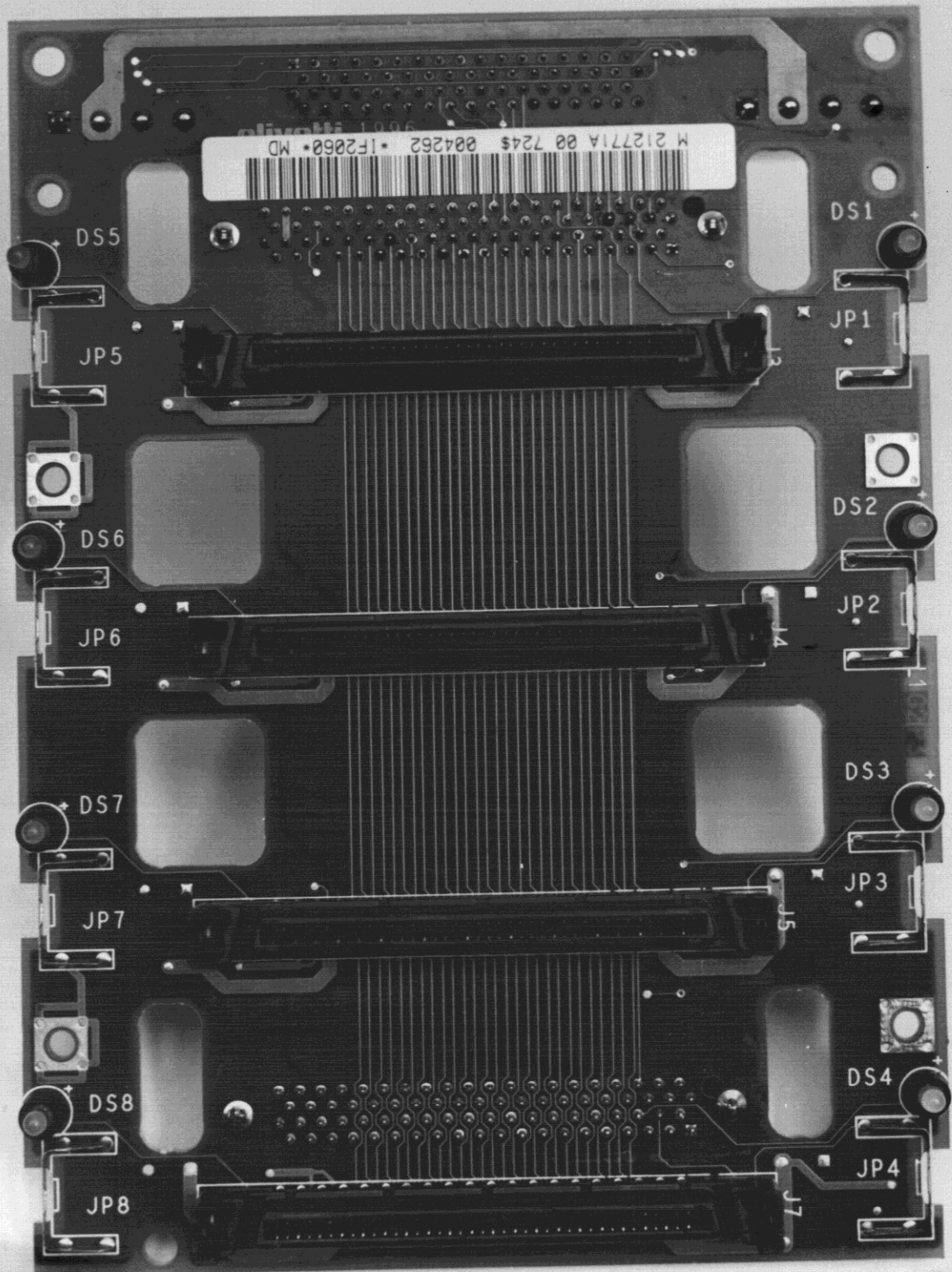
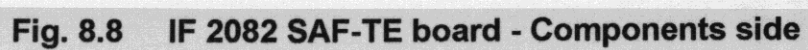


Fig. 8.7 IF 2060 interconnection board - Foil side



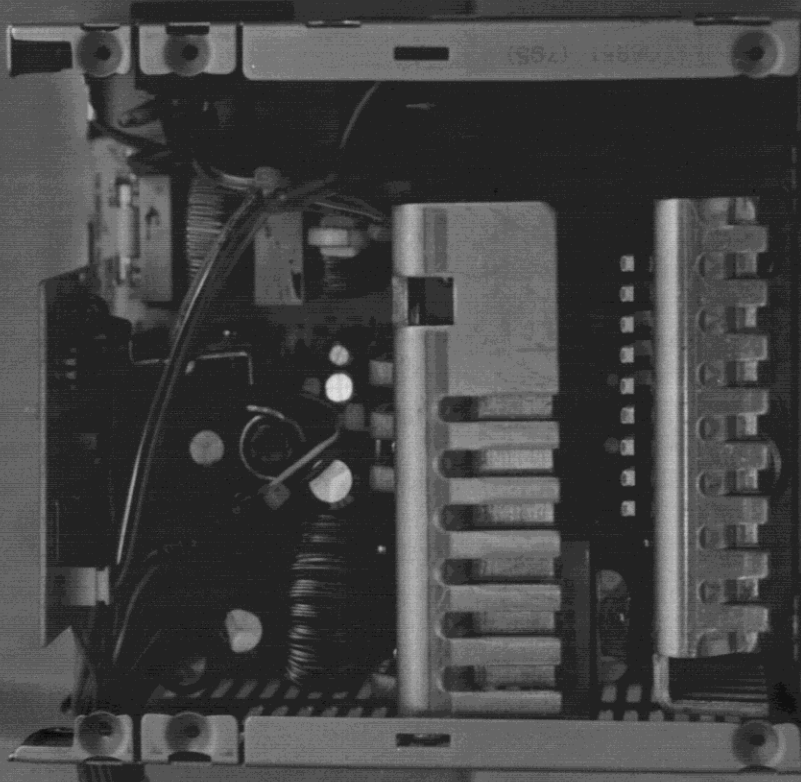
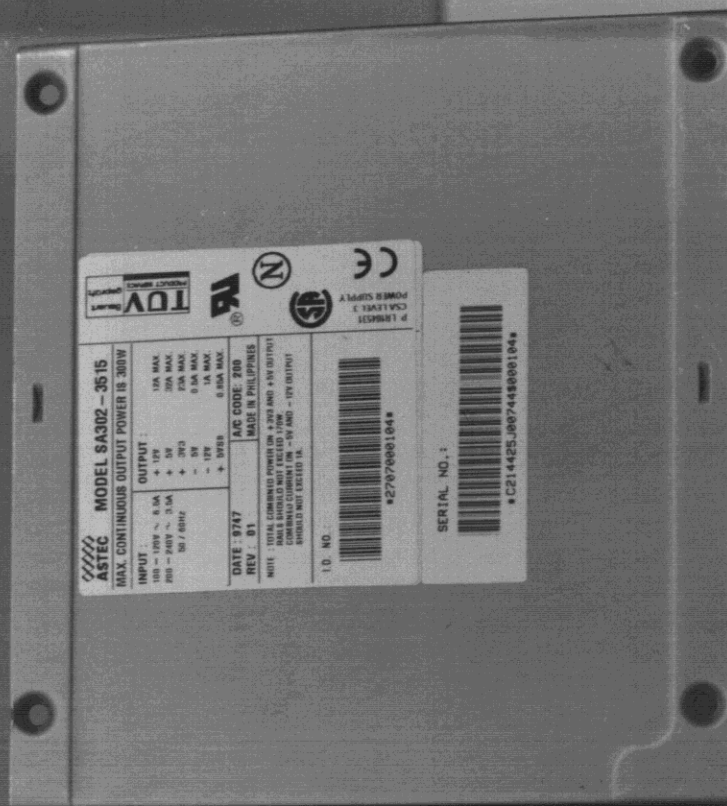


Fig. 8.10 Power Supply Unit ASTEC model SA 302 - 3515. Overall view

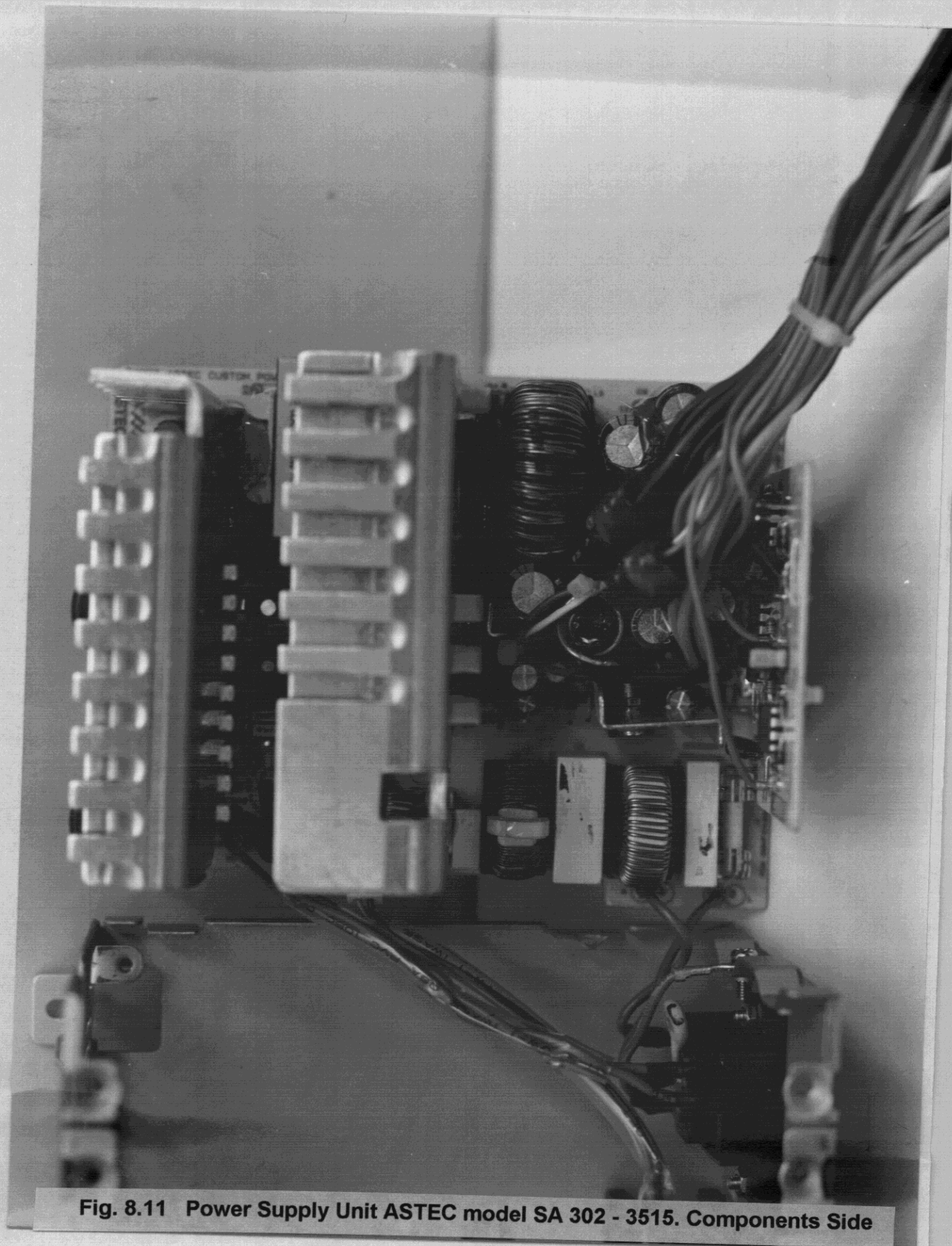


Fig. 8.11 Power Supply Unit ASTEC model SA 302 - 3515. Components Side

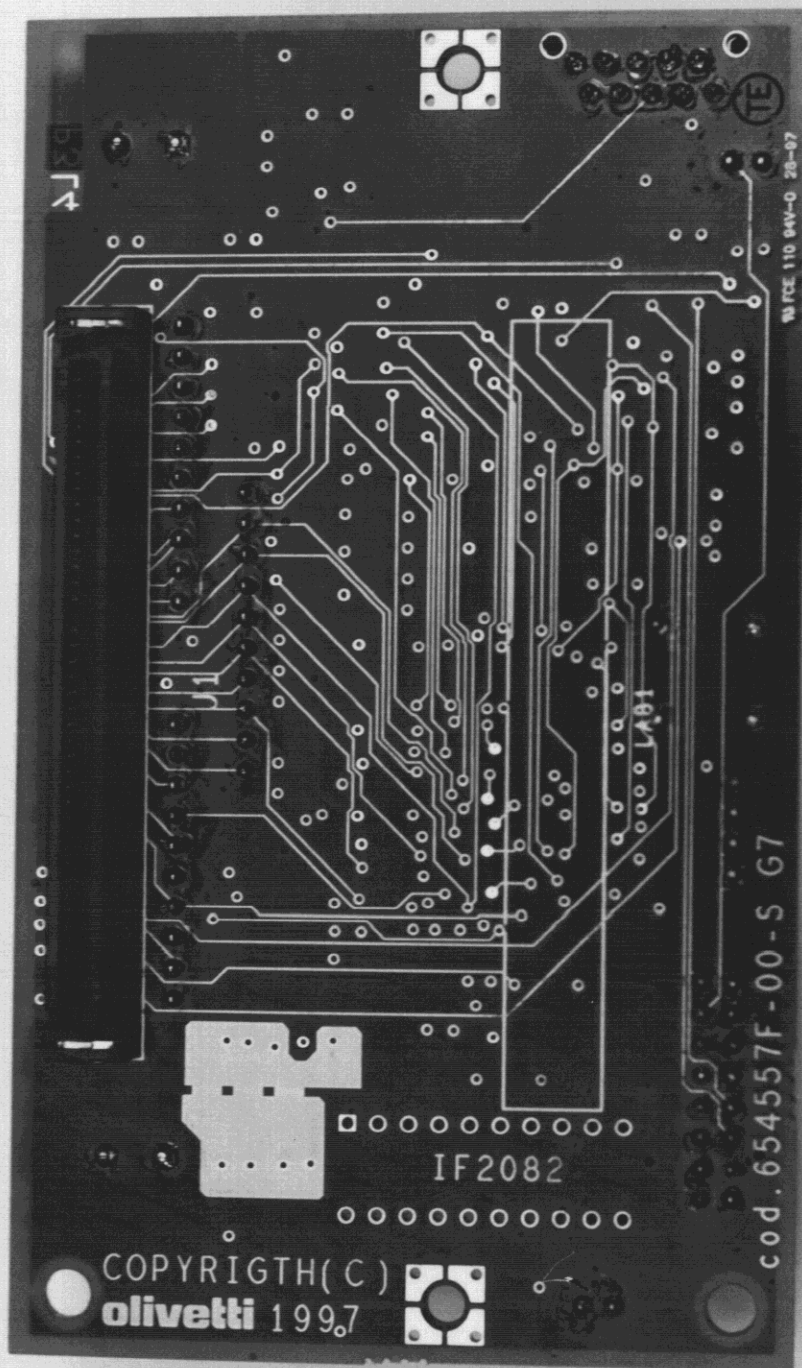


Fig. 8.9 IF 2082 SAF-TE board - Foil side

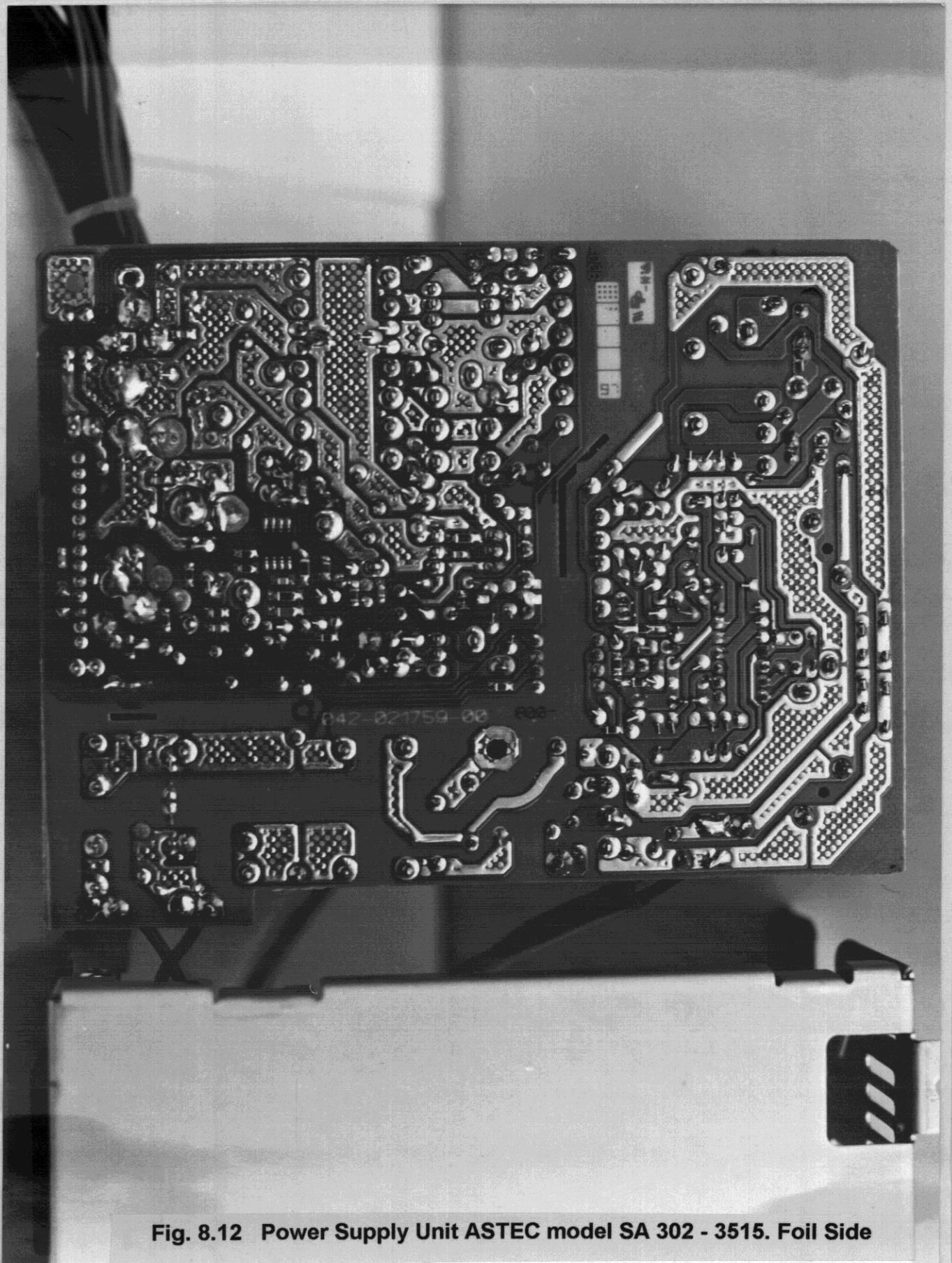


Fig. 8.12 Power Supply Unit ASTEC model SA 302 - 3515. Foil Side

Figure 2.2 - Location of the Label on the EUT

