



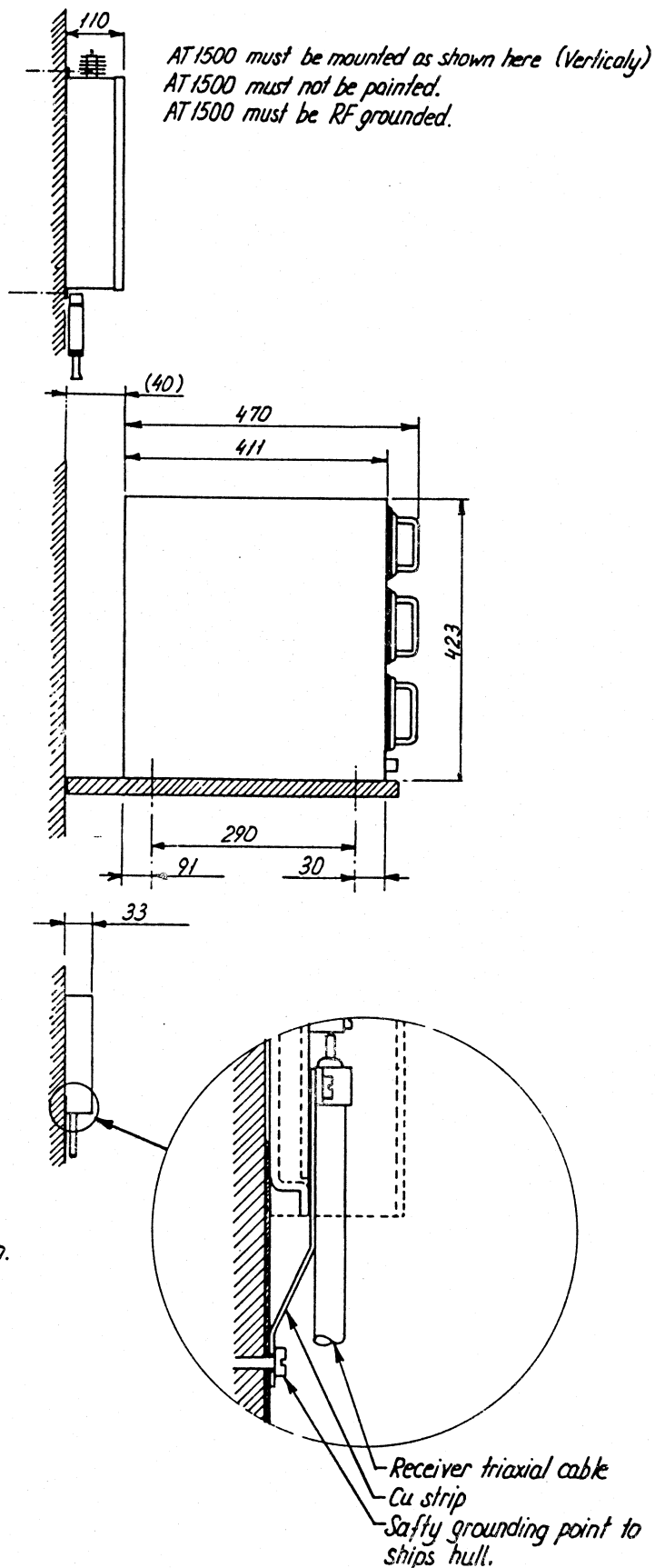
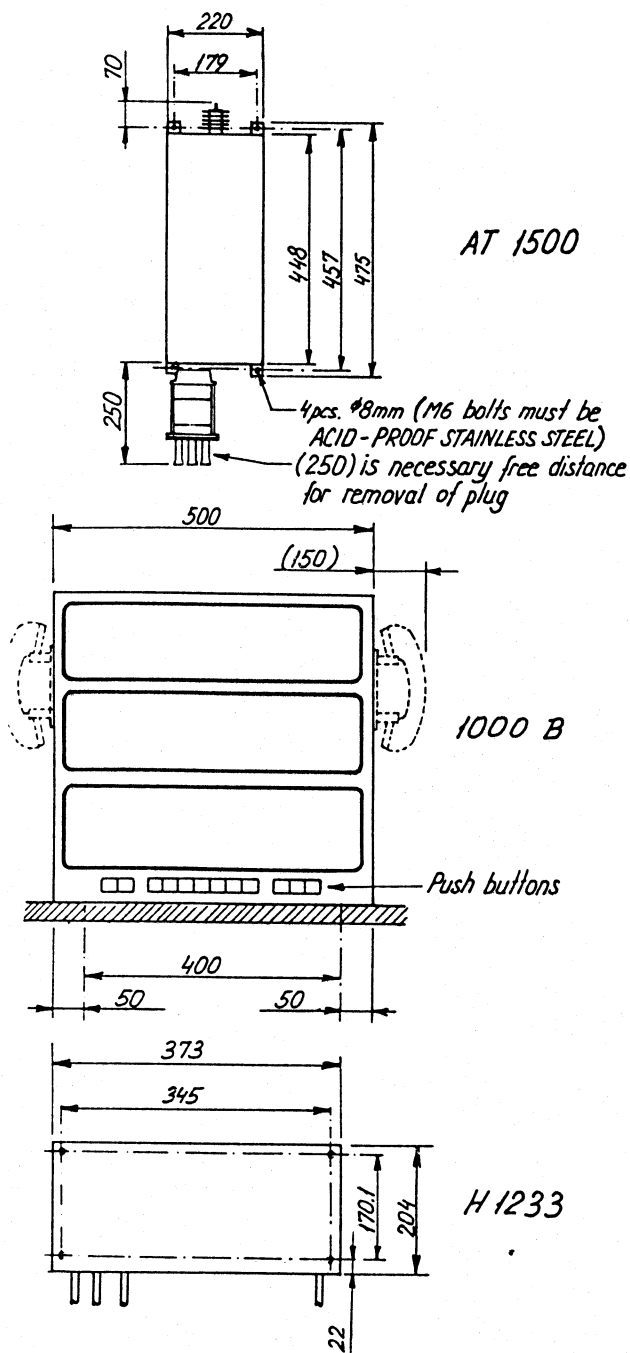
Sailor

Sailor

**AC/DC POWER SUPPLY
COMBINATION FOR
N1409 AND N1407
(H1245)**



A/S S. P. RADIO · AALBORG · DENMARK



Dimensions in brackets are min. free distances in mm.

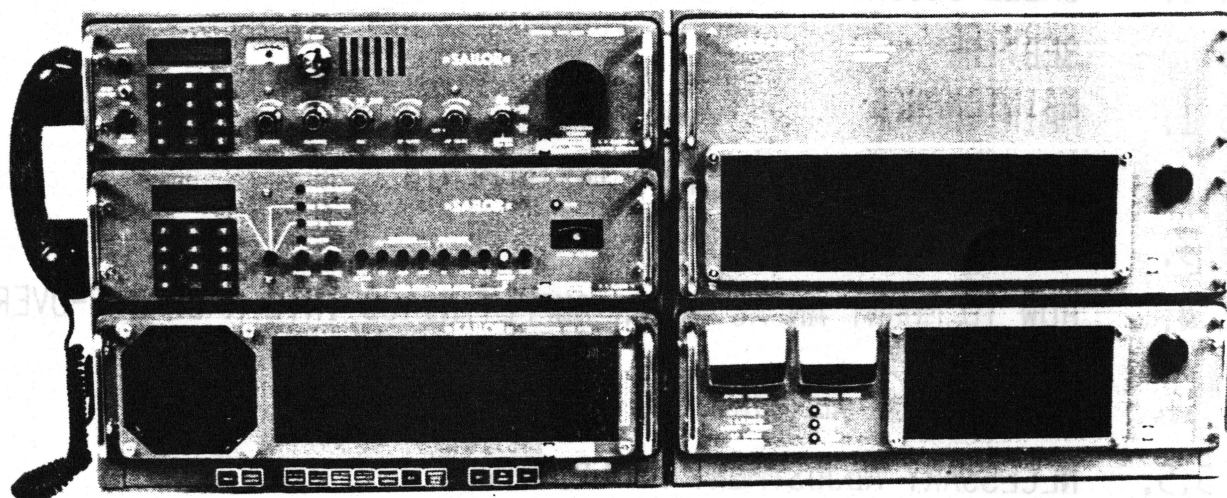
Cable length between 1000B rack and H 1233 is 2.0 meters.

DRILLING PLAN AND DIMENSIONS FOR PROGRAMME 1000/B

CONTENTS

1. GENERAL DESCRIPTION
 2. TECHNICAL DATA
 3. PRINCIPLE OF OPERATION
 4. MODULE AND COMPONENT LOCATION
 - 4.1. CABLE DESCRIPTION
 5. SERVICE
 - 5.1. MAINTENANCE
 - 5.2. RECOMMENDED MEASUREMENT INSTRUMENTS
 - 5.3. PERFORMANCE CHECK
 - 5.4. HOW TO MOUNT AN AC POWER SUPPLY N1409 INTO A CHANGE-OVER UNIT H1245
(OBS! SPECIAL ADJUSTMENT OF N1409 NECESSARY)
 - 5.5. NECESSARY ADJUSTMENT AFTER REPAIR
(PLEASE SEE MANUAL FOR N1407 OR N1409)
 6. CIRCUIT DESCRIPTION
 - 6.1. CHANGE-OVER UNIT
 - 6.2. ADAPTOR INSERTED IN T1130
 - 6.3. BLOWER CIRCUIT
 7. MAIN INTERCONNECTION DIAGRAM
- PARTS LIST

1000B WITH BATTERY CHARGER AND AC/DC POWER SUPPLY
COMBINATION IN RACK HI236



1. GENERAL DESCRIPTION

The combination consists of an AC power supply N1409, a DC power supply N1407, and a switching circuit.

By means of H1245 it is possible to supply a short wave station SAILOR 1000/B from either AC or DC source of energy, and furthermore it is possible to ensure no break in operation if the AC source of energy should fail.

With the switch on H1245 in position DC, the supply combination H1245 takes its energy from DC only.

With the switch on H1245 in position AC, the supply combination H1245 takes its energy from AC only.

With the switch on H1245 in position AUTOMATIC, the supply combination H1245 takes its energy from AC. If AC then fails, the energy is taken with no break from the DC source. When the AC mains returns, the energy is taken from the AC mains again.

2. TECHNICAL DATA

Please see instruction book in question:

N1407, 24V DC
N1409, 220V AC

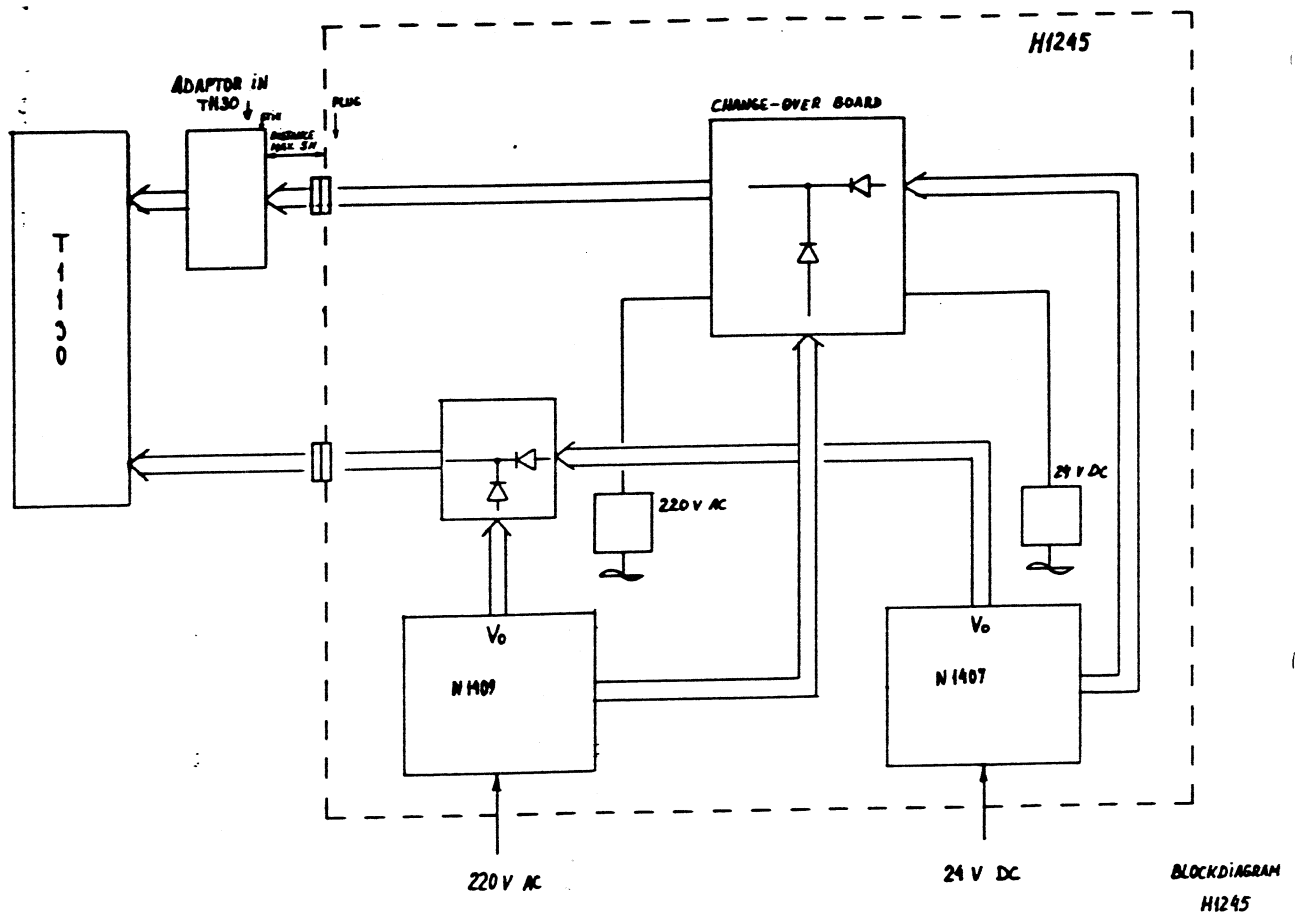
3. PRINCIPLE OF OPERATION

H1245 consists of a rack in which the two power supplies are placed. With the main switch on the front panel of H1245, the power source can be selected, either DC, AC, or automatic change-over.

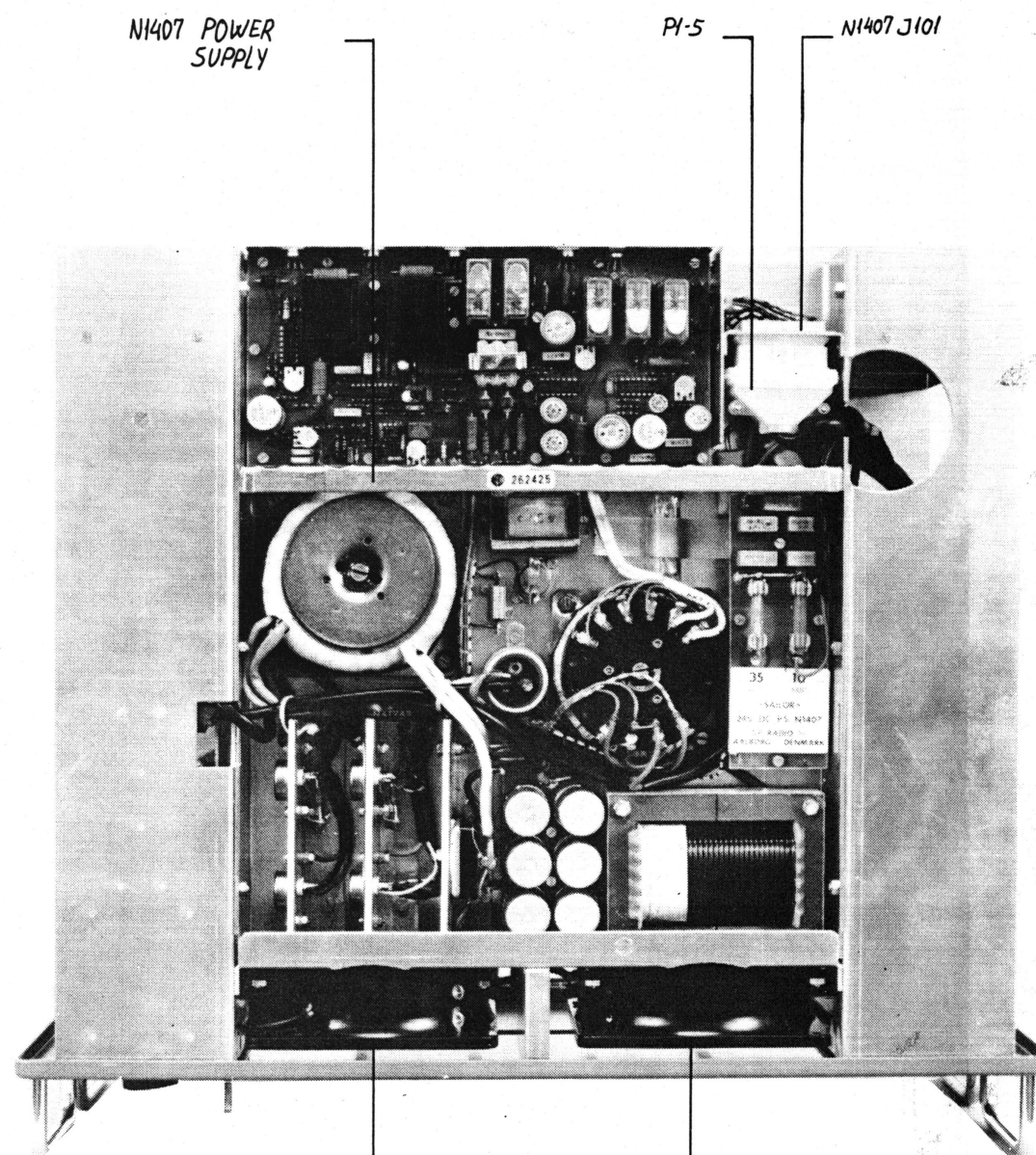
All the output voltages are combined together with diodes.

The blowers in H1245 are controlled via a relay by the blower voltages from the power supplies.

The power supplies are fully controlled from the short wave rack.



4. MODULE AND COMPONENT LOCATION



NI407 POWER
SUPPLY

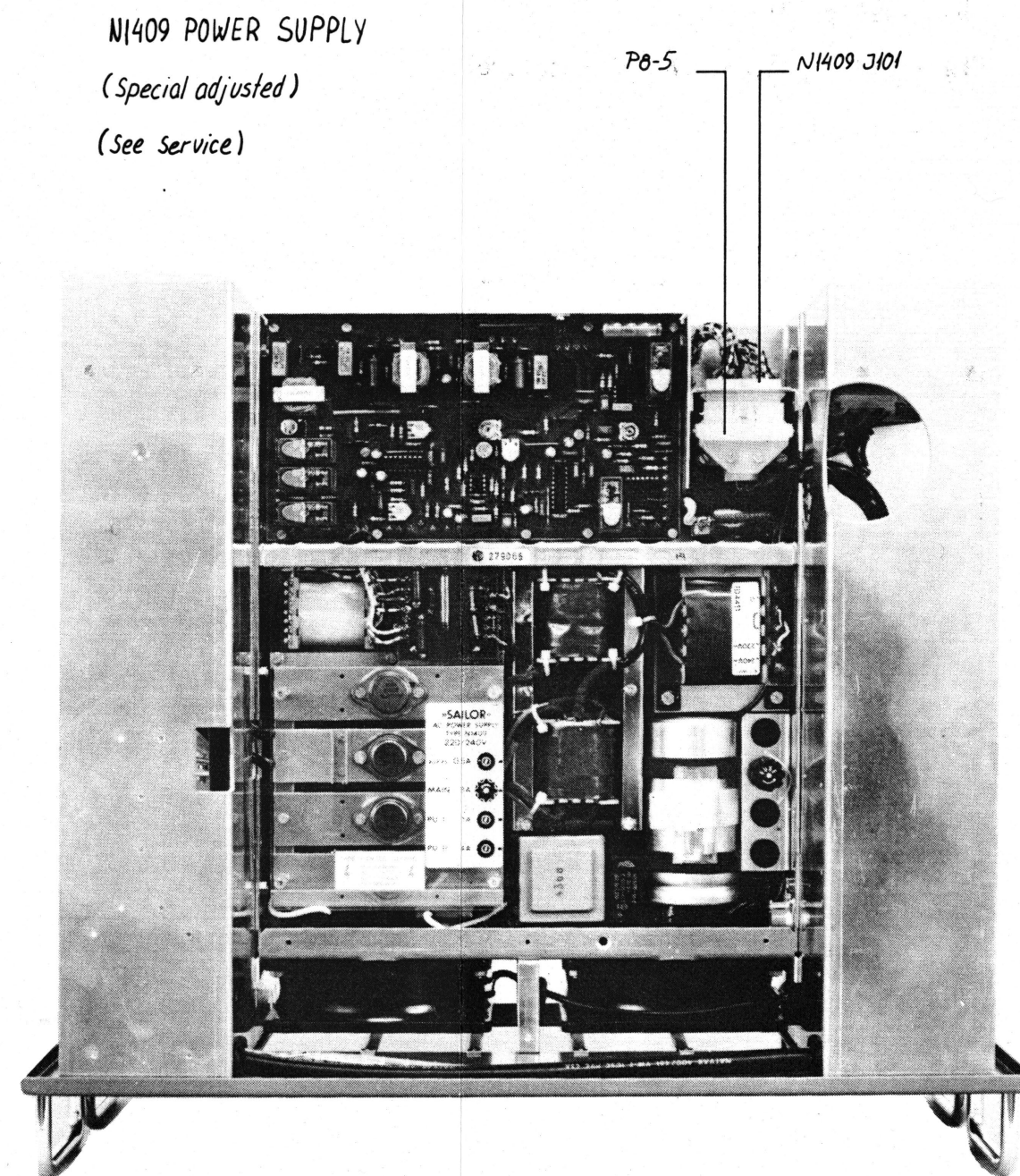
PI-5

NI407 J101

BL1-5
24 V BLOWER

BL2-5
220 V BLOWER

BOTTOM VIEW

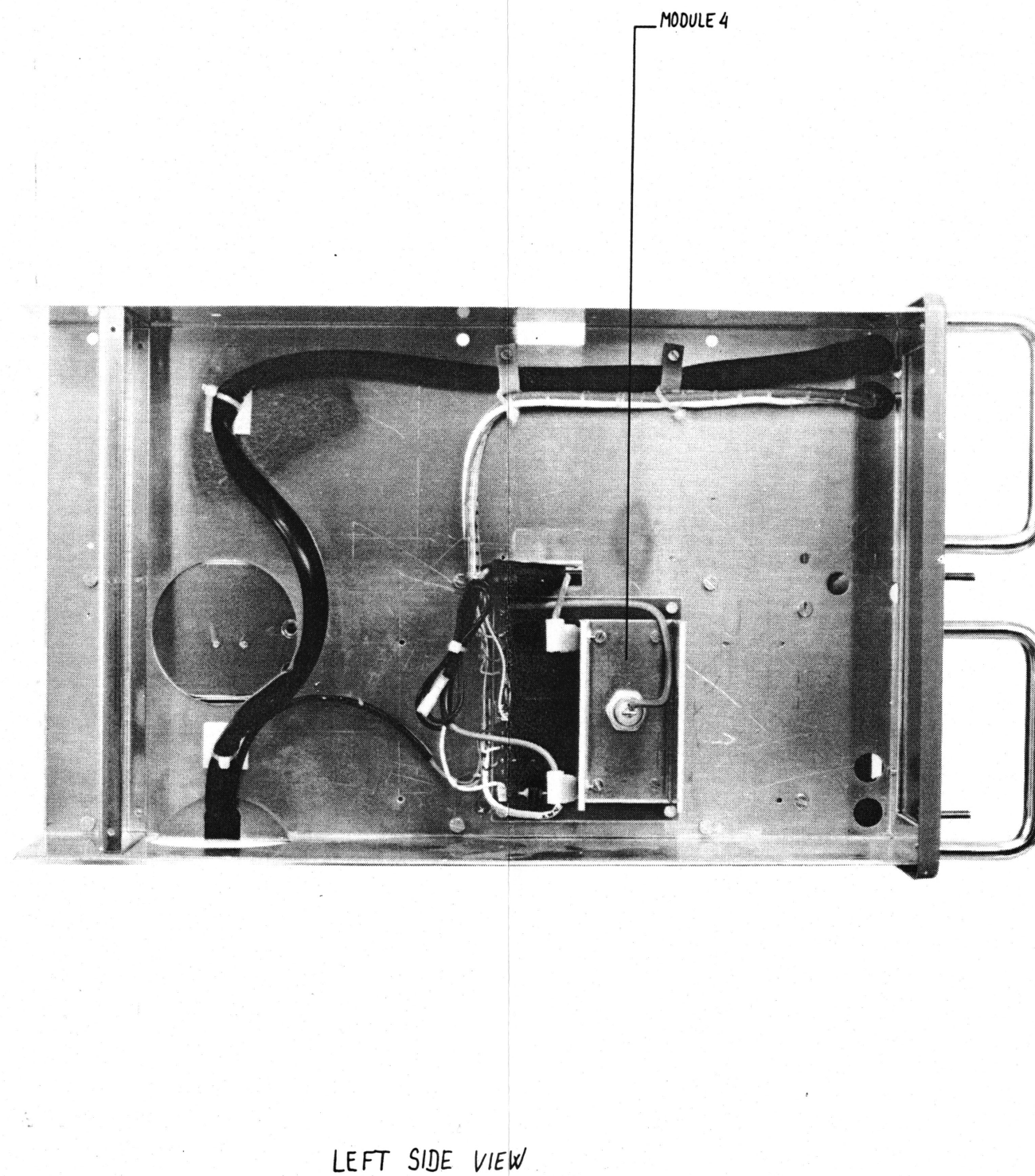
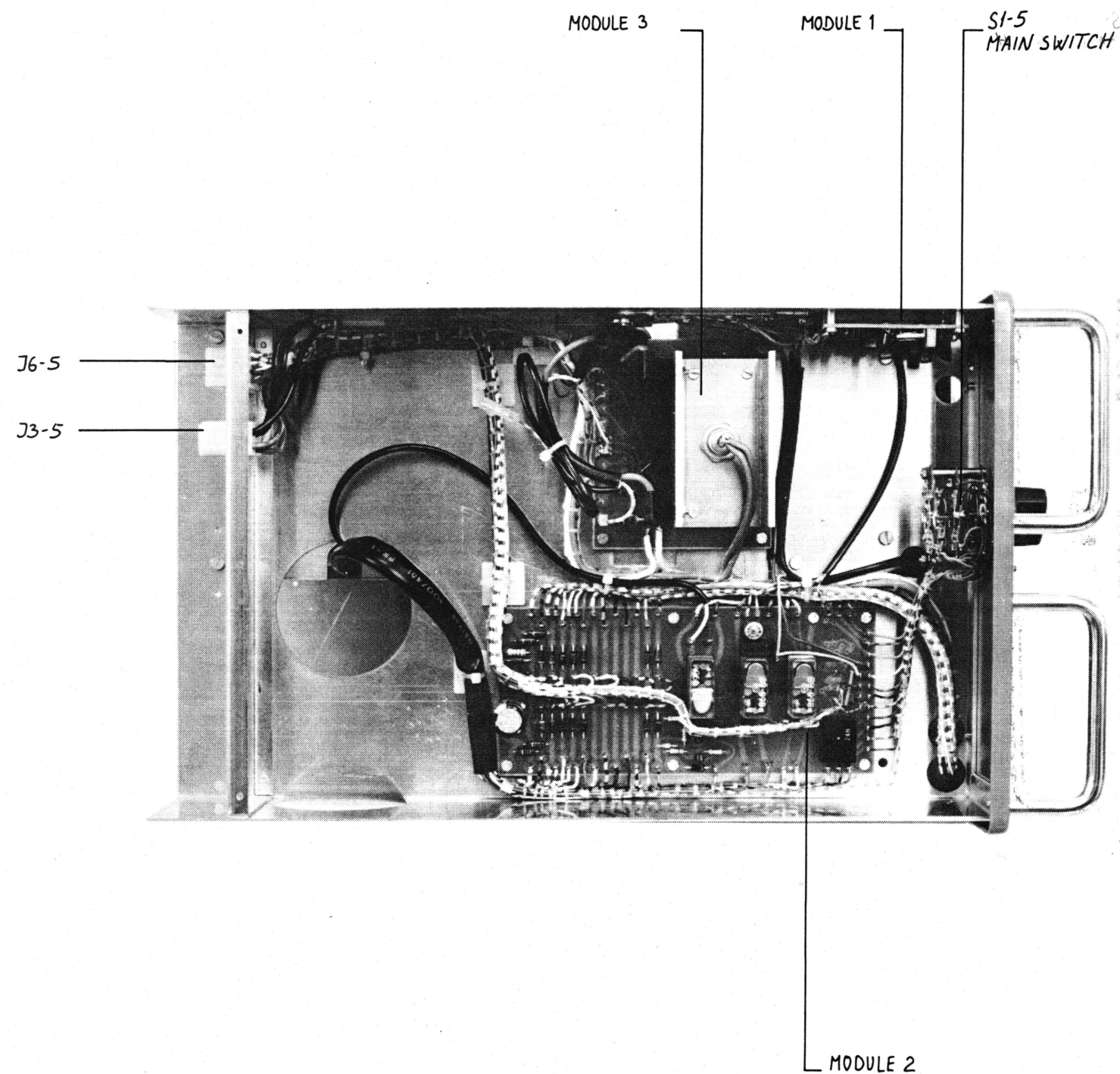


NI409 POWER SUPPLY
(Special adjusted)
(See Service)

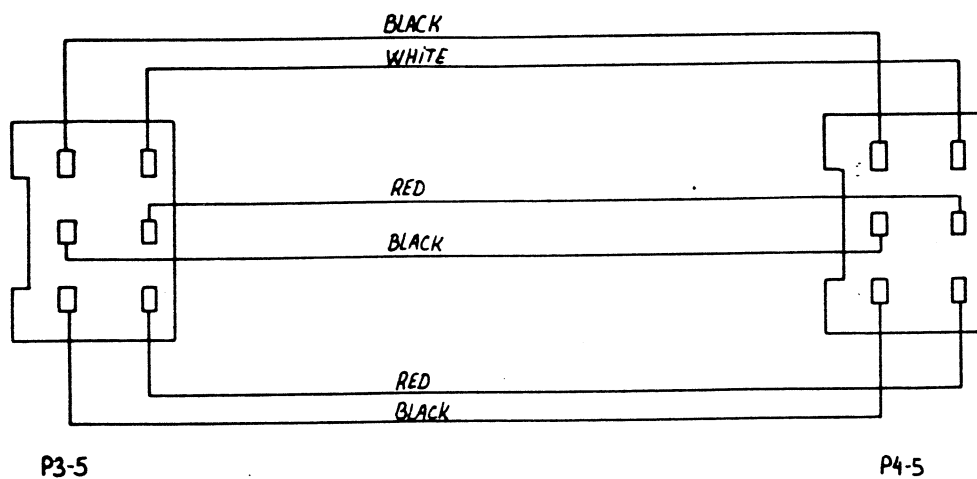
P8-5

NI409 J101

TOP VIEW



4.1. CABLE DESCRIPTION



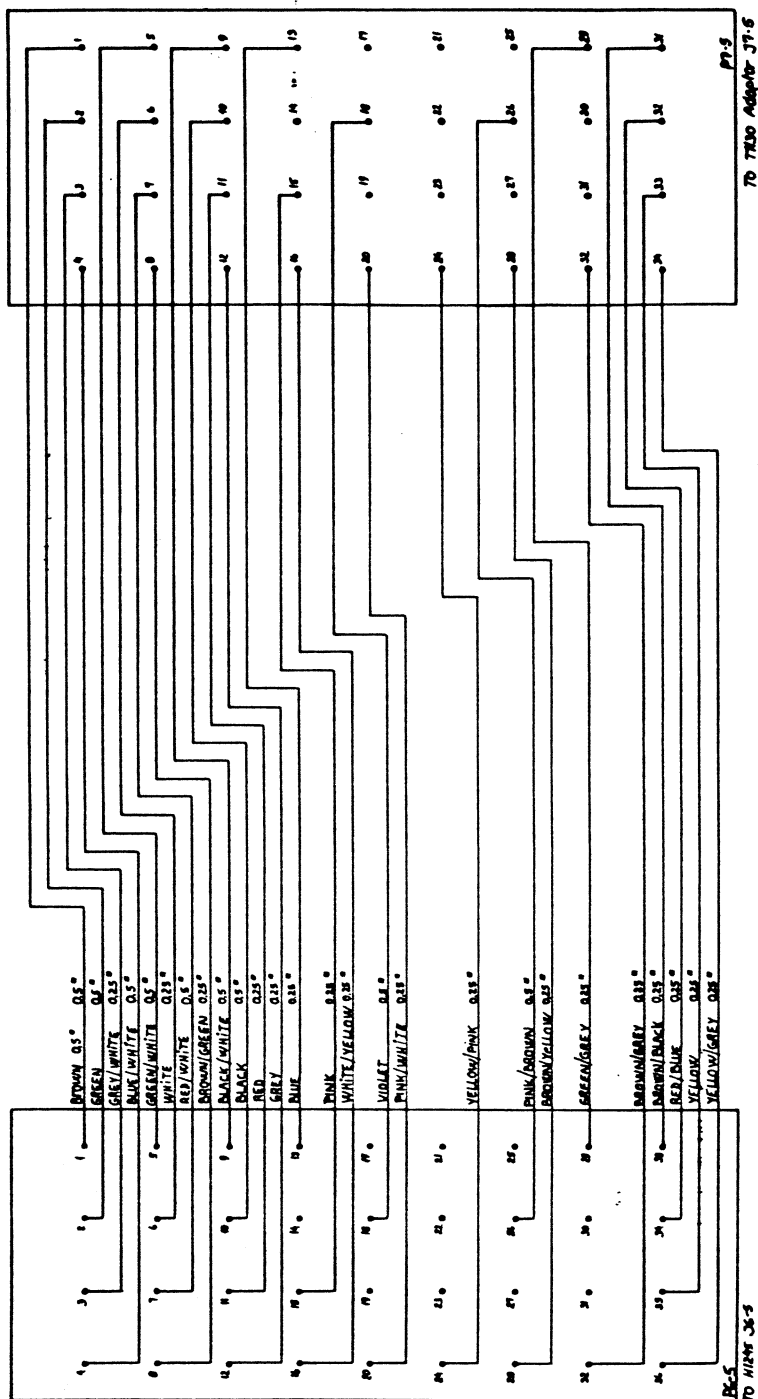
CABLE FOR DC SUPPLY TO T1130 FROM H1245.

BLACK : GROUND
WHITE : 28 V
RED : 38 V

111642
4-0-25616

MULTI WIRE BETWEEN H1245 AND RACK (T1130)

MULTI WIRE BETWEEN H1245 AND RACK (T1130)



5. SERVICE

5.1. MAINTENANCE

When the SAILOR short wave set programme 1000/B has been correctly installed, the maintenance of the power supply can, dependant on the environment and working hours, be reduced to a performance check at the service workshop at intervals not exceeding 5 years.

A performance check list is enclosed in the section 5.3. PERFORMANCE CHECK.

Also inspect cables and plugs for mechanical defects and corrosion.

Any repair of the set should be followed by a check described in the section 5.5. NECESSARY ADJUSTMENT AFTER REPAIR.

5.2. RECOMMENDED MEASUREMENT INSTRUMENTS

MULTIMETER PHILIPS PM2505
OSCILLOSCOPE PHILIPS PM3214

Because of high voltage in the power supply it is recommended to use an oscilloscope probe which can withstand at least 1000V DC, e.g. PHILIPS PM8932.

5.3. PERFORMANCE CHECK

1. N1407 is mounted in H1245, which is connected to T1130.
2. Switch the main switch on H1245 to position "DC".
3. Push "RX-ONLY" (switches on PUI), and check the output voltages at N1407.
4. Check 22V output voltage. If necessary, adjust to 22.0V with R238.
5. Check 8V output voltage. If necessary, adjust to 8.0V with R241.
6. Check -45V output voltage to approx. -40V.
7. Push "ON" button and press the key.
8. Check 28V and 38V output voltage. If necessary, adjust to 28V with R271 and to 38V with R259.
9. Current limiters cannot be adjusted.

5.3. PERFORMANCE CHECK cont.:

10. While pressing the key or short-circuiting the thermal breaker TB501 check that both blowers for N1407 and T1130 are running,
 11. Check the blower converter when the blowers are running. Measure by means of oscilloscope that the output frequency is 60 Hz (16.67 ms) and the pulse time is 7.5 ms.
-
1. N1409 is mounted in H1245.
 2. Connect AC-mains. Normally 220V AC; if above approx. 235V AC then strap TR701 to 240V AC.
 3. Check Aux. P.S. 24V DC can be measured at R101 for regulator IC701 and at C136 for regulator IC106.
Switch the main switch on H1245 to position "AC".
 4. Push "RX-ONLY" (switches on PUI).
 5. Check 22V, 8V and -45V output voltages. If necessary, adjust to 22.5V with R154. The voltages are measured at N1409.
 6. Push "ON" button and press the key.
 7. Check 28V and 38V output voltage. If necessary, adjust to 28V with R165 and to 38V with R169.
 8. Current limiters cannot be adjusted.
 9. While pressing the key, check that both blowers for N1409 and T1130 are running.
 10. Switch the main switch on H1245 to position "AUTOMATIC".
 11. Push the "RX-ONLY" button, which starts up PUI in both N1407 and N1409. Because of the higher output voltage of N1409, the power is mainly delivered by N1409.
 12. Push the "ON" button and press the key.
 13. Disconnect the AC-mains to N1409. Now the N1407 takes over.
 14. Reconnect the AC-mains to N1409, which again takes over. Frequency information must remain in the display during changing-over of the power supplies.

5.4. HOW TO MOUNT AN AC POWER SUPPLY N1409 INTO A CHANGE-OVER UNIT H1245

1. Mount the N1409 into H1245 in the room designed for it by using the supplied screws 5 pcs. 4MGx8 mm with nuts.
2. The two 0.5 mm² wires coming from H1245 are connected by soldering one white and one blue wire to the terminals on TR701 so that the blue wire goes to blue, and the white wire to white.

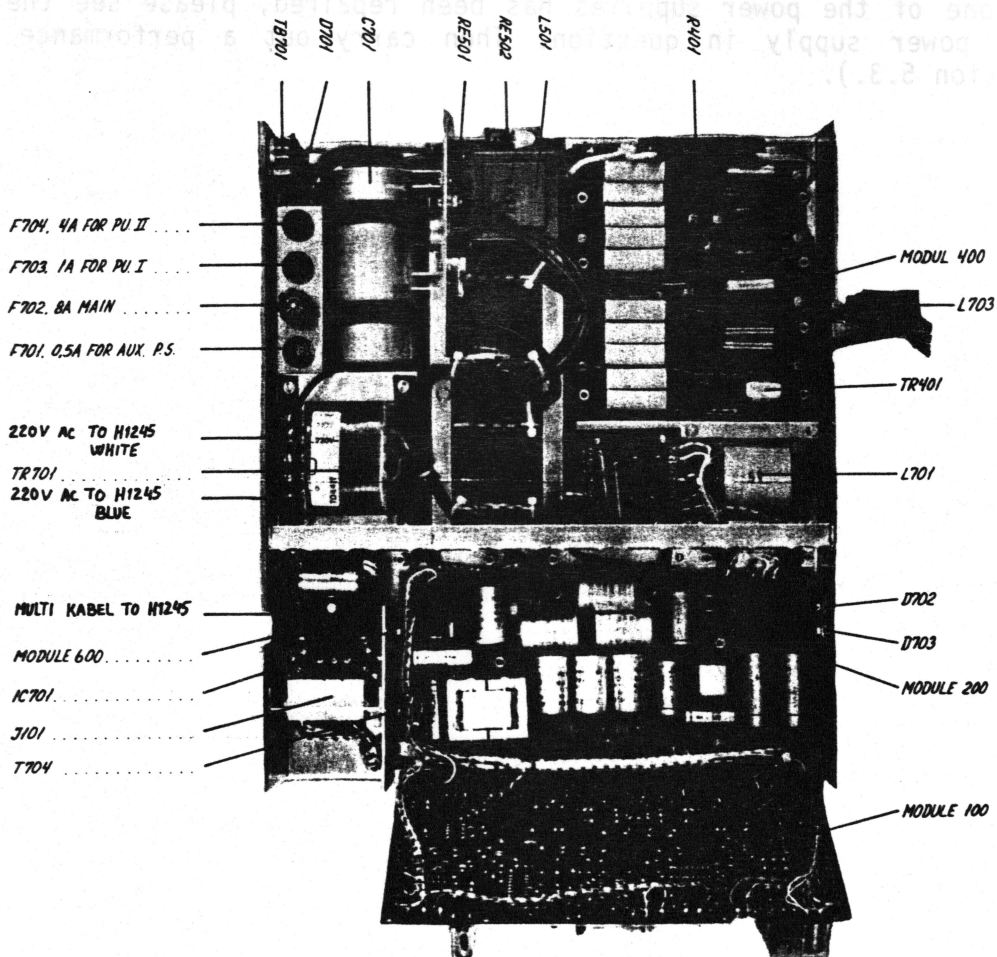
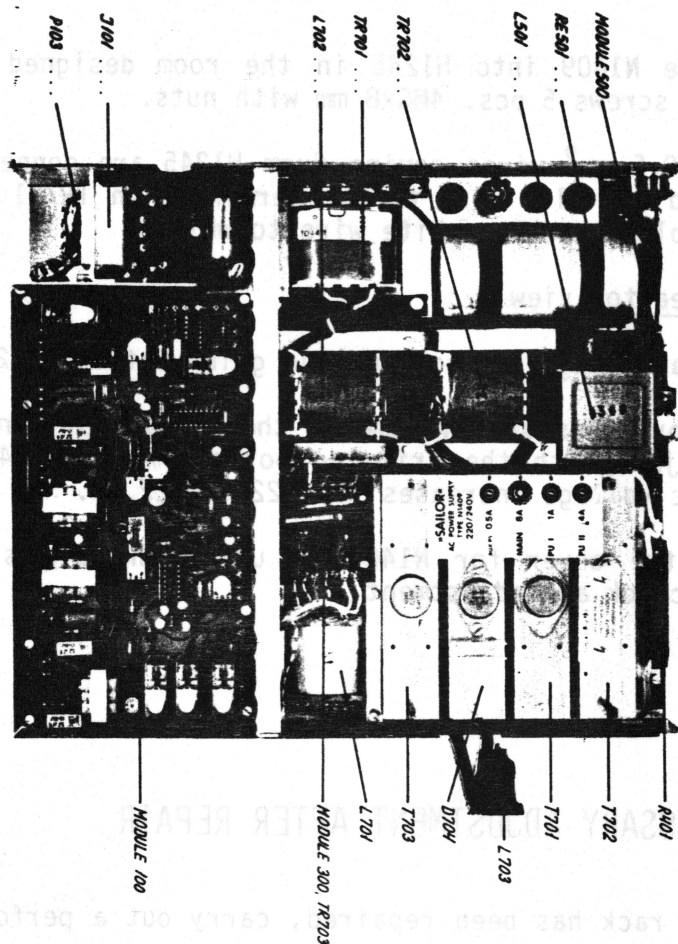
Please see top view

3. Connect all plugs coming from and going between H1245.
4. Measure by means of a voltmeter the voltage of pin 1 of J101 (brown 0.5 mm²). Adjust with the trimming potentiometer R154 (see module 100) so that this voltage increases from 22V to 22.5V.
5. Install the cover for N1409 by using the 6 pcs. 3MGx5mm screws and perform check and adjustment.

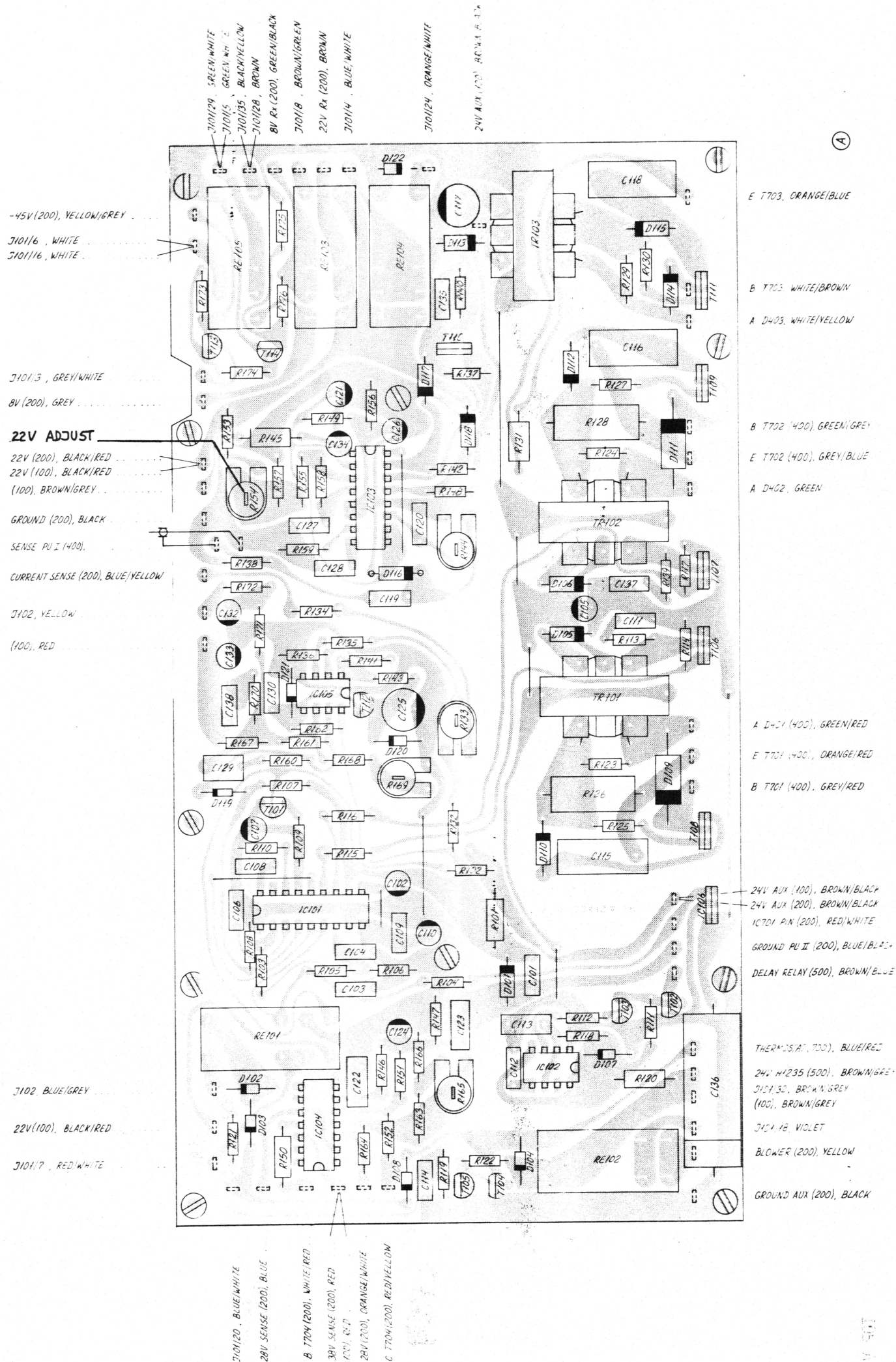
5.5. NECESSARY ADJUSTMENT AFTER REPAIR

If the H1245 rack has been repaired, carry out a performance check (section 5.3.)

If one of the power supplies has been repaired, please see the manual for the power supply in question. Then carry out a performance check (see section 5.3.).



4.1. POWER SUPPLY CONTROL UNIT MODULE 100



N1409 4-6-23413A

6. CIRCUIT DESCRIPTION

Please see the manuals for N1407 and N1409 for circuit description of the power supplies.

6.1. CHANGE-OVER UNIT

With the switch on the H1245 front panel in position AC, only the N1409 AC power supply is working and delivers the power to T1130.

The blower for N1409 in H1245 is connected via a relay to the transformer TR701 in N1409 (220V AC terminal). The blower is controlled from N1409.

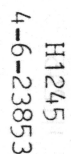
With the switch on the H1245 front panel in position DC, only the N1407 DC power supply is working and delivers power to T1130. The blower for N1407 in H1245 is driven from a blower converter unit in H1245, similar to the one in N1407, and the power is taken from fuse F401 in N1407. The blower is controlled from N1407.

With the switch on the H1245 front panel in position AUTOMATIC, N1409 delivers the power to T1130, but PUI in N1407 is also working, ready to take over, if the AC-mains should fail. The PUI is working both in N1407 and in N1409, but the output voltage from PUI in N1409 is adjusted from 22.0V to 22.5V, so that N1409 delivers the power if AC-mains is present. If the AC-mains fails, the PUI in N1407 takes over with no break, thus maintaining the preset informations in the receiver and the exciter. A voltage detector in H1245 is watching if the 22.5V from N1409 falls below approx. 19V. If that happens the PUI in N1407 starts up. If the transmitter is keyed during the change-over, a drop-out of about 1 second occurs in the output power from the transmitter, because of the soft start of PUI in N1407.

If H1245 is in the position AUTOMATIC and the 24V DC battery is disconnected from H1245, the N1409 stops. The switch has to be set in AC position to get N1409 working while the 24V DC is disconnected.

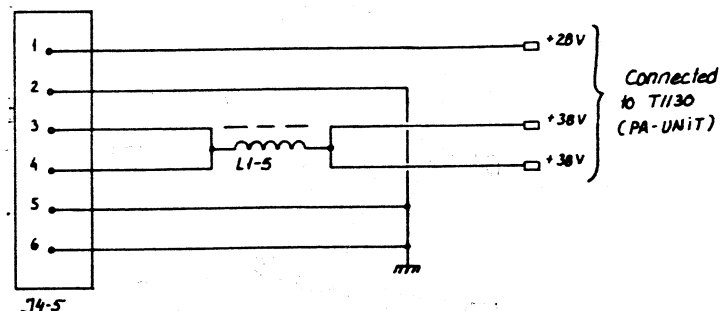
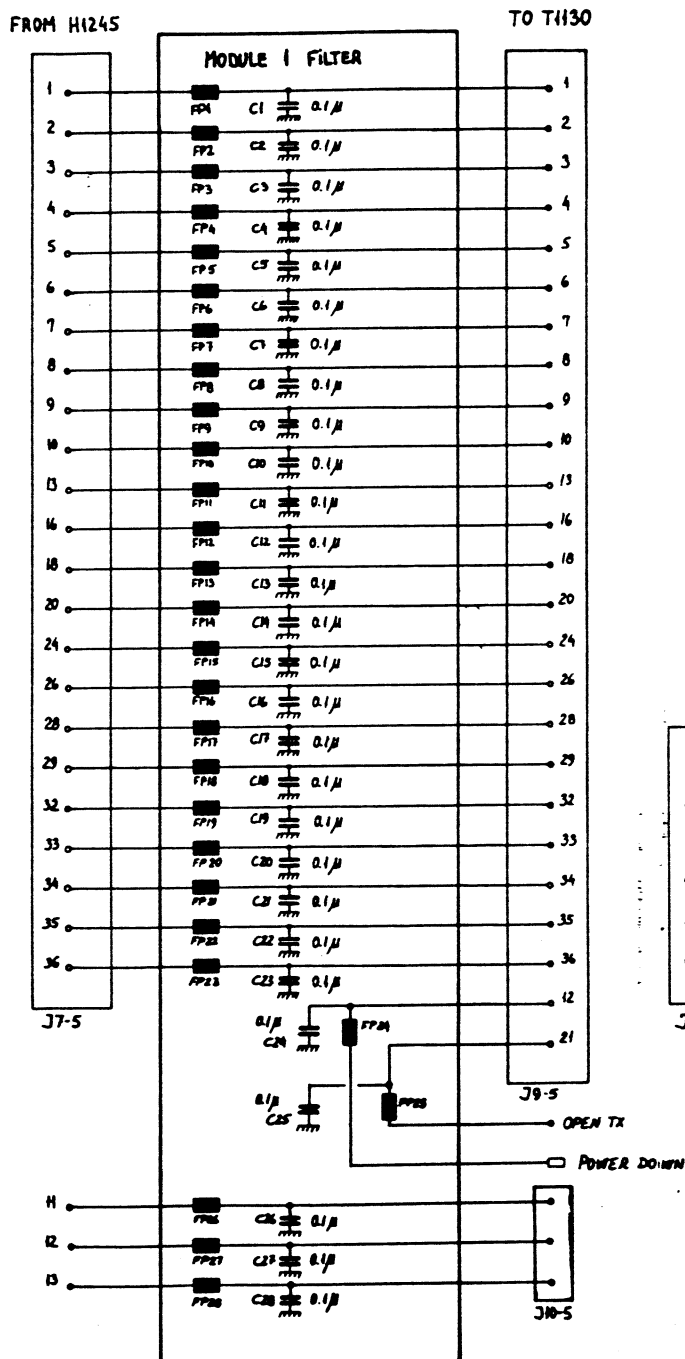
5 = Green
6 = Blue
7 = Violet
8 = Grey
9 = White

EX.:Brown/White = 19



6.2. ADAPTOR INSERTED IN T1130

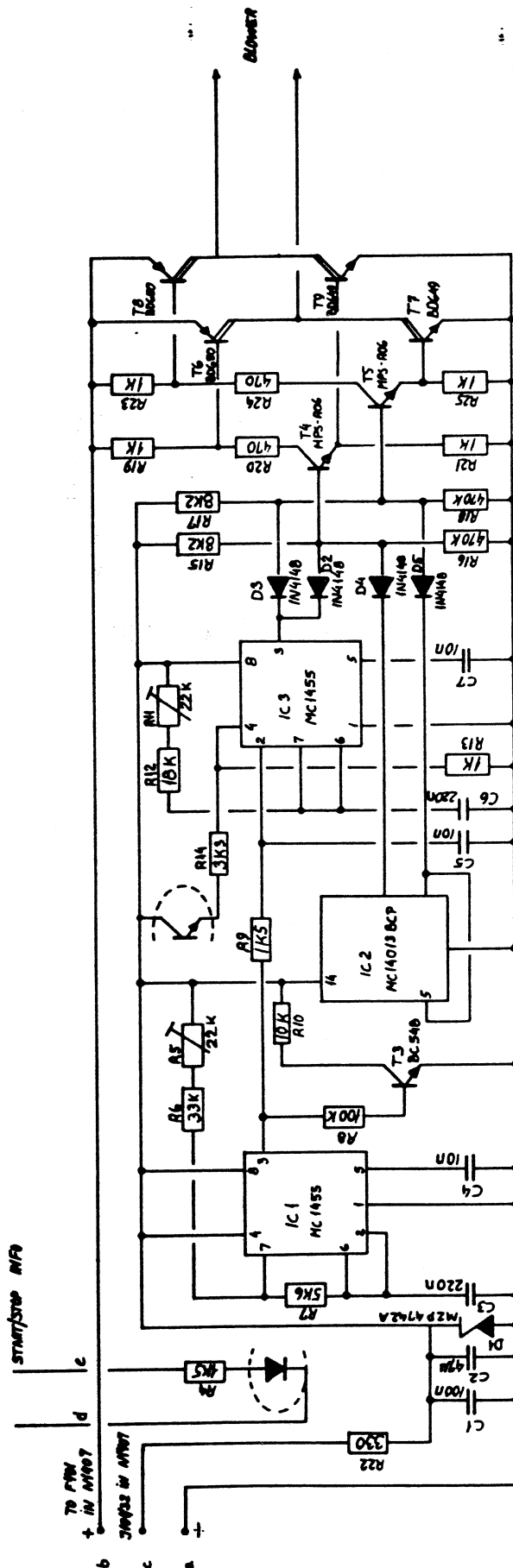
An adaptor is placed in the T1130 chassis together with the plugs and a noise filter. The adaptor is placed where the original power supply is normally placed.



ADAPTOR FOR T1130/H1245.

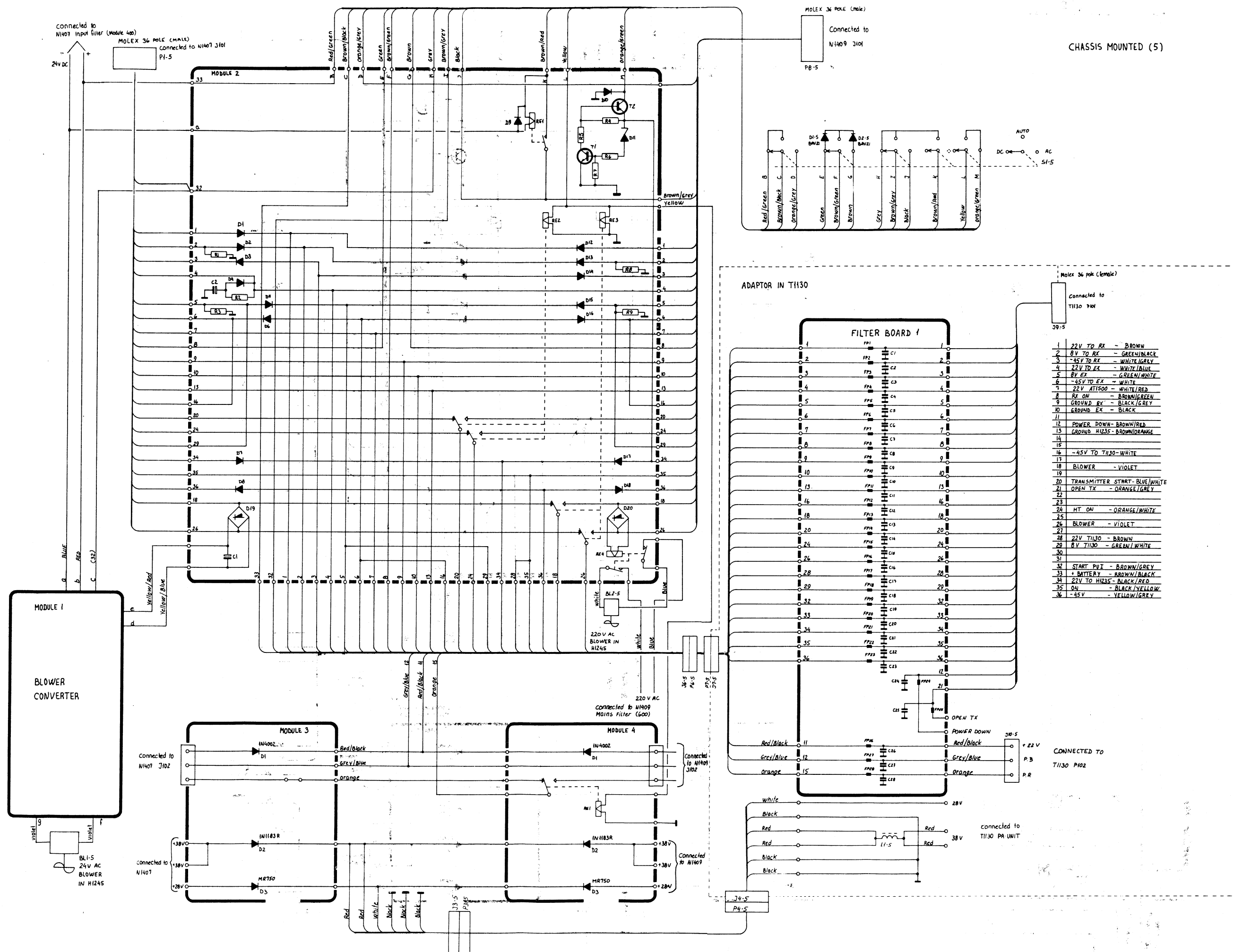
6.3. BLOWER CIRCUIT

(Please see manual for N1407)



BLOWER CONVERTER
H1245

CHASSIS MOUNTED (5)



- 1 22V TO RX - BROWN
- 2 8V TO RX - GREEN/BLACK
- 3 -45V TO RX - WHITE/GRAY
- 4 22V TO EX - WHITE/BLUE
- 5 8V EX - GREEN/WHITE
- 6 -45V TO EX - WHITE
- 7 2V AT1500 - WHITE/RED
- 8 RX ON - BROWN/GREEN
- 9 GROUND RX - BLACK/GRAY
- 10 GROUND EX - BLACK
- 11
- 12 POWER DOWN- BROWN/RED
- 13 GROUND H1235 - BROWN/ORANGE
- 14
- 15 -45V TO T130 - WHITE
- 16
- 17 BLOWER - VIOLET
- 18
- 19
- 20 TRANSMITTER START- BLUE/WHITE
- 21 OPEN TX - ORANGE/GRAY
- 22
- 23 HT ON - ORANGE/WHITE
- 24
- 25 BLOWER - VIOLET
- 26
- 27
- 28 22V T130 - BROWN
- 29 8V T130 - GREEN/WHITE
- 30
- 31
- 32 START PWT - BROWN/GRAY
- 33 BATTERY - BROWN/BLACK
- 34 22V TO H1235 - BLACK/RED
- 35 ON - BLACK/YELLOW
- 36 -45V - YELLOW/GRAY

CONNECTED TO
T1130 P102