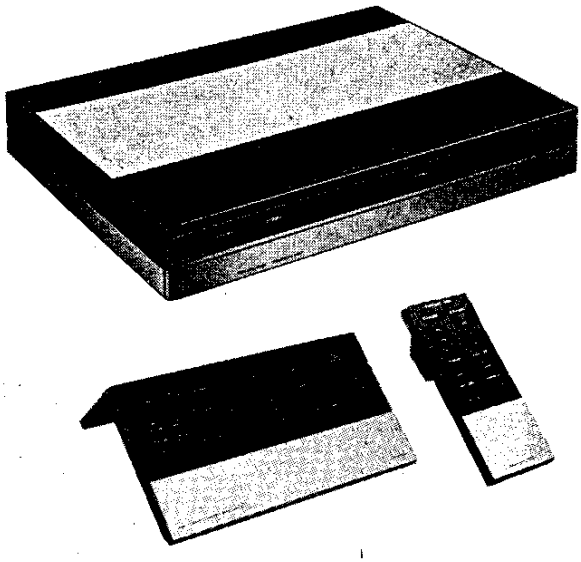
Bang&Olufsen



Beomaster 5000
Type 2321-2322-2323-2324-2325-2329

Master Control Panel
Type 2038

Master Terminal
Type 2039

FOR SERVICE MANUALS
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SERVICEANVISNING/
SERVICE MANUAL

mPC

INDHOLD

CONTENTS

INTRODUKTION

Beosystem 5000 består af Master Control Panel 5000 (MCP 5000) Beomaster 5000, Beocord 5000 og Beogram 5000.

MCP 5000 er den enhed i Beosystem 5000, som samler enhederne og gør den til et hele. MCP 5000 kommunikerer på infrarød basis med Beomaster 5000, hvorfra kommunikationen med resten af systemet foregår via en data link.

INTRODUCTION

Beosystem 5000 is made up of Master Control Panel 5000 (MCP 5000), Beomaster 5000, Beocord 5000 and Beogram 5000.

MCP 5000 is the unit in Beosystem 5000 which combines the units and makes them an entity. MCP 5000 communicates on an infrared basis with Beomaster 5000 which then communicates with the remainder of the system via a data link.

Designmæssigt er MCP 5000 udformet, således at topbetjeningens fordele fuldt ud kommer til sin ret, i modsætning til de øvrige enheder i systemet, hvor hovedvægten designmæssigt er lagt på de placeringsmæssige muligheder, hvilket giver frontbetjening.

MCP 5000 er Bang & Olufsens fjernbetjeningspanel nummer 2, som giver visuel tilbagemelding om systemets aktuelle status.
MCP 5000 giver i forhold til Beocenter 7700's Master Control Panel en endnu højere grad af betjenings komfort, idet samtlige funktioner (bortset fra handling af plader og bånd) i hele Beosystem 5000 kan betjenes herfra.

Beomaster 5000 er det første Bang & Olufsen produkt, som har indbygget automatisk opsøgning af AM og FM stationer.
Beomaster 5000 har indbygget memory for lagring af indtil 9 stationer (forvalg), AM eller FM i det ønskede mix. Indikation af program frekvens og volume foregår på ciffer display.

Betjeningstasterne, der normalt er skjult bag frontpanelet, kan vippes ud, således at en stor part af produktets funktioner kan betjenes herfra, men den komplette udnyttelse af Beomaster 5000 (Beosystem 5000) fås kun ved betjening via MCP 5000.

Beocord 5000 har, i forhold til tidligere båndoptagere fra Bang & Olufsen, indbygget et søgesystem, som arbejder med pauserne mellem optagelserne.
Systemet kan opsøge indtil 8 pauser frem eller tilbage på båndet.
Beocord 5000 har endvidere et løbeværk med kurvehjulskontrolleret »afdæmpning« af indkoblingen af tonehovedbroen og spolefunktionerne.

Beocord 5000 er opbygget med en »skuffe«, som glider frem ved hjælp af en motor, når der skal skiftes/ilægges bånd.
Hovedparten af båndoptagerens funktioner kan betjenes direkte på skuffens panel, når skuffen er kørt frem, Play kan endvidere betjenes på frontens højre side uden aktivering af »skuffen«.

Beogram 5000 er en videreudvikling af Beogram 1800.
Beogram 5000 har indbygget en repeat fuktion med tilhørende indikator. Repeat funktionen kan »huske« indtil 7 repeat indtastninger.

Denne serviceanvisning er gældende for MCP 5000 og Beomaster 5000.
Beocord 5000 og Beogram 5000 forefindes i separate serviceanvisninger.

MCP 5000 is designed in such a way that the advantages of the topside operation are fully utilized as opposed to the other units of the systems where designwise most considerations have been given to the location options which have resulted in frontal operation.

MCP 5000 is Bang & Olufsen's remote control panel No. 2 and it provides a visual feedback on the actual status of the system.
As compared with the Master Control Panel of Beocenter 7700, the MCP 5000 affords an even higher degree of operational comfort since all functions (apart from handling of records and tapes) of the complete Beosystem 5000 can be controlled from MCP 5000.

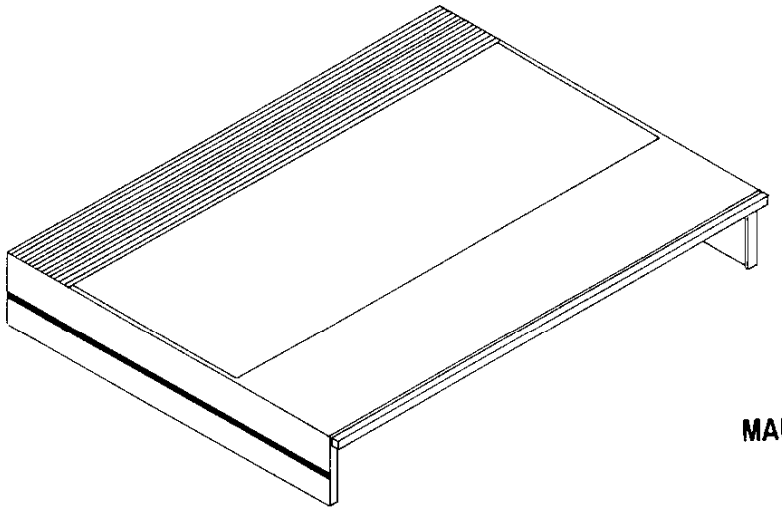
Beomaster 5000 is the first Bang & Olufsen product to have integrated automatic search of AM and FM stations.
Beomaster 5000 has integrated memory for storing of up to 9 stations (pre-selection), AM or FM in the mix required. Programme, frequency and volume are indicated on a digital display.

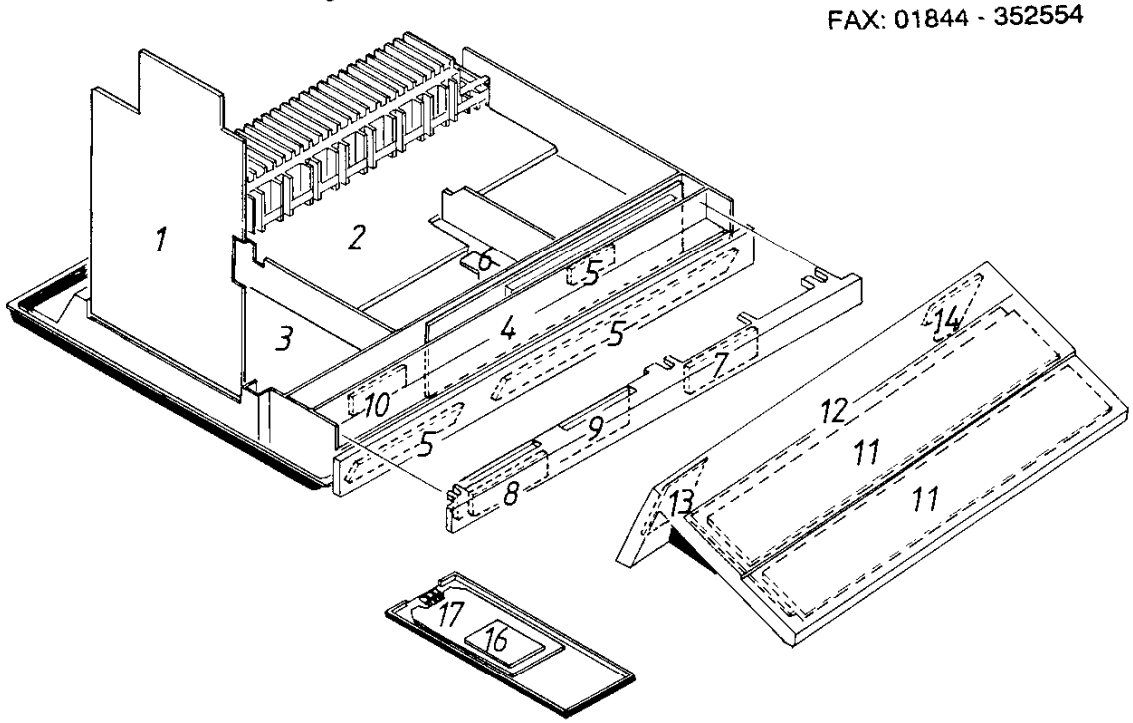
The operational keys which are normally concealed behind the front panel, are tiltable outwards so that a considerable part of the functions of this system can be operated from this location, but the full utilization of Beomaster 5000 (Beosystem 5000) is only achievable by operation via MCP 5000.

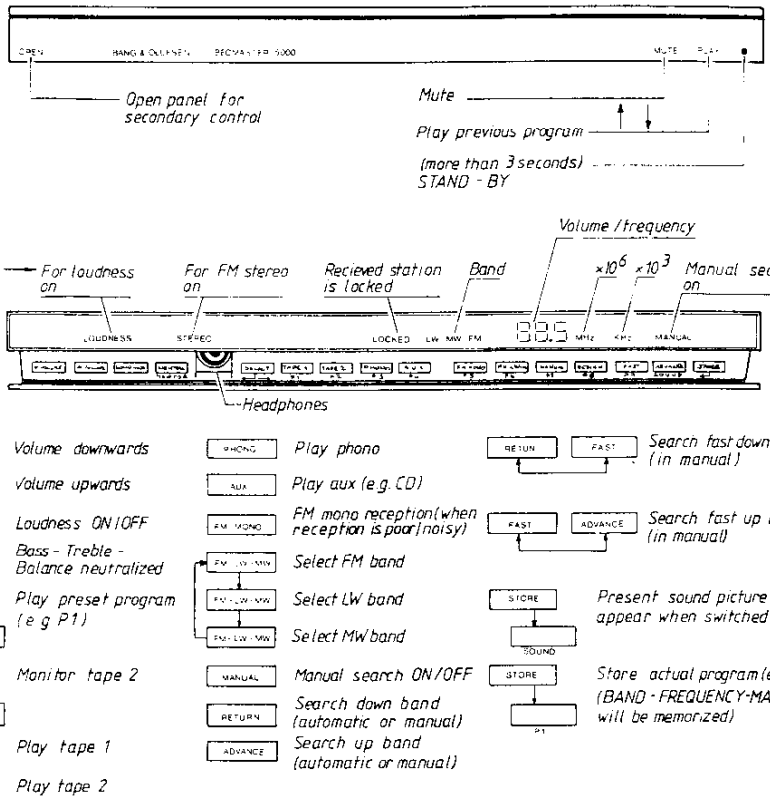
Compared with earlier Bang & Olufsen tape recorders Beocord 5000 has an integrated search system which inserts pauses between the recordings.
The system is capable of searching up to 8 pauses forwards or backwards on the tape.
Furthermore, Beocord 5000 has a drive train with camwheel controlled »damping« of the engagement of the tape head bridge and the coil functions.

Beocord 5000 has a »drawer« with a motordriven forward motion for tape changing/loading.
It is possible to operate the main part of the functions of the tape recorder direct on the drawer panel when the drawer is in its forward position.
Furthermore, Play is operable on the right side of the front without activation of the »drawer«.

Beogram 5000 is a further development of Beogram 1800.
Beogram 5000 has an integrated repeat function with associated indicator. The repeat function is able to »remember« up to 7 repeat entries.
This service manual applied to MCP 5000 and Beomaster 5000.
Beocord 5000 and Beogram 5000 have separate service manuals.

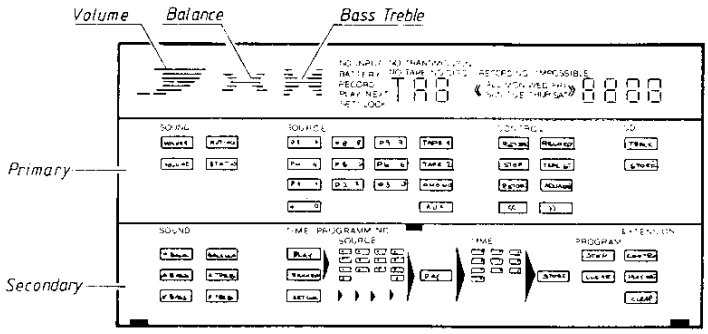





Open panel for secondary control
Mute
Play previous program
(more than 3 seconds)
STAND - BY
Volume / frequency
DISPLAYS
For loudness on
For FM stereo on
Recieved station is locked
Band
×10⁶
×10³
Manual search on
LOUDNESS
STEREO
LOCKED
LW MW FM
MHz
KHz
MANUAL
Headphones
VOLUME
Volume downwards
VOLUME
Volume upwards
LOUDNESS
Loudness ON/OFF
NEUTRAL
Bass - Treble - Balance neutralized
SELECT
Play preset program (e.g. P1)
SELECT
MONITOR
Monitor tape 2
TAPE 1
Play tape 1
TAPE 2
Play tape 2
PHONO
Play phono
AUX
Play aux (e.g. CD)
FM MONO
FM mono reception (when reception is poor/noisy)
FM - LW - MW
Select FM band
FM - LW - MW
Select LW band
FM - LW - MW
Select MW band
MANUAL
Manual search ON/OFF
RETURN
Search down band (automatic or manual)
ADVANCE
Search up band (automatic or manual)
RETURN
FAST
Search fast down band (in manual)
FAST
ADVANCE
Search fast up band (in manual)
STORE
SOUND
Present sound picture will appear when switched on.
STORE
Store actual program (e.g. P1) (BAND - FREQUENCY - MANUAL will be memorized)

Bang&Olufsen

Operating Manual for Master Control Panel



PRIMARY CONTROL

SOUND:

- VOLUME ▲ — Volume upwards
- VOLUME ▼ — Volume downwards
- MUTING — Sound instant OFF - ON
- STATUS — Display actual function

SOURCE:

- P1 / P9 — Select presat FM/AM station
- TAPE 1 — PLAY taperecorder connected TP1
- TAPE 2 — PLAY taperecorder connected TP2
- PHONO — PLAY recordplayer connected PH
- AUX — PLAY recordplayer (CD) connected AUX
- • — STAND BY

CONTROL:

Green buttons for record - functions

- RECORD — Recording possible (pause)
- RECORD — Recording
- TAPE STOP — Pause (4 sec. pause on tape)
- TAPE STOP — Recording possible OFF
- RETURN — Fast rewind to startposition of sequense

White buttons influence source chosen

- RETURN — Autosearch backwards (AM-FM-TP-CD)
- ADVANCE — Autosearch forwards (AM-FM-TP-CD)
- >> — AM/FM: Autosearch from bottom of opposite band; TAPE: Fast forward; CD: Move pick-up forward
- << — AM/FM: Autosearch from top of opposite band; TAPE: Fast rewind; CD: Move pick-up backward
- STOP — Stops searchfunctions

CD:

- TRACK — Open for track sequense selection
- 1 / 2 — Select track 12
- STORE — Memorize 12 as next in sequense

SECONDARY CONTROL

SOUND:

- ◄BALANCE — Balance towards left
- BALANCE► — Balance towards right
- ▲BASS — Bass upwards
- ▼BASS — Bass downwards
- ▲TREBLE — Treble upwards
- ▼TREBLE — Treble downwards

TIME PROGAMMING:

- SET CLOCK — Open for clock set
- DAY — Select actual day by stepping
- 8 / 3 / 0 — Select actual time (eg. 8.30)
- STORE — Memorize time setting
- PLAY — Select function of time - if memory is accupied NO INPUT is displayed
- P1 — Source selectione
- DAY — Select day by stepping
- 7 / 0 — Select time (eg. 7:00)
- STORE — Memorize time programming (one out of a capacity of 12)
- STEP — Recalls and displayes programmes one by one stepping - After last program the display will be NO INPUT.
- CLEAR — Remove displayed program from memory

EXTENSION:

- CONTROL — You can control tape or disc. without influing source
- TAPE 2 — eg. TAPE 2
- << — Tape 2 is rewinding
- PLAY NEXT — Event programming is possible (after any auto stop)
- P3 — P3 is played after tape auto stop - You can select any source you want
- PLAY NEXT
- CLEAR — Remove play next function

STORE AM/FM FREQUENCIES:

- CONTROL
- STORE
- P1 - P9

STORE SOUND:

- CONTROL
- STORE
- BASS — Or treble or bal.

DIAGRAMFORKLARING

På diagrammet er der angivet typenumre på transistorer og IC'er i de tilfælde hvor typenummeret er entydigt for komponentes placering i kredsløbet – f.eks. TR20/BC 557B.

Hvis positionsnummeret er efterfulgt af en stjerne **skal** reservedelsnummeret benyttes, da denne komponent er specielt udvalgt – f.eks. TR102*.

Koordinatnumre

De tre største PC plader er forsynet med et koordinatsystem. Komponenterne på disse PC plader er forsynet med et koordinatnummer på diagrammet (mindre skrifttype end positions nr.), som fortæller hvilket koordinat, på PC pladen, de er placeret i. Koordinatnumre for udgangsforstærkerens venstre kanal er angivet i parenteser i diagrammet for højre kanal.

Styrekredsløb

I visse styrekredsløb er den aktive tilstand angivet med en bogstavsbetegnelse (Cr = High med CrO_2 bånd). Hvis betegnelsen er forsynet med negationstegn er den aktive tilstand LOW ($\overline{Cr}$ = LOW med CrO_2 bånd).

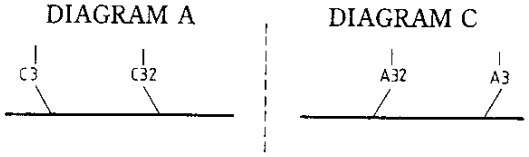
Ledningsforbindelser

Ledningsforbindelserne på diagrammet er samlet i »bundter«. De enkelte ledninger er forsynet med koder, der fortæller hvortil de går.

INTERN FORBINDELSE PÅ EN DIAGRAMSIDE

Interne forbindelser på en diagramside angives med et tal. Knækket på ledningen viser i hvilken retning den anden ende af ledningen findes.

FORBINDELSE TIL EN ANDEN DIAGRAMSIDE



Forbindelsen til en anden diagramside angives med et tal, samt bogstav indikation på det diagram forbindelsen går til.

Symbol for sikkerhedskomponenter

Ved udskiftning af komponenter med dette symbol skal der anvendes komponenter med samme reservedelsnummer. Den nye komponent skal monteres på samme måde som den udskiftede.

EXPLANATION OF DIAGRAM

Type numbers of transistors and IC's have been indicated on the diagram in those cases where the type number is unambiguous for the position of the component in a circuitry – e.g. TR20/BC 557B.

If the position number is followed by an asterisk the spare part number **must be used** because this component has been expecially selected – e.g. TR102*.

System of Coordinates

The biggest PCB boards are provided with co-ordinate systems. The components on these PCB boards are provided with a co-ordinate number on the diagram (smaller printing type than the position numbers) indicating in which co-ordinate they are placed on the PCB board.
The co-ordinate numbers for the left channel of the output amplifier are stated in brackets in the diagram for right channel.

Control Circuit

In certain control circuits the active mode has been indicated by means of a letter symbol (Cr = HIGH with CrO_2 tapes). If the symbol has a negation superscript bar the active mode is LOW ($\overline{Cr}$ = LOW with CrO_2 tapes).

Wiring Connections

The wiring connections on the diagram are assembled in »bundles«. The individual wires are coded to indicate to where they are leading.

INTERNAL CONNECTION ON ONE DIAGRAM PAGE

Internal connections on a diagram page are indicated by a number. The bend of the wire indicates in which direction the other end of the wire may be found.

CONNECTION TO ANOTHER DIAGRAM PAGE

Connections to another diagram page are indicated by a number, as well as by a letter of the diagram to which the connections lead.

Symbol for Safety Components

When replacing components with this symbol components with identical part numbers are to be used. The new component must be fitted in the same way as the one replaced.

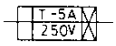
MÅLEBETINGELSER

Alle DC spændinger er målt til stel med voltmeter (indre modstand 10 Mohms).
DC spændinger er opgivet i volt (V). Eks. 0,7 V.
Spændinger på diagram A er målt i stilling FM og ca.1 mV signal, spændingerne i parentes er målt i stilling MW.
Spændinger på diagram B er målt med 1 W udgangseffekt.
Signalveje er vist for henholdsvis FM, AM, fjernbetjening og for LF højre kanal.

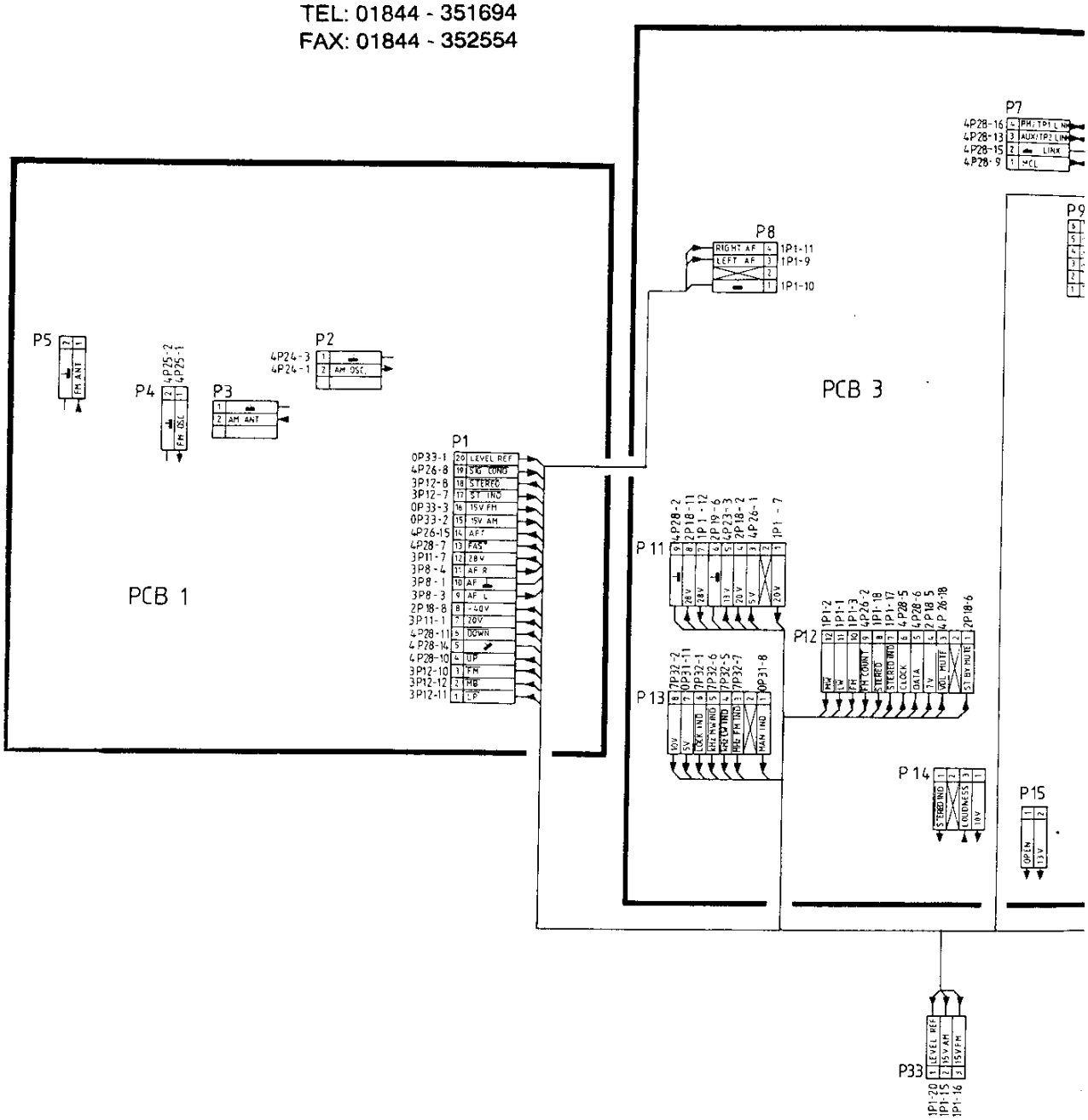
MEASURING CONDITIONS

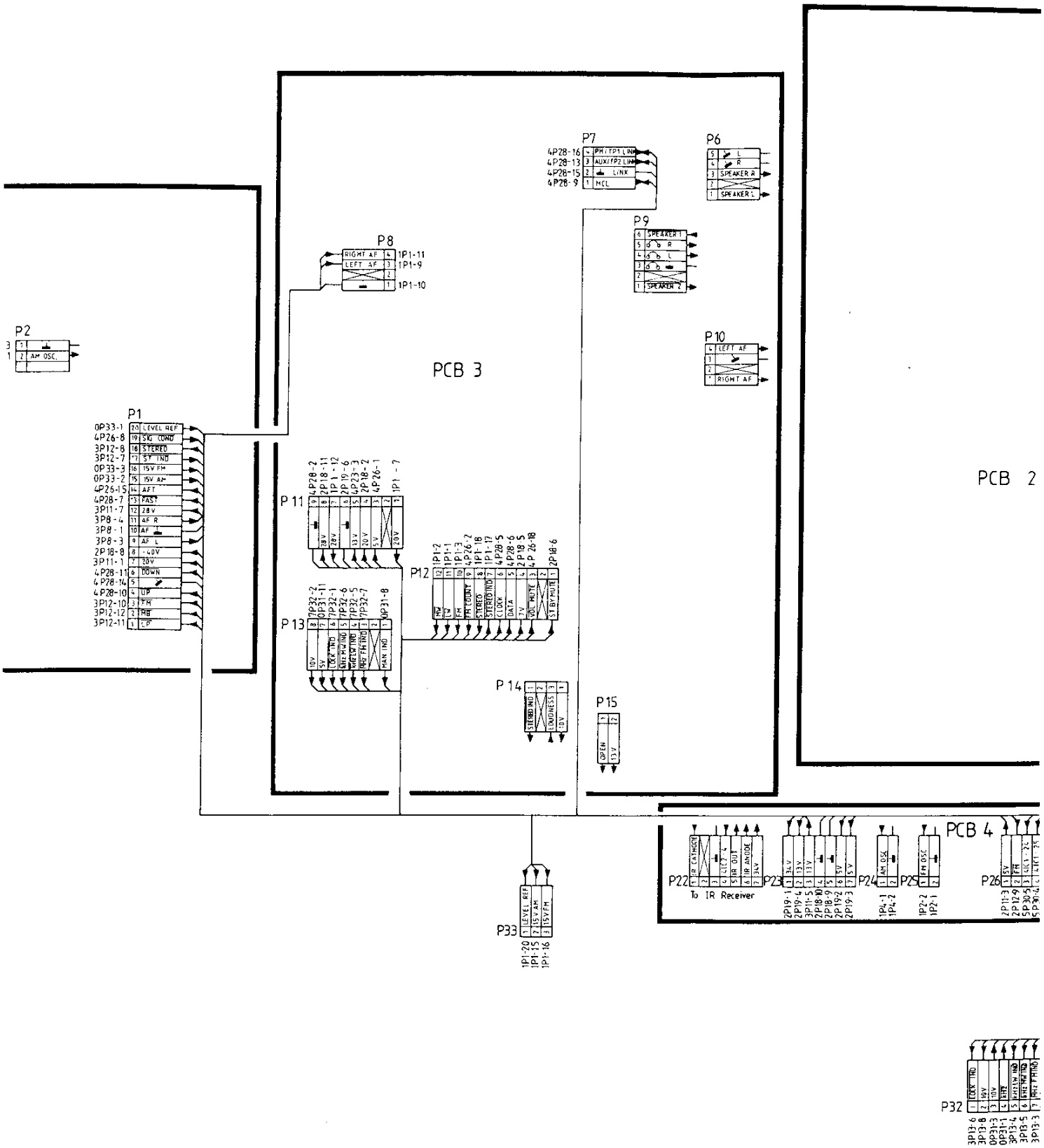
All DC voltages are measured in relation to chassis with a voltmeter (internal resistor 10 Mohms).
DC voltages are stated in volts (V). E.g. 0.7 V.
Voltages in diagram A are measured in FM mode and with approx. 1 mV signal, the voltages in parentheses are measured in MW mode.
Voltages in diagram B are measured with 1 W output level.
The signal paths are shown for FM, AM, remote control and AF right channel.

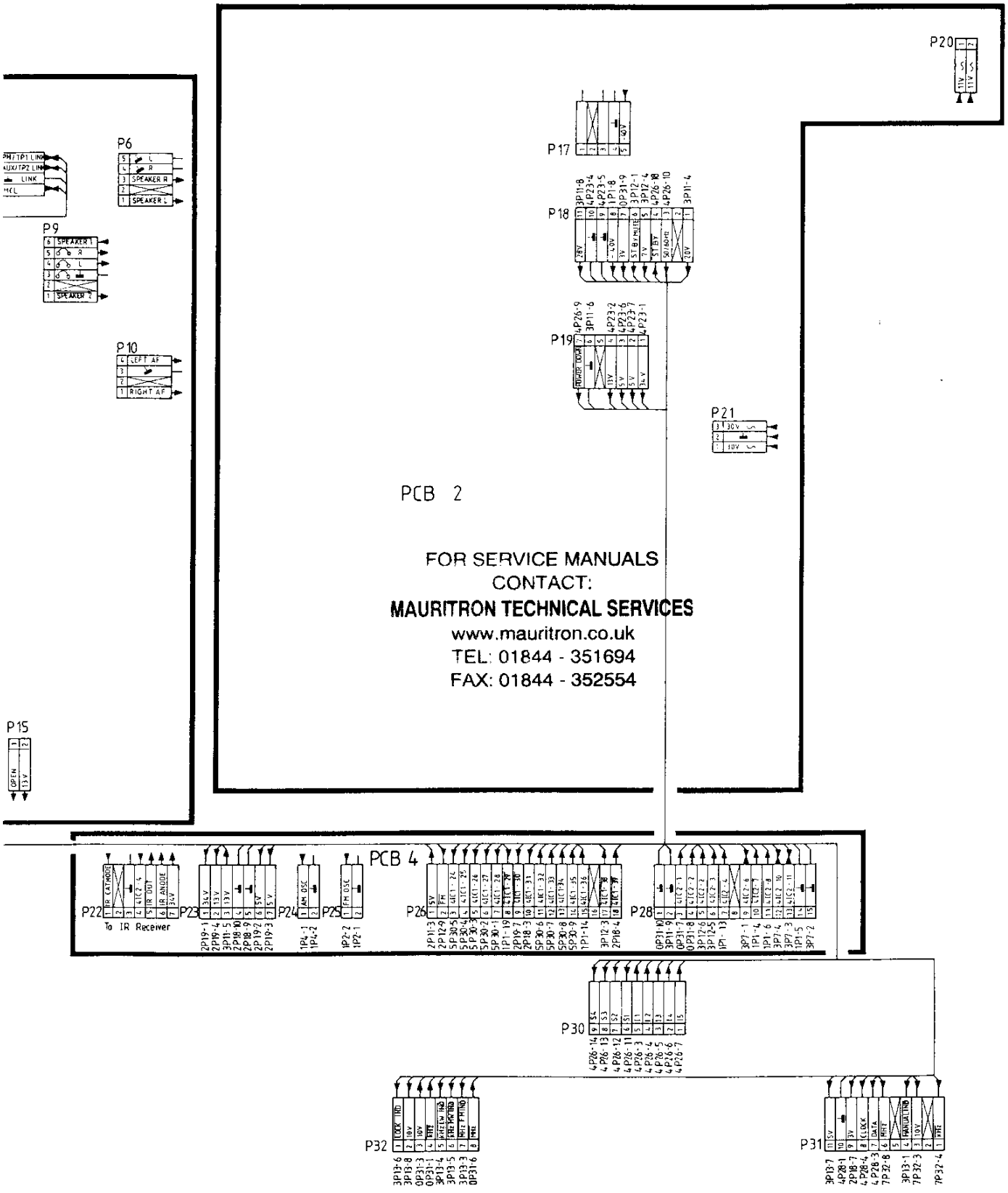
Type 2323 Explanation of the fuse symbols used in the set.
Explanation de symboles du fusible utilisés dans l'appareil.



Replace with same type 5 ampere 250 volts slow acting fuse.
Remplacer par un fusible de meme type retardé et de 5 amperes 250 volts.




PCB 3
PCB 2
PCB 4
P1
P2
P6
P7
P8
P9
P10
P11
P12
P13
P14
P15
P22
P23
P24
P25
P26
P32
P33
To IR Receiver


P20
P17
P18
P19
P21
P6
P9
P10
P15
PCB 2
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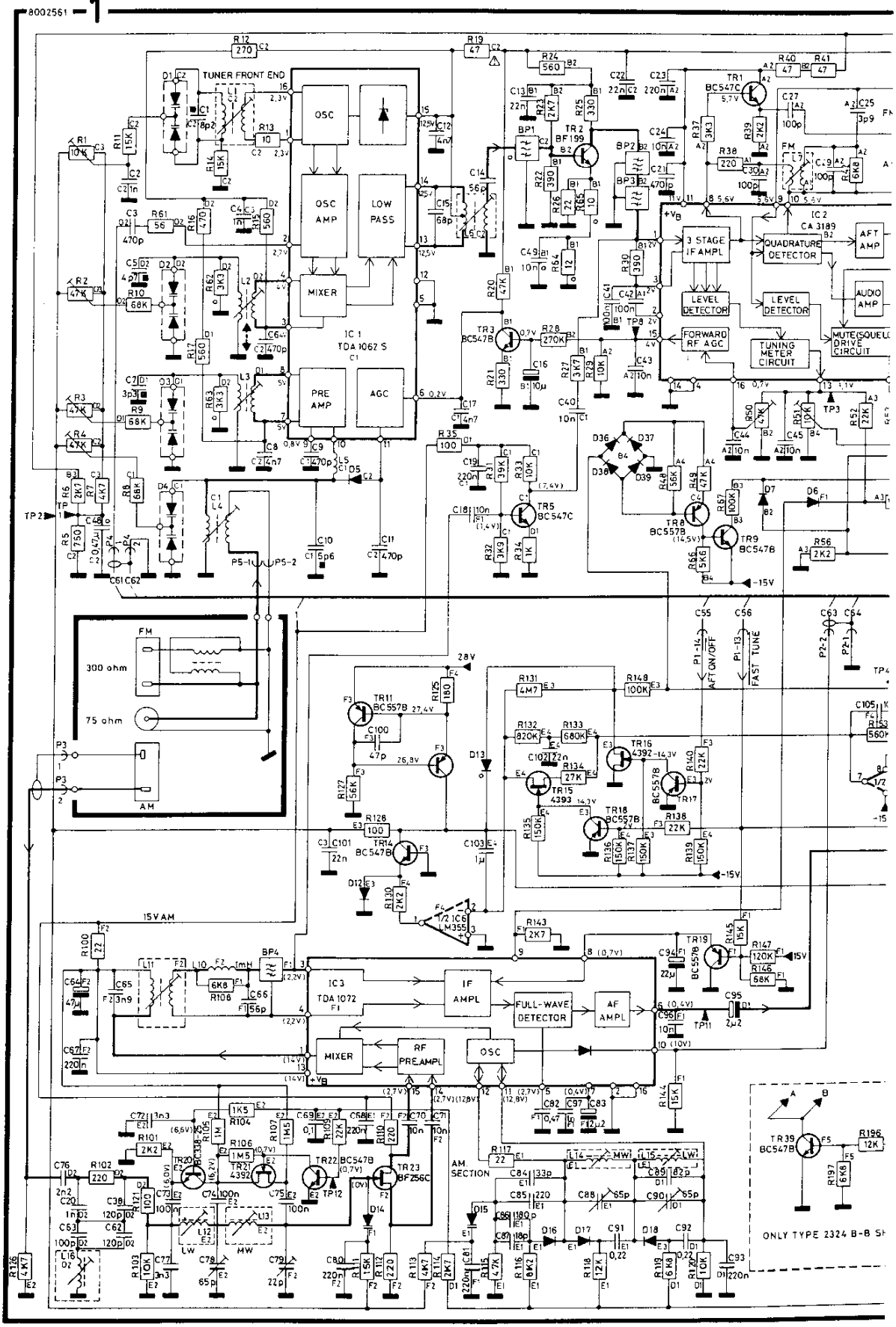
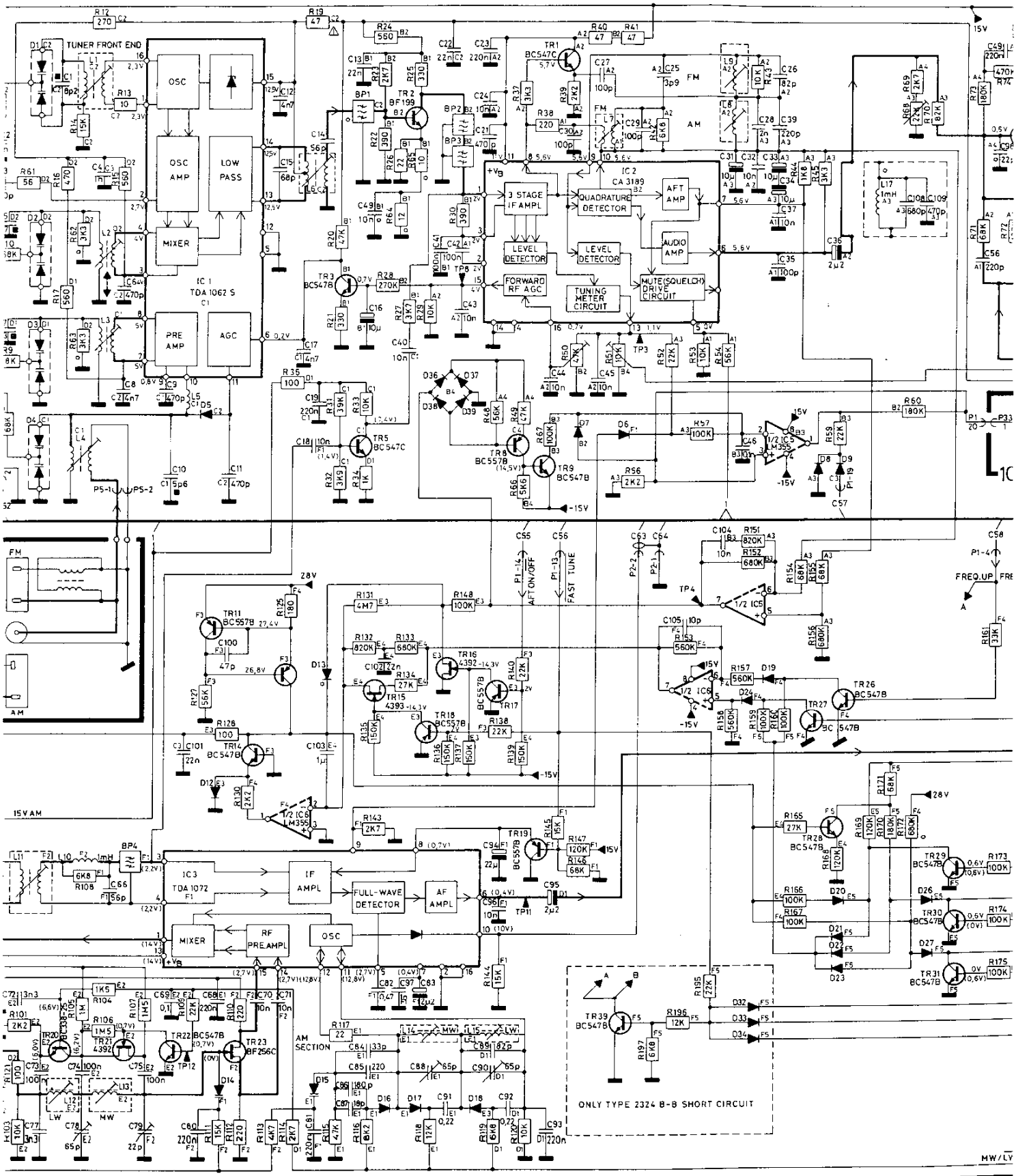
PCB 4
P22
To IR Receiver
P23
P24
P25
P26
P28
P30
P31
P32

Diagram A




TUNER FRONT END
OSC
OSC AMP
LOW PASS
MIXER
PRE AMP
AGC
IC 1 TDA 1062 S
IC 2 CA 3189
3 STAGE IF AMPL
QUADRATURE DETECTOR
AFT AMP
LEVEL DETECTOR
LEVEL DETECTOR
AUDIO AMP
FORWARD RF AGC
TUNING METER CIRCUIT
MUTE (SQUELCH) DRIVE CIRCUIT
FM
AM
IC3 TDA 1072
IF AMPL
FULL-WAVE DETECTOR
AF AMPL
MIXER
RF PRE.AMPL
OSC
AM SECTION
LW
MW
ONLY TYPE 2324 B-B SHORT CIRCUIT
FREQ.UP
15V AM
MW/LW

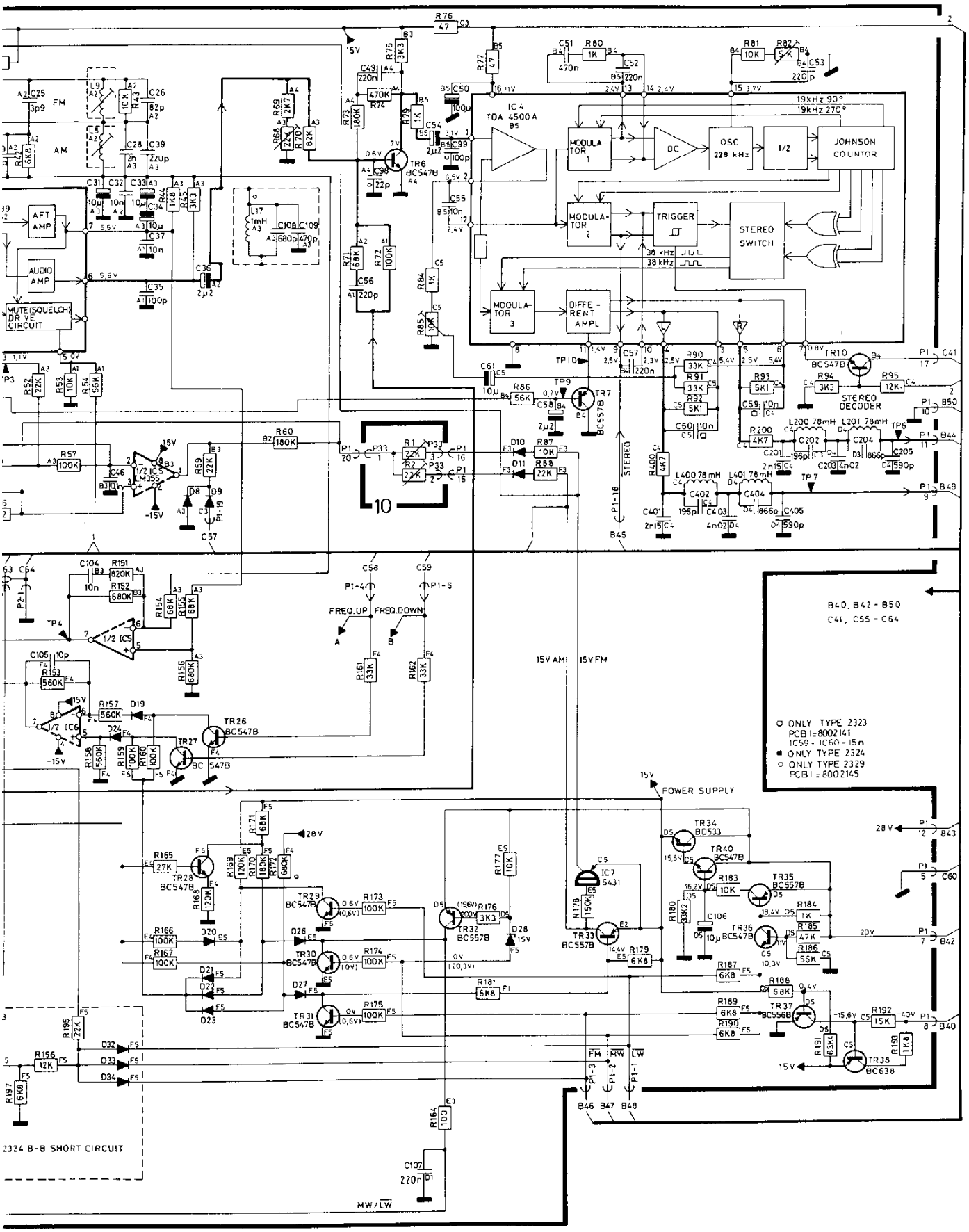

IC 4 TDA 4500 A
MODULA-TOR 1
MODULA-TOR 2
MODULA-TOR 3
DIFFE-RENT AMPL
OSC 228 kHz
1/2
JOHNSON COUNTOR
TRIGGER
STEREO SWITCH
19kHz 90°
19kHz 270°
38 kHz
AFT AMP
AUDIO AMP
MUTE(SQUELCH) DRIVE CIRCUIT
STEREO DECODER
STEREO
FREQ.UP
FREQ.DOWN
15V AM
15V FM
POWER SUPPLY
B40, B42 - B50
C41, C55 - C64
ONLY TYPE 2323
PCB1=8002141
IC59 - IC60 = 15n
ONLY TYPE 2324
ONLY TYPE 2329
PCB1 = 8002145
2324 B-B SHORT CIRCUIT
MW/LW
FM
MW
LW

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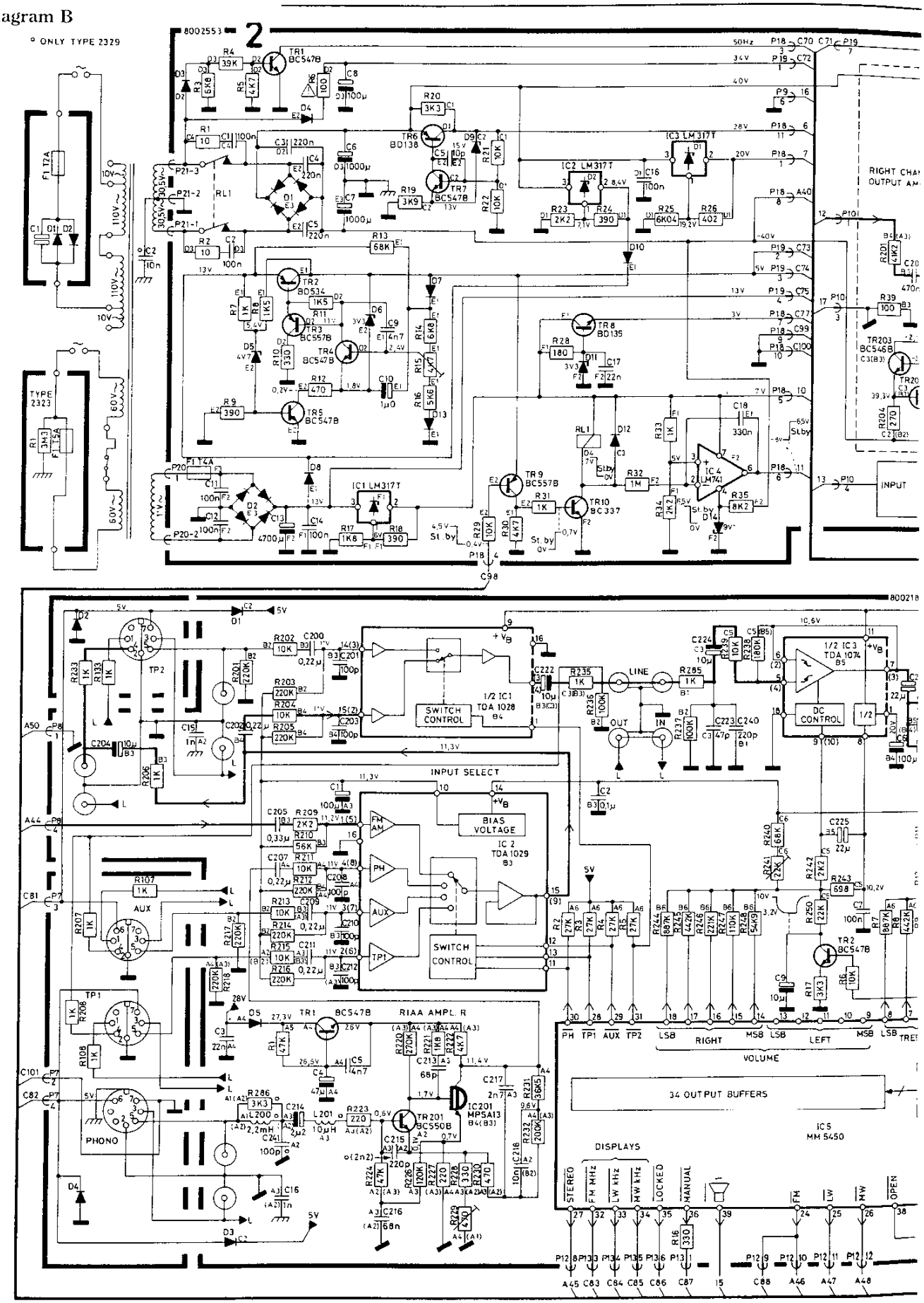
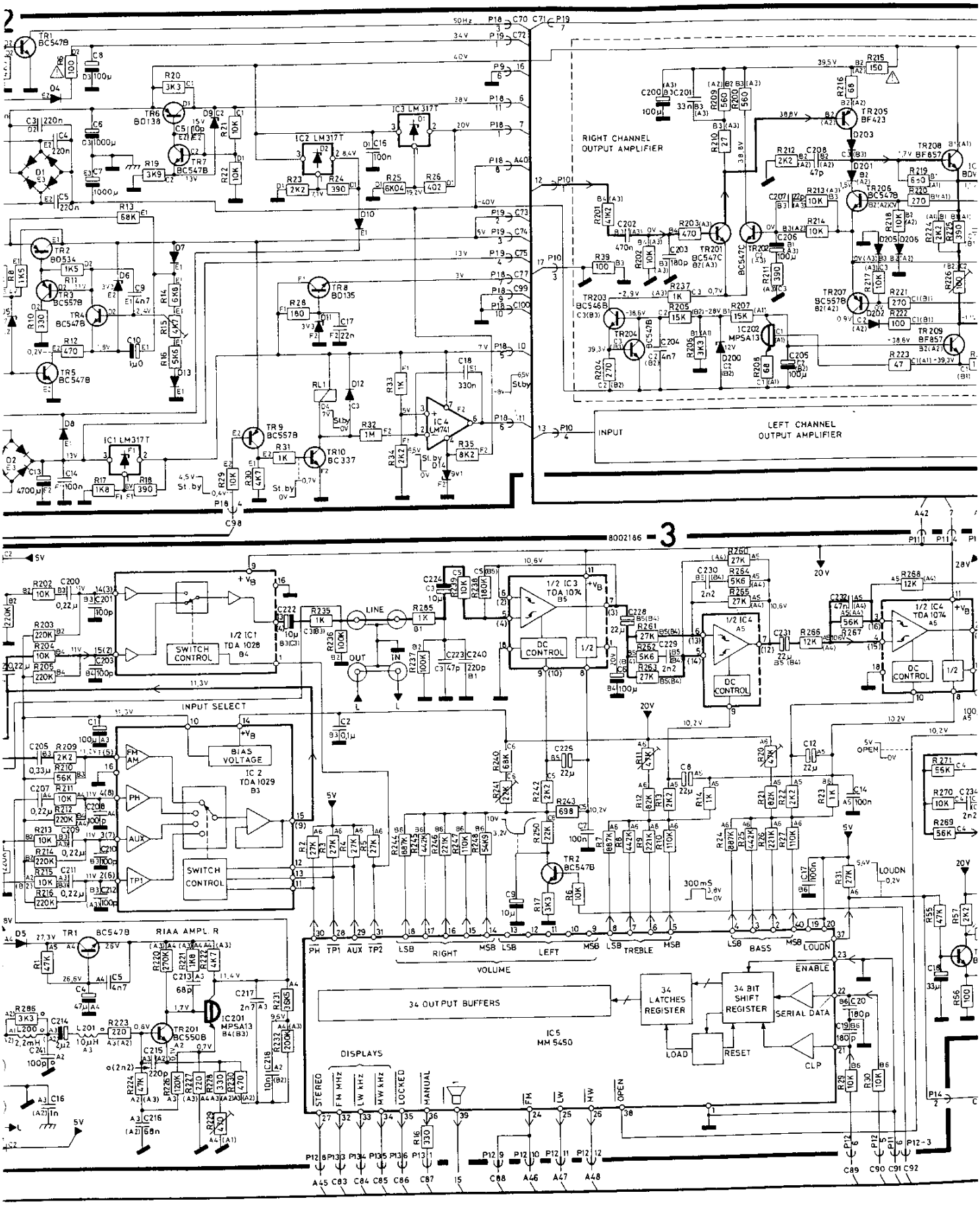
Diagram B




8002186 -3
RIGHT CHANNEL OUTPUT AMPLIFIER
LEFT CHANNEL OUTPUT AMPLIFIER
INPUT
SWITCH CONTROL
1/2 IC1 TDA 1028
INPUT SELECT
BIAS VOLTAGE
IC 2 TDA 1029
IC 3 TDA 1074
IC 4 TDA 1074
DC CONTROL
LINE
OUT
RIAA AMPL R
34 OUTPUT BUFFERS
34 LATCHES REGISTER
34 BIT SHIFT REGISTER
IC5 MM 5450
SERIAL DATA
LOAD
RESET
CLP
ENABLE
VOLUME
TREBLE
BASS
LOUDN
LEFT
RIGHT
DISPLAYS
STEREO
FM MHz
LW kHz
MW kHz
LOCKED
MANUAL
FM
LW
MW
OPEN

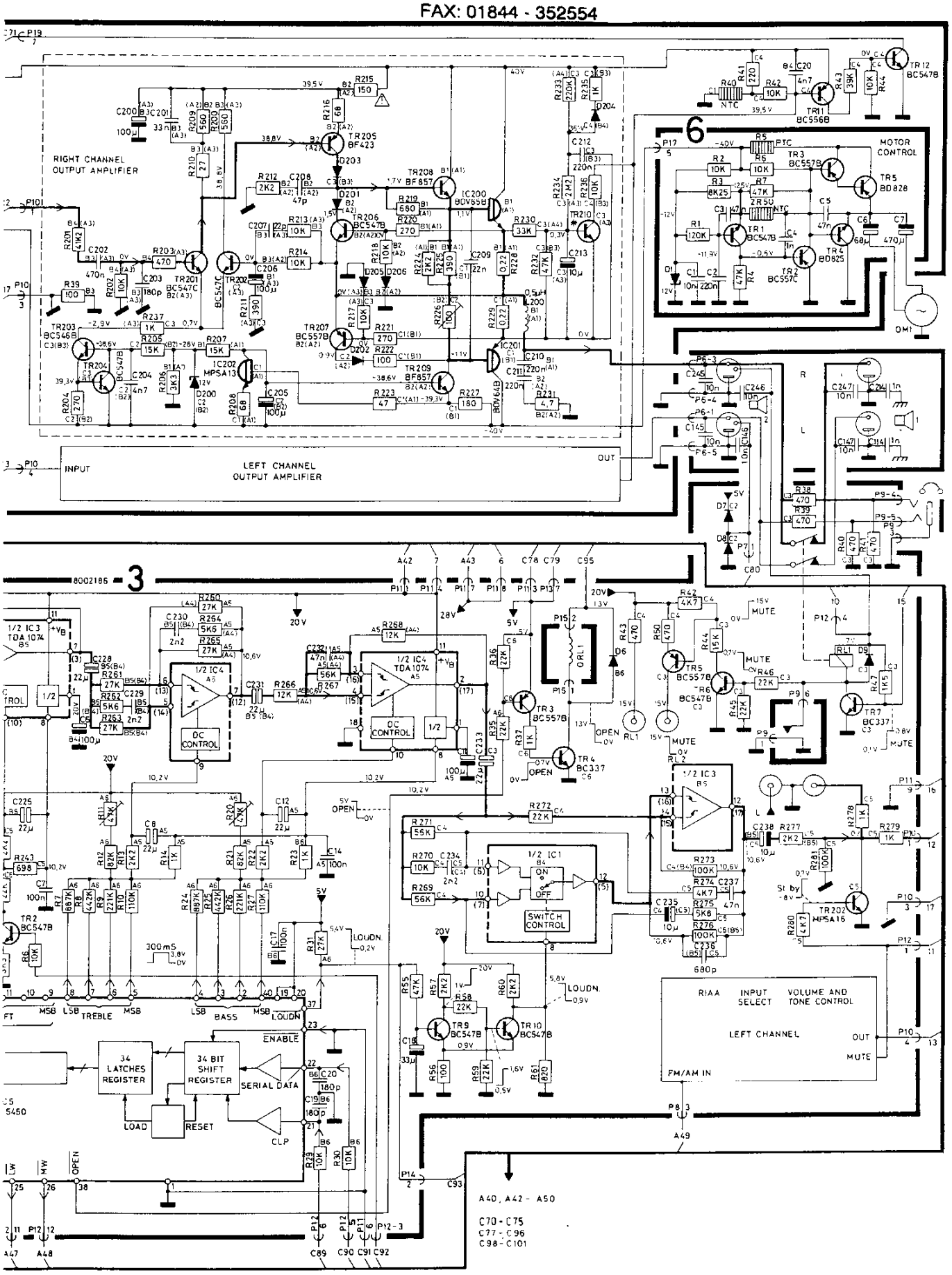
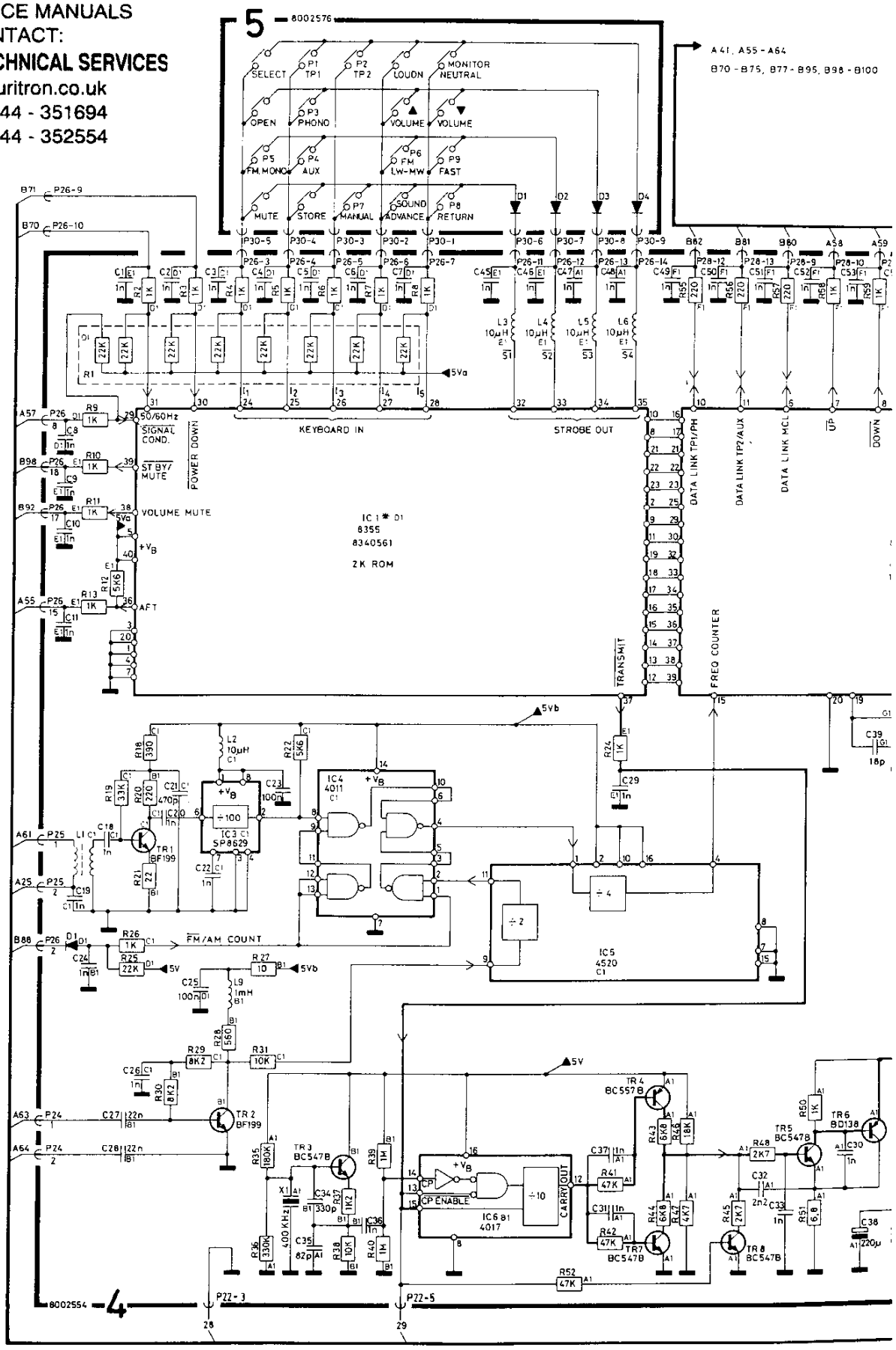
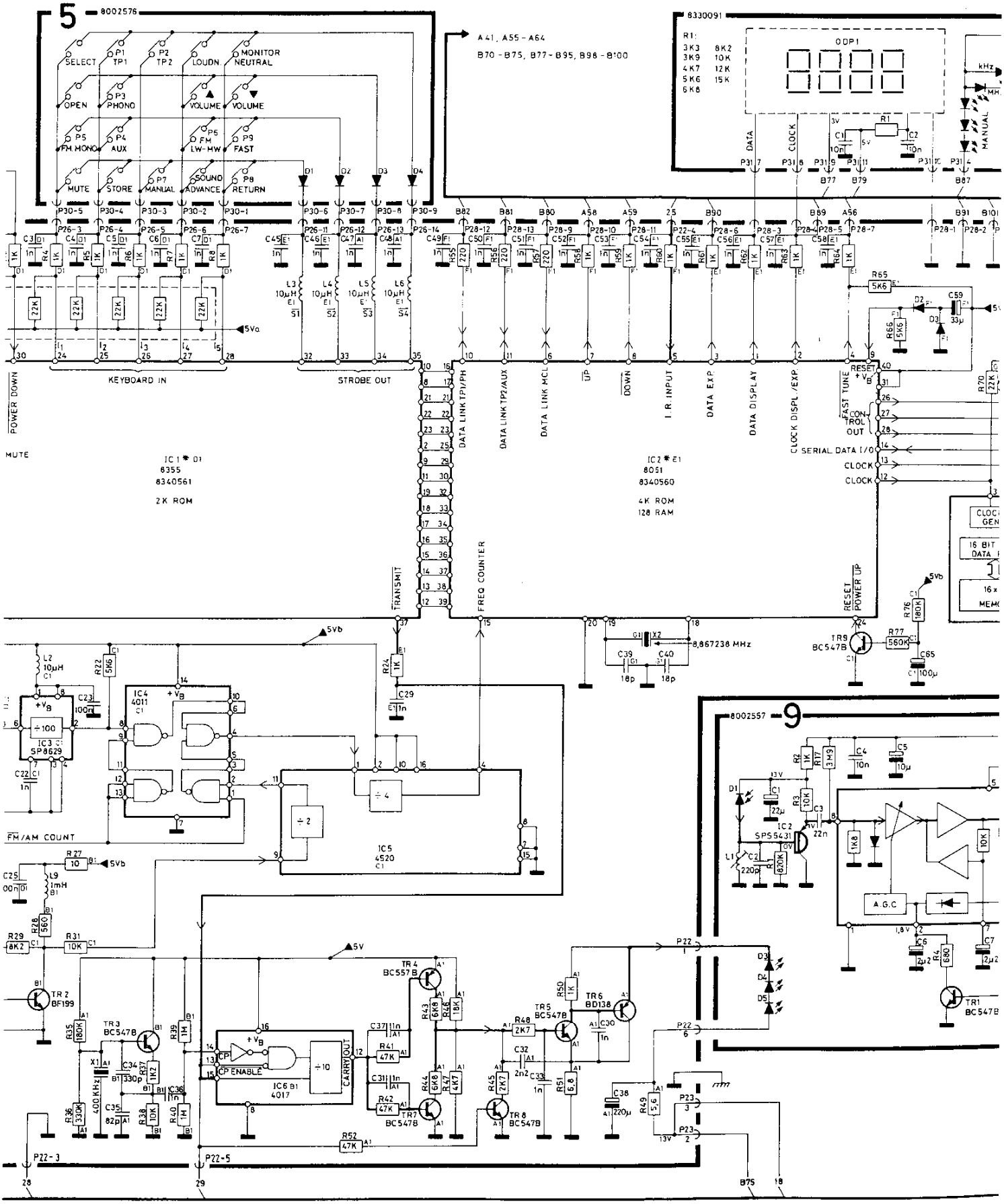
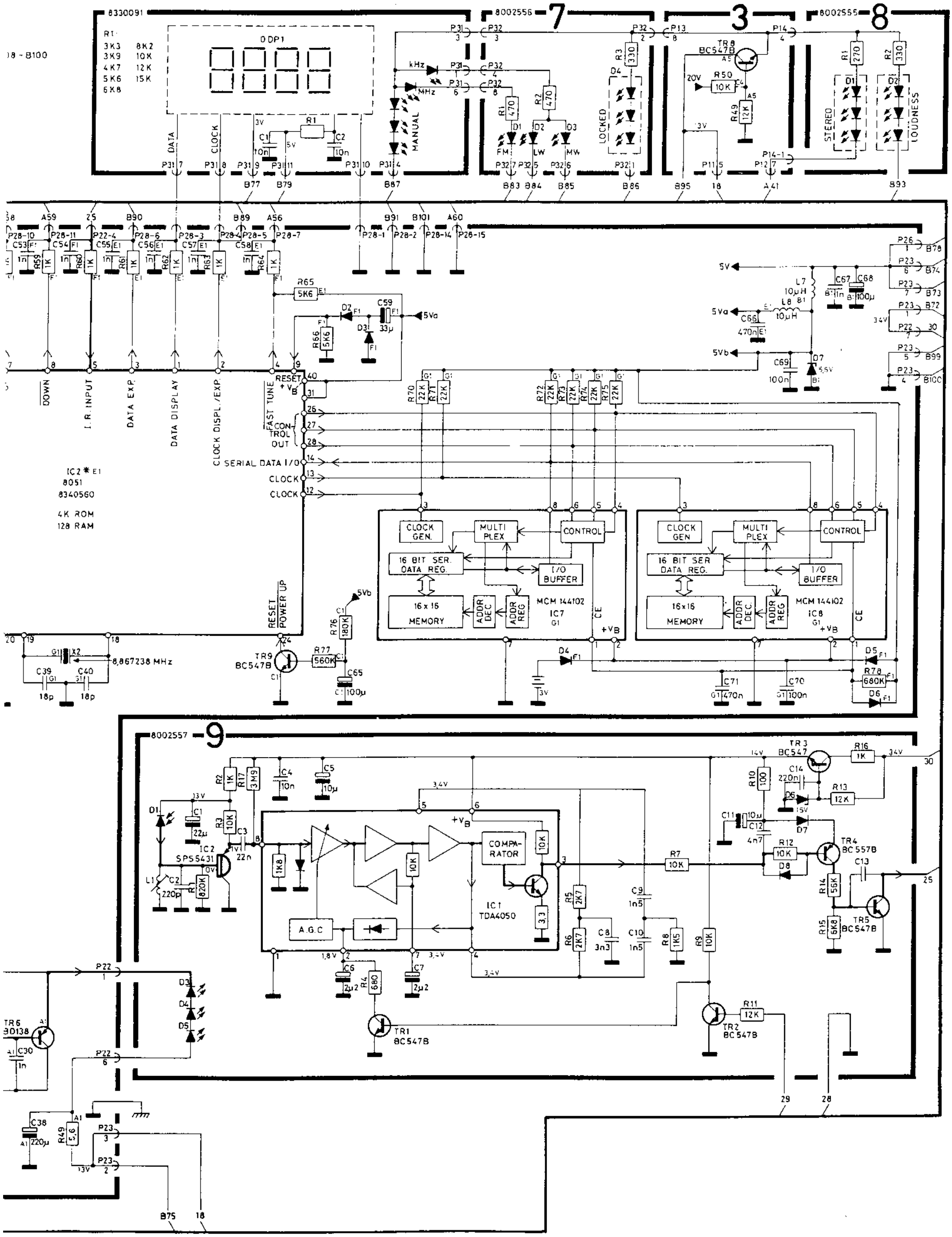

RIGHT CHANNEL
OUTPUT AMPLIFIER
LEFT CHANNEL
OUTPUT AMPLIFIER
INPUT
OUT
6
MOTOR
CONTROL
3
8002185
OC
CONTROL
SWITCH
CONTROL
ON
OFF
OPEN
MUTE
LOUDN.
TREBLE
BASS
LOUDN
LSB
MSB
ENABLE
34
LATCHES
REGISTER
34 BIT
SHIFT
REGISTER
SERIAL DATA
LOAD
RESET
CLP
RIAA
INPUT
SELECT
VOLUME AND
TONE CONTROL
LEFT CHANNEL
FM/AM IN
A40, A42 - A50
C70 - C75
C77 - C96
C98 - C101

Diagram C



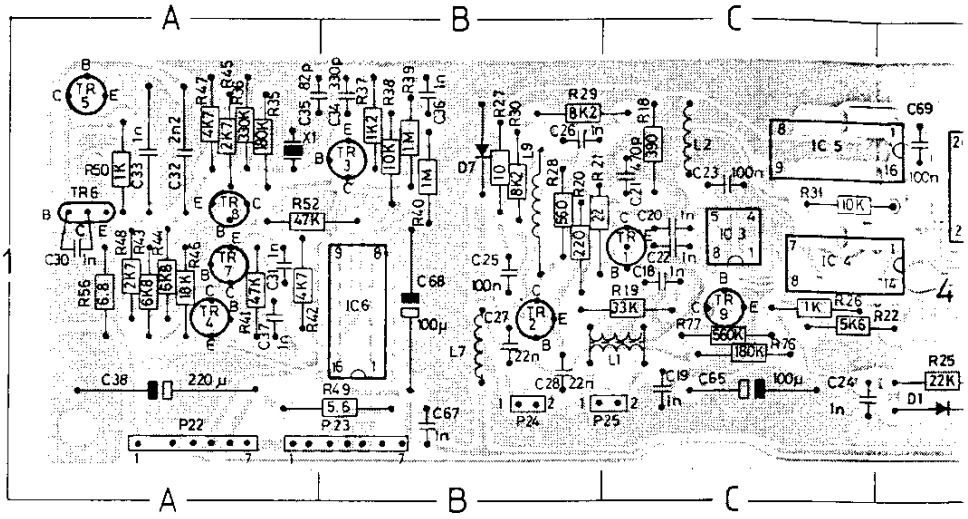

5
8002576
SELECT
P1 TP1
P2 TP2
LOUDN.
MONITOR NEUTRAL
OPEN
P3 PHONO
VOLUME
VOLUME
P5 FM MONO
P4 AUX
P6 FM LW-MW
P9 FAST
MUTE
STORE
P7 MANUAL
SOUND ADVANCE
P8 RETURN
A41, A55 - A64
B70 - B75, B77 - B95, B98 - B100
8330091
R1:
3K3 8K2
3K9 10K
4K7 12K
5K6 15K
6K8
ODP1
DATA
CLOCK
kHz
MANUAL
KEYBOARD IN
STROBE OUT
POWER DOWN
MUTE
IC1 * D1
8355
8340561
2K ROM
IC2 * E1
8051
8340560
4K ROM
128 RAM
DATA LINK TP1/PH
DATA LINK TP2/AUX
DATA LINK MCL
UP
DOWN
I.R. INPUT
DATA EXP.
DATA DISPLAY
CLOCK DISPL /EXP
FAST TUNE
CONTROL OUT
SERIAL DATA I/O
CLOCK
CLOCK
RESET
+VB
TRANSMIT
FREQ COUNTER
RESET POWER UP
8,867238 MHz
FM/AM COUNT
IC3 SP8629
IC4 4011
IC5 4520
÷100
÷4
÷2
9
8002557
IC2 SPS5431
A.G.C
TR1 BC547B
TR2 BF199
TR3 BC547B
TR4 BC557B
TR5 BC547B
TR6 BD138
TR7 BC547B
TR8 BC547B
TR9 BC547B
IC6 B1 4017
CP
CP ENABLE
CARRY OUT
÷10
400 KHz
P22-3
P22-5
B75


8330091
ODP1
8002556 7
3
8002555 8
MANUAL
LOCKED
STEREO
LOUDNESS
TR8 BC547B
DATA
CLOCK
DOWN
I.R. INPUT
DATA EXP.
DATA DISPLAY
CLOCK DISPL./EXP.
RESET +VB
FAST TUNE
CONTROL OUT
SERIAL DATA I/O
CLOCK
CLOCK
IC2 8051 8340560
4K ROM
128 RAM
RESET POWER UP
TR9 BC547B
8,867238 MHz
CLOCK GEN.
MULTI PLEX
CONTROL
16 BIT SER. DATA REG.
I/O BUFFER
16 x 16 MEMORY
ADDR DEC
ADDR REG
MCM 144102 IC7
MCM 144102 IC8
CE
8002557 9
IC2 SPS5431
COMPARATOR
A.G.C
IC1 TDA4050
TR1 BC547B
TR2 BC547B
TR3 BC547
TR4 BC557B
TR5 BC547B
TR6 BD138

Bang&Olufsen

Microcomputer,
8002554, PCB4

PCB drawings are



Functions Tables
for diagram B

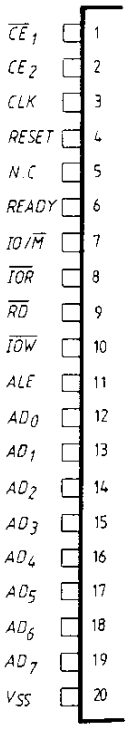
CONTROL VOLUME 3IC5					
R. PIN	14	15	16	17	18
L. PIN	9	10	11	12	13
DISPLAY	E	D	C	B	A
60	1	1	1	1	1
58	1	1	1	1	0
56	1	1	1	0	1
54	1	1	1	0	0
52	1	1	0	1	1
50	1	1	0	1	0
48	1	1	0	0	1
46	1	1	0	0	0
44	1	0	1	1	1
42	1	0	1	1	0
40	1	0	1	0	1
38	1	0	1	0	0
36	1	0	0	1	1
34	1	0	0	1	0
32	1	0	0	0	1
30	1	0	0	0	0
28	0	1	1	1	1
26	0	1	1	1	0
24	0	1	1	0	1
22	0	1	1	0	0
20	0	1	0	1	1
18	0	1	0	1	0
16	0	1	0	0	1
14	0	1	0	0	0
12	0	0	1	1	1
10	0	0	1	1	0
08	0	0	1	0	1
06	0	0	1	0	0
04	0	0	0	1	1
02	0	0	0	1	0
00	0	0	0	0	1
00	0	0	0	0	0

TONE CONTROL 3IC5				
BASS PIN	40	2	3	4
TREBLE PIN	5	6	7	8
	D	C	B	A
+12dB	1	1	1	1
	1	1	1	0
	1	1	0	1
	1	1	0	0
	1	0	1	1
	1	0	1	0
	1	0	0	1
	1	0	0	0
NEUTRAL	0	1	1	1
	0	1	1	0
	0	1	0	1
	0	1	0	0
	0	0	1	1
	0	0	1	0
	0	0	0	1
-10.5dB	0	0	0	0

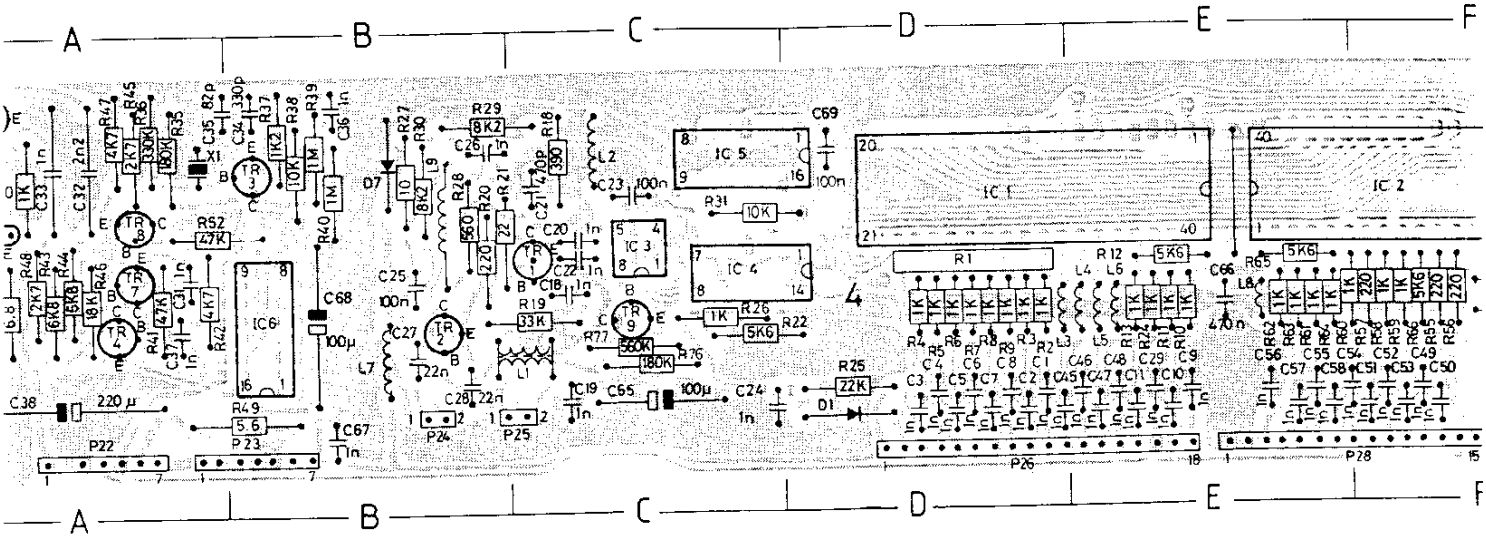
Functions Tables
for diagram C

FUNCTION TABLE FOR 4IC7-8			
	PIN		
FUNCTIONS	4	5	6
Write	0	1	0
Read	1	1	0
Serial data in	1	0	1
Serial data out	0	1	1
Serial address in	1	0	0
No operation	0	0	1
No operation	0	0	0

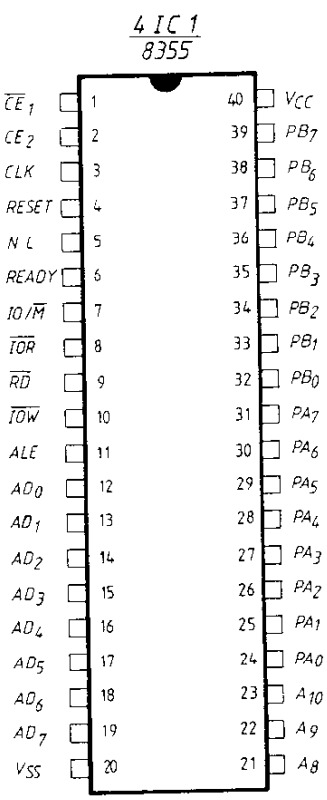
Pin config

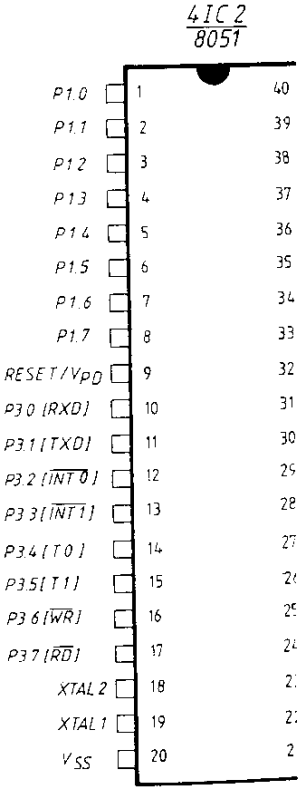


PCB drawings are seen from cooperfoil side



Pin configurations of microcomputers



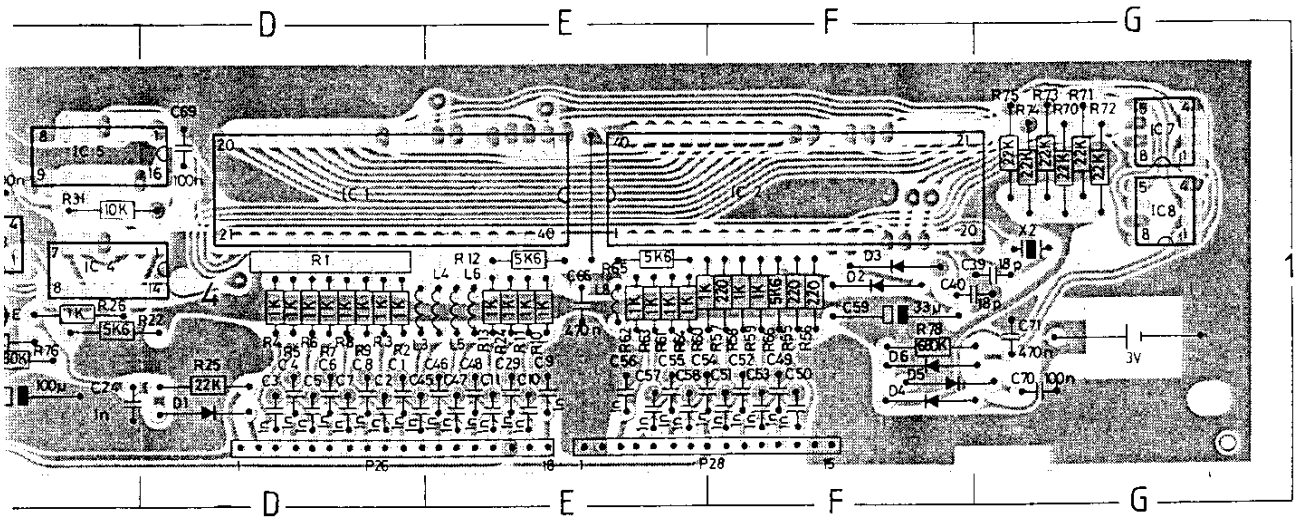


ONTROL BITS			
40	2	3	4
5	6	7	8
D	C	B	A
1	1	1	1
1	1	1	0
1	1	0	1
1	1	0	0
1	0	1	1
1	0	1	0
1	0	0	1
1	0	0	0
0	1	1	1
0	1	1	0
0	1	0	1
0	1	0	0
0	0	1	1
0	0	1	0
0	0	0	1
0	0	0	0

Functions Tables
for diagram C

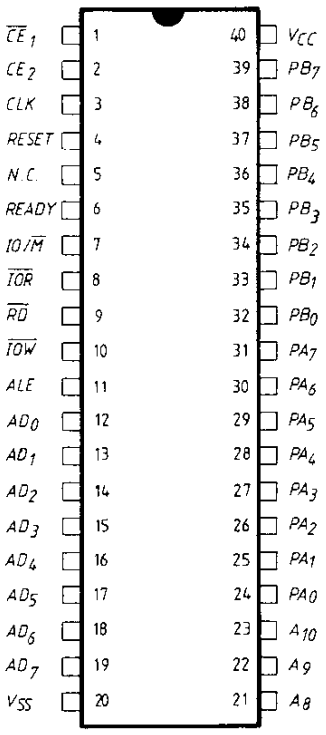
FUNCTION TABLE FOR 4IC 7-8			
	PIN		
FUNCTIONS	4	5	6
Write	0	1	0
Read	1	1	0
Serial data in	1	0	1
Serial data out	0	1	1
Serial address in	1	0	0
No operation	0	0	1
No operation	0	0	0

'CB drawings are seen from copperfoil side

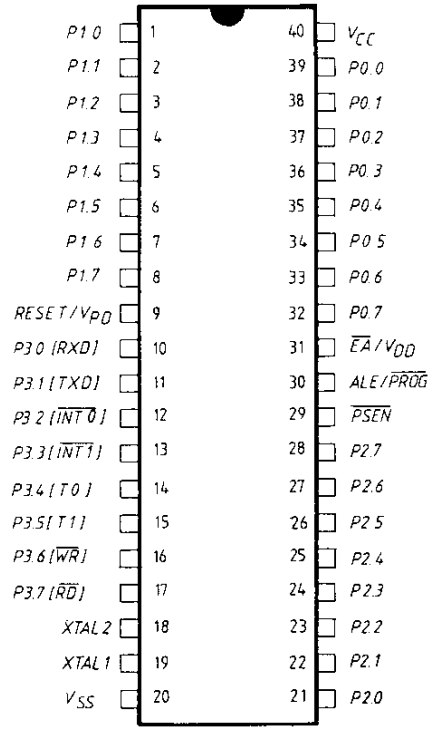


Pin configurations of microcomputers

4 IC 1
8355



4 IC 2
8051



12 IC 1
µPD 650C

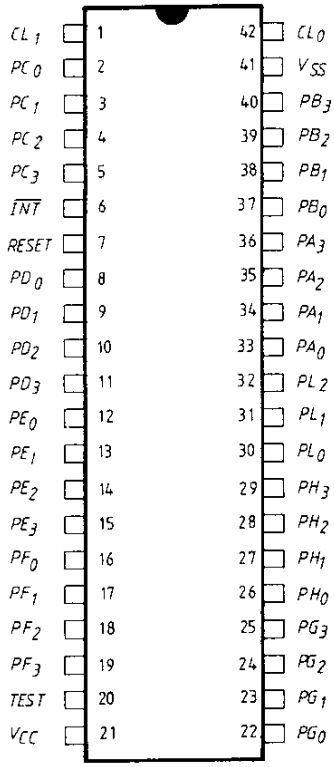
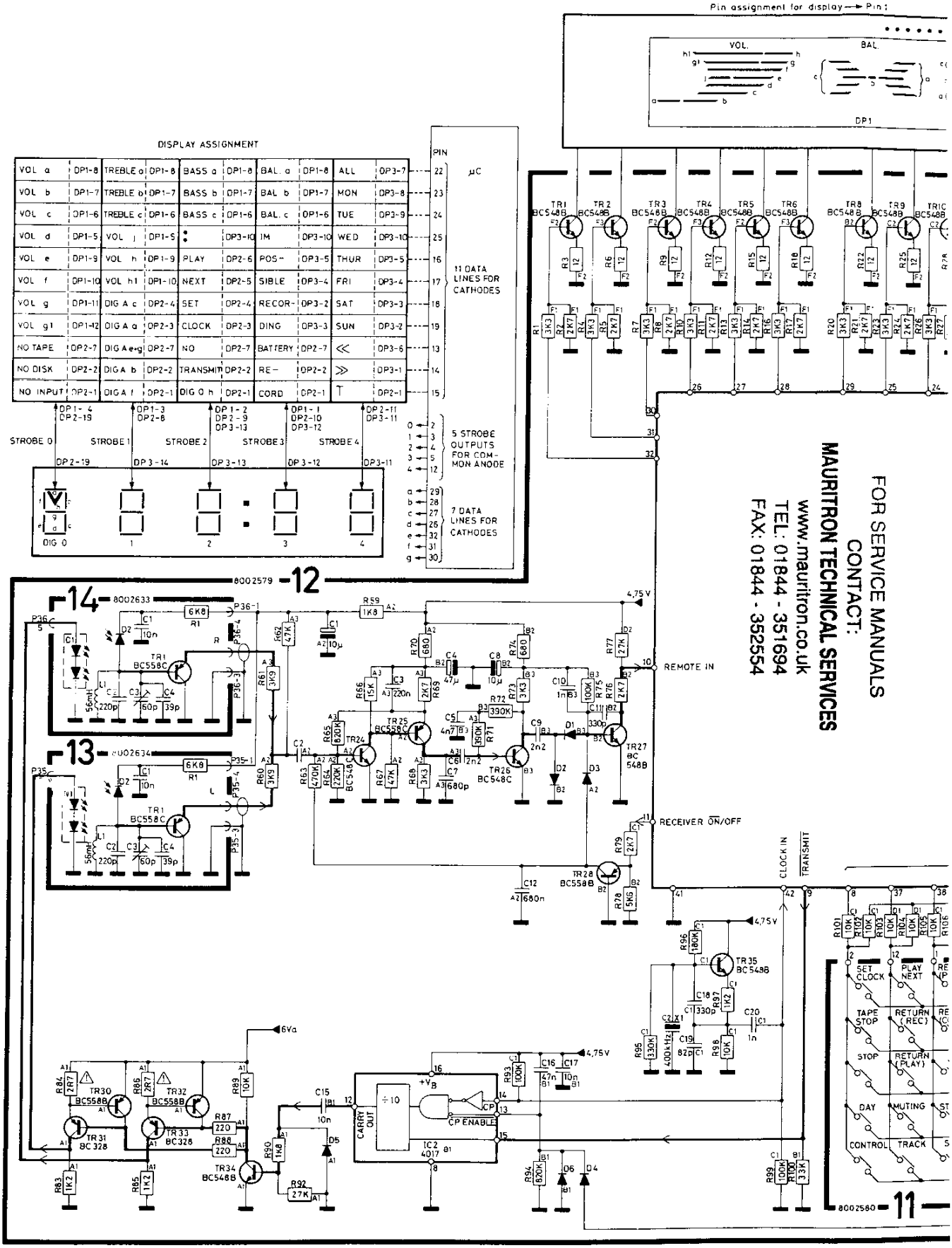
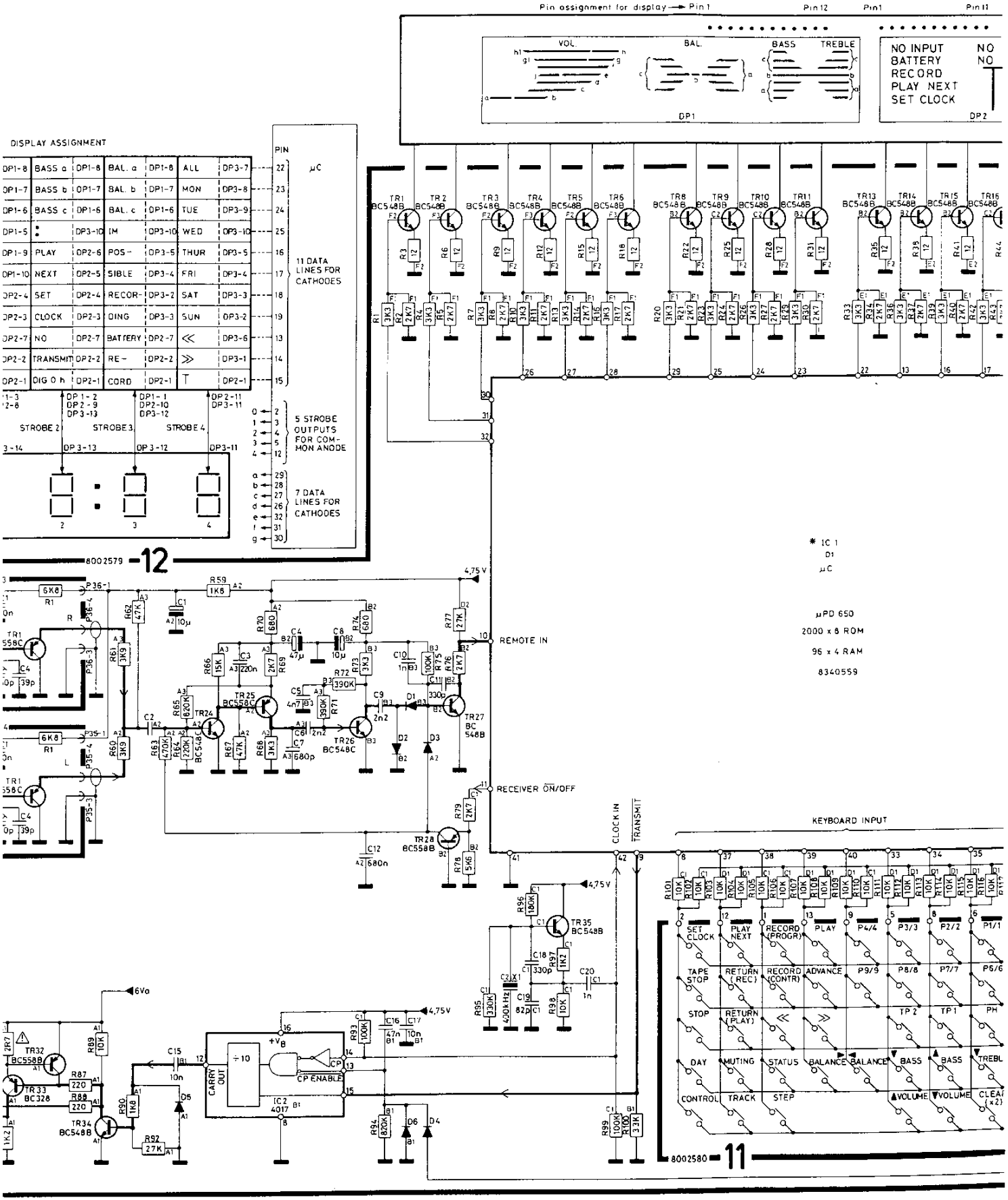
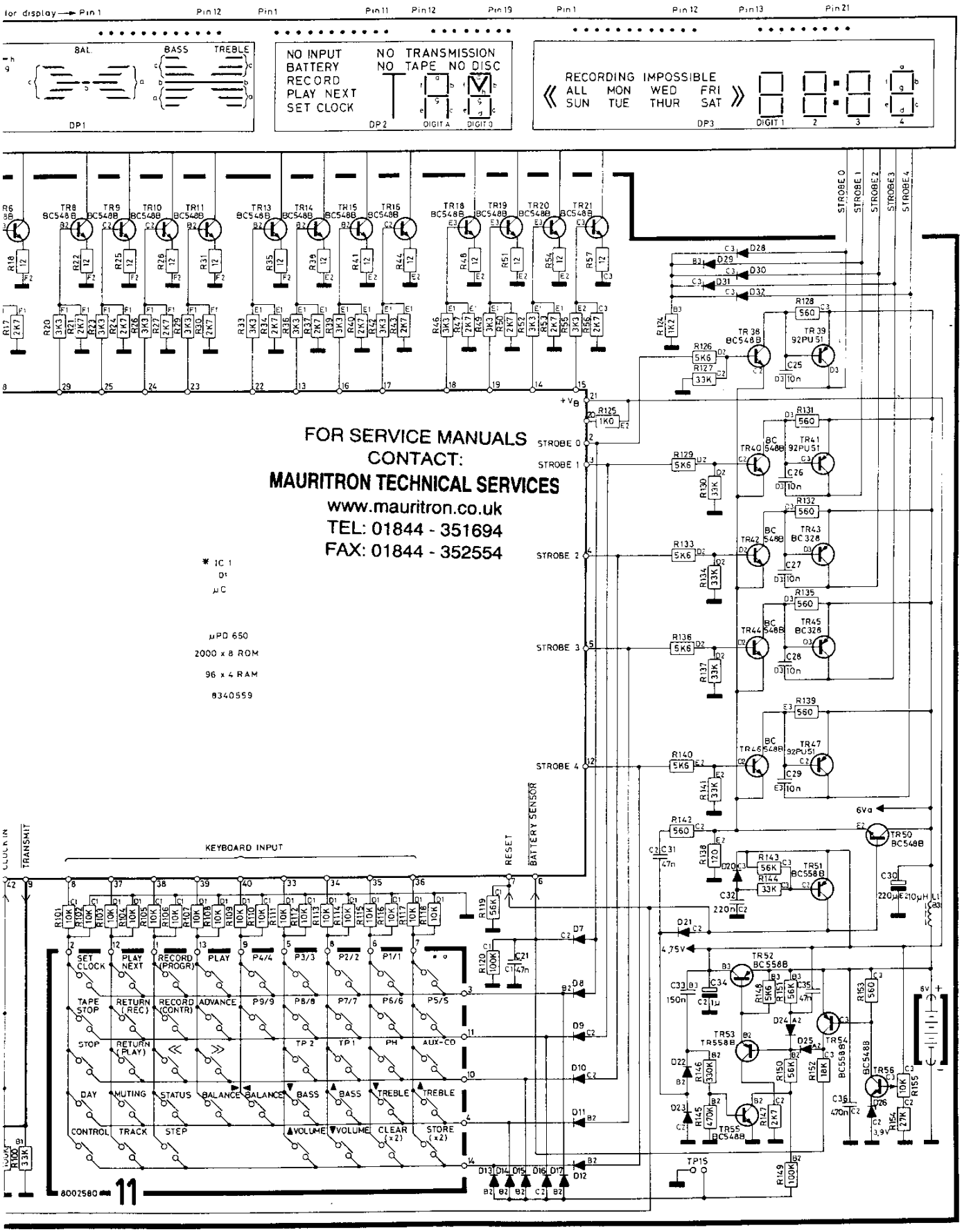


Diagram D




Pin assignment for display → Pin 1
Pin 12
Pin 1
Pin 11
VOL.
BAL.
BASS
TREBLE
DP1
NO INPUT
BATTERY
RECORD
PLAY NEXT
SET CLOCK
NO
NO
DP2
DISPLAY ASSIGNMENT
PIN
µC
11 DATA LINES FOR CATHODES
5 STROBE OUTPUTS FOR COMMON ANODE
7 DATA LINES FOR CATHODES
STROBE 2
STROBE 3
STROBE 4
8002579 -12
REMOTE IN
RECEIVER ON/OFF
CLOCK IN
TRANSMIT
KEYBOARD INPUT
4,75 V
6Va
IC 1
D1
µC
µPD 650
2000 x 8 ROM
96 x 4 RAM
8340559
8002580 -11



FOR SERVICE MANUALS
CONTACT:
MAURITRON TECHNICAL SERVICES
www.mauritron.co.uk
TEL: 01844 - 351694
FAX: 01844 - 352554

* IC 1
D1
µC

µPD 650
2000 x 8 ROM
96 x 4 RAM
8340599

Block Diagram
Master Control Panel

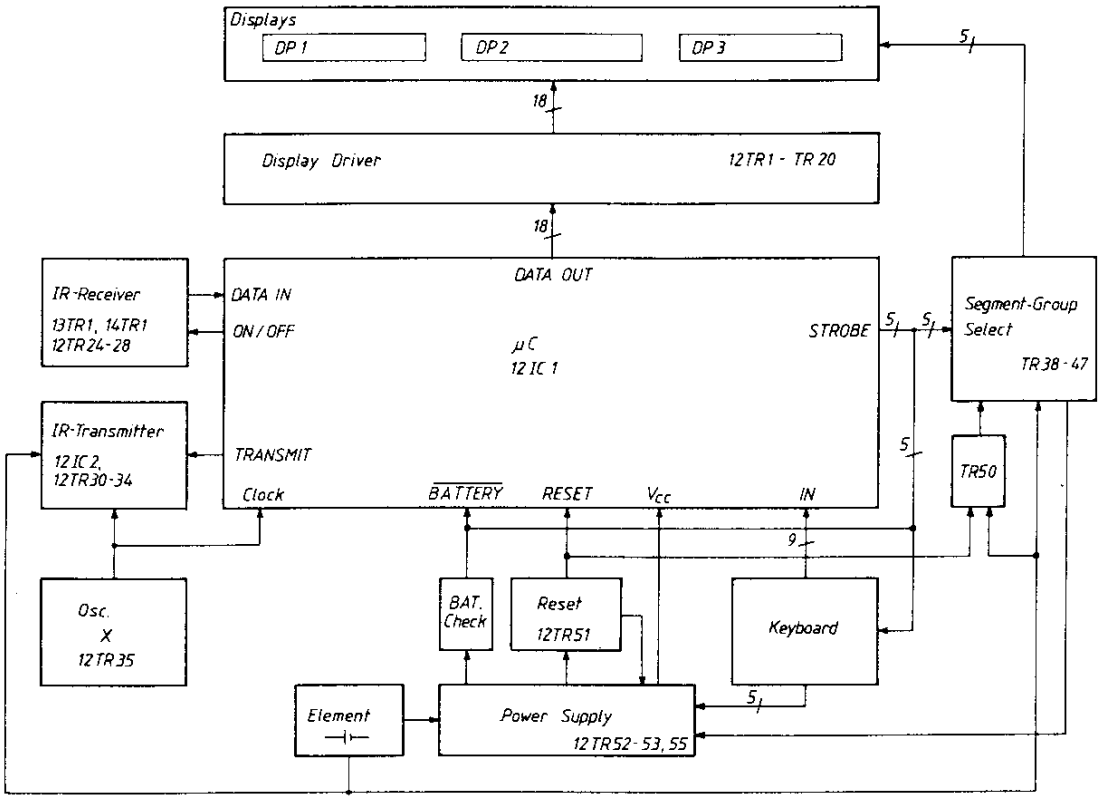
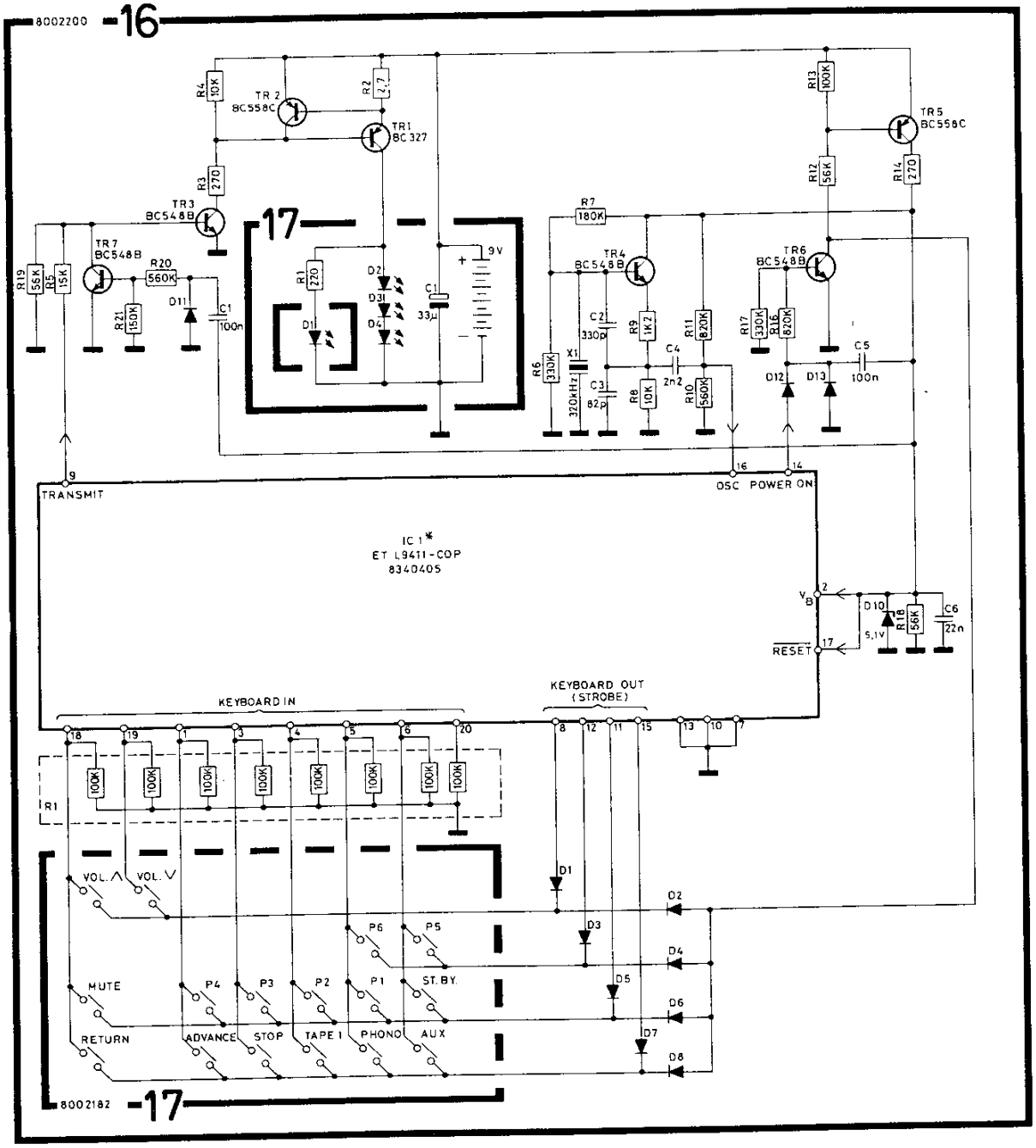
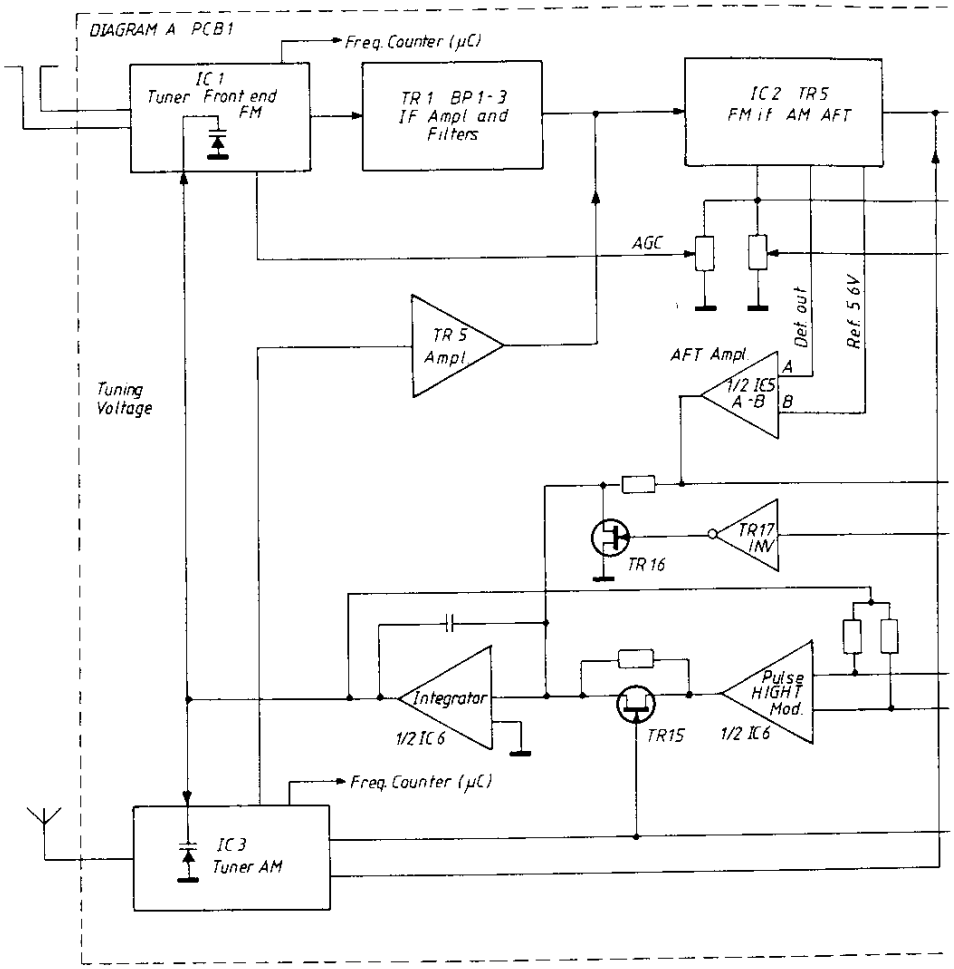


Diagram E


8002200
-16
TR 2 BC558C
TR1 BC 327
TR3 BC548B
TR7 BC548B
TR4 BC548B
TR6 BC548B
TR5 BC558C
9V
IC 1*
ET L9411-COP
8340405
TRANSMIT
OSC
POWER ON
RESET
KEYBOARD IN
KEYBOARD OUT (STROBE)
VOL. ∧
VOL. ∨
MUTE
RETURN
ADVANCE
STOP
TAPE 1
PHONO
AUX
ST.BY.
8002182
-17

Bang&Olufsen

Block Diagram, HF



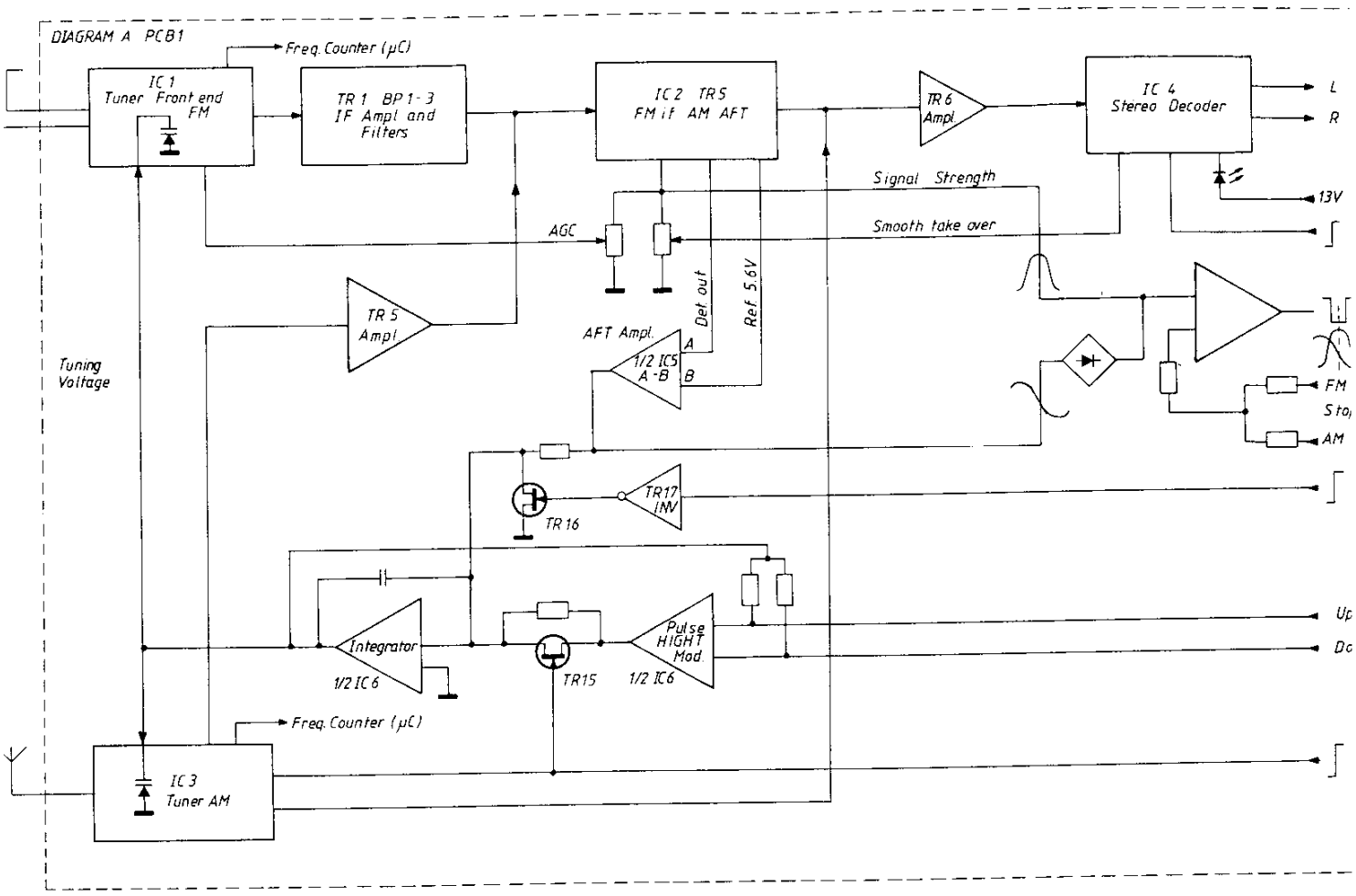
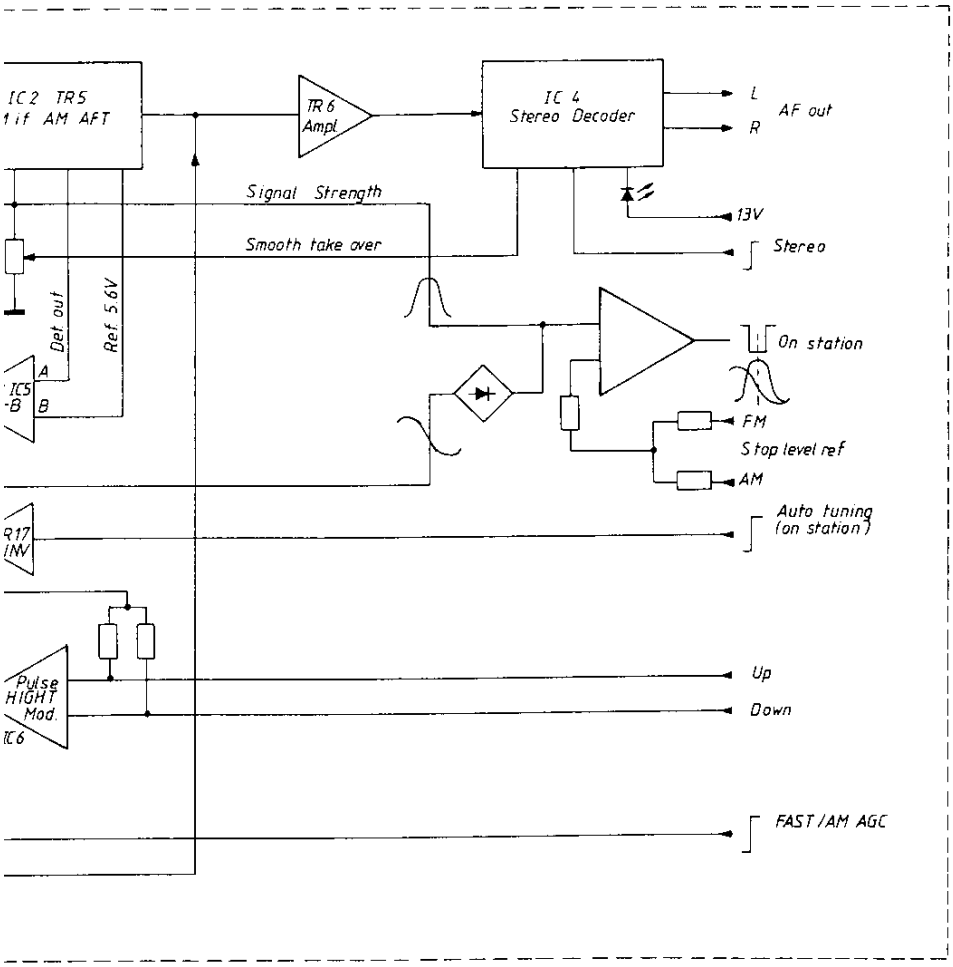
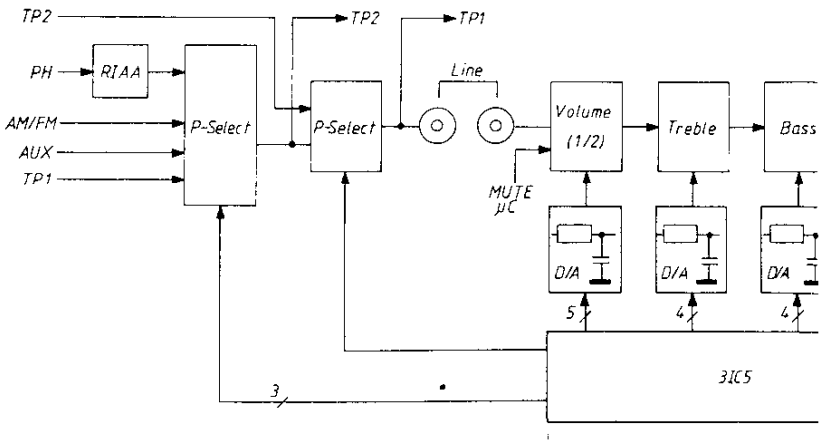


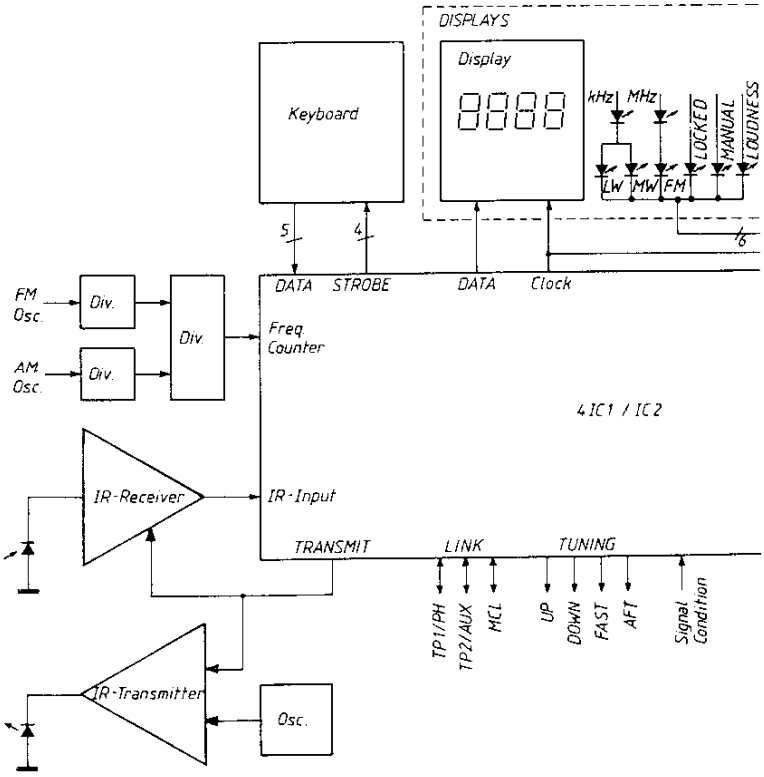
DIAGRAM A PCB1
Freq. Counter (µC)
IC 1
Tuner Front end
FM
TR 1 BP 1-3
IF Ampl and
Filters
IC 2 TR 5
FM i.f. AM AFT
TR 6
Ampl.
IC 4
Stereo Decoder
L
R
13V
Signal Strength
Smooth take over
AGC
Det out
Ref 5.6V
TR 5
Ampl.
AFT Ampl.
1/2 IC5
A-B
A
B
Tuning
Voltage
FM
AM
TR 16
TR17
INV
Integrator
1/2 IC 6
TR15
Pulse
HIGHT
Mod.
1/2 IC6
Freq. Counter (µC)
IC 3
Tuner AM

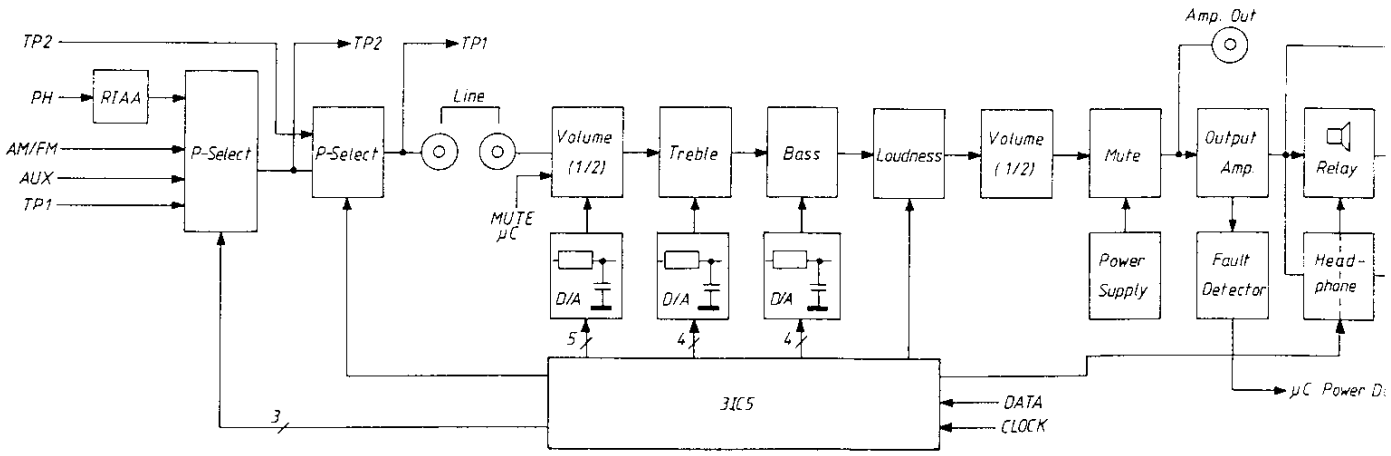


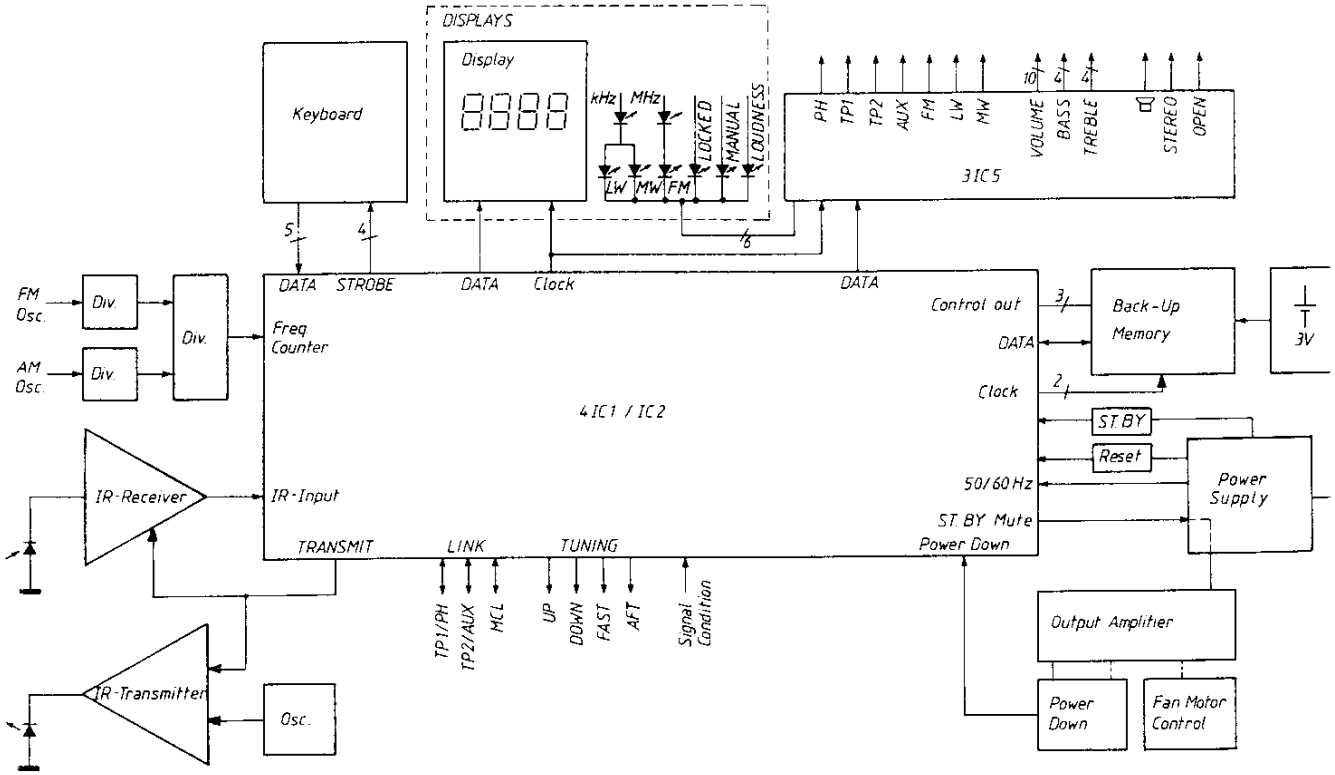
Block Diagram, LF

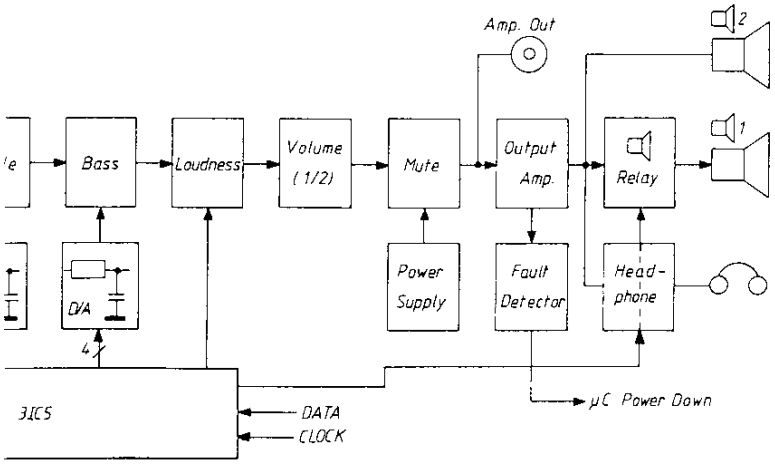


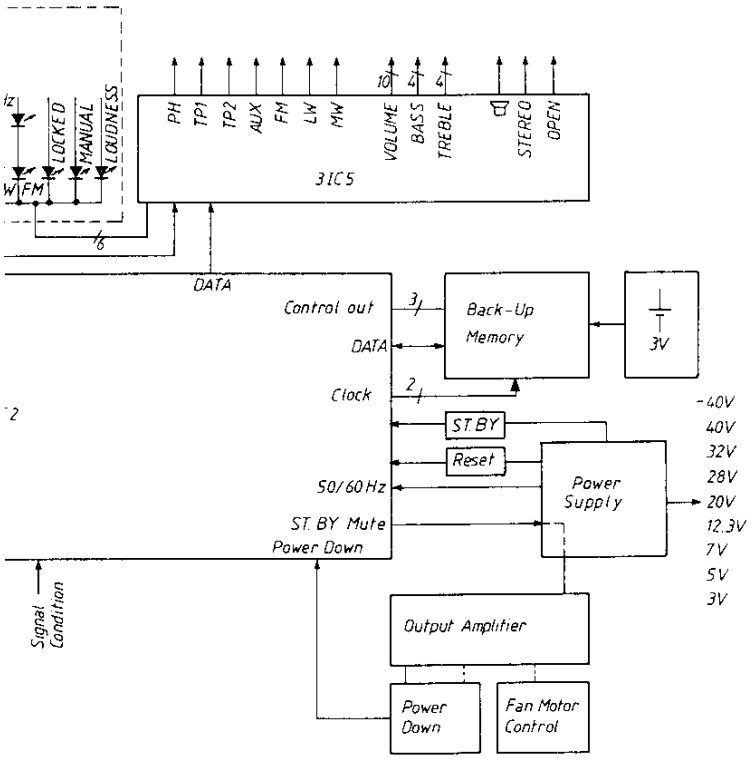
Block Diagram Control




TP2
TP2
TP1
PH
RIAA
AM/FM
AUX
TP1
P-Select
P-Select
Line
MUTE µC
Volume (1/2)
Treble
Bass
Loudness
Volume (1/2)
Mute
Output Amp.
Amp. Out
Relay
D/A
D/A
D/A
5
4
4
Power Supply
Fault Detector
Head-phone
3IC5
3
DATA
CLOCK
µC Power D


DISPLAYS
Display
Keyboard
kHz
MHz
LOCKED
MANUAL
LOUDNESS
LW
MW
FM
PH
TP1
TP2
AUX
FM
LW
MW
VOLUME
BASS
TREBLE
STEREO
OPEN
10
4
4
3IC5
5
4
6
DATA
STROBE
DATA
Clock
DATA
FM Osc.
AM Osc.
Div.
Div.
Div.
Freq. Counter
4IC1 / IC2
Control out
DATA
Clock
3
2
Back-Up Memory
3V
ST.BY
Reset
50/60 Hz
ST.BY Mute
Power Down
Power Supply
IR-Receiver
IR-Input
TRANSMIT
LINK
TUNING
TP1/PH
TP2/AUX
MCL
UP
DOWN
FAST
AFT
Signal Condition
Output Amplifier
IR-Transmitter
Osc.
Power Down
Fan Motor Control





Bang&Olufsen

SEMI CONDUCTORS

203	209	215	217	222	226	232	233
							
234							
							

List of Diodes

0DP1	8330091		
1D1	8300308	**222**	BB 204
1D4			
1D5	8300306	**226**	BA 479
1D6	8300058	**209**	1N4148
1D12		**217**	SFD 184
		215	1N4148
1D14	8300384	**234**	KV 1226
1D15			
1D16	8300385	**209**	BA 423
1D18			
1D19	8300058	**209**	1N4148
1D27		**217**	SFD 184
		215	1N4148
1D28	8300053	**209**	ZPD 15V
		209	BZX 79C15V
		209	BZX 83C15V
1D32	8300058	**209**	1N4148
1D34		**217**	SFD 184
		215	1N4148
1D36	8300058	**209**	1N4148
1D39		**217**	SFD 184
		215	1N4148
2D1	8300011		B250C5000/ 3300
2D2	8300297		B80C3700/ 2200
2D3	8300058	**209**	1N4148
2D4		**217**	SFD 184
		215	1B4148
2D5	8300309	**209**	ZPD 4.7V
		209	BZX 84B4V7
		209	BZX 79B4V7

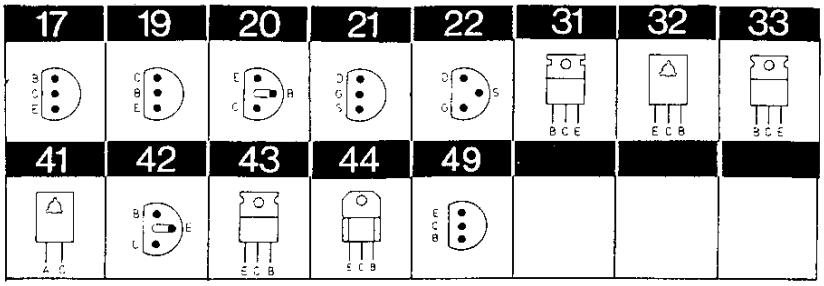
2D6	8300135	**209**	ZPD 3.3V
		209	BZX 79C3V3
		209	BZX 83C4V3
2D7	8300058	**209**	1N4148
		217	SFD 184
		215	1N4148
2D8	8300023	**209**	1N 4002
		209	1N 4003
2D9	8300053	**209**	ZPD 15V
		209	BZX 79C15V
		209	BZX 83C15V
2D10	8300023	**209**	1N 4002
		209	1N 4003
2D11	8300135	**209**	ZPD 33V
		209	BZX 79C3V3
		209	BZX 83C3V3
2D12	8300058	**209**	1N4148
2D13		**217**	SFD 184
		215	1N4148
2D14	8300028	**209**	ZPD 9.1V
		209	BZX 79C9V1
		209	BZX 83C9V1
2D200	8300029	**209**	ZPD 12V
		209	BZX 79C12V
		209	BZX 83C12V
2D201	8300058	**209**	1N4148
2D206		**217**	SFD 184
		215	1N4148
3D1	8300058	**209**	1N4148
3D5		**217**	SFD 184
		215	1N4148
3D6	8300023	**209**	1N4002
		209	1N4003
3D7	8300058	**209**	1N4148
3D9		**217**	SFD 184
		215	1N4148

4D1	8300058	**209**	1N4148
		217	SFD 184
		215	1N4148
4D2	8300142	**209**	AA 143
4D3		**209**	QA 47
4D4	8300058	**209**	1N4148
4D5		**217**	SFD 184
		215	1N4148
4D6	8300142	**209**	OA47
		209	OA 47
4D7	8300128	**209**	ZPD 5.6V
		209	BZX 79C5V6
		209	BZX 83C5V6
5D1	8300142	**209**	AA 143
5D4		**209**	OA 47
6D1	8300029	**209**	ZPD 12V
		209	BZX 79C12V
		209	BZX 83C12V
7D1	8330081	**232**	SLF-102B
7D3			
7D4	8330083	**233**	SLF-203B
8D1	8330082	**233**	SLD-103B
8D2	8330083	**233**	SLF-203B
9D1	8330004	**219**	SHF 205
9D3	8330097	**203**	CQW 14
9D5			
9D6	8300053	**209**	ZPD 15V
		209	BZX 79C15V
		209	BZX 83C15V

9D7	8300058	**209**	1N4148
9D8		**217**	SFD 184
		215	1N4148
12D1-	8300058	**209**	1N4148
12D25		**217**	SFD 184
		215	1N4148
12D26	8300404	**209**	83C 3.9V
12D28	8300058	**209**	1N4148
12D32		**217**	SFD 184
		215	1N4148
12DP1	8330100		NSB 4060
12DP2	8330101		NSB 4069
12DP3	8330102		NSB 4070
13D1	8330094	**235**	CQX 47
13D2	8330004	**219**	SFH 205
14D1	8330094	**235**	CQX 47
14D2	8330004	**219**	SFH 205
16D1-	8300058	**209**	1N4148
16D9		**217**	SFD 184
		215	1N4148

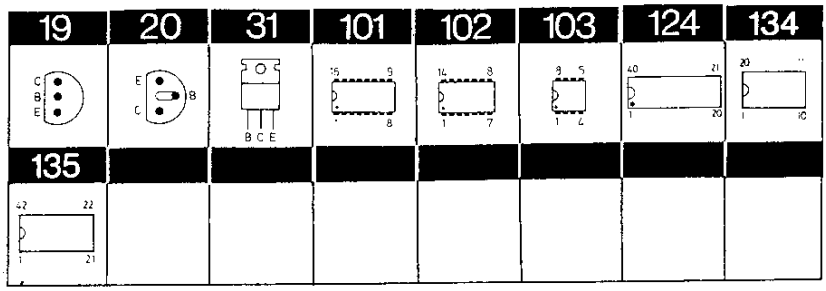
2-2

List of Transistors



1TR1	8320377	**20**	BC 547C
1TR2	8320281	**42**	BF 199
1TR3	8320097	**20**	BC 547B
1TR5	8320377	**20**	BC 547C
1TR6	8320097	**20**	BC 547B
1TR7	8320152	**20**	BC 557B
1TR8			
1TR9	8320097	**20**	BC 547B
1TR10			
1TR11	8320152	**20**	BC 557B
1TR12			
1TR14	8320097	**20**	BC 547B
1TR15	8320536	**24**	MPF 4393-18
1TR16	8320396	**24**	MPF 4392
1TR17	8320152	**20**	BC 557B
1TR19			
1TR20	8320329	**20**	BC 338-25
1TR21	8320396	**24**	MPF 4392
1TR22	8320097	**20**	BC 547B
1TR23	8320535	**22**	BC 256C
1TR26	8320097	**20**	BC 547C
1TR31			
1TR32	8320152	**20**	BC 557B
1TR33			
1TR34	8320368	**31**	BD 533
		33	BD 539A
1TR35	8320152	**20**	BC 557B
1TR36	8320097	**20**	BC 547B
1TR37	8320242	**20**	BC 556B
1TR38	8320391	**17**	BC 638
1TR39	8320097	**20**	BC 547B
1TR40			
2TR1	8320097	**20**	BC 547B
2TR2	8320369	**31**	BD 534
		33	BD 540A
2TR3	8320152	**20**	BC 557B
2TR4	8320097	**20**	BC 547B
2TR5			
2TR6	8320241	**32**	BP 138
2TR7	8320097	**20**	BC 547B
2TR8*	8320239	**32**	BD 135
2TR9	8320152	**20**	BC 557B
2TR10	8320295	**20**	BC 337-25/18
2TR11	8320242	**20**	BC 556B
2TR12	8320097	**20**	BC 547B
2TR201	8320377	**20**	BC 547C
2TR202			
2TR203	8320237	**20**	BC 546B
2TR204	8320097	**20**	BC 547B
2TR205	8320454	**17**	BF 423
2TR206	8320097	**20**	BC 546B
2TR207	8320152	**20**	BC 557B

2TR208	8320460	**44**	BF 857
2TR209			
2TR210	8320546	**49**	BF 422
3TR1	8320097	**20**	BC 547B
3TR2			
3TR3	8320152	**20**	BC 557B
3TR4	8320295	**20**	BC 337-25/18
3TR5	8320152	**20**	BC 557B
3TR6			
3TR7	8320295	**20**	BC 337-25/18
3TR8	8320097	**20**	BC 547B
3TR201	8320344	**20**	BC 550B
3TR202	8320323	**19**	MPS A05
4TR1	8320281	**42**	BF 199
4TR2			
4TR3	8320097	**20**	BC 547B
4TR4	8320152	**20**	BC 557B
4TR5	8320097	**20**	BC 547B
4TR6	8320241	**32**	BD 138/W
4TR7	8320097	**20**	BC 547B
4TR9			
6TR1	8320097	**20**	BC 547B
6TR2	8320540	**20**	BC 557C
6TR3	8320152	**20**	BC 557B
6TR4	8320542	**43**	BD 825
6TR5	8320541	**43**	BD 828
9TR1	8320097	**20**	BC 547B
9TR3			
9TR4	8320152	**20**	BC 557B
9TR5	8320097	**20**	BC 547B
12TR1	8320108	**20**	BC 548B
12TR21			
12TR24	8320285	**20**	BC 548C
		20	BC 183C/CL
		17	BC 183CL
12TR25	8320398	**20**	BC 548C
12TR26	8320285	**20**	BC 548C
		20	BC 183C/CL
		17	BC 183CL
121TR27	8320108	**20**	BC 548B
12TR28	8320104	**20**	BC 558B
12TR30			
12TR31	8320331	**20**	BC 328-25/18
12TR32	8320104	**20**	BC 558B
12TR33	8320331	**20**	BC 328-25/18
12TR34	8320108	**20**	BC 548B
12TR35			
12TR38			
12TR39	8320423	**19**	92 PU51
12TR40	8320108	**20**	BC 548B
12TR41	8320423	**19**	92 PU51
12TR42	8320108	**20**	BC 548B
12TR43	8320331	**20**	BC 328-25/18
12TR44	8320108	**20**	BC 548B
12TR45	8320331	**20**	BC 328-25/18
12TR46	8320108	**20**	BC 548B
12TR47	8320423	**19**	92PU51
12TR50	8320108	**20**	BC 548B
12TR51	8320104	**20**	BC 548B
12TR54			
12TR55	8320108	**20**	BC 548B
12TR56			
13TR1	8320398	**20**	BC 558C
14TR1	8320398	**20**	BC 558C



List of IC's

1IC1	8340490	**101**	TDA 1062S
1IC2*	8340233	**101**	CA 3189E
1IC3	8340489	**101**	TDA 1072
1IC4	8340284	**101**	TDA 4500A
1IC5△	8340224	**103**	TL 072CP
1IC6			
1IC7	8340025	**19**	SPS 5431
		19	MPS A65
		20	BC 516
2IC1	8340244	**130**	LM 317T
2IC3			
2IC4	8340141	**103**	LM 741 CN
2IC200	8340470	**31**	BDV 65B
2IC201	8340469	**31**	BDV 64B
2IC202	8340400	**19**	MPSA 13 SP
3IC1	8340468	**101**	TDA 1028
3IC2△	8340188	**101**	TDA 1029
3IC3	8340187	**111**	TDA 1074
3IC4			
3IC5△	8340467	**124**	MM 5450
3IC201	8340054	**19**	MPS A13
4IC1△	8340561	**124**	TMP 8355P
4IC2△	8340560	**124**	P8051
4IC3	8340492	**103**	SP 8629
4IC4△	8340109	**102**	MC 14011B
		102	CD 4011CN
		102	CD 4011
		102	14011CP
4IC5△	8340491	**101**	HEF4520
4IC6△	8340378	**101**	MC 14017
4IC7△	8340351	**103**	MC 144102
4IC8			
9IC1	8340193	**103**	TDA 4050
9IC2	8340025	**19**	SPS 5431
		19	MPS A65
		20	BC 516
12IC1△	8340559	**134**	µPD 650
12IC2△	8340378	**101**	4017

△ betyder at statisk elektricitet kan ødelægge komponenten.
△ indicates that static electricity may destroy the component.
△ bedeutet, daß statische Elektrizität die Komponente zerstören kann.
△ signifi que électricité statique peut detruire le composant.

* Speciel udvalgt eller bearbejdet eksemplar.
* Specially selected or adapted sample.
* Speziell ausgewähltes und bearbeitets Exemplar.

Bang&Olufsen

LIST OF ELECTRICAL PARTS

AM/FM, 8002561, PCB1
(Type 2321, 2322, 2325)

0R1	5000194	3.3 MΩ 10% 1/2W			
OC1	4200421	1000 µF -10+50% 63V	OC2	4130214	10 nF ±20% 63V
F1	6600019	Fuse 2A-T/250	F1	6600019	Fuse 5A

R1	5370074	10 kΩ 20% 0.1W	R82	5370058	5 kΩ 20% 0.1W
R2	5370061	47 kΩ 20% 0.1W	R85	5370074	10 kΩ 20% 0.1W
R3	5370061	47 kΩ 20% 0.1W	R92	5010733	5.1 kΩ 5% 1/4W
R4	5370061	47 kΩ 20% 0.1W	R93	5010733	5.1 kΩ 5% 1/4W
R5	5020342	750 Ω 1% 1/4W	R180	5020083	33.2 kΩ 1% 1/4W
R19	5020345	47 Ω 10% 1/4W	R183	5020110	10 kΩ 1% 1/4W
R50	5370061	47 kΩ 20% 0.1W	R191	5020255	63.4 kΩ 1% 1/4W
R51	5370074	10 kΩ 20% 0.1W	R197	5010839	6.8 kΩ 5% 1/8W
R68	5370068	22 kΩ 20% 0.1W			

C1	4000106	8.2 pF ±0.25 pF 250V	C57	4130233	220 nF 20% 63V
C2	4010027	1 nF 10% 100V	C58	4200517	2.2 µF 20% 50V
C3	4010024	470 pF 10% 100V	C59	4130213	10 nF 10% 63V
C4	4010027	1 nF 10% 100V	C60	4130213	10 nF 10% 63V
C5	4000104	4.7 pF ±25 pF 63V	C61	4200510	10 µF 20% 16V
C6	4010024	470 pF 10% 100V	C62	4000170	120 pF 2% 63V
C7	4000099	3.3 pF ±0.25 pF 63V	C63	4003128	100 pF 5% 63V
C8	4011022	4.7 nF -20+80% 40V	C64	4201087	47 µF -10+100% 40V
C9	4010024	470 pF 10% 100V	C65	4100216	3.9 nF 2.5% 63V
C10	4000105	5.6 pF ±0.25 pF 63V	C66	4003124	56 pF 2% 63V
C11	4010087	470 pF 10% 63V	C67	4130233	200 nF 20% 63V
C12	4011022	4.7 nF -20+80% 40V	C68	4130233	220 nF 20% 63 V
C13	4010107	22 nF -20+100% 40V	C69	4130230	100 nF 20% 63V
C14	4003124	56 pF 2% 63V	C70	4010106	10 nF -20+80% 40V
C15	4000107	68 pF 2% 63V	C71	4010106	10 nF -20+80% 40V
C16	4200510	10 µF 20% 16V	C72	4100033	3.3 nF 5% 63V
C17	4011022	4.7 nF -20+80% 40V	C73	4130230	100 nF 20% 63V
C18	4010106	10 nF -20+80% 40V	C74	4130230	100 nF 20% 63V
C19	4130233	220 nF 20% 63V	C75	4130230	100 nF 20% 63V
C20	4010027	1 nF 10% 100V	C76	4010103	2.2 nF 10% 63V
C21	4010087	470 pF 10% 63V	C77	4100033	3.3 nF 5% 63V
C22	4010107	22 nF -20+100% 40V	C78	4340003	5.5-65 pF folie
C23	4130233	220 nF 20% 63V	C79	4340002	2-22 pF foil
C24	4010106	10 nF -20+80% 40V	C80	4130233	220 nF 20% 63V
C25	4000082	3.9 pF ±0.25 pF 63V	C81	4130233	220 nF 20% 63V
C26	4000110	82 pF 5% 63V	C82	4130234	470 nF 10% 63V
C27	4000069	100 pF 5% 63V	C83	4200517	2.2 µF 20% 50V
C28	4100192	1.8 nF 5% 63V	C84	4003125	33 pF 2% 63V
C29	4003128	100 pF 5% 63V	C85	4000029	220 pF 5% 63V
C30	4003128	100 pF 5% 63V	C86	4101025	180 pF ±2.5% 63V
C31	4200510	10 µF 20% 16V	C87	4000081	18 pF 5% 63V
C32	4010106	10 nF -20+80% 40V	C88	4340003	5.5-65 pF folie
C33	4200510	10 µF 20% 16V	C89	4001110	82 pF 5% 63V
C34	4200510	10 µ 20% 16V	C90	4340003	5.5-65 pF folie
C35	4003128	100 pF 5% 63V	C91	4132033	220 nF 20% 63V
C36	4200517	2.2 µF 20% 50V	C92	4130233	220 nF 20% 63V
C37	4010106	10 nF -20+80% 40V	C93	4130233	220 nF 20% 63V
C38	4000170	120 pF 2% 63V	C94	4200525	22 µF 20% 10V
C39	4000029	220 pF 5% 63V	C95	4200517	2.2 µF 20% 50V
C40	4010106	10 nF -20+80% 40V	C96	4010106	10 nF -20+80% 40V
C41	4130230	100 nF 20% 63V	C97	4010027	1 nF 10% 100V
C42	4130230	100 nF 20% 63V	C100	4000077	47 pF 2% 63 V
C43	4010106	10 nF -20+80% 40V	C101	4010107	22 nF -20+100% 40V
C44	4010106	10 nF -20+80% 40V	C102	4010107	22 nF -20+100% 40V
C45	4010106	10 nF -20+80% 40V	C103	4130136	1 µF 20% 100V
C46	4130230	100 nF 20% 63V	C104	4010106	10 nF -20+80% 40V
C49	4130233	220 nF 20% 63V	C105	4000016	10 pF 2% 63V
C50	4200403	100 µF -10+100% 25V	C106	4200510	10 µF 20% 16V
C51	4130234	470 nF 10% 63V	C107	4130233	220 nF 20% 63V
C52	4130233	220 nF 20% 63V	C201	4100081	2.15 nF 2.5% 63V
C53	4000029	220 pF 5% 63V	C202	4100077	196 pF 2.5% 63V
C54	4200517	2.2 µF 20% 50V	C203	4100078	4.02 nF 2.5% 63V
C55	4010106	10 nF -20+80% 40V	C204	4100080	866 pF 2.5% 63V
C56	4000029	220 pF 5% 63V	C205	4100079	590 pF 2.5% 63V

C401	4100081	2.15 nF 2.5% 63 V	C404	4100080	866 pF 2.5% 63 V
C402	4100077	196 pF 2.5% 63 V	C405	4100079	590 pF 2.5% 63 V
C403	4100078	4.02 nF 2.5% 63 V			

BP1	8030040	10.7 MHz	BP3	8030040	10.7 MHz
	8030037	Only type 2329		8030037	Only type 2329
BP2	8030040	10.7 MHz	BP4	8030025	460 kHz ±1 kHz
	8030037	Only type 2329			

L1	8020322	OSC	L12	8020414	Coil LW
L2	8020321	RF	L13	8020416	Coil MW
L3	8020320	RF coil	L14	8020417	Coil OSC MW
L4	8020319	Aerial coil	L15	8020415	Coil OSC LW
L6	8020323	IF	L16	8020471	Coil 460 kHz
L7	8020368	IF	L200	8022079	Coil LF 78 mH
L8	8020419	Coil AFC 460 kHz	L201	8022079	Coil LF 78 mH
L9	8020369	IR	L400	8022079	Coil LF 78 mH
L10	8020413	Coil 1 mH	L401	8022079	Coil LF 78 mH
L11	8020418	Coil 460 kHz			

P1	7220219	Plug 2x10/10		3304014	Screen/housing
P2	7220313	Plug 3/3		3304017	Screen/housing
P3	7220212	Plug 3/3		3304098	Screen/housing
P4	7220312	Plug 2/2		3304102	Screen/housing
P5	7220279	Plug 2/2			

AM/FM, 8002141, PCB1
Type 2323

C59	4130275	15 nF 2.5% 63V	C60	4130275	15 nF 2.5% 63V

AM/FM 8002140, PCB1
Type 2324

R197	5010839	6.8 kΩ 5% 1/8W

AM/FM 8002145, PCB1
Type 2329

C108	4100222	680 pF 2.5% 63V	C109	4130234	470 nF 10% 63V
L17	8020413	Coil 1 mH			

Øvrige komponenter som i styklisten for PCB1, 8002561
Other components in parts list for PCB1, 8002561

Båndpasfiltrene 1BP1, 2 og 3 skal være forsynede med ens farvemærkning, og udleveres derfor fra reservedelslageret i sæt af 3 stk.
Ved udskiftning til filtre med anden farvekode end de monterede, skal displayets frekvensudlæsning korrigeres iflg. nedenstående procedure:
Tryk [MANUEL].
Tryk [SELECT], samtidig trykkes på [TAPE 1], begge knapper holdes nede.
Displayet viser først P, kort efter skifter display til frekvensen.
Ved gentagne tryk på [▽ VOLUME] eller [△ VOLUME] kan frekvensudlæsningen ændres til mindre henholdsvis større frekvens. Displayet justeres til korrekt visning.

The band-pass filters 1BP1, 2 and 3 must have identical colour marking, and are therefore delivered from the spareparts stock in sets of 3 units.
When replacing filters of different colour code than those mounted, the frequency reading must be corrected as to the following procedure:
Press [MANUEL].
Press [SELECT], and simultaneously press [TAPE 1], both buttons are held down. The display will first indicate P, shortly after the display will switch to the frequency.
By repeated pressing on [▽ VOLUME] or [△ VOLUME] the frequency reading changes to lower respectively higher frequency. The display is adjusted to correct indication.

Output Amplifier and Power Supply 8002553, PCB2

R6	5010065	10 Ω 5% 1/4W	R206	5011037	3.3 kΩ 5% 1/2W
R15	5370058	4.7 kΩ 20% 0.1W	R211	5010797	390 Ω 2% 1/4W
R21	5020110	10 kΩ 1% 1/4W	R213	5020110	10 kΩ 1% 1/4W
R22	5020110	10 kΩ 1% 1/4W	R214	5020110	10 kΩ 1% 1/4W
R25	5020222	6.04 kΩ 1% 1/4W	R215	5020633	150 Ω 5% 1/4W
R26	5020533	402 Ω 1% 1/4W	R226	5370240	100 Ω 20% 0.1W
R40	5220036	330 kΩ 10% 1/2W	R228	5102016	0.22 Ω 10% 1/4W
R50	5220036	330 kΩ 10% 1/2W	R229	5102016	0.22 Ω 10% 1/4W
R201	5020153	41.2 kΩ 1% 1/4W	R231	5010765	4.7 Ω 5% 1/2W
R202	5020110	10 kΩ 1% 1/4W			

C1	4130103	100 nF 20% 250V	C18	4130171	330 nF 20% 63V
C2	4130103	100 nF 20% 250V	C20	4010063	4.7 nF 10% 63V
C3	4130280	220 nF 20% 100V	C200	4200368	100µF -10+100% 63V
C4	4130280	220 nF 20% 100V	C201	4130214	10 nF 20% 63V
C5	4130280	220 nF 20% 100V	C202	4130228	470 nF 20% 63V
C6	4200530	1000µF-20+50% 50V	C203	4000092	180 pF 5% 63V
C7	4200530	1000µF-20+50% 50V	C204	4010063	4.7 nF 10% 63V
C8	4200368	100µF-10+100% 63V	C205	4200478	100 µF 20% 10V
C9	4010063	4.7 nF 10% 63V	C206	4200478	100 µF 20% 10V
C10	4200380	1 µF -10+50% 63V	C207	4000026	22 pF 2% 63V
C11	4130179	100 nF 20% 63V	C208	4003130,	47 pF 2% 63V
C12	4130179	100 nF 20% 63V	C209	4130193	22 nF 20% 63V
C13	4200417	4700 µF -10+50% 16V	C210	4130215	220 nF 20% 63V
C14	4130179	100 nF 20% 63V	C211	4130215	220 nF 20% 63V
C15	4000016	10 pF 2% 63V	C212	4130215	220 nF 20% 63V
C16	4130179	100 nF 20% 63V	C213	4200431	10 µF 20% 16V
C17	4130193	22 nF 20% 63V			

L200	6850114	Coil 0.5 µH

F1	6600010	Fuse 4A-T/250 V

RL1	7600046	Relay 6 V

P17	7220160	Plug 5/4 pins	P20	7220195	Plug 2/2 pins
P18	7220139	Plug 11/12 pins	P21	7220185	Plug 3/3 pins
P19	7220320	Plug 7/7 pins			

Preamplifer, 8002186, PCB3

R7	5020515	887 kΩ 1% 1/4W	R39	5020455	470 Ω 5% 1W
R8	5020517	442 kΩ 1% 1/4W	R43	5020455	470 Ω 5% 1W
R9	5020518	221 kΩ 1% 1/4W	R50	5020455	470 Ω 5% 1W
R10	5020265	110 kΩ 1% 1/4W	R229	5370150	470 Ω 20% 0.1W
R11	5370061	47 kΩ 20% 0.1W	R231	5020075	36.5 kΩ 1% 1/4W
R14	5020188	1 kΩ 1% 1/4W	R232	5020456	200 kΩ 1% 1/4W
R20	5370061	47 kΩ 20% 0.1W	R241	5370068	22 Ω 20% 0.1W
R23	5020188	1 kΩ 1% 1/4W	R243	5020574	698 Ω 1% 1/4W
R24	5020515	887 kΩ 1% 1/4W	R244	5020515	887 kΩ 1% 1/4W
R25	5020517	442 kΩ 1% 1/4W	R245	5020517	442 kΩ 1% 1/4W
R26	5020518	221 kΩ 1% 1/4W	R246	5020518	221 kΩ 1% 1/4W
R27	5020265	110 kΩ 1% 1/4W	R247	5020265	110 kΩ 1% 1/4W
R38	5020455	470 Ω 5% 1W	R248	5020254	54.9 kΩ 1% 1/4W

C1	4200403	100µF-10+100%25V	C200	4130233	220 nF 20% 63V
C2	4130230	100 nF 20% 63V	C201	4000139	100 pF 5% 63V
C3	4010107	22 nF -20+100% 40V	C202	4130233	220 nF 20% 63V
C4	4201087	47µF -10+100% 40V	C203	4000139	100 pF 5% 63V
C5	4010101	4.7 nF 10% 63V	C204	4200510	10 µF 20% 16V
C6	4200403	100µF-10+100%25V	C205	4130236	330 nF 20% 63V
C7	4130230	100 nF 20% 63V	C207	4130233	220 nF 20% 63V
C8	4200518	22 µF -10+100% 16V	C208	4000139	100 pF 5% 63 V
C9	4200510	10 µF 20% 16V	C209	4130233	220 nF 20% 63 V
C11	4200403	100µF-10+100%25V	C210	4000139	100 pF 5% 63 V
C12	4200518	22µF -10+100% 16V	C211	4130233	220 nF 20% 63 V
C14	4130230	100 nF 20% 63V	C212	4000139	100 pF 5% 63 V
C15	4010105	1 nF 10% 100V	C213	4000150	68 pF 5% 63 V
C16	4010105	1 nF 10% 100 V	C214	4200517	2.2 µF 20% 50 V
C18	4200551	33 µF 20% 16 V	C215	4010104	220 pF 10% 250 V

C216	4130231	68 nF 10% 63V	C230	4010103	2.2 nF 10% 63V
C217	4010065	2.7 nF 10% 63V	C231	4200518	22 µF -10+100% 16V
C218	4130241	10 nF 20% 63V	C232	4130235	47 nF 20% 63V
C222	4200510	10 µF 20% 16V	C233	4200518	22 µF -10+100% 16V
C223	4000137	47 pF 5% 63V	C234	4010103	2.2 nF 10% 63V
C224	4200510	10 µF 20% 16V	C235	4200510	10 µF 20% 16V
C225	4200518	22 µF -10+100% 16V	C236	4010122	680 pF 10% 63V
C228	4200518	22 µF -10+100% 16V	C237	4130235	47 nF 20% 63V
C229	4010103	2.2 nF 10% 63V	C238	4200510	10 µF 20% 16V

RL1	7600046	Relay 6V			

P6	7220114	Plug 5/4 pins	P13	7220116	Plug 8/7 pins
P7	7220210	Plug 4/4 pins	P14	7220122	Plug 4/3 pins
P8	7220122	Plug 4/3 pins	P14	7220129	Plug 2/2 pins
P9	7220128	Plug 6/5 pins	P16	7220144	Plug 5/4 pins
P10	7220122	Plug 4/3 pins		7220272	Connector 13/13
P11	7220124	Plug 9/8 pins		7220230	Connector 5/5
P12	7220117	Plug 12/11 pins		7220178	Connector 10/10

Microcomputer, 8002554, PCB4

R1	5030001	8 x 22 kΩ 5% 1/8W	R14	5010816	1 kΩ 5% 1/8W
R2	5010816	1 kΩ 5% 1/8W	R55	5010886	220 Ω 5% 1/8W
R3	5010816	1 kΩ 5% 1/8W	R56	5010886	220 Ω 5% 1/8W
R4	5010816	1 kΩ 5% 1/8W	R57	5010886	220 Ω 5% 1/8W
R5	5010816	1 kΩ 5% 1/8W	R58	5010816	1 kΩ 5% 1/8W
R6	5010816	1 kΩ 5% 1/8W	R59	5010816	1 kΩ 5% 1/8W
R7	5010816	1 kΩ 5% 1/8W	R60	5010816	1 kΩ 5% 1/8W
R8	5010816	1 kΩ 5% 1/8W	R61	5010816	1 kΩ 5% 1/8W
R9	5010816	1 kΩ 5% 1/8W	R62	5010816	1 kΩ 5% 1/8W
R10	5010816	1 kΩ 5% 1/8W	R63	5010816	1 kΩ 5% 1/8W
R11	5010816	1 kΩ 5% 1/8W	R64	5010816	1 kΩ 5% 1/8W
R12	5010885	5.6 kΩ 5% 1/8W	R65	5010885	5.6 kΩ 5% 1/8W
R13	5010816	1 kΩ 5% 1/8W	R66	5010885	5.6 kΩ 5% 1/8W

C1	4010027	1 nF 10% 100V	C35	4000110	82 pF 5% 63V
C2	4010027	1 nF 10% 100V	C36	4010027	1 nF 10% 100V
C3	4010027	1 nF 10% 100V	C37	4010027	1 nF 10% 100V
C4	4010027	1 nF 10% 100V	C38	4200396	220 µF 16V
C5	4010027	1 nF 10% 100V	C39	4000076	18 pF 2% 63V
C6	4010027	1 nF 10% 100V	C40	4000076	18 pF 2% 63V
C7	4010027	1 nF 10% 100V	C45	4010027	1 nF 10% 100V
C8	4010027	1 nF 10% 100V	C46	4010027	1 nF 10% 100V
C9	4010027	1 nF 10% 100V	C47	4010027	1 nF 10% 100V
C10	4010027	1 nF 10% 100V	C48	4010027	1 nF 10% 100V
C11	4010027	1 nF 10% 100V	C49	4010027	1 nF 10% 100V
C18	4010027	1 nF 10% 100 V	C50	4010027	1 nF 10% 100V
C19	4010027	1 nF 10% 100 V	C51	4010027	1 nF 10% 100V
C20	4010027	1 nF 10% 100 V	C52	4010027	1 nF 10% 100V
C21	4010024	470 pF 10% 100V	C53	4010027	1 nF 10% 100V
C22	4010027	1 nF 10% 100V	C54	4010027	1 nF 10% 100V
C23	4130179	100 nF 20% 63V	C55	4010027	1 nF 10% 100V
C24	4010027	1 nF 10% 100V	C56	4010027	1 nF 10% 100V
C25	4130179	100 nF 20% 63V	C57	4010027	1 nF 10% 100V
C26	4010027	1 nF 10% 100V	C58	4010027	1 nF 10% 100V
C27	4010060	22 nF -20+80% 40V	C59	4200414	33 µF -10+50% 16V
C28	4010060	22 nF -20+80% 40V	C65	4200539	100µF -10+50% 6.3V
C29	4010027	1 nF 10% 100V	C66	4130254	470 nF 20% 63V
C30	4010027	1 nF 10% 100V	C67	4100019	1 nF 2.5% 63V
C31	4010027	1 nF 10% 100V	C68	4200330	100 µF -10+50% 10V
C32	4100146	2.2 nF 2.5% 63V	C60	4130179	100 nF 20% 63V
C33	4010027	1 nF 10% 100V	C70	4130179	100 nF 20% 63V
C34	4010062	330 pF 10% 100V	C71	4130254	470 nF 20% 63V

X1	8030023	400 kHz ±1 kHz	X2	8090005	8.8672 M ±20 ppm

L1	8020341	Aerial transformer	L4	8020085	10 µH
L2	8020342	10 µH	L5	8020085	10 µH
L3	8020085	10 µH	L6	8020085	10 µH

	L7	8020342	10 µH	L9	8020413	1 mH MF/AM
	L8	8020085	10 µH			
	P22	7220115	Plug 7/6 pins		8700012	Battery
	P23	7220320	Plug 7/7 pins		3302356	Frame for µc-box
	P24	7220129	Plug 2/2 pins		3302355	Lid for µc-box
	P25	7220129	Plug 2/2 pins			
	P26	7220321	Plug 18/18 pins			
	P27	7220323	Plug 15/15 pins			
Keyboard, 8002576, PCB5	P30	7220355	Plug 9/9 pins			
Fan regulation, 8002173, PCB6	R3	5020577	8.25 kΩ 1% 1/4W	R5	5230012	15 Ω ±20% 1/8W
	C1	4010041	10 nF -20+80% 40V	C5	4130210	47 nF 20% 63V
	C2	4130259	220 nF 1% 160V	C6	4200542	68 µF 20% 63V
	C3	4130210	47 nF 20% 63V	C7	4200304	470µF -10+100%40V
	C4	4010027	1 n ±10% 100V			
		3358186	Heatsink			
Display-Right, 8002556, PCB7	P32	7220238	Plug 8/8 pins			
RF-Level Adjustment, 8002600, PCB10	R1	5370068	22 kΩ 20% 0.1W	R2	5370068	22 kΩ 20% 0.1W
	P33	7220310	Plug 3/3 pins			
Remote Control, 8002557, PCB9	C1	4200488	22 µF ±20% 25V	C7	4200423	2.2 µF ±20% 50V
	C2	4000029	220 pF ±5% 63V	C8	4100033	3.3 nF ±5% 63V
	C3	4010060	22 nF -20+80% 40V	C9	4010067	1.5 nF ±10% 63V
	C4	4010041	10 nF -20+80% 40V	C10	4010067	1.5 nF ±10% 63V
	C5	4200431	10 µF ±20% 16V	C11	4200431	10 µF 20% 16V
	C6	4200423	2.2 µF ±20% 50V	C13	4010041	10 nF -20+80% 40V
	L1	8022128	Coil 55 mH			
Terminal Microcomputer, 8002579, PCB12	R84	5020625	2.7 Ω ±5% 0.3W	R155	5370191	10 kΩ ±20% 0.1 W
	R86	5020625	2.7 Ω ±5% 0.3V			
	C1	4200342	10 pF -10+50% 63V	C19	4000171	82 pF ±2% 63V
	C2	4010027	1 nF ±10% 100V	C20	4010027	1 nF ±10% 100V
	C3	4130215	220 nF ±20% 63V	C21	4130223	47 nF ±10% 63V
	C4	4200364	47 µF -10+50% 10V	C25	4010041	10 nF -20+80% 40V
	C5	4010063	4.7 nF ±10% 63V	C26	4010041	10 nF -20+80% 40V
	C6	4010061	2.2 nF ±10% 63V	C27	4010041	10 nF -20+80% 40V
	C7	4010031	680 pF ±10% 100V	C28	4010041	10 nF -20+80% 40V
	C8	4200342	10 µF -10+50% 63V	C29	4010041	10 nF -20+80% 40V
	C9	4010061	2.2 nF ±10% 63V	C30	4200396	220 µF 16V
	C10	4010027	1 nF ±10% 100V	C31	4130223	47 nF ±10% 63V
	C11	4010062	330 pF ±10% 100V	C32	4130215	220 nF ±20% 63V
	C12	4130237	680 nF ±20% 63V	C33	4130225	150 nF ±10% 63V
	C15	4010041	10 nF -20+80% 40V	C34	4200426	1 µF ±20% 50V
	C16	4130179	100 nF ±20% 63V	C35	4130223	47 nF ±10% 63V
	C17	4010041	10 nF -20+80% 40V	C36	4130228	470 nF ±20% 63V
	C18	4010062	330 pF ±10% 100V			
	L1	8020342	Coil 10 µH			
	X1	8030038	400 kHz ±1 kHz		3302357	Screen/housing

Master control IR – Left, 8002634, PCB13

R1	5010839	6.8 kΩ ±5% 1/8W			
C1	4010041	10 nF -20+80% 40 V	C3	4340018	10-60 pF
C2	4000018	220 pF ±5% 63 V	C4	4003135	39 pF ±5% 63 V
L1	8022138	Coil 54 MHz ±10%			
P35	7220344	Plug 5/4			
	3304105	Screen			
	3304106	Screen			

Master control IR – Right, 8002633, PCB14

R1	5010839	6.8 kΩ ±5% 1/8W			
C1	4010041	10 nF -20+80% 40V	C3	4340018	10-60 pF
C2	4000018	220 pF ±5% 63V	C4	4003135	39 pF ±5% 63V
L1	8022138	Coil 54 MHz ±10%			
P36	7220344	Plug 5/4			
	3304105	Screen			
	3304106	Screen			

Modstande som ikke er nævnt i elektrisk stykliste er 5% 1/4 W kulfilm.

Resistors not mentioned in the electrical parts list are 5% 1/4 W carbon film.

Widerstände die nicht in der elektrischen Stückliste erwähnt sind, sind 5% 1/4 W Kohlenfilm.

Resistances pad mentionés dans la liste des composants, sont 5% 1/4 W films de carbon.

MEKANISK STYKLISTE/
MECHANICAL PARTS LIST

001	2039020	Skrue AM 3 x 5	Screw AM 3 x 5
002	2039020	Skrue AM 3 x 5	Screw AM 3 x 5
003	2039020	Skrue AM 3 x 5	Screw AM 3 x 5
004	2039020	Skrue Am 3 x 5	Screw AM 3 x 5
005	2039026	Skrue AM 3 x 4	Screw AM 3 x 4
006	2622016	Skive 3,2	Washer 3.2
0010	2810088	Fjeder	Spring
0011	2810085	Fjeder	Spring
0012	3151215	Eject samlet	Eject assembled
0013	2039020	Skrue AM 3 x 5	Screw AM 3 x 5
0014	2625002	Skive	Washer
0016	2039030	Skrue AM 3 x 10	Screw AM 3 x 10
0017	2038206	Bøsning	Bushing
0018	2039020	Skrue AM 3 x 5	Screw AM 3 x 5
0019	2036036	Skrue AM 2,5 x 4	Screw AM 2.5 x 4
0020	2542506	Dæmpe vinkel	Damping bracket
0021	2810152	Fjeder	Spring
0022	2992021	Tap	Tap
0023	2724046	Snortrisse	Cord pulley
0024	3131211	Hus	Housing
0025	2039020	Skrue AM 3 x 5	Screw AM 3 x 5
0026	2039020	Skrue AM 3 x 5	Screw AM 3 x 5
0027	2015913	Skrue M 3,5 x 9,5	Screw M 3.5 x 9.5
0028	2938205	Bøsning	Bushing
0029	3152367	Leningsholder	Cable fastener
0030	3152366	Ledningsholder	Cable fastener
0031	3454298	Chassisramme	Chassis frame
0032	2819174	Fjeder	Spring
0033	8002577	PCB hovedtelefon med stik	PCB headphone with plug
0034	2380092	Møtrik for Jack-stik	Nut for Jack socket
0035	3454297	Bund	Bottom
0036	2039020	Skrue AM 3 x 5	Screw AM 3 x 5
0037	2043020	Skrue AM 4 x 6	Screw AM 4 x 6
0038	3035119	Gummifod	Rubber foot
0039	2043011	Skrue AM 4 x 8	Screw AM 4 x 8
0040	2622304	Skive	Washer
0041	2391059	Låseplade	Locking plate
0042	3413008	Kabinet, aluminium	Cabinet, aluminium
	3413973	Kabinet, palis	Cabinet, rosewood
0043	2039020	Skrue AM 3 x 5	Screw AM 3 x 5
0044	8002164	PCB mont. sikring, type 2321	PCB mount. fuse, type 2321
	8002589	PCB mont. sikring, type 2323	PCB mount. fuse, type 2323
	8002590	PCB mont. sikring, type 2324	PCB mount. fuse, type 2324
0045	2043003	Skrue AM 4 x 25	Screw AM 4 x 25
0046	2938154	Bøsning	Bushing
0047	3152341	Holder	Holder
0048	2938154	Bøsning	Bushing
0049	2834084	Aksel	Shaft
0050	3014060	Styr	Guide
0051	2039020	Skrue AM 3 x 5	Screw AM 3 x 5
0052	2622117	Skive 3,2	Washer 3.2
0053	3150053	Leje	Bearing
0054	2013107	Skrue M 2,9 x 9,5	Screw M 2.9 x 9.5
0055	2039027	Skrue AM 3 x 6	Screw AM 3 x 6
0056	2622041	Skive 3,2	Washer 3.2
0057	3131220	Display hus	Display housing

0T1	8013297	Transformator for type 2321	Transformer for type 2321
	8013299	Transformator for type 2323 med print	Transformer for type 2323 with print
	8013300	Transformator for type 2324 med print	Transformer for type 2324 with print
	3170000	Isolations stykke	Insulation piece

0M1	8410011	Blæser komplet	Fan complete

0DP1	8330091	Display	Display

0RL1	6840279	Sugespole	Magnet coil
0P2	6274110	P2/P24 med ledning	P2/P24 with cable
0P4	6274109	P4/P25 med ledning	P4/P25 with cable
0P24	6274110	P24/P2 med ledning	P24/P2 with cable
0P25	6274109	P25/P4 med ledning	P25/P4 with cable
0P9	6275512	Ledningssæt med fatning	Set of wires with socket
0P15	6275534	Ledningssæt med fatning	Set of wires with socket
0P20	6275507	Ledningssæt med fatning	Set of wires with socket
0P21	6275507	Ledningssæt med fatning	Set of wires with socket
01Modul	8002561	PCB. AM/FM - type 2321	PCB. AM/FM - type 2321
	8002141	PCB. AM/FM - type 2323	PCB. AM/FM - type 2323
	8002145	PCB. AM/FM - type 2329	PCB. AM/FM - type 2329
0101	2039020	Skrue AM 3 x 5	Screw AM 3 x 5
0102	2566047	Skinne	Rail
0103	2815007	Bladfjeder	Leaf spring
02Modul	8002553	PCB. Udgang og netdel	PCB. Output and power supply
0201	2568679	Køleprofil	Heatsink
0202	2011023	Skrue 2,2 x 6,6	Screw 2.2 x 6.6
0203	6140921	Print	PCB board
0204	2819175	Fjeder	Spring
0205	3170001	Glimmerskive T0-220	Mica sheet T0-220
	2622231	Glimmerskive T0-126	Mica sheet T0-126
0206	2819175	Fjeder	Spring
0207	2622014	Skive ø 3,2	Washer ø 3.2
0208	2013107	Skrue 2,9 x 6,5	Screw 2.9 x 6.5
0209	2560123	Skinne	Rail
02P6	6275509	Ledningssæt med fatning	Set of wires with socket
02P10	6275506	Ledningssæt med fatning	Set of wires with socket
03Modul	8002186	PCB. Indgang	PCB. Preamplifier
0301	2510134	Kortslutningsbøjle	Shortcircuit bracket
0302	7210378	Stikdåse »HØJTTALER«	Socket »LOUDSPEAKER«
0303	7210269	Stikdåse 7 pol.	Socket 7 pole
0304	7210273	Stikdåse 2 pol	Socket 2 pole
0305	2382009	Fingermøtrik	Milled nut
0306	7210153	Stikdåse »AM«	Socket »AM«
0307	7210279	Stikdåse »FM«	Socket »FM«
0308	2039028	Skrue AM 3 x 8	Screw AM 3 x 8
0309	8002552	Stikpanel kompl.	Socket panel compl.
0310	3014059	Styr	Guide
0311	2039027	Skrue AM 3 x 6	Screw AM 3 x 6
0312	2365104	Nitte ø2	Rivet ø2
0313	7210001	Stikdåse netdel	Socket power supply
03P3	6274106	Ledningssæt med fatning	Set of wires with socket
03P5	7210326	Fatning/hus 2/2 pol	Socket/housing 2/2 pol
	7500161	Crimp kont.	Crimp cont.
04Modul	8002554	PCB. Microcomputer	PCB. Microcomputer
05Modul	3168230	Betjeningspanel kompl.	Operating panel compl.
0501	3168357	Panel	Panel
0502	3168219	Underpart	Bottom part
0503	2390001	Skive ø 2,3	Washer ø 2.3
0504	2812095	Fjeder	Spring
0505	2819171	Fjeder	Spring
0506	2568761	Profil	Profil
0507	2380011	Møtrik	Nut
0508	2622041	Skive ø 3,2	Washer ø 3.2
0509	2620020	Skive ø 3,2	Washer ø 3.2
0510	3150054	Leje	Bearing
0511	3947152	Tape - sort	Tape - black
0512	8002576	PCB. Betjening	PCB. Operating
0513	2775875	Knapsæt	Set of buttons
0514	7500148	Kontaktfjeder	Contact spring
0515	3947153	Tape - sort	Tape - black
	6200048	Båndkabel	Band cable

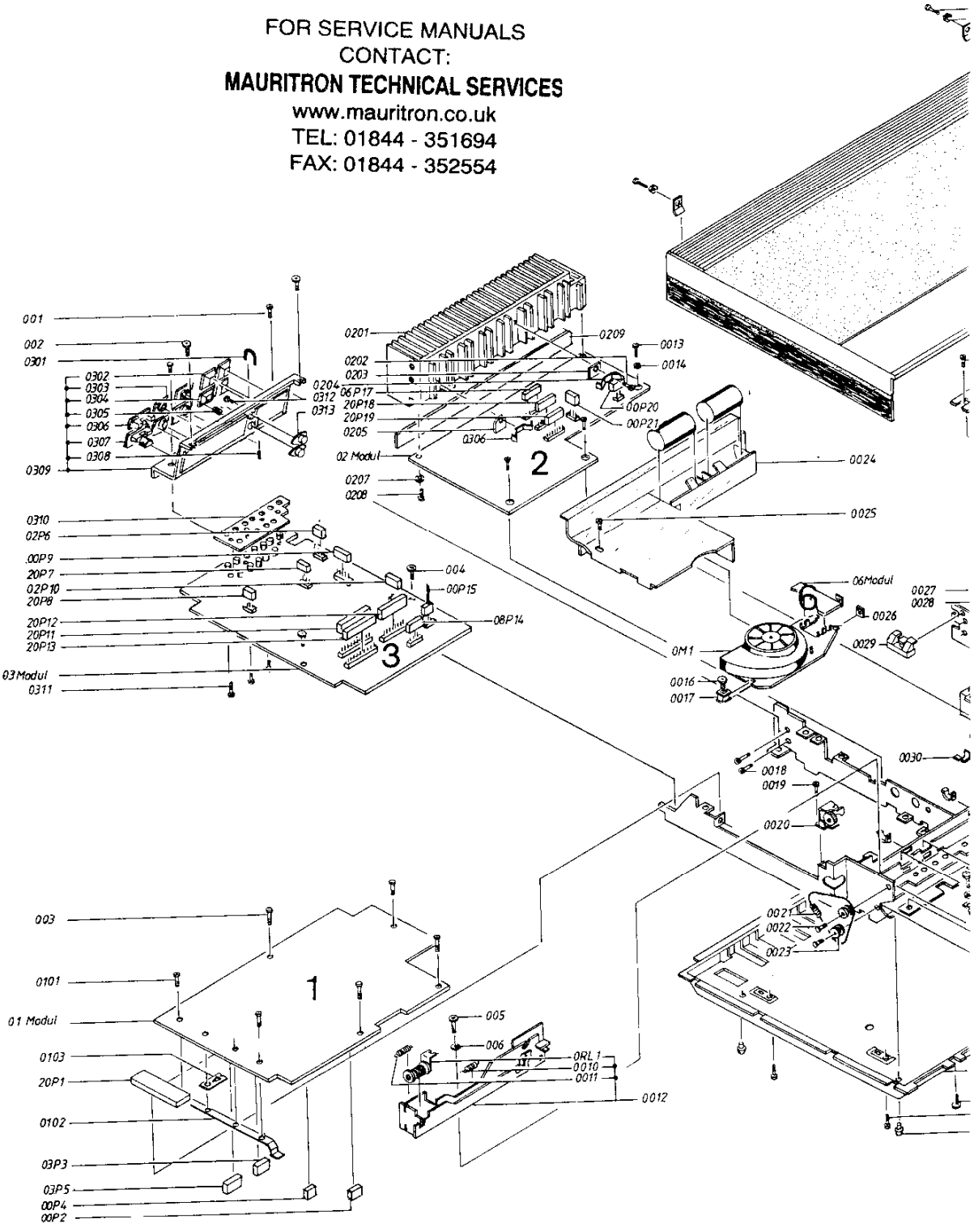
06Modul	8002173	PCB. Motorstyring	PCB. Fan regulation
06P17	6275505	Ledningssæt med fatning	Set of wires with socket
07Modul	8002556	PCB. Display – højre	PCB. Display – right
08Modul	8002555	PCB. Display – venstre	PCB. Display – left
08P14	6275503	Ledningssæt med fatning	Set of wires with socket
09Modul	8002557	PCB. Fjernbetjening – modtager	PCB. Remote control – receiver
09P22	6275504	Ledningssæt med fatning	Set of wires with socket
10Modul	8002600	PCB. HF justering	PCB. RF Level adjustment
20Modul	6775511	Hovedledningsbundt	Main cable bundle
20P1	7210401	Fatning/hus 20/20 pol	Socket/housing 20/20 pole
20P7	7210259	Fatning/hus 4/4 pol	Socket/housing 4/4 pole
20P8	7210405	Fatning/hus 4/3 pol	Socket/housing 4/3 pole
20P11	7210421	Fatning/hus 9/8 pol	Socket/housing 9/8 pole
20P12	7210420	Fatning/hus 12/11 pol	Socket/housing 12/11 pole
20P13	7210424	Fatning/hus 8/7 pol	Socket/housing 8/7 pole
20P18	7210422	Fatning/hus 11/10 pol	Socket/housing 10/11 pole
20P19	7210262	Fatning/hus 7/7 pol	Socket/housing 7/7 pole
20P23	7210423	Fatning/hus 7/7 pol	Socket/housing 7/7 pole
20P26	7210402	Fatning/hus 18/18 pol	Socket/housing 18/18 pol
20P28	7210403	Fatning/hus 15/15 pol	Socket/housing 15/15 pole
20P30	7210264	Fatning/hus 9/9 pol	Socket/housing 9/9 pole
20P31	7210404	Fatning/hus 11/11 pol	Socket/housing 11/11 pole
20P32	7210263	Fatning/hus 8/8 pol	Socket/housing 8/8 pole
20P33	7210258	Fatning/hus 3/3 pol	Socket/housing 3/3 pole

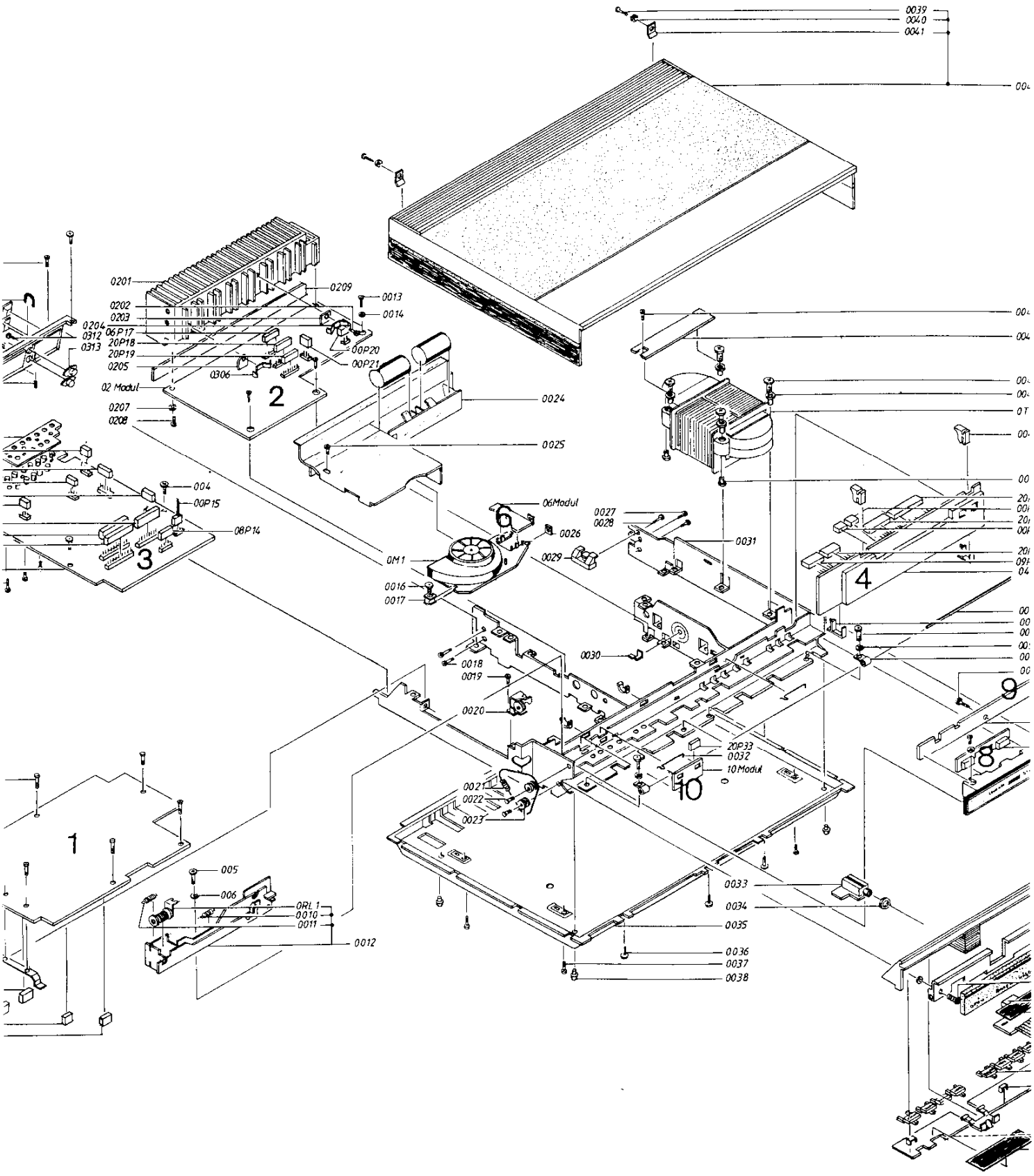
Ikke viste dele/
Parts not shown

3532157	Diagram	Diagram
3397443	Skumemballage sæt for Beomaster	Foam packing set for Beomaster
3391251	Yderæske for Beomaster	Outer carton for Beomaster
3397495	Skumemballage sæt, for Master Control	Foam packing set for Master Control
3391273	Yderæske for Master Control	Outer carton for Master Control
3391687	Papindlæg for Master Control	Carton insert for Master Control
3391630	Emballage for Beomaster Terminal	Packing for Beomaster Terminal
6271115	Netledning m/eurostik	Mains cable with Euro plug
6270251	Netledning for type 2323	Mains cable for type 2323
6271119	Netledning for type 2324	Mains cable for type 2324
6271091	Netledning for type 2325	Mains cable for type 2325
3414040	Kabinets finer, sæt alu.	Cabinet veneer, set alu.
3414043	Kabinets finer, sæt palis.	Cabinet veneer, set rosewood
3502488	Betjeningsanv. for 2321 DK	Operating manual for 2321 DK
3502489	Betjeningsanv. for 2321 S	Operating manual for 2321 S
3502490	Betjeningsanv. for 23221 SF	Operating manual for 2321 SF
3502491	Betjeningsanv. for 2321 GB	Operating manual for 2321 GB
3502492	Betjeningsanv. for 2321 D	Operating manual for 2321 D
3502493	Betjeningsanv. for 2321 F	Operating manual for 2321 F
3502494	Betjeningsanv. for 2321 NL	Operating manual for 2321 NL
3502495	Betjeningsanv. for 2323 USA	Operating manual for 2323 USA
3502496	Betjeningsanv. for 2038 DK	Operating manual for 2038 DK
3502497	Betjeningsanv. for 2038 S	Operating manual for 2038 S
3502498	Betjeningsanv. for 2038 SF	Operating manual for 2038 SF
3502499	Betjeningsanv. for 2038 GB	Operating manual for 2038 GB
3502500	Betjeningsanv. for 2038 D	Operating manual for 2038 D
3502501	Betjeningsanv. for 2038 F	Operating manual for 2038 F
3502502	Betjeningsanv. for 2038 NL	Operating manual for 2038 NL
3502503	Betjeningsanv. for 2038 USA	Operating manual for 2038 USA

Bang&Olufsen

BEOMASTER 5000
TYPE 2321

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00P20
00P21
0013
0014
02 Modul
0207
0208
0024
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004
00P15
08P14
06Modul
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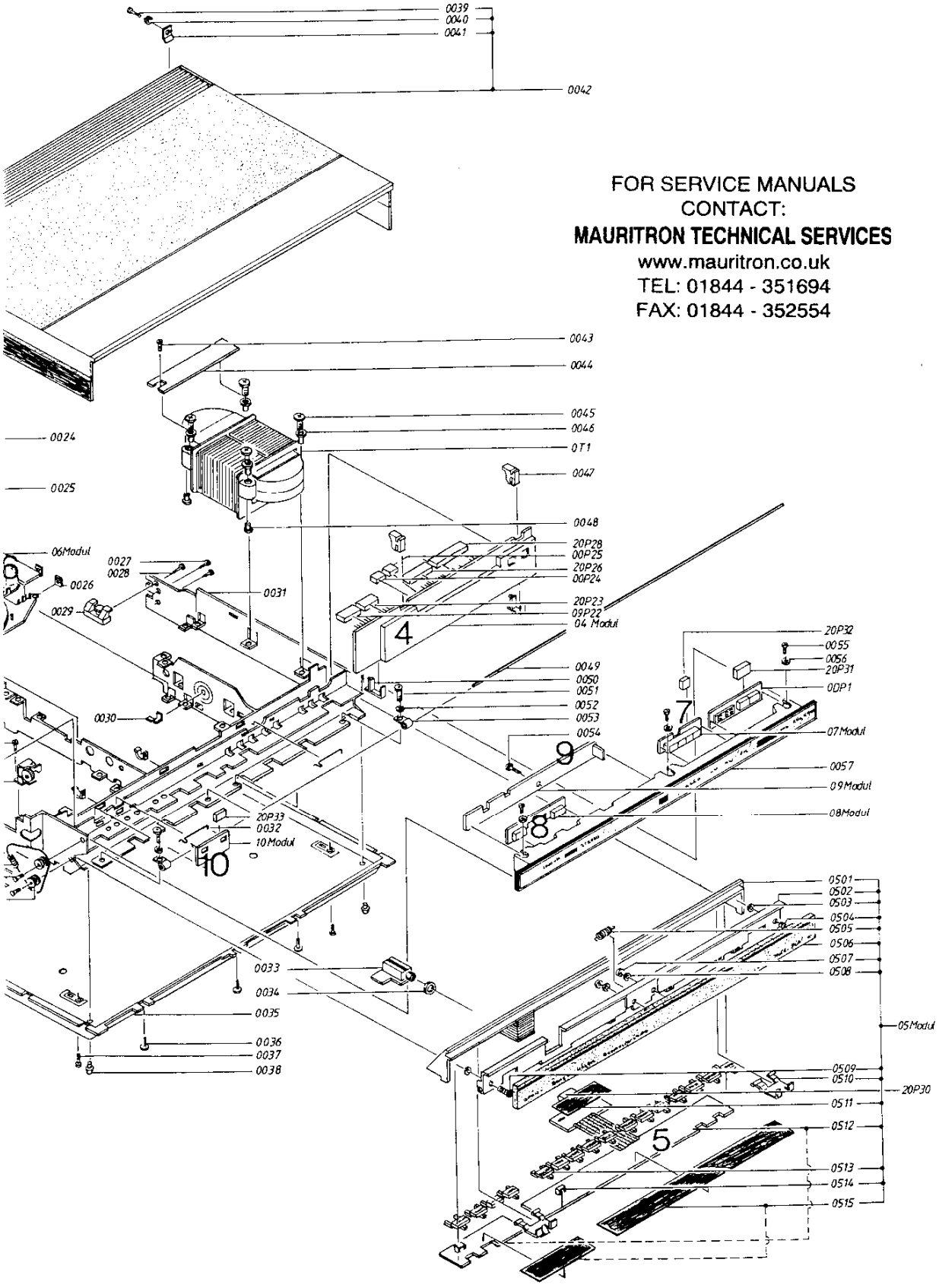
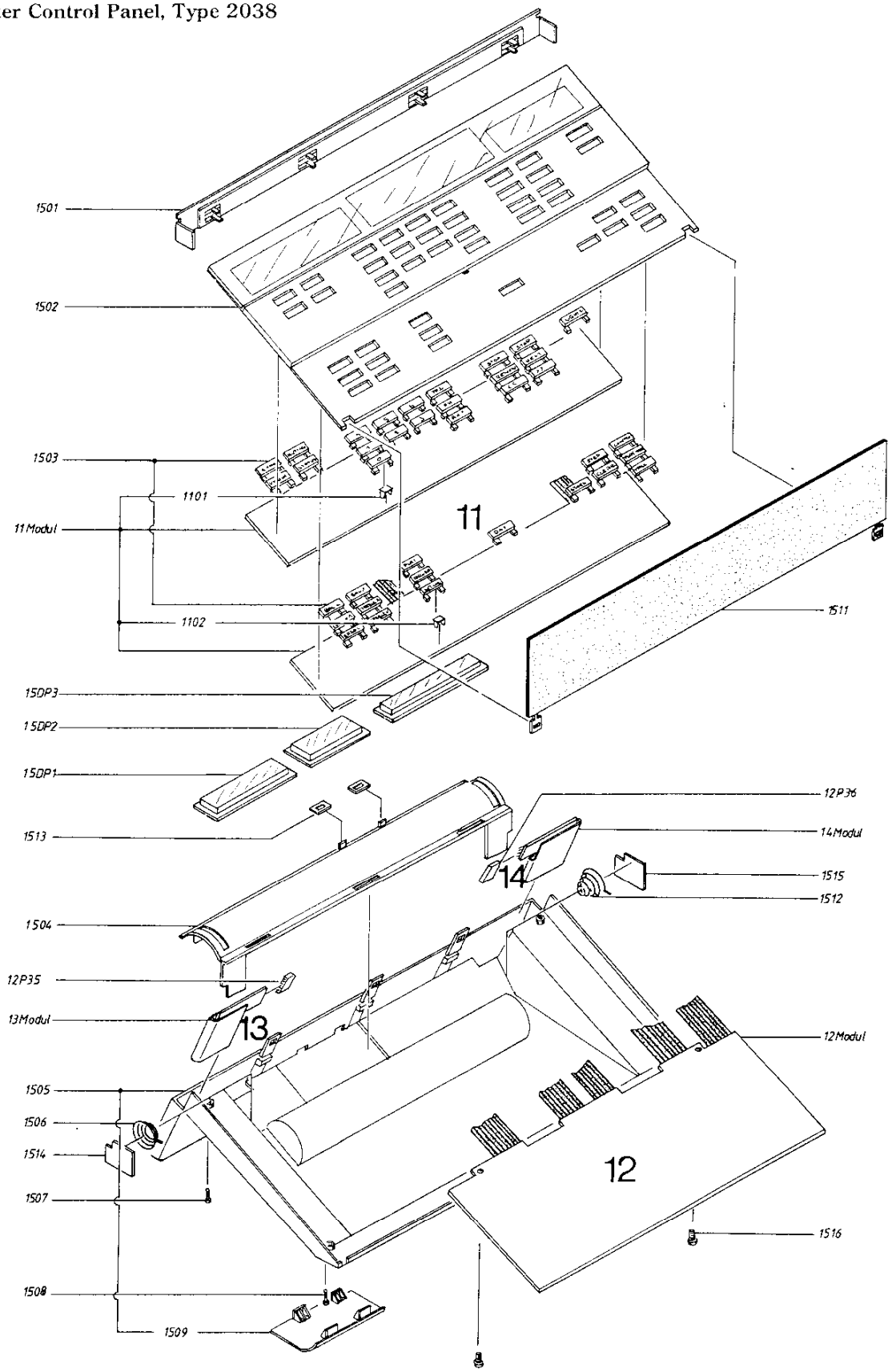


Master Control Panel, Type 2038



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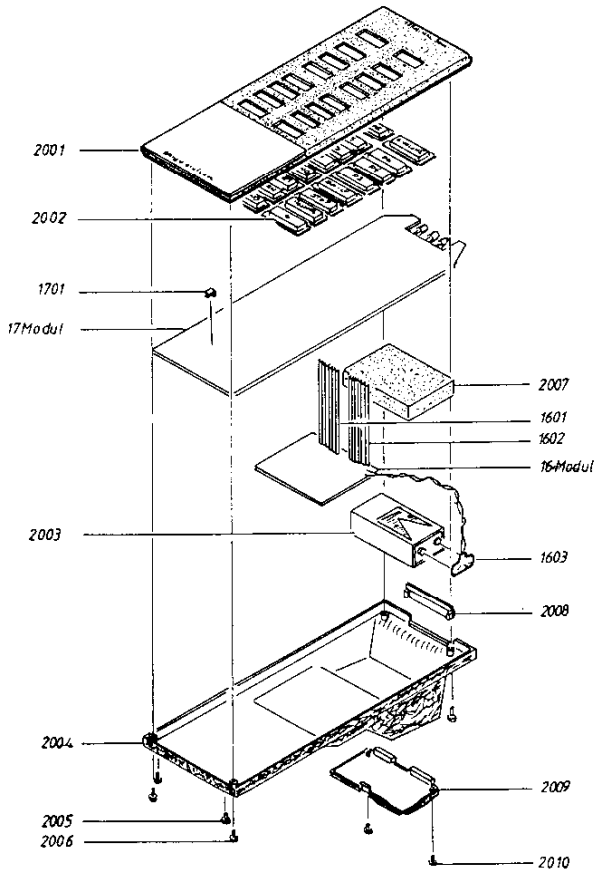
11Modul	8002580	PCB. Betjening	PCB. Keyboard
1101	7500148	Kontaktfjeder	Contact spring
1102	7500148	Kontaktfjeder	Contact spring
12Modul	8002579	PCB. Microcomputer	PCB. Microcomputer
12P35	6274116	Ledning sæt med fatning	Set of wires with socket
12P36	6274117	Ledning sæt med fatning	Set of wires with socket
13Modul	8002634	PCB. IR-venstre	PCB. IR-left
14Modul	8002633	PCB. IR-højre	PCB. IR-right
15Modul	8052164	Master Control Panel Kompl.	Master Control Panel Compl.
1501	3322103	Holder	Holder
1502	3168356	Panel	Panel
1503	2775966	Knapsæt	Set of buttons
1504	2952015	Holder	Holder
1505	3454326	Bund	Bottom
1506	2818075	Fjeder	Spring
1507	2039033	Skrue M 3 x 6	Screw M 3 x 6
1508	3010007	Stop	Stop
1509	3164460	Låg	Lid
1511	2568762	Låg	Lid
1512	2818074	Fjeder	Spring
1513	2390048	Ledningsholder	Wire holder
1514	2805000	Skærm	Screen
1515	2805000	Skærm	Screen
1516	2013080	Skrue 2,9 x 9,5	Screw 2.9 x 9.5
	8700015	Batteri 1,5 V	Battery
15DP1	8330100	Display indic	Display indic
15DP2	8330101	Display 3 char.	Display 3 char.
15DP3	8330102	Display 4 char.	Display 4 char.

Beomaster Terminal, Type 2039



16Modul	8002200	PCB Microcomputer	PCB Microcomputer
1601	6200058	Ledningssæt, 8 leder	Set of leads, 8 leads
1602	6200058	Lednignssæt, 8 leder	Set of leads, 8 leads
1603	7229020	Batteritilslutning	Battery connection

17Modul	8002182	PCB. Betjeningsmodul	PCB, Kayboard
1701	7500148	Kontaktfjeder	Contact spring

20Modul	8052208	Beomaster terminal,	Beomaster terminal,
2001	3168379	Panel	Panel
2002	2775877	Knapsæt	Set of buttons
2003	8700000	Batteri 9 V	Battery 9 V
2004	3454343	Bund m. batteridæksel	Bottom with battery cover
2005	3010007	Stop	Stop
2006	2011023	Skrue 2.2 x 6.5	Screw 2.2 x 65.
2007	3917036	Skumgummi	Foam
2008	3322058	Vindue	Window
2009	3160031	Batteri dæksel	Battery cover
2010	3010007	Stop	Stop

Modulemballage/Modulpacking

Modul no.	Designation:		Emb. no.
1	AM/FM	8002561	3391576
2	Output Amplifier and Power Supply	8002553	3391576
3	Preamplifier	8002558	3391576
4	Microcomputer	8002554	3391575
6	Fan. regulation	8002174	3391574
9	Remote Control	8002557	3391574
	Fan Complet		3391574

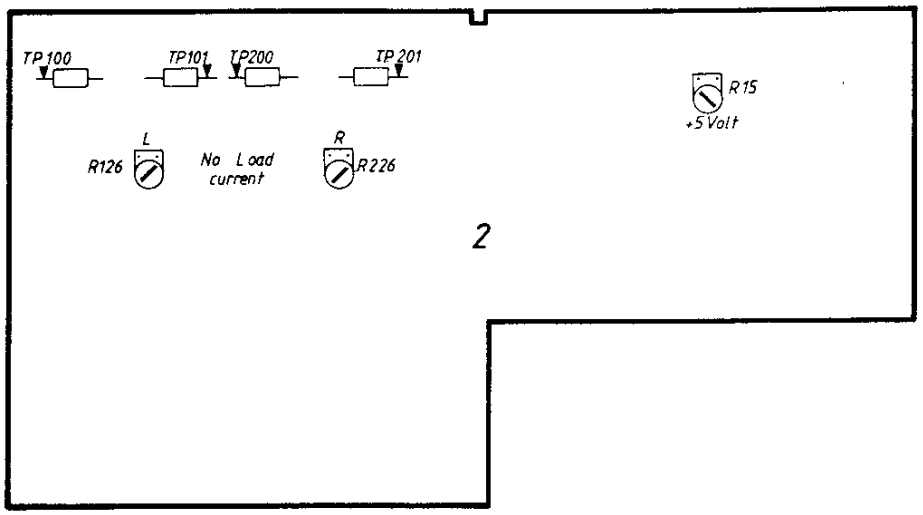
ELEKTRISKE JUSTERINGER

Henvisningerne er for højre kanal. (Henvisningerne i parantes er for venstre kanal). Koordinat betegnelse er angivet efter positionsnumre.

5V Netdel

DC voltmeter tilsluttes modul 4 (µC) med - på P23 ben 4-5 og + på P23 ben 6-7.
Med 2R15E1 justeres til 5V ±0,1V.

Tomgangsstrøm



Apparatet stilles i P1-P9.
Tomgangsstrømmen justeres medens modtageren er kold og med neddrejet volumekontrol.
Højttalere må ikke være tilsluttet.
DC millivoltmeter tilsluttes mellem 2TP200B1 2TP201C2 (2TP100A1 2TP101B1).
Med 2R226A2 (2R126C2) justeres til 11 mV.

LF

LF justeringer (volume, bas og diskant) skal foretages medens modtageren er varm (tændt i ca. 10 min.).

Volume

Apparatet stilles i TP1. Tonegenerator tilsluttes TAPE1, og indstilles til at afgive 1 kHz 175 mV.
NEUTRAL aktiveres.
Volume reguleres til max.
AC voltmeter tilsluttes 3TP200C5 (3TP100C5).
Med 3R241C6 (3R141C6) justeres indtil der måles 4,2V.

ELECTRICAL ADJUSTMENTS

The references apply to the RH channel (the references in parenthesis apply to the LF channel). The co-ordinate denomination is indicated after the position numbers.

5 V Power Supply

Connect a DC voltmeter to module 4 (microcomputer) with – on pins 4-5 of P23 and + on 6-7 of P23.
Adjust with 2R15E1 until a reading of 5 V ±0.1 V is obtained.

No-load Current

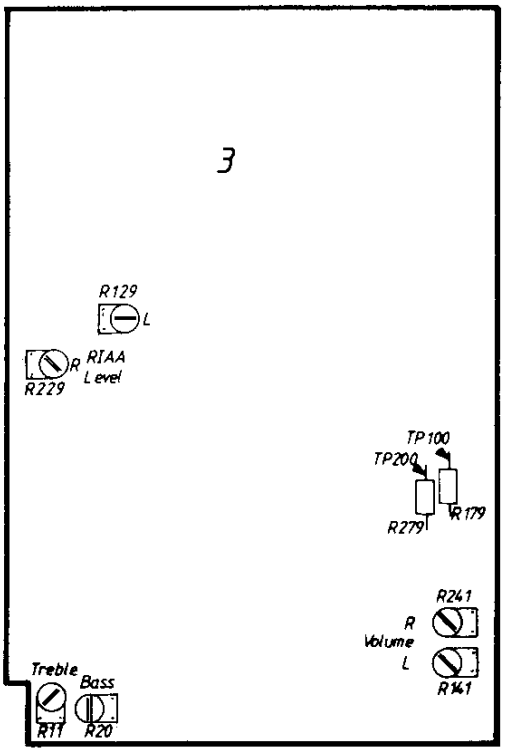
Set the receiver in mode P1-P9.
Adjust the no-load current while the receiver is cold and with the volume control turned fully down.
Loudspeakers must not be connected.
Connect a DC millivoltmeter between 2TP2000B1 and 2TP201C2 (2TO100A1 and 2TO101B1).
Adjust with 2R226A2 (2R126C2) until a reading of 11 mV is obtained.

AF

Make AF adjustments (volume, bass and treble) while the receiver is warm (ON for approx. 10 minutes).

Volume

Set the receiver in mode TP1. Connect a tone generator to TAPE 1 and set it to generate 1 kHz 175 mV.
Activate NEUTRAL.
Regulate volume to max.
Connect an AC voltmeter to 3TP200C5 (3TO100C5).
Adjust with 3R241C6 (3R141C6) until a reading of 4.2 V is obtained.



Bas
Samme indstillinger og tilslutninger som ved volume justering, blot skal tonegeneratorens frekvens ændres til 40 Hz.
Med 3R20A6 justeres til 4,2V i 3TP200C5.

Diskant
Samme indstillinger og tilslutninger som ved volume justeringer blot skal tonegeneratorens frekvens ændres til 12,5 kHz.
Med 3R11A6 justeres til 4,2V i 3TP200C5.

RIAA
3R229A4 (3R129A4) er fra fabrikken justeret til max. output fra RIAA forstærkeren.
Ved brug af pick-up'en med højt output niveau, kan RIAA forstærkerens output reguleres med 3R229 (3R129).

Bass
Same adjustments and connections as for the volume adjustment, with the only difference that the frequency of the tone generator is changed to 40 Hz.
Adjust with 3R20A6 until a reading of 4.2 V is obtained in 3TP200C5.

Treble
Same adjustments and connections as for the volume adjustment, with the only difference that the frequency of the tone generator is changed to 12.5 kHz.
Adjust with 3R11A6 until a reading of 4.2 V is obtained in 3TP200C5.

RIAA
3R229A4 (3R129A4) are adjusted by the factory for max. output from the RIAA amplifier.
When using pick-up with a high output level, the RIAA amplifier output can be regulated with 3R229 (3R129).

HF
Ved tuning med MANUAL on er AFT'en stadig aktiv (LOCKED indikatoren lyser eller blinker ved signal). Ved justeringer hvor modtageren skal stå i MANUAL on må AFT'en ikke være aktiv. AFT'en kan ophæves ved nogle gentryk på RETURN eller ADVANCE, når displayet viser den ønskede frekvens.
F.eks. MANUAL ADVANCE fra 87,5 MHz til 94 MHz. Når displayet skifter til den ønskede frekvens

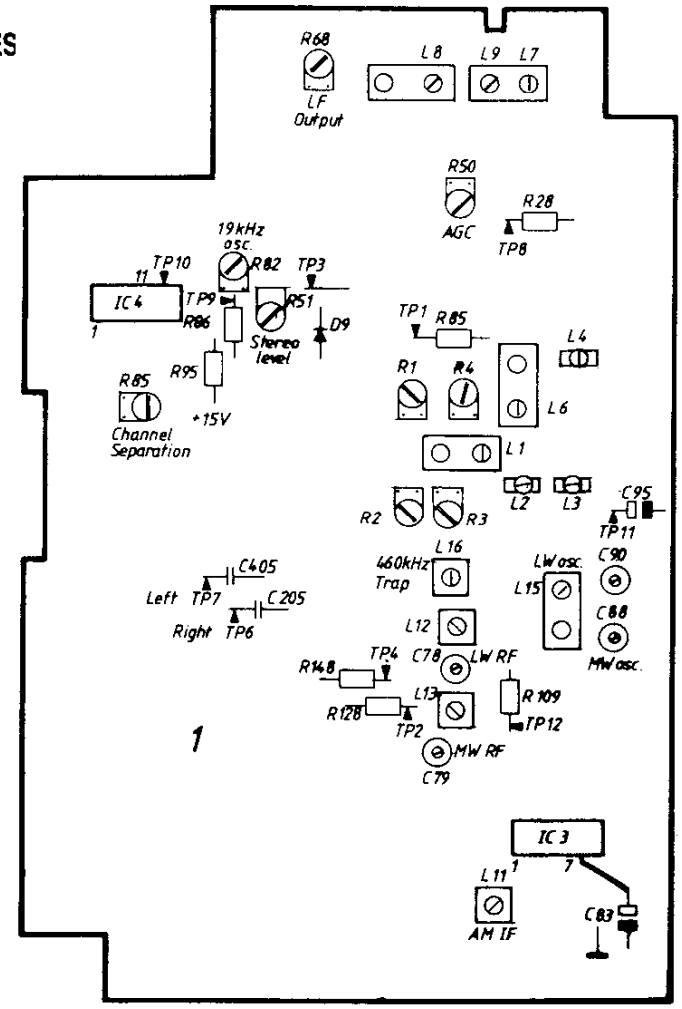
HF
When tuning while MANUAL in ON, the AFT will still be active (the LOCKED indicator is glowing or flashing when signals are present).
For adjustments where the receiver must be in mode MANUAL ON, the AFT must not be active.
The AFT is cancellable by activating RETURN or ADVANCE a few times when the display indicates the frequency wanted.
For instance, MANUAL ADVANCE from 87.5 MHz to 94 MHz. When the display changes to the

gentrykkes ADVANCE derefter et tryk på RETURN.

AFT'en kan ligeledes ophæves ved at afbryde 1D9C3.

frequency wanted, ADVANCE shall be activated a few times followed by one activation of RETURN.

It is also possible to cancel the AFT by disconnecting 1D9C3.



FM OSCILLATOR OG MF

Oscillator 87,5 MHz

SELECT f.eks. P1 (uden signal tilført).
Aktiver RETURN indtil displayet viser 87,5 MHz, LOCKED indikatoren skal være slukket (evt. støj), og MANUAL indikatoren skal være slukket (MANUAL off).
DC voltmeter tilsluttes mellem 1TP1C3 og 1TP2E3 1L1C2 justeres til min. DC spænding målt mellem 1TP1 og 1TP2 (spændingen må max. være 30 mV).

MF

Aktiver MANUAL on.
En sweepgenerator tilsluttes antenneindgangen og indstilles til 87,5 MHz.
Et oscilloscop tilsluttes 1TP3B3.

FM OSCILLATOR AND MF

Oscillator 87.5 MHz

SELECT, e.g. P1 (with no signal applied).
Activate RETURN until the display indicates 87.5 MHz, the LOCKED indicator must be off (noise possible), and the MANUAL indicator must be off (MANUAL off).
Connect a voltmeter between 1TP1C3 and 1TP2E3.
Adjust 1L1C2 until min. DC voltage reading is obtained between 1TP1 and 1TP2 (max. voltage allowed is 30 mV).

IF

Activate MANUAL on.
Connect a sweep generator to the aerial input and set it at 87.5 MHz.
Connect an oscilloscope to 1TP3B3.

Med 1L2D2, 1L3D1, 1L4C1, 1L6C2 justeres til maksimum og symmetrisk MF kurve. (Gentag evt. proceduren).

Oscillator 108 MHz

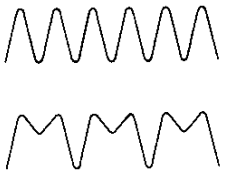
Aktiver MANUAL off (uden signal tilført).
Aktiver ADVANCE indtil displayet viser 108 MHz.
Aktiver MANUAL on.
DC voltmeter tilsluttes 1TP2E3.
1R1C3 justeres til 19,6V ±200 millivolt.

MF

Sweepgenerator tilsluttes antenneindgangen og indstilles til 108 MHz.
Oscilloscop tilsluttes 1TP3B3.
Med 1R2D3, 1R3D2, 1R4C4 justeres til maksimum og symmetrisk MF kurve.

AGC

En målesender tilsluttes antenneindgangen, den indstilles på f.eks. 94 MHz og til at afgive 1 mV EMF, Δ±75 kHz.
Aktiver MANUAL on.
Modtageren indstilles på samme frekvens som målesenderen.
Oscilloscop tilsluttes 1TP3B3.
På modtageren eller målesenderen finindstilles til min. 2. harmonisk forvrængning af signalet som vist på kurven.



RIGTIGT

FORKERT

Adjust with 1L2D2, 1L3D1, 1L4C1, 1L6C2 until maximum and symmetrical IF-curve is obtained. (Repeat the procedure, if necessary).

Oscillator 108 MHz

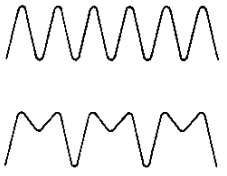
Activate MANUAL off (with no signal applied).
Activate ADVANCE until the display indicates 108 MHz.
Activate MANUAL on.
Connect a DC voltmeter to 1TP2E3.
Adjust 1R1C3 to 19.6 V ±200 mV.

IF

Connect a sweep generator to the aerial input and set it at 108 MHz.
Connect an oscilloscope to 1TP3B3.
Adjust with 1R2D3, 1R3D2, 1R4C4 until maximum and symmetrical IF-curve.

AGC

Connect a signal generator to the aerial input and set it at, e.g. 94 MHz and to yield 1 mV EMF, ±75 kHz.
Activate MANUAL on.
Set the receiver to the same frequency as the signal generator.
Connect an oscilloscope to 1TP3B3.
Make fine adjustments on the receiver or the generator to min. 2nd harmonic of the signal, as shown on the curve.



CORRECT

INCORRECT

DC voltmeter tilsluttes 1TP8B2.
Med 1R50B2 justeres indtil der måles mellem 3 og 4 volt i 1TP8.

Detektor

For at der kan foretages en korrekt justering af detektoren, skal der bl.a. anvendes et forvrængningsmeter som beskrevet i punkt 1.
Hvis et forvrængningsmeter ikke er tilgængeligt, kan der foretages en tilnærmet justering som beskrevet i punkt 2.

1. Aktiver MANUAL on.
   Modtageren indstilles på f.eks. 94 MHz.
   En kombineret målesender og sweepgenerator tilsluttes antenneindgangen, og indstilles til at afgive 1 mV EMF, Δ±75 kHz.
   Målesenderens frekvens indstilles til 94 MHz, og til min. 2. harmonisk af signalet (se skitse).

Connect a DC voltmeter to 1TP8B2.
Adjust with 1R50B2 until a reading between 3 and 4 V is obtained in 1TP8.

Detector

To enable a correct adjustment of the detector, a distortion meter is needed, among other instruments, as mentioned in point 1.
If a distortion meter is not available, an approximated adjustment can be made, as described in point 2.

1. Activate MANUAL on.
   Set the receiver at, e.g. 94 MHz.
   Connect a combination signal generator and a sweep generator to the aerial input and set it to yield i mV EMF, ±75 kHz.
   Set the signal generator frequency at 94 MHz and for min. 2nd harmonic of the signal (see diagram).


RIGTIG


FORKERT

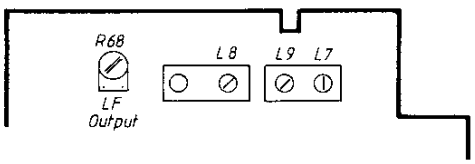
Et forvrængningsmeter tilsluttes højttalerudgangen.
Et DC voltmeter tilsluttes 1TP4E3.
Med 1L7A2 justers, indtil der måles minimum forvrængning.
Derefter justeres med 1L9A2, indtil der måles 0V i 1TP4.
Gentag beggge justeringer, indtil de er iorden.

2. Justeringen foretages ved hjælp af »S-kurven«, men der vil være usikkerhed for, hvorvidt modtageren overholder sine forvrængningsdata.
Aktiver MANUAL on.
Modtageren indstilles på f.eks. 94 MHz.
En kombineret målesender og sweepgenerator tilsluttes antenneindgangene, og indstilles til at afgive 1 mV EMF, Δ±75 kHz.
Målesenderens frekvens indstilles til 94 MHz, og til min. 2. harmonisk af signalet (se skitse).


RIGTIG


FORKERT

Generatoren indstilles til sweep.
Et oscilloscop tilsluttes 1TP7D4 og et DC voltmeter tilsluttes 1TP4E3.
Med 1L7A2 og 1L9A2 justeres til maksimum og symmetrisk S kurve.
Derefter justeres 1L9 indtil der måles 0V i 1TP4.



FM-LF output

En målesender tilsluttes antenneindgangen, der indstilles på f.eks. 94 MHz og til at afgive 1 mV EMF, Δ±75 kHz.
Aktiver MANUAL on.

CORRECT

INCORRECT

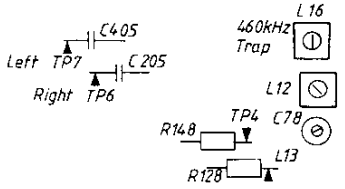
Connect a distortion meter to the loudspeaker output.
Connect a DC voltmeter to 1TP4E3.
Adjust with 1L7A2 until min. distortion is obtained.
Then adjust with 1L9A2 until a reading of 0 V is obtained in 1TP4.
Repeat both adjustments until they are OK.

2. Make the adjustment by means of the »S-curve«, but it will be uncertain whether the receiver adheres to its distortion data.
Activate MANUAL on.
Set the receiver at, e.g. 94 MHz.
Connect a combination signal generator and a sweep generator to the aerial input and set it to yield 1 mV EMF, Δ±75 kHz.
Set the signal generator frequency at 94 MHz and for min. 2nd harmonic of the signal (see diagram).

CORRECT

INCORRECT

Set the generator to sweep.
Connect an oscilloscope to 1TP7D4 and connect a DC voltmeter to 1TP4E3.
Adjust with 1L7A2 and 1L9A2 until maximum and symmetrical S-curve has been obtained. Then adjust with 1L9 until a reading of 0 V is obtained in 1TP4.



FM-AF Output

Connect a signal generator to the aerial input and set it at e.g. 94 MHz and to yield 1 mV EMF, Δ±75 kHz.
Activate MANUAL on.

Modtageren indstilles på samme frekvens som målesenderen og stilling MONO.
AC voltmeter tilsluttes 1TP7D4.
1R68A3 justeres indtil der måles 650-750 millivolt i 1TP7.

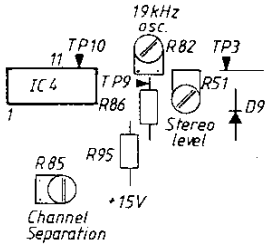
Åbning af stereodekoder

En målesender tilsluttes antenneindgangen, den indstilles på f.eks. 94 MHz og til at afgive 25µV EMF, Δ±75 kHz.
Aktiver MANUAL on.
Modtageren indtilles på samme frekvens som målesenderen.

Set the receiver to the same frequency as the signal generator and in mode MONO.
Connect an AC voltmeter to 1TP7D4.
Adjust 1R68A3 until a reading of 650-750 mV is obtained in TP7.

Opening of Stereo Decoder

Connect a signal generator to the aerial input and set it at e.g. 94 MHz and to yield 25 µV Δ±75 kHz.
Activate MANUAL on.
Tune the receiver to the same frequency as that of the signal generator.



Et DC voltmeter tilsluttes 1TP9B4.
Med potentiometeret 1R51B3 justeres, indtil der måles 0,6V.

Stereodekoder
Oscillator

For at denne justering kan foretages korrekt, skal der anvendes en frekvenstæller eller Bang & Olufsens voltmeter RV11 og frekvens probe.
PF5 som beskrevet i punkt 1. Hvis omtalte instrumenter ikke er tilgængeligt, kan der foretages en tilnærmet justering som beskrevet i punkt 2.

1. Lad en 220 kohms modstand fra basis af 1TR7 (1TP9B4) til +15VC4.
   Indstil modtageren på en mono station.
   En frekvenstæller (eller RV11/PF5) tilsluttes 1TP10B4.
   Med potentiometeret 1R82B4 justeres, indtil der måles 19 kHz ±50 Hz.
   Efter endt justering fjernes den påloddede modstand.

2. Lod en 220 kohms modstand fra basis af 1TR7 (1TP9B4 til +15VC4.
   Indstil modtageren på en stereo station.
   Potentiometeret 1R82B4 drejes imod uret (set fra komponentsiden), indtil stereovirkningen lige netop ophører. Derefter drejes 1R82 med uret, indtil stereovirkningen lige netop ophører. Indstil nu 1R82 midt imellem de to stillinger, og der er opnået en tilnærmelsesvis korrekt justering.

Connect a DC voltmeter to 1TP9B4.
Adjust with the potentiometer 1R51B3 until a reading of 0.6 V is obtained.

Stereo Decoder
Oscillator

In order to make this adjustment correctly a frequency counter or Bang & Olufsen's voltmeter RV11 and frequency probe FP5 must be used, as described in point 1. If these instruments are not available, an approximated adjustment can be made, as described in point 2.

1. Solder a 220 kohm resistor from the base of 1TR7 (1TP9B4) to +15 VC4.
   Tune the receiver to a mono transmitting station.
   Connect a frequency counter (or RV11/PF5) to 1TP10B4.
   Adjust with the potentiometer 1R82B4 until a reading of 19 kHz ±50 Hz is obtained.
   Remove the soldered-on resistor when the adjustment is completed.

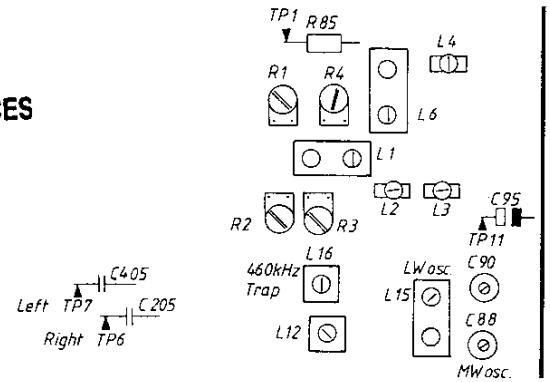
2. Solder a 220 kohm resistor from the base of 1TR7 (1TP9B4) to +15 VC4.
   Tune the receiver to a stereo transmitting station.
   Turn the potentiometer 1R82B4 anti-clockwise (as seen from the component side) until the stereo effect just ceases. Now turn 1R82 clockwise until the stereo effect just ceases. Next, adjust 1R82 centrally between the two positions, and an approximately correct adjustment has been obtained.

Efter endt justering fjernes den påloddede modstand.

Remove the soldered-on resistor when the adjustment is completed.

Kanalseparation

Channel Separation



En stereokoder (Encoder) tilsluttes antenneindgangen.
Wattmeter tilsluttes højttalerudgangen eller AC voltmeter tilsluttes 1TP6D4 (1TP7D4).
Med potentiometeret 1R85C5 justeres, indtil der opnås minimum signal i moduleret kanal.

Connect a stereo encoder to the aerial input.
Connect a wattmeter to the loudspeaker output or an AC voltmeter to 1TP6D4 (1TP7D4).
Adjust with the potentiometer 1R85C5 until minimum signal is obtained in the unmodulated channel.

Locked FM

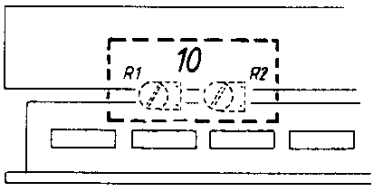
En målesender tilsluttes antenneindgangen, den indstilles på f.eks. 94 MHz og til at afgive 10µV EMF, Δ±75 kHz.

Modtageren indstilles på samme frekvens som målesenderen og sættes i stilling MANUAL off. Potentiometeret 10R1 drejes helt mod venstre, og derefter mod højre indtil LOCKED indikatoren netop tænder.

Locked FM

Connect a signal generator to the aerial input and set it at e.g. 94 MHz and to yield 10 µV EMF, Δ±75 kHz.

Tune the receiver to the same frequency as the signal generator and set it in mode MANUAL off. Turn the potentiometer 10R1 all the way anti-clockwise and then clockwise until the LOCKED indicator just starts glowing.



NB: 10R1 er tilgængelig fra fronten af apparatet og kan derfor let omjusteres, hvis lokale modtagerforhold eller kundeønsker nødvendiggør dette.

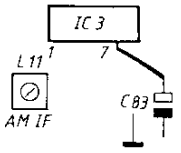
NOTE: 10R1 is accessible from the front of the receiver and, consequently, it is easily re-adjustable in case local reception conditions or customer wishes should necessitate that.

AM

NB! Der **må ikke** justeres i MW oscillatorspolen 1L14.

AM

NOTE! **Do not** adjust in the MW oscillator coil 1L14.

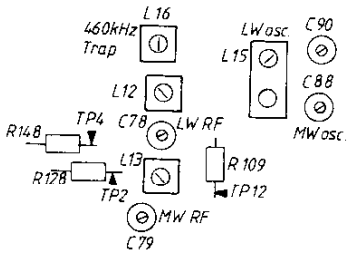


For at undgå indvirkning fra AGC under AM justeringer, anbefales det at kortslutte ben 7 på 1IC3 til stel.

To avoid interference from AGC during AM adjustment it is recommended to short-circuit pin 7 on 1IC3 to chassis.

MW oscillator

MW oscillator



Step til MW (uden signal tilført).
Aktiver MANUAL off.
Aktiver ADVANCE indtil displayet viser 1610 kHz.
LOCKED indikatoren skal være slukket.
DC voltmeter tilsluttes 1TP2E3.
1C88E8 justeres til 25V ±300 mV.

Step to MW (with no signal applied).
Activate MANUAL off.
Activate ADVANCE until the display indicates 1610 kHz.
The LOCKED indicator must be off.
Connect a DC voltmeter to 1TP2E3.
Adjust 1C88E3 until a reading of 25 V ±300 mV is obtained.

Aktiver RETURN indtil displayet viser 520 kHz.
Spændingen i 1TP2 aflæses og noteres (spændingen skal ligge mellem 1,5 V og 2,5V).

Activate RETURN until the display indicates 520 kHz.
Take a reading and make a note of the voltage in 1TP2 (the voltage should be somewhere between 1.5 V and 2.5 V).

LW oscillator

Step til LW (uden signal tilført).
Aktiver MANUAL off.
Aktiver RETURN indtil displayet viser 150 kHz.
1L15D1 justeres indtil spændingen i 1TP2, er den samme som spændingen noteret ved MW oscillator justeringen.

LW oscillator

Step to LW (with no signal applied).
Activate MANUAL off.
Activate RETURN until the display indicates 150 kHz.
Adjust 1L15D1 until the voltage in 1TP2 is identical with the voltage noted down during the MW oscillator adjustment.

Aktiver ADVANCE indtil displayet viser 350 kHz.
1C90D1 justeres til 25V ±300 mV.

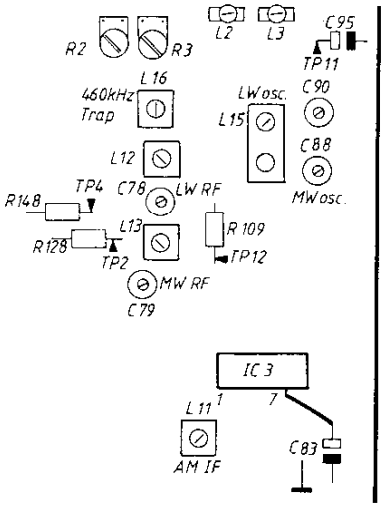
Activate ADVANCE until the display indicates 350 kHz.
Adjust 1C90D1 until a reading of 25 V ±300 mV is obtained.

Aktiver RETURN indtil displayet viser 150 kHz.
Kontroller at spændingen i 1TP2 er den samme som den noterede spænding. Er dette ikke tilfældet, gentages proceduren til den er korrekt.

Activate RETURN until the display indicates 150 kHz.
Check that the voltage in 1TP2 is identical with the voltage noted down. If this is not the case, repeat the procedure until it is correct.

AM MF og AFT

AM IF and AFT

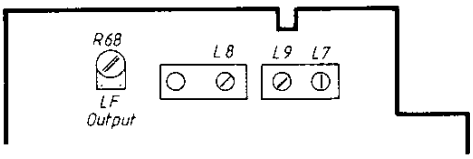


En sweepgenerator tilsluttes antenneindgangen, og indstilles til centerfrekvens 460 kHz Δ10 kHz.
1TP12E2 (basis på 1TR22) kortsluttes til stel.
1L16D2 forstemmes ved at dreje kernen ud.
Step til MW.
Aktiver MANUAL on.
Aktiver ADVANCE indtil displayet viser 1500 kHz.
Oscilloscop tilsluttes 1TP11D1.
Med 1L11F2 justeres til maksimum og symmetrisk MF kurve.

Connect a sweep generator to the aerial input and adjust it to centre frequency 460 kHz Δ10 kHz.
Short-circuit 1TP12E2 (base on 1TR22) to chassis.
Detune 1L16D2 by turning out the core.
Step to MW.
Activate MANUAL on.
Activate ADVANCE until the display indicates 1500 kHz.
Connect an oscilloscope to 1TP11D1.
Adjust with 1L11F2 to maximum and symmetrical IF-curve.

AFT

AFT



Sweepgeneratorens output niveau stilles til ca. 1 mV, og generatorens frekvens finreguleres således at den står nøjagtigt på modtagerens mellemfrekvens.
DC voltmeter tilsluttes 1TP4E3.
Med 1L8A2 justeres til 0V i 1TP4.
1L16D2 justeres til minimum MF kurve.
Kortslutningen i 1TP12 fjernes.

Set the sweep generator output level at approx. 1 mV and fine-adjust the frequency of the generator until it is exactly at the intermediate frequency of the receiver.
Connect a DC voltmeter to 1TP4E3.
Adjust with 1L8A2 until a reading of 0 V is obtained in 1TP4.
Adjust 1L16D2 until minimum IF-curve is obtained.
Remove the short-circuit in 1TP12.

Antennekredse MW

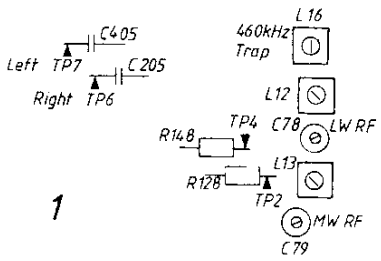
En målesender tilsluttes antenneindgangen, og indstilles til 1500 kHz, modulation 30% 400 Hz eller 1 kHz.

Wattmeter tilsluttes højttalerudgangen eller AC voltmeter tilsluttes 1TP6D4 (1TP7D4).
Aktiver MANUAL on.

Aerial circuits MW

Connect a signal generator to the aerial input and set it at 1500 kHz, modulation 30% 400 Hz or 1 kHz.

Connect a wattmeter to the loudspeaker output or an AC voltmeter ot 1TP6D4 (1TP7D4).
Activate MANUAL on.



Modtageren indstilles til displayet viser 1500 kHz.
1C79F2 justeres til max. output.
Målesender og modtager indstilles til 575 kHz.
1L13E2 justeres til max. output.
Proceduren gentages, indtil den er iorden.

Adjust the receiver until the display indicates 1500 kHz.
Adjust 1C79F2 until max. output is obtained.
Set signal generator and receiver at 575 kHz.
Adjust 1L13E2 until max. output is obtained.
Repeat the procedure until everything is OK.

Antennekredse LW

Målesender og modtager indstilles 330 kHz.
1C78E2 justeres til max. output.
Målesender og modtager indstilles til 160 kHz.
1L12F2 justeres til max. output.
Proceduren gentages, indtil den er iorden.

Aerial Circuits MW

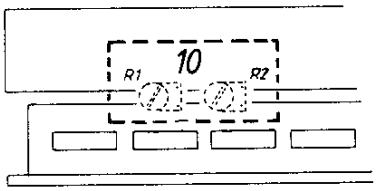
Set signal generator and receiver at 330 kHz.
Adjust 1C78E2 until max. output is obtained.
Set signal generator and receiver at 160 kHz. Adjust 1L12F2 until max. output is obtained.
Repeat the procedure until everything is OK.

Locked AM

En målesender tilsluttes antenneindgangen, og indstilles til 575 kHz, modulation 30% 400 Hz eller 1 kHz, 50 µV.
Modtageren indstilles på 575 kHz og i stilling MANUAL off.
Potentiometeret 10R2 drejes helt mod venstre, og derefter mod højre indtil LOCKED indikatoren netop tænder.

Locked AM

Connect a signal generator to the aerial input and set it at 575 kHz, modulation 30% 400 Hz or 1 kHz, 50 µV.
Set the receiver at 575 kHz and in mode MANUAL off.
Turn the potentiometer 10R2 all the way to the left and then to the right until the LOCKED indicator just starts glowing.



NB: 10R2 er tilgængelig fra fronten af apparatet og kan derfor let omjusteres, hvis lokale modtagerforhold eller kundeønsker nødvendiggør dette.

NOTE! 10R2 is accessible form the front of the receiver and, consequently, is easily re-adjustable if local receiving conditions or customer wishes should so neccessitate.

IR modtager
Beomaster

IR Receiver
Beomaster

Oscilloscop tilsluttes emitter på 9IC2.
MASTER CONTROL PANELET placeres indirekte mod sensor.
Aktiver volume ned på MASTER CONTROL PANELET.
9L1 justeres til max.

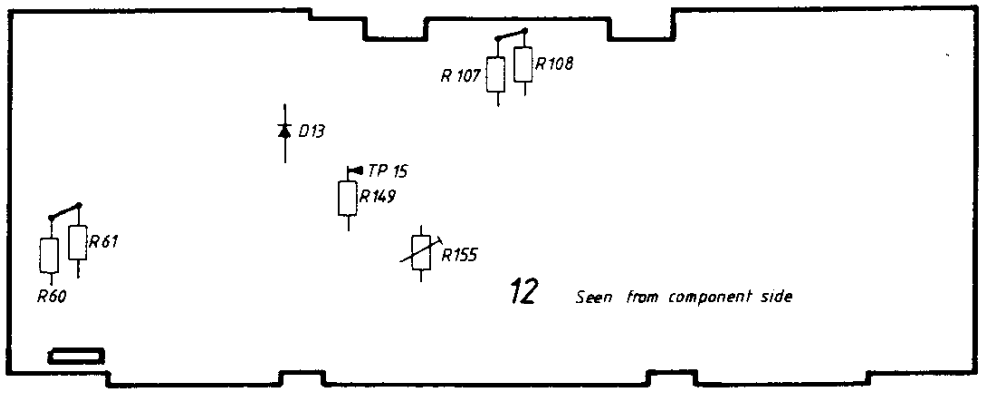
Connect an oscilloscope to the emitter of 9IC2.
Place the MASTER CONTROL PANEL indirectly towards the sensor.
Activate Volume Down on the MASTER CONTROL PANEL.
Adjust 9L1 to max.

MASTER CONTROL PANEL

Forsyningsspænding

MASTER CONTROL PANEL

Supply Voltage

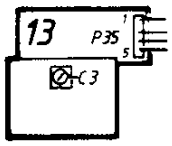


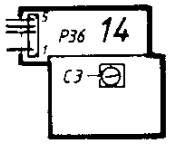
12TP15 kortsluttes til stel.
Med 12R155 justeres til der måles 4,75 ±0,1 V på kollektoren af 12TR52.

Short-circuit 12TP15 to chassis.
Adjust with 12R155 until a reading of 4.75 ±0.1 V on the ecollector of 12TR52 is obtained.

Remote modtagere

Remote transceivers



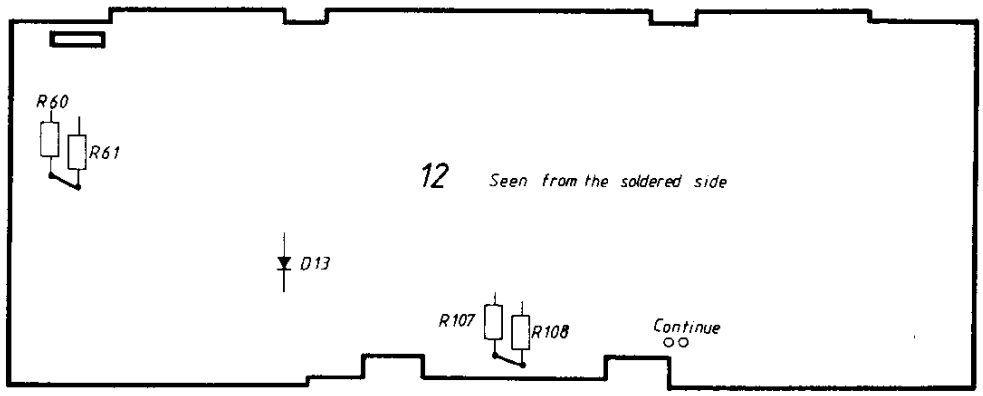


Ved justering af remote transceiverne, modul 13 og 14, benyttes den ene transceiver til at sende til den anden.
Den transceiver, som skal justeres, skal afmonteres og placeres ca. 40 cm foran control panelet for at undgå overstyring.
Justeringen af de to transceivere er ens, og beskrivelsen omfatter derfor kun modul 13.
Der loddes en modstand på 47 kohm fra P35-1 til P35-4.

When adjusting the remote transceivers, modules 13 and 14, use one transceiver for transmitting to the other.
Dismount the transceiver to be adjusted and place it approx. 40 cm in front of the control panel in order to avoid overriding.
Since the adjustment of the two transceivers is identical, this description only deals with module 13.
Solder a resistor of 47 kohm from P35-1 to P35-4.

Modul 13 tilføres spænding ved at lodde en ledning fra P35-1 til + forsyningen på control panelet eller anden ekstern strømforsyning (4-10V). Stelledning loddes på P35-3.
Oscilloscop tilsluttes P35-4.

Apply to module 13 a voltage by soldering a lead from P35-1 to the +supply on the control panel or another external power supply (4-10 V). Solder chassis lead on to P35-3.
Connect an oscilloscope to P35-4.



Printpunkterne mærket CONTINUE kortsluttes (på komponentsiden er CONTINUE punkterne = fællespunktet for 12R107 og 12R108 → katoden af 12D13.
13C3 justeres til maksimum.

Short-circuit the PCB points marked CONTINUE (on the component side the CONTINUE points = the node of 12R107 and 12R108 → the cathode of 12D13.
Adjust 13C3 to maximum.

Bang&Olufsen

TECHNICAL SPECIFICATIONS

Amplifier section	Power output RMS DIN/IEC	2 x 60 watts/8 ohms
	Power output music	2 x 85 watts/8 ohms
	Harmonic distortion DIN/IEC	<0.02%
	Power output 20-20,000 Hz IHF	2 x 55 watts/8 ohms
	Total harmonic distortion IHF	<0.09%
	Following measurements:	IHF A-202
	Dynamic headroom	1 dB/8 ohms, 2 dB/4 ohms
	IHF intermodulation	<0.15%
Response vs frequency	Phono	20-20,000 Hz ±1.5 dB
	Tape	20-20,000 Hz ±1.5 dB
	Wideband damping factor	100
Input sensitivity/impedance	Phono	0.3 mV-0.6 mV/47 kohms
	Tape	23 mV/220 kohms
	Line	450 mV/10 kohms
	Overload level:	
	Phono	55 mV-110 mV
	Tape	6 V
Signal-to-noise ratio	Phono A-weighted	>74 dB
	Tape A-weighted	>76 dB
	Channel separation	45 dB
Output	Tape	400 mV/1 kohms
	Line	450 mV/1 kohms
	Headphones	Max. 10 V/470 ohms
	Bass control at 40 Hz	±12 dB
	Treble control at 12.500 Hz	±11 dB
	FM tuner section	
	Standard for measurements (RF)	IHF T-200
	FM range	87.5-108 MHz
	FM aerial impedance	75 and 240 ohms
	Usable sensitivity mono	15 dBf-1.5 µV/75 ohms
	Usable sensitivity stereo	17 dBf-2 µV/75 ohms
	50 dB quiting sensitivity mono	21 dBf-3.2 µV/75 ohms
	50 dB quiting sensitivity stereo	42 dBf-35 µV/75 ohms
	Signal-to-noise ratio at 65 dBf mono	70 dB
	Signal-to-noise ratio at 65 dBf stereo	67 dB
	Frequency response	20-15,000 Hz ±1.5 dB
	Distortion at 65 dBf mono	0.3%
	Distortion at 65 dBf stereo	0.35%
	Intermodulation distortion mono	0.05%
	Intermodulation distortion stereo	0.25%
	Capture ratio	1.8 dB
	Adjacent channel selectivity	6 dB
	Alternate channel selectivity	56 dB
	Spurious response	96 dB
	Image response ratio	75 dB
	IF response ratio	110 dB
	AM suppression	55 dB
	Stereo channel separation	
	100-10,000 Hz	40 dB
	Subcarrier product rejection	64 dB
AM tuner section	LW range	150-350 kHz
	MW range	520-1610 kHz
	LW sensitivity 20 dB S/N ratio	140 µV
	MW sensitivity 20 dB S/N ratio	100 µV

Other data

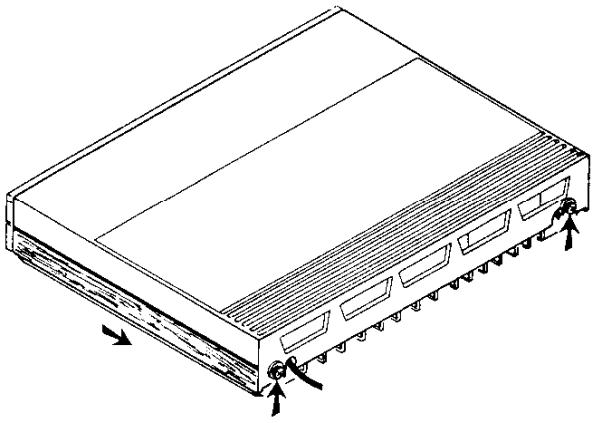
Power supply	220 volts
Power frequency	50-60 Hz
Power consumption	15-225 watts
Dimensions W x H x D	42 x 7.5 x 32.5 cm
Weight	8.5 kg

Subject to change without notice

Bang&Olufsen

ADSKILLELSE
Kabinet

DISMANTLING
Cabinet

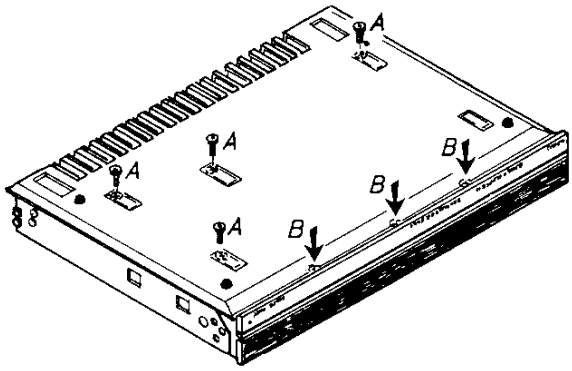


De to skruer i bagkanten løsnes og løftes op. Kabinettet presses ca.1 cm bagud og kan nu løftes af.

Loosen the two screws at the rear edge and press them upwards while simultaneously pushing the cabinet approx. 1 cm rearwards. It can bow be removed.

Bund

Bottom



De fire skruer (A) fjernes og de 3 skruer (B) løsnes. Bunden kan nu løftes af.

Remove the four screws (A) and loosen the 3 screws (B).
The bottom can now be removed.

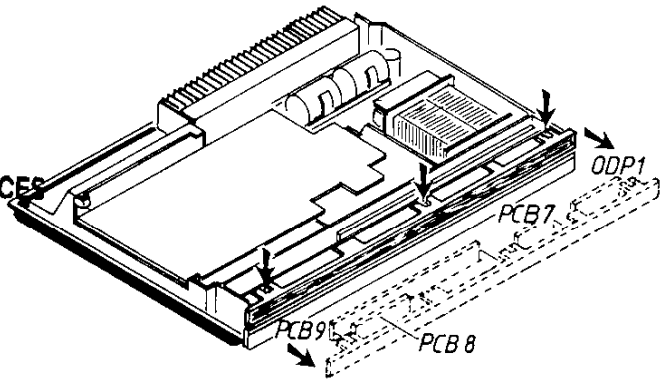
Bemærk ved kabinetmontage

For at opnå korrekt montering af kabinettet efter at bundpladen har været afmonteret, iagttages følgende monteringsvejledning.
Top (pos. nr. 0042) og bund (pos. nr. 0035) spændes sammen med skruerne (A og B). Apparatet stilles på højkant på en jævn bordplade med fronten nedad. (Pas på ridser). (Bundskruerne skal være løsnet).
Når toppens kant rører bordpladen tilspændes bundskruerne, hvorefter kabinettet sidder korrekt placeret.

Note when assembling cabinet

In order to obtain correct mounting of the cabinet after dismantling the bottom plate please note the following mounting instruction:
Assemble top (pos. no. 0042) and bottom (pos. no. 0035) by means of the screws (A and B). Place the product on its edge on an even table, front pointing downwards (be careful not to scratch).
(Screws at the bottom must be loosened).
When the top edge touches the table the bottom screws are tightened, – the cabinet is now correctly mounted!

Frontpanel

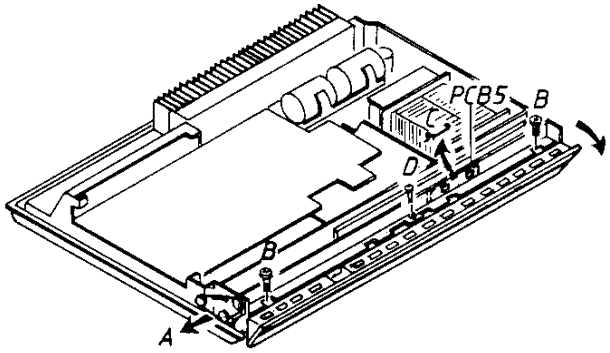


De tre viste skruer (ved pilene) løsnes.
Frontpanelet kan nu trækkes ud.
PCB9 kan afmonteres og PCB7, PCB8 og DP1 er nu tilgængelige.

Front panel

Loosen the three screws shown (at the arrows).
The front panel can now be pulled out. PCB9 can be removed and PCB7, PCB8 and DP1 are now accessible.

Betjeningspanel

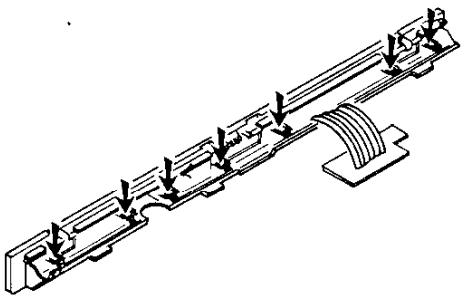


Snoretræk (A) afmonteres.
De to skruer (B) fjernes.
Skruen (D) fjernes.
Den viste printholder (C) ved båndkabel forbindelsen fjernes og betjeningspanelet kan nu afmonteres.

Control panel

Dismantle cord and pulley (A).
Remove the two screws (B).
Remove the screw (D).
Remove the PCB retainer (C) at the band cable connection. The control panel can now be removed.

Betjeningspanel/Frontpanel

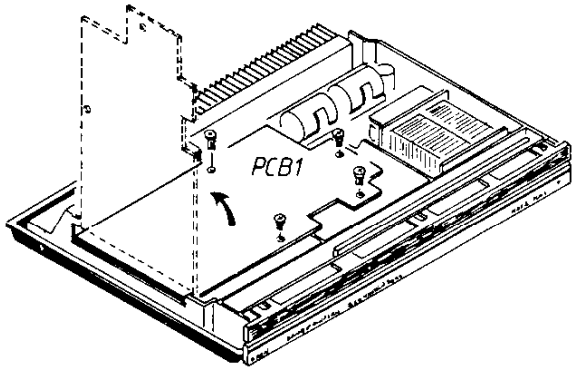


Låsetappene (ved pilene) frigøres med en skruetrækker eller lignende.
Betjeningspanelet kan nu adskilles fra frontpanel.

Control panel/front panel

Loosen the retainer pins (at the arrows) with e.g. a screw driver.
The control panel can now be separated from the front panel.

PCB1

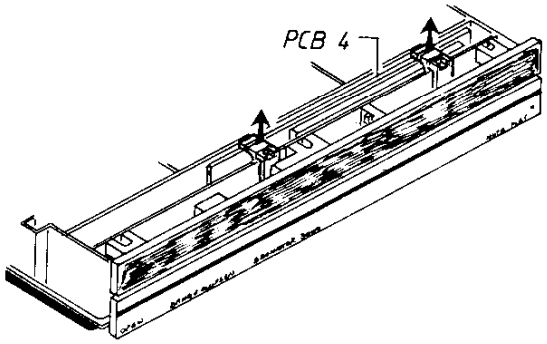


De fire skruer fjernes.
PCB1 kan nu anbringes i service stilling som vist.

PCB1

Remove the four screws.
PCB1 can now be placed in service position as shown.

PCB4

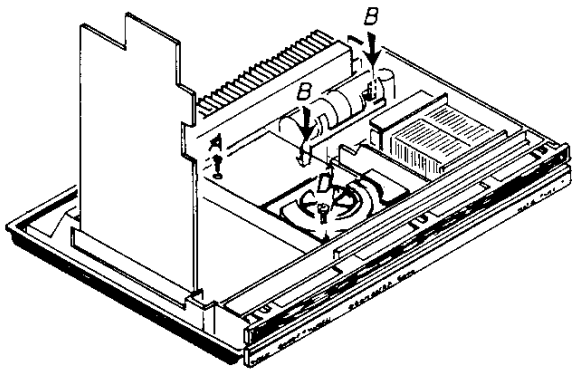


De to plastholdere (ved pilene) tages af (ved at trække i den).
PCB4 kan nu løftes op.

PCB4

Pull out the two plastic retainers.
PCB4 can now be lifted out.

Hus og blæser



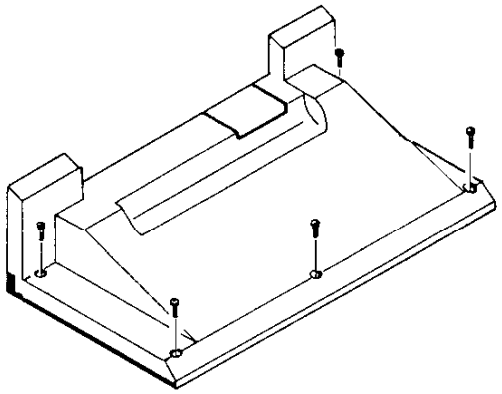
Fjern skruen (A).
Frigør de to plasttappe (B). Huset kan nu afmonteres.
Skruen D fjernes.
Blæseren kan nu løftes op.

Housing and fan

Remove the screw (A).
Loosen the two plastic pins (B). The housing can now be dismantled.
Remove the screw (D).
The fan can now be lifted out.

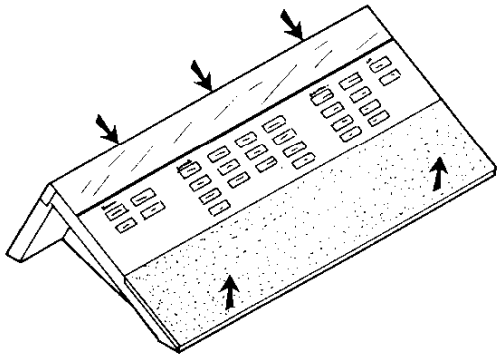
Master Control

Master Control



De 5 viste skruer fjernes.

Remove the 5 screws shown.



Betjeningspanel løftes lidt i forkanten og der presses de 3 viste steder i bagkanten (hørebart klik).
Panelet kan nu løftes af.

Lift up control panel slightly in the front edge, and push at the rear edge in the three points shown (a click can be heard).
The panel can now be removed.

SERVICETIPS OG MODIFIKATIONER

Reparation i frekvenstæller og afstemningssystemet

Ved reparation i frekvenstæller og afstemningssystemet kan det være vanskeligt af lokalisere en fejl. Følgende servicetips kan benyttes til at »åbne sløjfen« mellem microcomputeren og afstemningssystemet.

1. **Frekvenstæller:**
   Anoden af 1D9C3 korstluttes til stel.

   FM

   Afmonter hunstikket på 1P4B2 og tilslut en målesender til hunstikket. Målesenderen indstilles til FM og en frekvens på f.eks. 100,7 MHz >10 mV.
   Modtageren indstilles til FM, MANUAL off.
   Modtagerens frekvensdisplay skal nu vise en frekvens der er 10,7 MHz under målesenderens frekvens, i dette tilfælde 90 MHz.

   AM

   Afmonter hunstikket på 1P2F1 og tilslut en målesender til hunstikket. Målesenderen indstilles til MW og en frekvens på f.eks. 1,16 MHz >10 mV.
   Modtageren indstilles til MW, MANUAL off.
   Modtagerens frekvensdisplay skal nu vise en frekvens der er 460 kHz under målesenderens frekvens, i dette tilfælde 700 kHz.

2. **Afstemningsspænding:**
   Afmonter hunstikket 1P4B2 og tilslut en målesender til hunstikket.
   Oscilloscop tilsluttes ben 7 på 1IC6F4.
   DC voltmeter tilsluttes kollektor på 1TR14F3.
   Målesenderen indstilles til FM og en frekvens på f.eks. 100,7 MHz >10 mV.
   Modtageren indstilles på 90 MHz MANUAL on (LOCKED lampen skal være slukket).
   Med målesenderens frekvenskontrol reguleres frekvensen langsomt op. Microcomputeren vil opfatte dette som oscillatordrift mod en højere frekvens, og det vil resultere i korrektionspulser fra microcomputeren. Dette kan ses som positive pulser på oscilloscopet, og faldende spænding på voltmeteret. Pulsernes bredde er udtryk for frekvensafvigelsens størrelse.
   (Regulering mod lavere frekvens = negative pulser og stigende spænding på voltmeteret).

3. **Oscillatorer og HF:**
   Anoden af 1D9C3 kortsluttes til stel.
   1R128E3 løftes (den side af 1R128 som vender mod 1TR14 loddes fra).
   En variabel DC strømforsyning tilsluttes med + til den fraloddede side af 1R128.

SERVICE TIPS AND MODIFICATIONS

Repairs in the Frequency Counter and the Tuning system

In repair situations involving the frequency counter and the tuning system it may be difficult to localize a fault. The following service tips can be used for »opening the loop« between the microcomputer and the tuning system.

1. **Frequency counter:**
   Short-circuit the anode of 1D9C3 to the chassis.

   FM

   Remove the female socket on 1P4B2 and connect a signal generator to the female socket. Set the signal generator in FM mode and at a frequency of e.g. 100.7 MHz >10 mV.
   Set the receiver in FM, MANUAL off mode.
   The frequency display of the receiver shall now indicate a frequency which is 10.7 MHz below the frequency of the signal generator, in this case 90 MHz.

   AM

   Remove the female socket on 1P2F1 and connect a signal generator to the female socket. Set the signal generator in MW mode and at a frequency of e.g. 1.16 MHz >10 mV.
   Set the receiver in MW, MANUAL off mode.
   The frequency display of the receiver shall now indicate a frequency below the frequency of the signal generator, in this case 700 kHz.

2. **Tuning voltage:**
   Remove the female socket 1P4B2 and connect a signal generator to the female socket.
   Connect an oscilloscope to pin 7 on 1IC6F4.
   Connect a DC voltmeter to the collector on 1TR14F3.
   Set the generator in FM mode and at a frequency of e.g. 100.7 MHz >10 mV.
   Set the receiver at 90 MHz MANUAl on.
   (The LOCKED lamp shall be off).
   Regulate the frequency slowly upwards, by means of the frequency control of the signal generator. The microcomputer will comprehend this as oscillator drifting towards a higher frequency and this will result in corrective pulses from the microcomputer. This can be seen as positive pulses on the oscilloscope and declining voltage on the voltmeter. The extent of the frequency deviation is expressed by the pulse width.
   (Regulating towards lower frequency = negative pulses and rising voltage on the voltmeter).

3. **Oscillators and RF:**
   Short-circuit the anode of 1D9C3 to the chassis.
   Lift 1R128E3 (Unsolder the section of 1R128 which faces 1TR14).
   Connect a variable DC power supply with + to the unsoldered side of 1R128.

Når DC spændigen på strømforsyningen varieres, skal modtagerens frekvensdisplay følge variationen. Variationen er på FM fra ca. 2,5 V til 20 V, og på AM fra ca. 2 V til 25 V.
Ved at tilslutte en målesender/sweepgenerator til antenneindgangen, indstille den til 87,5 MHz og indstille DC strømforsyningen på ca. 3 V, kan HF funktionerne kontrolleres.

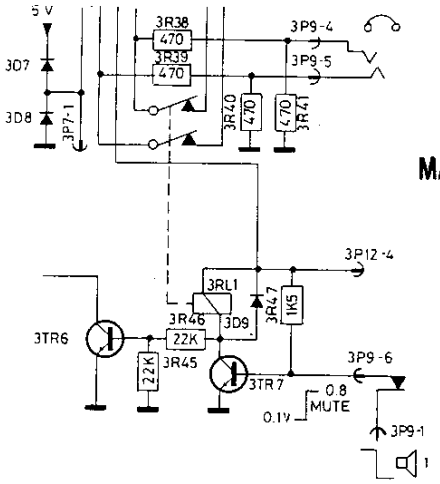
When the DC voltage on the power supply is varied, the frequency display of the receiver shall follow the variation. On FM the variation is from approx. 2.5 V to 20 V, and on AM from approx. 2 V to 25 V.
The HF functions are controllable by connecting a signal generator/sweep generator to the aerial input, setting it at 87.5 MHz and setting the DC power supply at approx. 3 V.

Hovedtelefonstik

Efter produktion af ca. 1500 apparater ændres hovedtelefonstikket fra en brydekontakt til en sluttekontakt. Diagrammet i afsnit 1 er gældende for hovedtelefonstik med sluttekontakt. Nedenstående diagramudsnit viser hovedtelefonstik med brydekontakt.

Headphone Sockets

After the production of approx. 1500 sets the headphone socket has been modified from a break switch to a make switch. The diagram in section 1 is applicable to headphone sockets with make switch. The below diagram section shows a headphone socket with break switch.

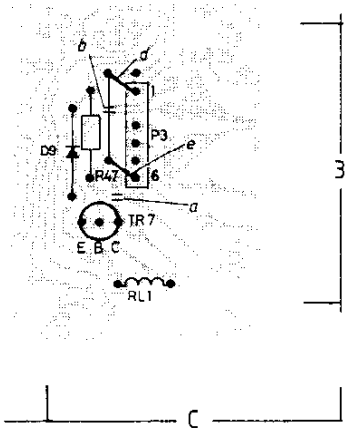


Der lagerføres kun hovedtelefonstik med sluttekontakt, samt modul 3 beregnet for hovedtelefon med sluttekontakt.
Ved udskiftning af modul 3 eller hovedtelefonstik i apparater med brydekontakt skal følgende foretages:

1. **Udskiftning af modul 3:**
   Hovedtelefonstikket udskiftes sammen med modul 3 eller modul 3 ændres til nedenstående.

Only headphone socket with make switch are stocked together with module 3 intended for headphone with make switch.
When replacing module 3 or headphone socket in sets with break sockets, the following procedure shall be followed:

1. **Replacement of module 3:**
   Replace the headphone socket together with module 3, or modify module 3 according to the diagram below.

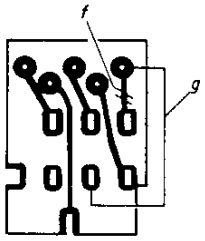


Printed afbrydes i punktet (a).
Kortslutning (b) afmonteres.
Kortslutningerne (d) og (e) monteres.

2. **Udskiftning af hovedtelefonstik:**

Interrupt the PCB at the point (a).
Remove short-circuit (b).
Fit the short-circuits (d) and (e).

2. **Replacement of headphone socket:**



Printet afbrydes i punktet (f).
Kortslutning (g) monteres.

Interrupt the PCB at the point (f).
Fit the short-circuit (g).

Afmontering af stik
Ved afmontering af stik i apparatet må der ikke trækkes i ledningerne til stikket.

Dismantling of socket
When removing socket from the set do not pull the wires for the socket.

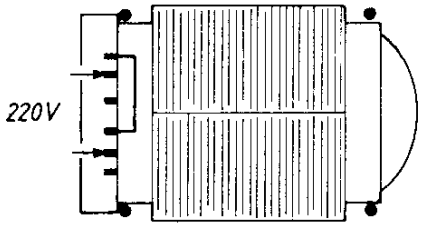
Testprogram Microcomputer
Microcomputeren har indbygget et selvtest program.
Aktivering af testprogram:
Aktiver SELECT derefter TAPE 1 og MANUAL, hold alle tre knapper aktiveret samtidig. Hvis displayet viser aktuel volume efter ca. 5 sek. er microcomputeren OK.

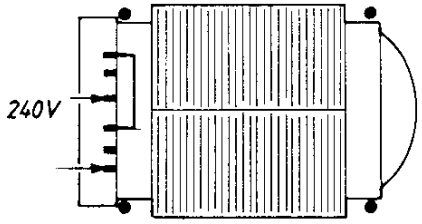
Viser display:
0 = RAM 4IC2 defekt
2 = ROM 4IC2 defekt
4 = ROM 4IC1 defekt

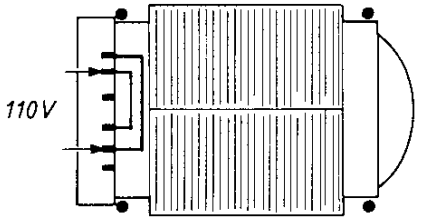
Microcomputer Test Program
The microcomputer has an integrated autotesting program.
Activation of testing program:
Activate SELECT, then TAPE 1 and MANUAL, keep all three buttons activated simultaneously. In case the display indicates actual volume after approx. 5 seconds, the microcomputer is OK.

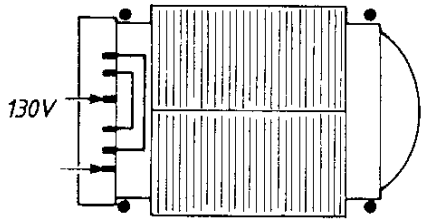
If the display shows:
0 = RAM 4IC2 is defective
2 = ROM 4IC2 is defective
4 = ROM 4IC1 is defective

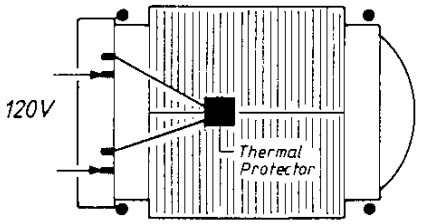
Tilslutning af nettransformer/
Connection of Mains Transformer



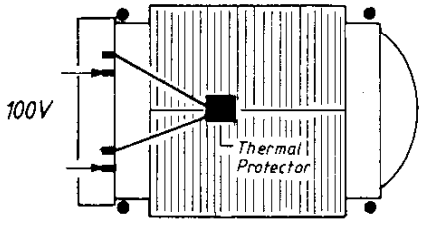








8013299 for type 2323



8013300 for type 2324.

ISOLATIONSTEST

Ethvert apparat **skal** isolationstestes efter at det har været adskilt. Testen udføres når apparatet igen er helt samlet og klar til udlevering til kunden.

Isolationstest for Beomaster 5000

Isolationstesten udføres på følgende måde:
De to stikben på netstikket kortsluttes og tilsluttes en af terminalerne på isolationstesteren. Den anden terminal fra isolationstesteren tilsluttes stelbenet i hovedtelefonstikdåsen.

OBS!
For at undgå beskadigelser på apparatet er det vigtigt, at begge terminaler fra isolationstesteren har virkelig god mekanisk kontakt.

Der drejes nu langsomt med spændingsreguleringen på isolationstesteren indtil en spænding på 1,5 - 2 kV er opnået. Her skal den holdes i 1 sekund, derefter drejes der langsomt ned for spændingen igen.

Der må ikke på noget tidspunkt under testen forekomme overslag.

INSULATION TEST

Each set **must** be insulation tested after dismantling. The test is to be performed when the set has been re-assembeld and is ready for delivery to the customer.

Insulation test for Beomaster 5000

Make the insulation test as follows: Short-circuit the two plug pins of the mains plug and connect one of the terminals of the insulation tester. Connect the other terminal of the insulation tester to the chassis pin of the headphone socket.

N.B.!
To avoid ruining the set, it is essential that both insulator test terminals are in really good mechanical contact.

Now turn slowly the voltage control of the insulation tester until a voltage of 1.5 – 2 kV is obtained. Hold is there for 1 second, then turn slowly the voltage down again.

At no point during the testing procedure any flash-overs are permissible.

AFPRØVNING AF BEOMASTER 5000

Slutafprøvning afsnit 10 skal foretages i rækkefølgen side 10-3/10-4 derefter 10-1/10-2/

Tilslut:
4 X højttalere.
Båndoptager med datalink til TAPE 1 og TAPE 2.
Båndoptager til AUX.
Grammofon med datalink til PHONO.

OPERATION	FEEDBACK	
Tast (betjening)	Bemærkninger	Display
OPEN	Betjeningspanelet vipper ud med afdæmpet hastighed	
SELECT ..... SELECT ↓ ↓ P1 ..... P9	Foretag lyttetest	P .....P ↓ ↓ P1 P9
FM-LW-MW ↓ ADVANCE (hvis LOCKED lyser gentryk ADVANCE). (Hvis STEREO lyser, tryk FM MONO og STEREO skal slukke).	Foretag lyttetest Foretag lyttetest tavs imellem stationerne	FM87.5MHz FM87.5.....108MHz (LOCKED hvis der stoppes på station) (STEREO hvis der stoppes på stereo station).
MANUAL ↓ RETURN (hold nedtrykket) ↓ RETURN FAST (hold nedtr.)		FM 108 MHz MANUAL ↓ FM 108 .... 87.5 MHz MANUAL FM 108 .... 87.5 (hurtigere skift på display).
FM-LW-MW ↓ FAST ADVANCE ↓ FM-LW-MW ↓ FAST ADVANCE ↓ STORE	Foretag lyttetest Foretag lyttetest	LW 150 kHz MANUAL ↓ LW 150 ....350 kHz MANUAL ↓ MW 520 kHz MANUAL ↓ MW 520....1610kHz MANUAL ↓ P(blinker) → MW 1610 KHz MANUAL
TAPE 1 ↓ TAPE 2 ↓ PHONO ↓ AUX	Foretag lyttetest og test af Data Link Foretag lyttetest og test af Data Link Foretag lyttetest og test af Data Link Foretag lyttetest og test af Data Link	TP1 TP2 PH AU

OPERATION	FEEDBACK	
Tast (betjening)	Bemærkninger	Display
NEUTRAL ↓ LOUDNESS	[4]Balance, Bas og Diskant stilles i neutral stilling. Foretag lyttetest	8U (blinker 1 gang) ↓ LOUDNESS 8U
Tilslut hovedtelefon	Foretag lyttetest (højttalersæt 1 afbrydes)	
▲VOLUME ▼VOLUME	Foretag lyttetest Foretag lyttetest	0:0 → 0:2...6:0 6:0 ... 0:0
MUTE	Mute og efter 2 sek. ST.BT	Decimal punkt (ST.BY)

[4]Balance, bas og diskant kan kun reguleres fra MCP.

SLUTAFPRØVNING EFTER REPARATION

Denne slutafprøvning gælder for Master Control Panel 5000 (MCP) og Beomaster 5000.

OPERATION	FEEDBACK	
Tast (betjening) MCP	**Display MCP**	**Display Beomaster 5000**
Tilslut Beomaster til lysnet (efter 1 min. uden tilslut til lysnet)		Decimal punkt (ST.BY)
P1 til P9	Set clock P1 .... P9	P1 .... P9
TAPE 1 ↓ TAPE 2 ↓ PHONO ↓ AUX·CD	TP1 ↓ TP2 ↓ PH ↓ AU	TP1 ↓ TP2 ↓ PH ↓ AU
SET CLOCK ↓ 8 (4 gange) ↓ STORE (på primær panel)	SET CLOCK SUN[1)] ↓ SET CLOCK SUN 88:88 ↓ SET CLOCK SUN 8888 derefter ?	AU ↓ AU ↓ AU
PLAY ↓ 0 (5 gange) ↓ DAY (7 gange) ↓ STORE (på sekundær panel)	PLAY SUN ↓ PLAY 0 SUN 00:00 ↓ PLAY 0 ALL→MON→TUE→WED→ THUR→FRI→SAT 0000 ↓ PLAY 0 SAT 0000	AU ↓ AU ↓ AU ↓ AU
STEP (indtil displayet viser) ↓ CLEAR (medens displayet lyser)	: → PLAY 0 SAT 00:00 ↓ mørk display	AU ↓ AU
STEP (indtil displayet viser)	NO INPUT	AU
TRACK	T	AU
PLAY NEXT ↓ P1	PLAY NEXT ↓ PLAY NEXT P1→AU	AU ↓ AU

OPERATION	FEEDBACK	
Tast (betjening) MCP	Display MCP	Display Beomaster 5000
P1 ↓ << AUX ↓ >> ↓ RETURN (hvid) ↓ ADVANCE ↓ STOP ↓ TAPE STOP ↓ RETURN (grøn) ↓ RECORD (primær panel)	P1 ↓ FM AU ↓ AU >> ↓ AU << ↓ AU >> ↓ AU << >> ↓ AU RECORDING POSSIBLE ↓ AU << RECORDING ↓ AU RECORDING	P1 ↓ FM 108→107.9 .... 87.5MHz AU ↓ AU ↓ AU ↓ AU ↓ AU ↓ AU ↓ AU
RECORD (sekundær panel)	RECORD SUN	AU
CONTROL	C	AU
▼VOLUME og ▲VOLUME ↓ ◄BALANCE og BALANCE► ↓ ▲BASS og ▼BASS ↓ ▲TREBLE og ▼TREBLE ↓ MUTING	VOL. BAL. BASS TREBLE (Volume display regulerer, lys i Bal., Bass og Treble) AU ↓ (Balance display regulerer, lys i Vol., Bass og Treble) AU ↓ (Bass display regulerer, lys i Vol., Bal. og Treble) AU ↓ (Treble display regulerer, lys i Vol., Bal. og Bass) AU ↓ (Vol. display blinker, lys i Bal., Bass og Treble) AU	0:0↓ 0:2 ....5:8↓ 6:0 ↓ AU ↓ AU ↓ AU ↓ AU
0 ↓ STATUS	0 ↓ 0 og aktuel tid fra tilslutning til lysnet	Decimal punkt ↓ Decimal punkt

1) Dag og tid indikationen er vilkårlig afhængig af hvor længe apparatet har været afbrudt fra lysnet.

Display NO DISC – NO TAPE – IM – BATTERY – NO TRANSMISSION er ikke omtalt i skemaet.

Final test section 10 is to be made in the order 10-7/10-8 thereafter 10-5/10-6

TESTING OF BEOMASTER 5000
Connect:
4 X loudspeakers.
Tape recorder with data link to TAPE 1 and TAPE 2.
Tape recorder to AUX.
Gramophone with data link to PHONO.

OPERATION	FEEDBACK	
Button (operation)	Remarks	Display
OPEN	Operating panel tips out with damped speed	
SELECT ..... SELECT ↓ ↓ P1 ..... P9	Undertake listening test	P ..... P ↓ ↓ P1 P9
FM-LW-MW ↓ ADVANCE (if LOCKED lights repress ADVANCE). (If STEREO lights, press FM MONO and STEREO must switch off).	Undertake listening test Undertake listening test (silent between stations)	FM87.5MHz FM 87.5.....108MHz (LOCKED if stopped at station (STEREO if stopped at stereo station).
MANUAL ↓ RETURN (hold down) ↓ RETURN FAST (hold down)		FM 108 MHz MANUAL ↓ FM 108....87.5MHz MANUAL (Faster shifting in display).
FM-LW-MW ↓ FAST ADVANCE ↓ FM-LW-MW ↓ FAST ADVANCE ↓ STORE	Undertake listening test Undertake listening test Undertake listening test	LW 150 kHz MANUAL ↓ LW 150 .... 350kHz MANUAL MW 520 kHz MANUAL ↓ MW 520....1610kHz MANUAL ↓ P (blinking) → MW 1610 KHz MANUAL
TAPE 1 ↓ TAPE 2 ↓ PHONO ↓ AUX	Undertake listening test and test of Data Link Undertake listening test and test of Data Link Undertake listening test and test of Data Link Undertake listening test and test of Data Link	TP1 TP2 PH AU

OPERATION	FEEDBACK	
Button (operation)	Remarks	Display
NEUTRAL ↓ LOUDNESS	[4]Balance, Bas and Treble are set in position neutral. Undertake listening test	80 (blinks once) ↓ LOUDNESS 80
Connect headphone	Undertake listening test (loudspeaker set 1 i disconnected)	
▲VOLUME ▼VOLUME	Undertake listening test Undertake listening test	00 →02 ...60 60 ...00
MUTE	Mute and after 2 sec. ST.BT	Decimal point (ST.BY)

[4]Balance, Bass and Treble can only be regulated from MCP.

FINAL TESTING AFTER REPAIR

This testing is valid for Master Control Panel 5000 (MCP) and Beomaster 5000.

OPERATION	FEEDBACK	
Button (operation) MCP	**Display MCP**	**Display Beomaster 5000**
Connect Beomaster to mains (after 1 min. without connection to mains)		Decimal punkt (ST.BY)
P1 til P9	Set clock P1 .... P9	P1.... P9
TAPE 1 ↓ TAPE 2 ↓ PHONO ↓ AUX·CD	TP1 ↓ TP2 ↓ PH ↓ AU	TP1 ↓ TP2 ↓ PH ↓ AU
SET CLOCK ↓ 8 (4 times) ↓ STORE (in primary panel)	SET CLOCK SUN[1)] ↓ SET CLOCK SUN 88·88 ↓ SET CLOCK SUN 8888 followed by P	AU ↓ AU ↓ AU
PLAY ↓ 0 (5 times) ↓ DAY (7 times) ↓ STORE (in secondary panel)	PLAY SUN ↓ PLAY 0 SUN 00:00 ↓ PLAY 0 ALL→MON→TUE→WED→ THUR→FRI→SAT 00:00 ↓ PLAY 0 SAT 0000	AU ↓ AU ↓ AU ↓ AU
STEP (until display indicates) ↓ CLEAR (while display lights)	→ PLAY 0 SAT 00:00 ↓ dark display	AU ↓ AU
STEP (until display indicates)	NO INPUT	AU
TRACK	T	AU
PLAY NEXT ↓ P1	PLAY NEXT ↓ PLAY NEXT P1→AU	AU ↓ AU

OPERATION	FEEDBACK	
Button (operation) MCP	Display MCP	Display Beomaster 5000
P1 ↓ << AUX ↓ >> ↓ RETURN (white) ↓ ADVANCE ↓ STOP ↓ TAPE STOP ↓ RETURN (green) ↓ RECORD (primary panel)	P1 FM AU AU >> AU << AU >> AU << >> AU RECORDING POSSIBLE AU << RECORDING AU RECORDING	P1 FM 88 → 107.9 .... 87.5 MHz AU AU AU AU AU AU AU AU
RECORD (secondary panel)	RECORD SUN	AU
CONTROL	C	AU
▼VOLUME and ▲VOLUME ↓ ◄BALANCE and BALANCE► ↓ ▲BASS and ▼BASS ↓ ▲TREBLE and ▼TREBLE ↓ MUTING	VOL. BAL. BASS TREBLE (Volume display regulate light in Bal., Bass and Treble) AU (Balance display regulate light in Vol., Bass and Treble) AU (Bass display regulate light in Vol., Bal. and Treble) AU (Treble display regulate light in Vol., Bal. and Bass) AU (Vol. display is blinking in Bal., Bass and Treble) AU	0:0 ↓ 0:2 .... 5:8 ↓ 6:0 AU AU AU AU
0 ↓ STATUS	0 0 and actual time from connection to mains	Decimal point ↓ Decimal point

1) Day and time indication is at random dependant onfor how long the set has been disconnected from mains.

Display NO DISC - NO TAPE - IM - BATTERY - NO TRANSMISSION are not mentioned in the table.

Display NO DISC - NO TAPE - IM - BATTERY - NO TRANSMISSION er ikke omtalt i skemaet.