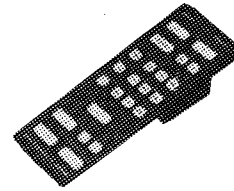
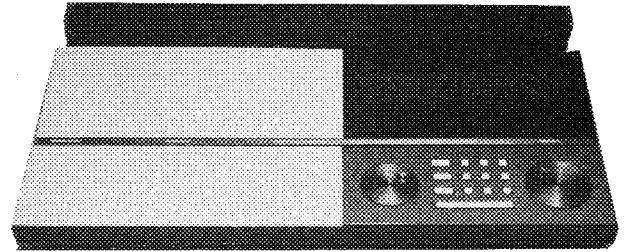


Bang & Olufsen

Beomaster 8000
TYPE 1901, 1903, 1905, 1907

Beolab Terminal
TYPE 1002

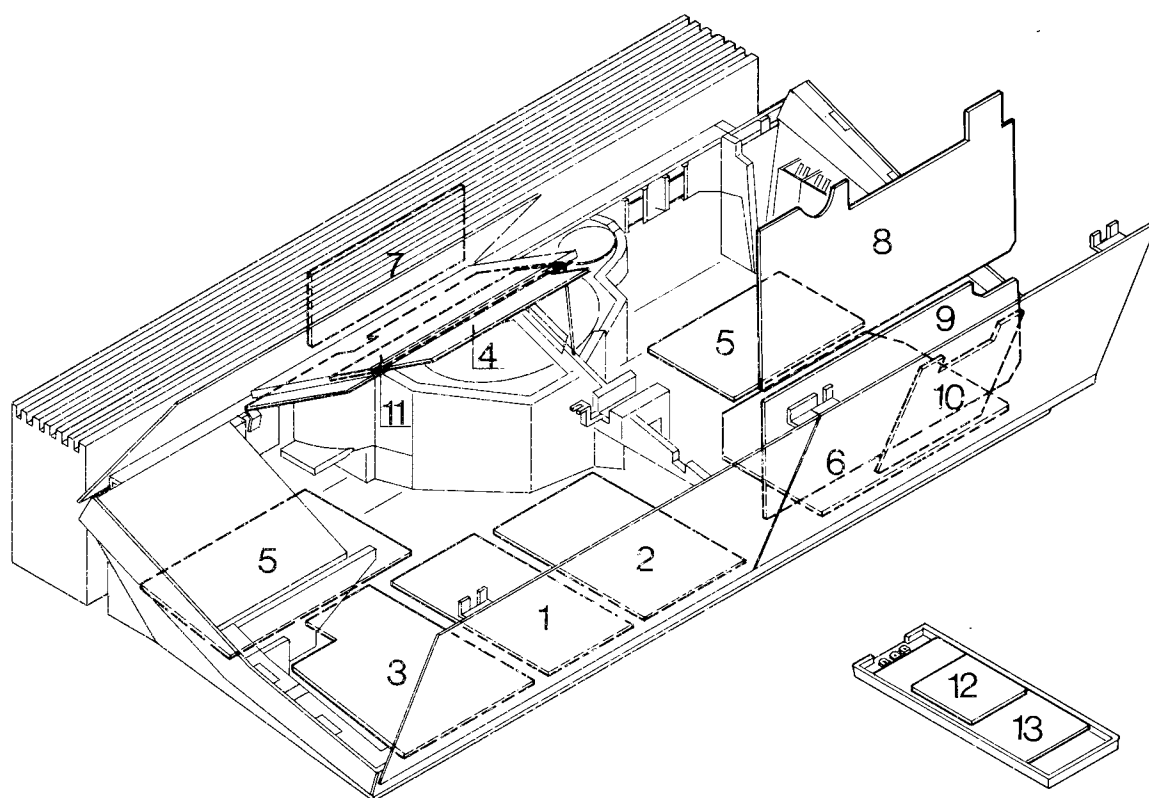


CONTENTS

Circuit Diagrams	1
Diagram 1	1-3
Diagram 2	1-4
Diagram 3	1-5
Diagram 4	1-6
Explanation of diagram	1-2
Measuring conditions diagrams	1-8
Function tables (for 9IC-2 and display)	1-7
Survey of display pin connections	1-7
Drawing of PC9 (Microcomputer)	1-9
Block Diagrams	2
Block diagram of power supply	2-1
Block diagram of RF circuit	2-1
Block diagram of AF circuit	2-2
Block diagram of the operating system	2-3
Survey of Semi-conductors	3
List of transistors	3-1
List of IC's and PE's	3-2
List of diodes	3-4
List of Electrical Parts	4
List of Mechanical Parts	5
Main chassis, Secondary operating panel	5-2
Primary operating panel	5-4
LF-output and Cooling tower	5-6
Beolab Terminal	5-7
Parts not shown	5-7
Cable survey	5-8
Survey of packings for module transport	5-8
Guide to Adjustments	6
No-load current	6-1
Offset output amplifier	6-1
Offset volume control	6-1
Tuning voltage	6-2
Tuner and IF section	6-2
FM-AF output	6-4
AGC	6-4
Signal strength meter	6-4
Opening of stereo decoder	6-4
Stereo decoder	6-4
AFT	6-5
FM signal condition	6-5
Resetting of microcomputer	6-6
Display light	6-6
Remote control receiver	6-6
Dismantling	7
Technical Data	8
★ Insulation Test	9
Final Testing	10
Service Tips and Modifications	11
Method to locate fault in the FM tuning system	11-1
To be remembered when replacing 9IC6	11-2
Re the »Spike Suppression« circuit on PC4	11-2
Re PC9 (Microcomputer)	11-2
Table of Input/Output levels	11-3
Diag. 2 includes »Spike Suppression« circuit on PC4	11-5
Diag. 3 includes the previous version of PC9	11-6

★ Read this new section, which in future will form part of new Service manuals.

1	FM	diagr. 1	8	Display	diagr. 3
2	FM Interface	diagr. 1	9	Microcomputer	diagr. 3
3	Preamplifier	diagr. 2	10	Keyboard Primary	diagr. 3
4	Filter and Tone Controls ...	diagr. 1-2-3	11	Keyboard Secondary	diagr. 3
5	Output Amplifier	diagr. 2	12	Terminal Transmitter	diagr. 4
6	Power Supply and Remote Receiver	diagr. 4	13	Keyboard, Terminal	diagr. 4
7	Starting Up Circuit	diagr. 4			



Beomaster 8000
TYPE 1901, 1903, 1905, 1907

Beolab Terminal
TYPE 1002

EXPLANATION OF DIAGRAM

The diagrams have been drawn-up in such a way that in circuits with a RH and a LH channel, only the RH channel is shown.

Printed components and co-ordinate system

Most of the PC-units have printed components on the print side as well as on the component side. In the diagrams all components are provided with position and co-ordinate numbers (the co-ordinate numbers being printed with smaller type than the position numbers). This means that from the diagram it is possible to identify a given component in a circuit in the correct PC-unit by means of these numbers.

Any RH channel component in the diagram has a position number in the »number group 200«, while the corresponding LH component in the same PC-unit has its numbers in the »number group 100«. E.g. R203 (RH channel) will have the corresponding resistor indicated as R103.

Components which in the diagram have position numbers from 1 up to and including 99 are common for both channels.

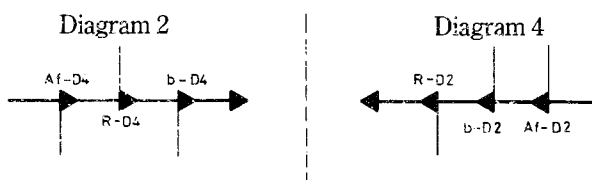
In the circuits which show the RH channel only, the co-ordinate numbers and the IC pin numbers for the LH channel are shown in brackets.

Cable connections in the diagrams

Some of the cable connections in the diagrams are assembled in »bundles«. Each individual cable has its own code which tells to where it leads. Cables with two identical letters (either upper or lower case) tell that it is an internal connection in the same diagram.

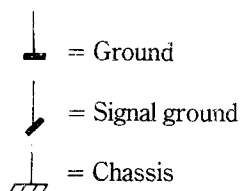


Cables which have connection to other diagrams are indicated by a letter (upper or lower case) or by a lower case and an upper case letter. In both cases a diagram (D) number is also indicated which tells to what diagram that cable is connected.



Grounding symbols

The following 3 grounding symbols are used in the diagrams:



NOTE: The signal voltages must be measured relative to signal ground in order to obtain a correct reading.

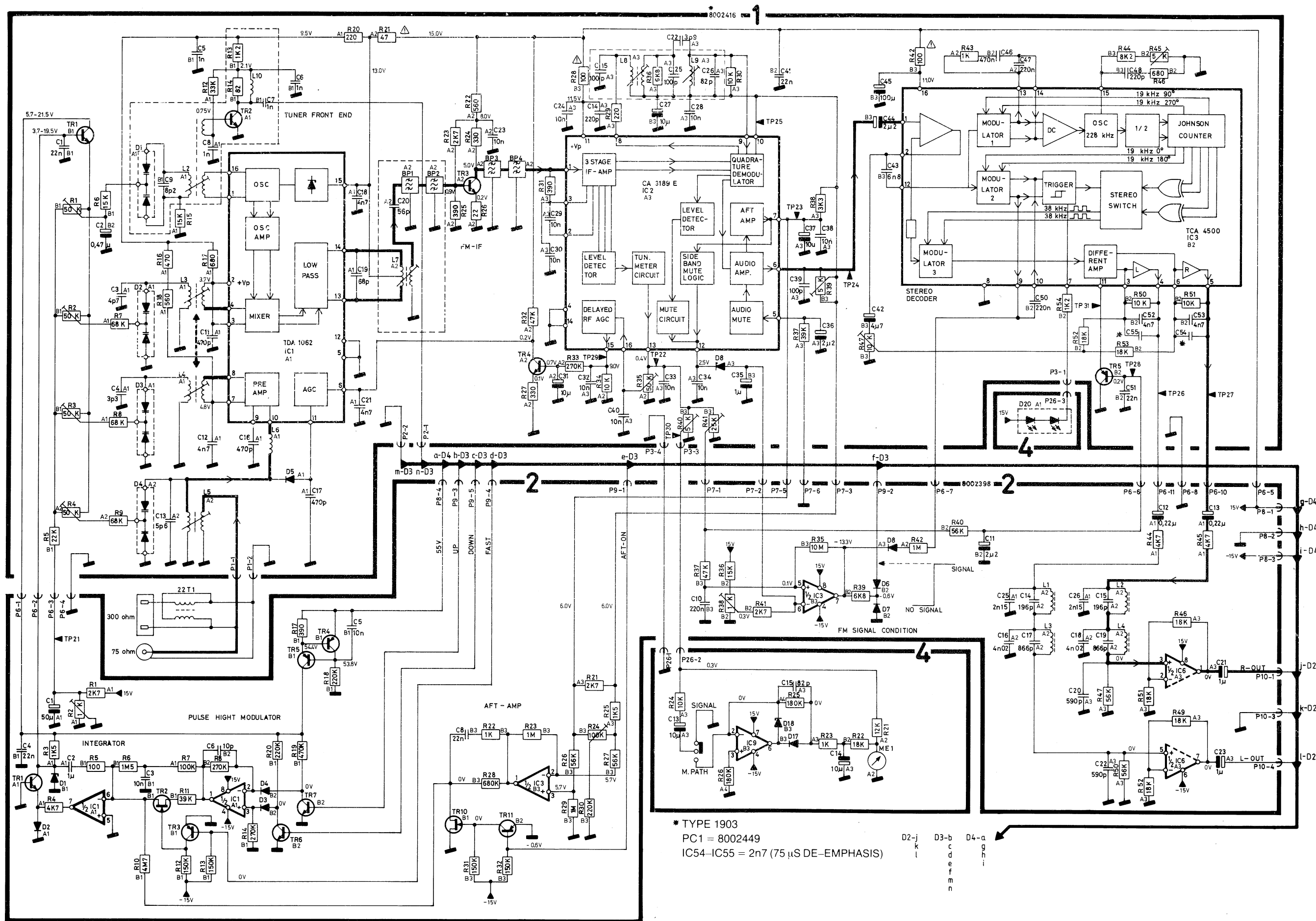
Signal paths

The signal paths are shown in the diagrams by semi-bold lines and arrow heads for FM, remote, and AF circuit respectively.

MEASURING CONDITIONS FOR THE DIAGRAMS

Measuring conditions for the diagrams, please see page 1-8

DIAGRAM 1 FOR BEOMASTER 8000 TYPE 1901, 1903, 1905, 1907



* TYPE 1903
 PC1 = 8002449
 IC54-IC55 = 2n7 (75 μS DE-EMPHASIS)

D2-j
 k
 l
 D3-b
 c
 d
 e
 f
 m
 D4-a
 b
 c
 d
 e
 f
 g
 h
 i

DIAGRAM 2 FOR BEOMASTER 8000 TYPE 1901, 1903, 1905, 1907

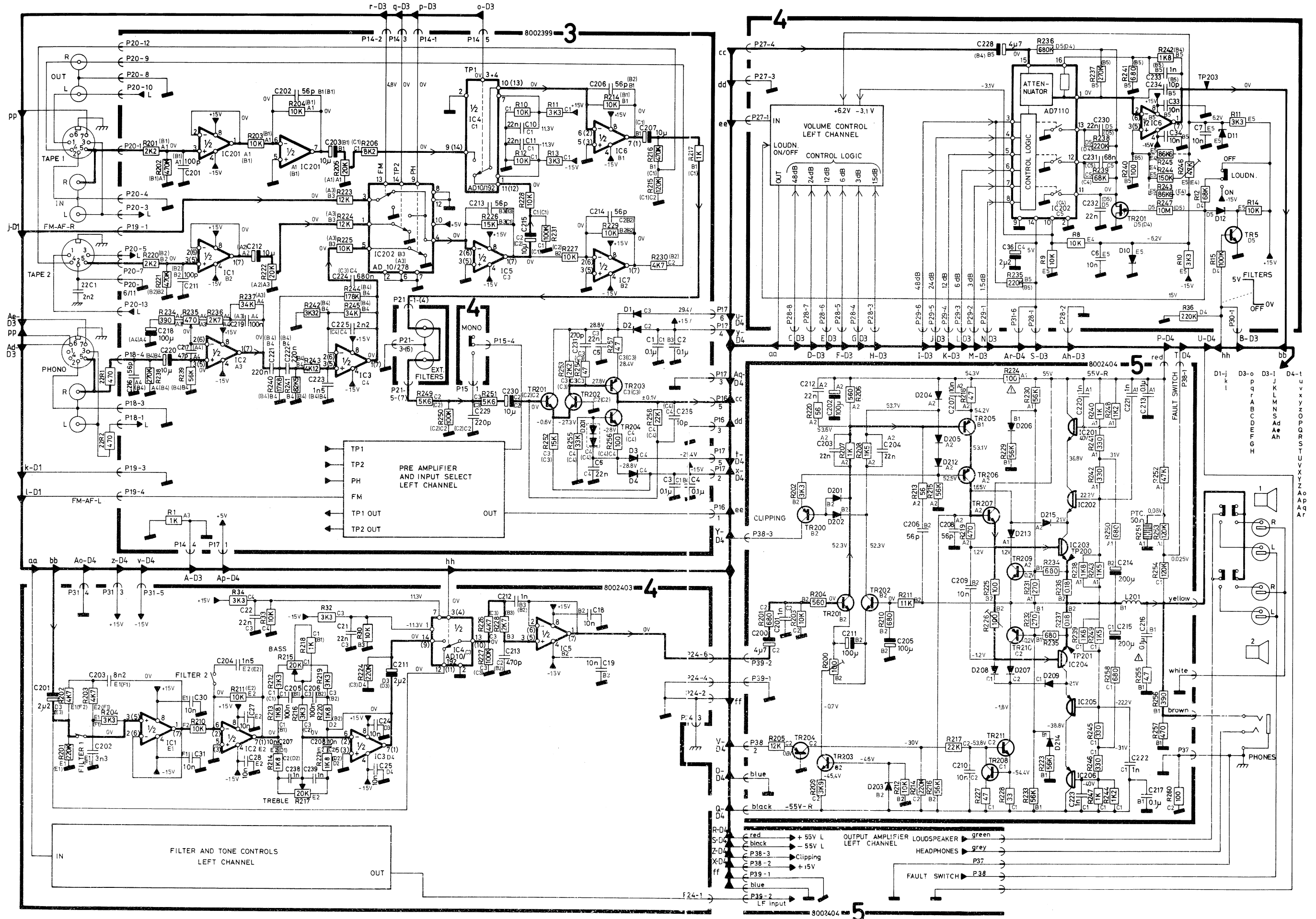
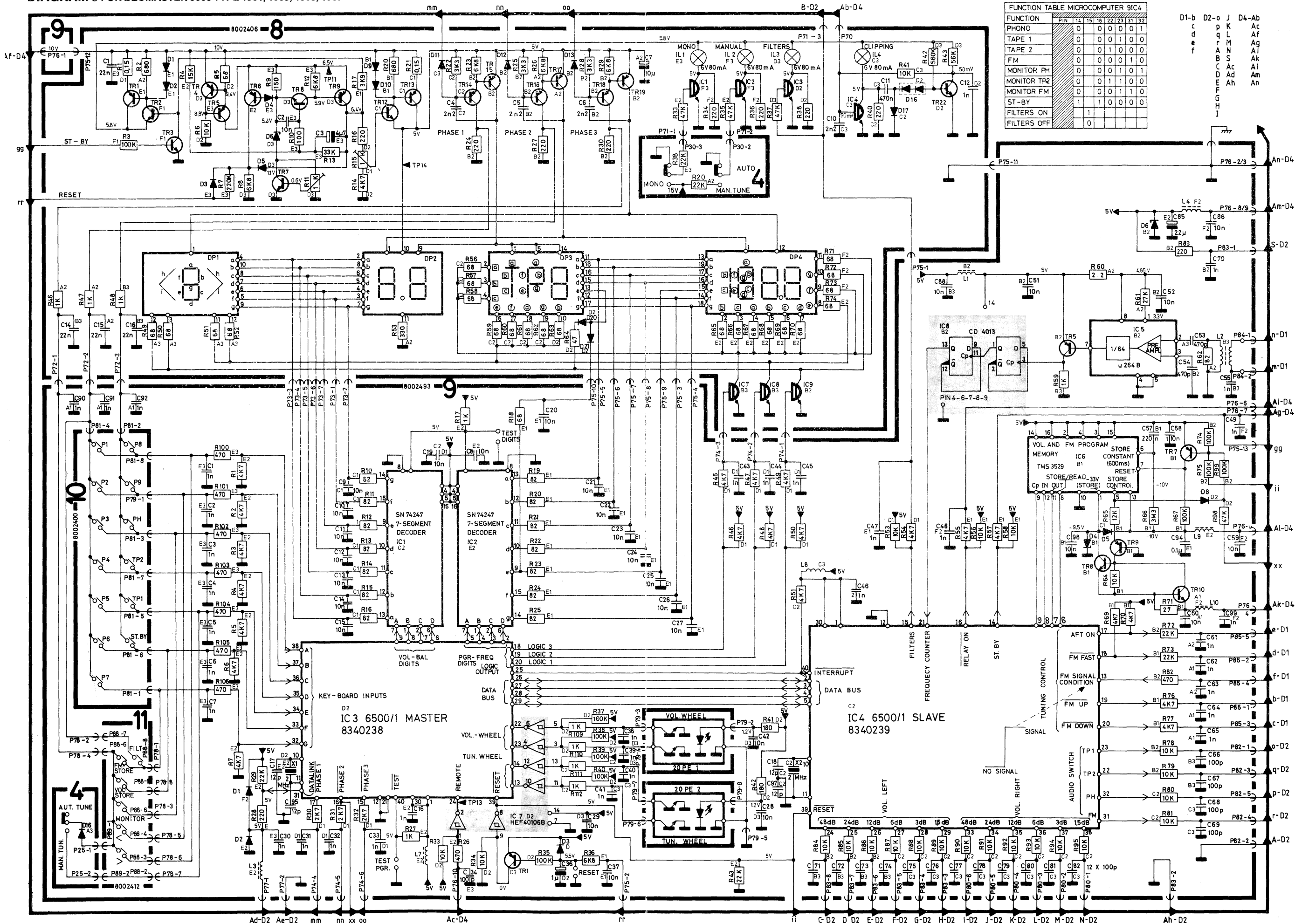


DIAGRAM 3 FOR BEOMASTER 8000 TYPE 1901, 1903, 1905, 1907

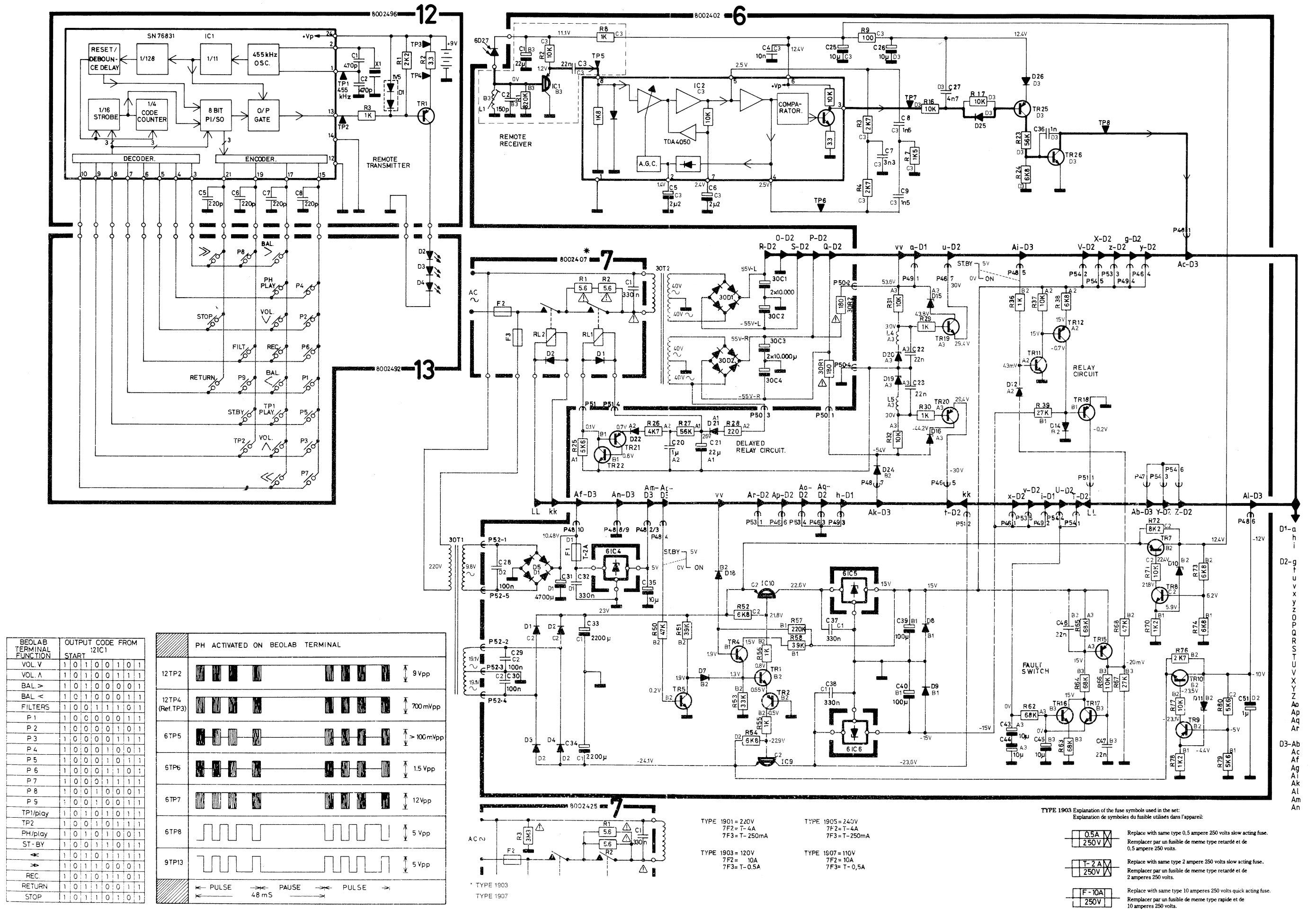


FUNCTION TABLE MICROCOMPUTER 91C4

FUNCTION	14	15	16	22	23	31	32
PHONO	0	0	0	0	0	1	
TAPE 1	0	0	0	1	0	0	
TAPE 2	0	0	1	0	0	0	
FM	0	0	0	0	1	0	
MONITOR PH	0	0	0	1	0	1	
MONITOR TR2	0	0	1	1	0	0	
MONITOR FM	0	0	0	1	1	0	
ST-BY	1	1	0	0	0	0	
FILTERS ON							
FILTERS OFF							

D1-b p q r A B C D E F G H I
 D2-o p q r A B C D E F G H I
 J K L M N S Ac Ad Ah
 D4-Ab Ac Af Ag Aj Ak Al Am An

DIAGRAM 4 FOR BEOMASTER 8000 TYPE 1901, 1903, 1905, 1907 - BEOLAB TERMINAL TYPE 1002



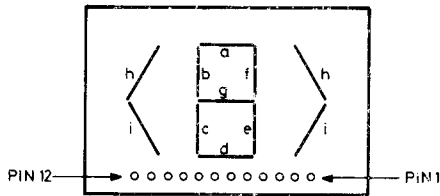
Funktionsskemaer og oversigt over benforbindelser på displays
(Tilhører diagram 3)

Function tables and survey of display pin connections
(Refer to diagram 3)

DECIMAL ON DISPLAY	INPUTS				OUTPUTS						
	D	C	B	A	a	b	c	d	e	f	g
0	0	0	0	0	0	0	0	0	0	0	1
1	0	0	0	1	1	0	0	1	1	1	1
2	0	0	1	0	0	0	1	0	0	1	0
3	0	0	1	1	0	0	0	0	1	1	0
4	0	1	0	0	1	0	0	1	1	0	0
5	0	1	0	1	0	1	0	0	1	0	0
6	0	1	1	0	0	1	0	0	0	0	0
7	0	1	1	1	0	0	0	1	1	1	1
8	1	0	0	0	0	0	0	0	0	0	0
9	1	0	0	1	0	0	0	0	1	0	0
OFF	1	1	1	1	1	1	1	1	1	1	1

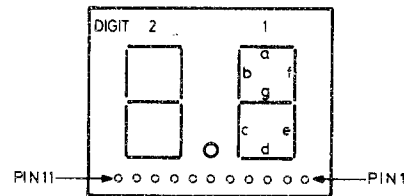
PIN	9IC3			9IC3	9IC3	9IC1	9IC2
	15	16	17				
	PHASE 3	PHASE 2	PHASE 1	LOGIC 3	LOGIC 2	LOGIC 1	
	0			9DP3			
	0			9DP3		1	
	0			9DP3		1	
	0			FM 10MHz			1
	0			FM 10MHz		1	
	0			FM 10MHz		1	
	0			9DP4, decimal point		1	
	0			9DP1			1
	0			9DP1		1	
	0			FM 100MHz		1	
	0			VOL. LS 0.1			*
	0			VOL. MS 1.0			*
	0			BALANCE			*
	0			PGR. No.			*
	0			FM 0.1MHz			*
	0			FM 1.0MHz			*

* SEE FUNCTION TABLE FOR 9IC1-2



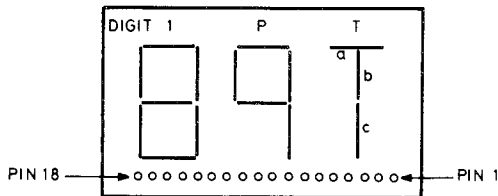
SDP1 PIN ASSIGNMENT (BOTTOM VIEW)

1. COMMON ANODE
2. CATHODE LEFT ARROW SEG. h
3. CATHODE LEFT ARROW SEG. i
4. CATHODE SEG. a
5. CATHODE SEG. f
6. CATHODE SEG. e
7. CATHODE SEG. d
8. CATHODE SEG. c
9. CATHODE SEG. g
10. CATHODE SEG. b
11. CATHODE RIGHT ARROW SEG. h
12. CATHODE RIGHT ARROW SEG. i



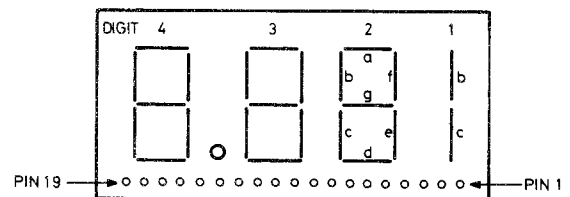
SDP2 PIN ASSIGNMENT (BOTTOM VIEW)

1. COMMON ANODE DIGIT 1
2. COMMON CATHODE SEG. a DIGIT 1 & 2
3. COMMON CATHODE SEG. f DIGIT 1 & 2
4. COMMON CATHODE SEG. e DIGIT 1 & 2
5. COMMON CATHODE SEG. d DIGIT 1 & 2
6. COMMON CATHODE SEG. c DIGIT 1 & 2
7. COMMON CATHODE SEG. g DIGIT 1 & 2
8. COMMON CATHODE SEG. b DIGIT 1 & 2
9. COMMON ANODE DIGIT 2
10. ANODE DECIMAL POINT
11. CATHODE DECIMAL POINT



SDP3 PIN ASSIGNMENT (BOTTOM VIEW)

1. COMMON ANODE DIGIT T
2. SEG. a CATHODE DIGIT T
3. SEG. b CATHODE DIGIT T
4. SEG. c CATHODE DIGIT T
5. COMMON ANODE DIGIT P
6. SEG. e CATHODE DIGIT P
7. SEG. f CATHODE DIGIT P
8. SEG. a CATHODE DIGIT P
9. SEG. g CATHODE DIGIT P
10. SEG. b CATHODE DIGIT P
11. SEG. a CATHODE DIGIT 1
12. SEG. f CATHODE DIGIT 1
13. SEG. e CATHODE DIGIT 1
14. COMMON ANODE DIGIT 1
15. SEG. d CATHODE DIGIT 1
16. SEG. c CATHODE DIGIT 1
17. SEG. g CATHODE DIGIT 1
18. SEG. b CATHODE DIGIT 1



SDP4 PIN ASSIGNMENT (BOTTOM VIEW)

1. COMMON ANODE DIGIT 1 & 3
2. CATHODE SEG. b DIGIT 1
3. CATHODE SEG. c DIGIT 1
4. CATHODE SEG. a DIGIT 2
5. CATHODE SEG. b DIGIT 2
6. CATHODE SEG. c DIGIT 2
7. CATHODE SEG. d DIGIT 2
8. CATHODE SEG. e DIGIT 2
9. CATHODE SEG. f DIGIT 2
10. CATHODE SEG. g DIGIT 2
11. CATHODE DECIMAL POINT
12. COMMON ANODE DIGIT 2 & 4 & DECIMAL POINT
13. CATHODE SEG. a DIGIT 3 & 4
14. CATHODE SEG. f DIGIT 3 & 4
15. CATHODE SEG. e DIGIT 3 & 4
16. CATHODE SEG. d DIGIT 3 & 4
17. CATHODE SEG. c DIGIT 3 & 4
18. CATHODE SEG. g DIGIT 3 & 4
19. CATHODE SEG. b DIGIT 3 & 4

**MÅLEBETINGELSER FOR
DIAGRAMMER**

Alle DC spændinger er målt i forhold til stel med et voltmeter med en indre modstand på mindst 10 Mohm. Spændingerne er målt uden signal tilsluttet modtageren.

Signalspændinger er målt i forhold til signalstel for at opnå korrekt resultat (se stelsymbolet under afsnittet »stelsymboler« side 1-2).

Oscillogrammer i fjernbetjeningsmodtageren (remote receiver) er målt med et signal fra Beolab terminalen, afgivet i ca. 0,5 m afstand.

Mekaniske omskiftere er vist i neutral stilling.

**SYMBOL FOR
SIKKERHEDSMODSTANDE****MEASURING CONDITIONS
DIAGRAMS**

Ved udskiftning af komponenter med dette symbol skal der anvendes samme type, samt samme værdier for ohm og watt. Den nye komponent skal monteres på samme måde som den udskiftede.

All DC voltages are measured relative to ground with a voltmeter with an inherent resistance of 10 Mohm. The voltages are measured with no signal connected to the receiver.

The signal voltages are measured relative to signal ground in order to obtain a correct reading (see ground symbol in the section »Ground signals«, page 1-2).

Oscillograms in the remote receiver are measured with a signal from the Beolab terminal, transmitted at a distance of approx. 0.5 m.

Mechanical switches are shown in their neutral positions.

**SYMBOL FOR SAFETY
RESISTORS****MEßBEDINGUNGEN FÜR DIE
SCHALTBILDER**

When replacing components with this symbol the same type has to be used, also the same values for ohm and watt. The new component is to be mounted in the same way as the replaced one.

Alle DC-Spannungen sind im Verhältnis zu Masse und mit einem Voltmeter mit einem inneren Widerstand von mindestens 10 MOhm gemessen. Die Spannungen sind ohne an den Empfänger angeschlossenes Signal gemessen.

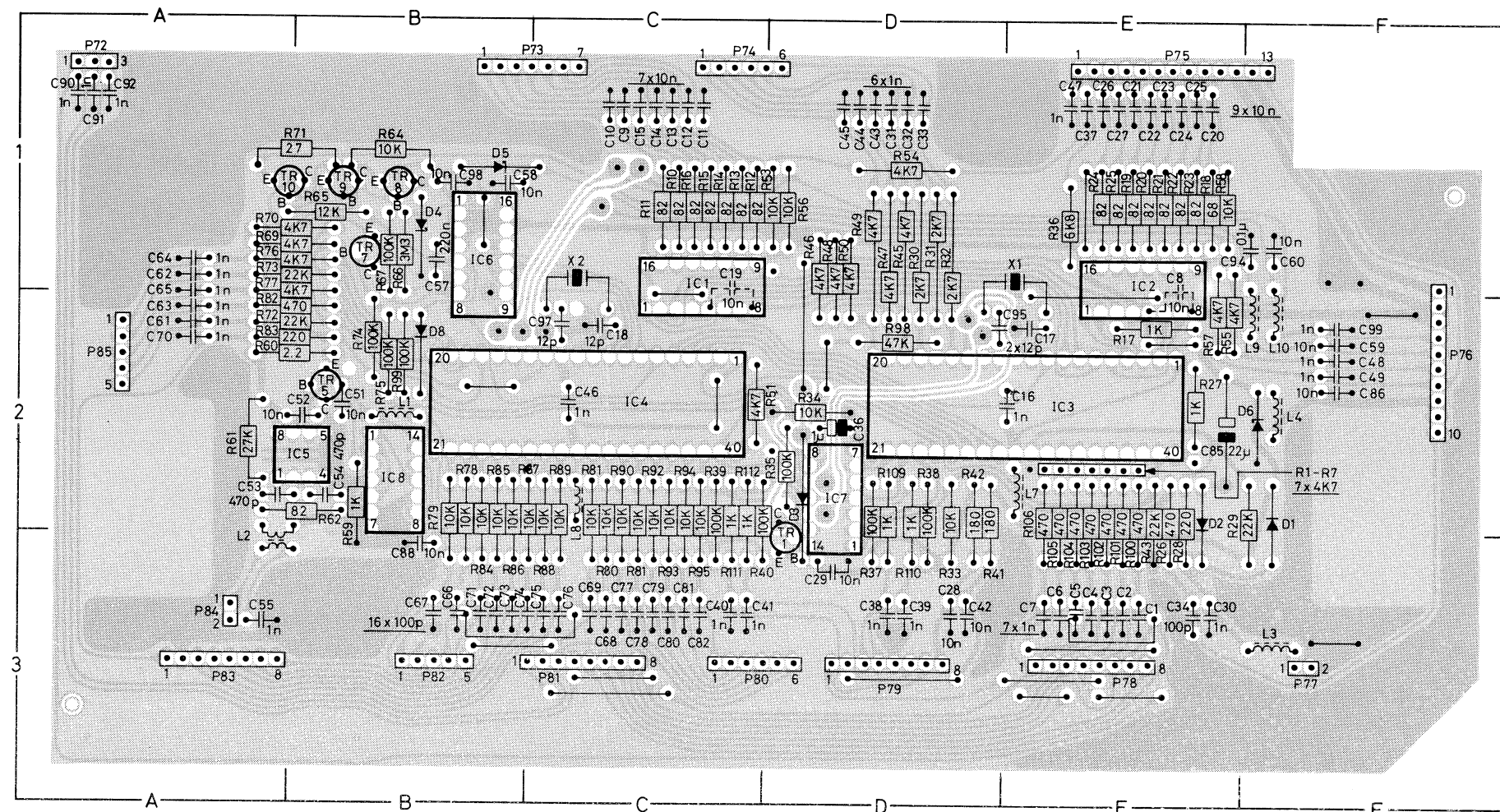
Signalspannungen sind im Verhältnis zu Signal-Masse zur Erzielung des korrekten Ergebnisses gemessen (siehe Masse-Symbol unter dem Abschnitt »Masse-Symbole«, Seite 1-2).

Oszillogramme im Fernbedienungsempfänger (Remote Receiver) sind mit einem vom Fernbedienungssender Beolab Terminal kommenden und in einem Abstand von ca. 0,5 m abgegebenen Signal gemessen.

Mechanische Umschalter sind in neutraler Stellung gezeigt.

**SYMBOL FÜR SICHERHEITS-
WIDERSTÄNDE**

Beim Austausch von Komponenten mit diesem Symbol sind Komponenten des gleichen Typs und mit den gleichen Ohm- und Watt-Werten zu benutzen. Die neuen Komponenten sind in derselben Weise zu montieren wie die ausgetauschten Komponenten.



PC-pladen er vist fra komponentsiden

The PC board is shown from the component side

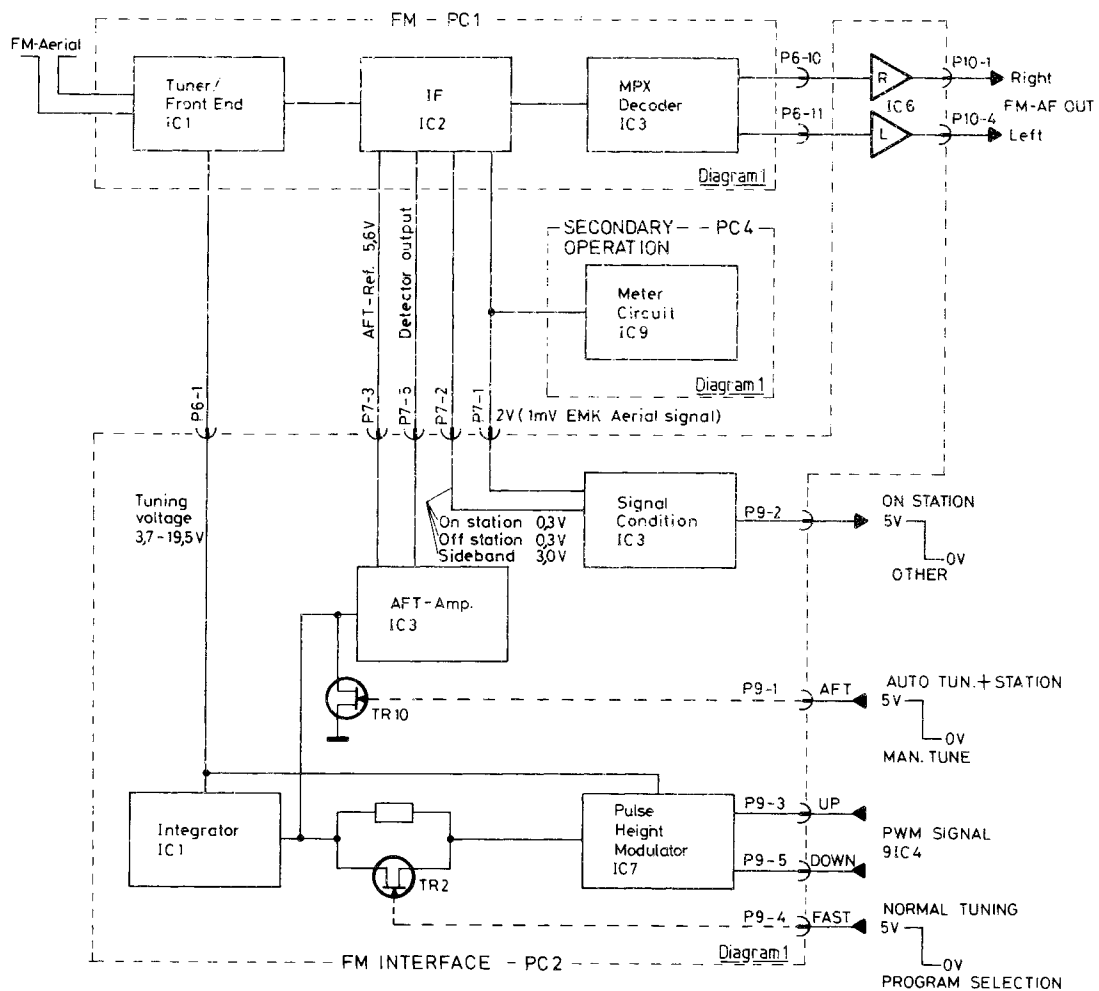
Printplatte von der Bauteilseite aus gesehen.

BLOCKSCHALTBILDER

In diesem Abschnitt sind einige Blockschaltbilder gezeigt, die bei einer Blockfehlersuche im Empfänger helfen sollen.

Ist eine Erläuterung zu der Funktionsweise der einzelnen Schaltkreise erwünscht, so verweisen wir auf die »Technische Produkt-Information« für Beomaster 8000, Beolab Terminal.

Block diagram of RF circuit



Blokdiagram over LF-delen

Blokdiagrammet viser højre kanal. Stikforbindelserne for venstre kanal er angivet i parentes.

De angivne signalspændinger (mV) er målt med indgangspotentiometrene og volumen reguleringen indstillet til maksimum og med 1W udgangseffekt i 8 ohm (1 kHz).

Block diagram of AF circuit

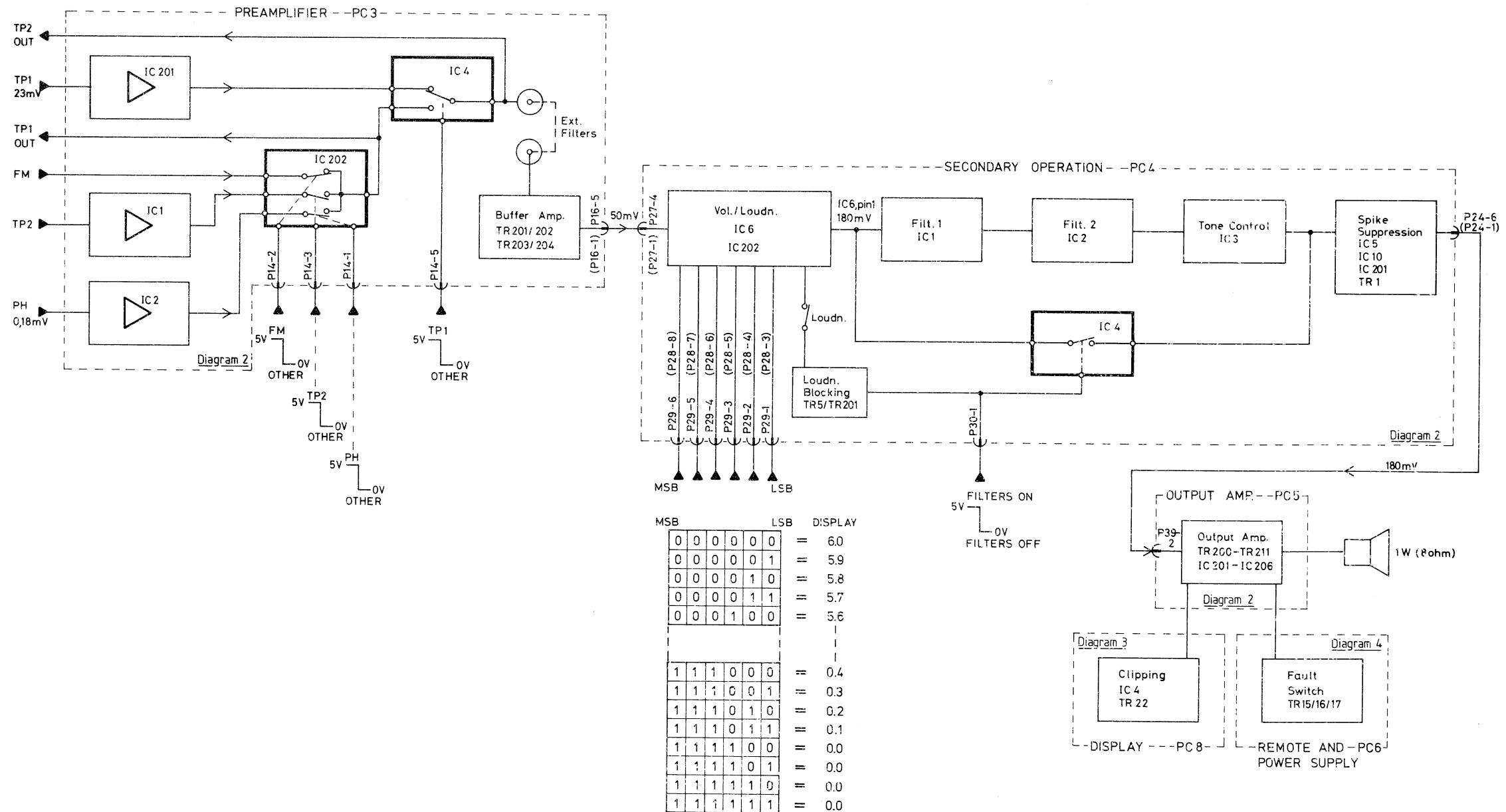
The block diagram shows the RH channel. The plug connections for the LH channel are shown in brackets.

The stated signal voltages (mV) are measured with input potentiometers in maximum, volume in maximum and with 1 W output power into 8 ohm (1 kHz).

Blockschaltbild für das NF-Teil

Das Blockschaltbild zeigt den rechten Kanal. Die Steckverbindungen für den linken Kanal sind in Klammern angegeben.

Die angegebenen Signalspannungen (mV) sind mit den Eingangspotentiometern und der Lautstärkeregelung in Maximalstellung und bei 1W Ausgangsleistung in 8 Ohm (1 kHz) gemessen.



Blokdiagram over betjenings-systemet

De viste funktionsskemaer har relation til microcomputeren (9IC3, 9IC4) og display-dekoderen (9IC1, 9IC2).

Block diagram of the operating system

The functional tables shown are relative to the microcomputer (9IC3, 9IC4) and the display decoder (9IC1, 9IC2).

Blockschaltbild für das Bedienungssystem

Die gezeigten Funktionsschemas beziehen sich auf den Mikrocomputer (9IC3, 9IC4) und den Display-Decoder (9IC1, 9IC2).

FUNCTION TABLE 9IC1-2 (SN74247)

DECIMAL ON DISPLAY	INPUTS				OUTPUTS						
	D	C	B	A	a	b	c	d	e	f	g
0	0	0	0	0	0	0	0	0	0	0	1
1	0	0	0	1	0	0	1	1	1	1	1
2	0	0	1	0	0	0	1	0	0	1	0
3	0	0	1	1	0	0	0	0	1	1	0
4	0	1	0	0	1	0	0	1	1	0	0
5	0	1	0	1	0	1	0	0	1	0	0
6	0	1	1	0	0	1	0	0	0	0	0
7	0	1	1	1	0	0	0	1	1	1	1
8	1	0	0	0	0	0	0	0	0	0	0
9	1	0	0	1	0	0	0	0	1	0	0
OFF	1	1	1	1	1	1	1	1	1	1	1

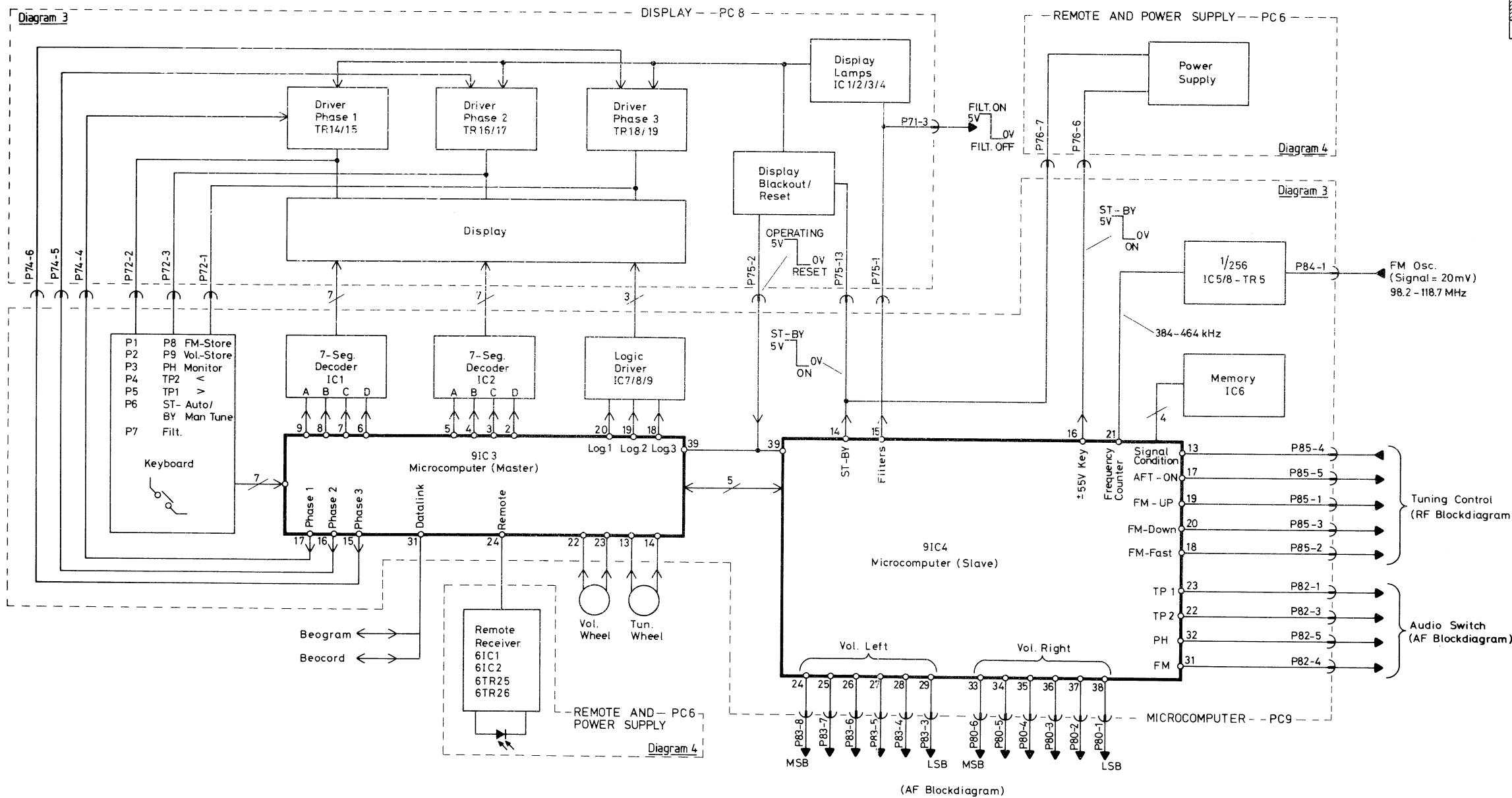
FUNCTION TABLE DISPLAY

PIN	9IC3			9IC3		
	15	16	17	18	19	20
PHASE 3						
PHASE 2						
PHASE 1						
	0	9DP3				
	0	9DP3		1		
	0	9DP3		1		
	0	FM 10MHz			1	
	0	FM 10MHz			1	
	0	FM 10MHz			1	
	0	9DP4, decimal point		1		
	0	9DP1			1	
	0	9DP1		1		
	0	FM 100MHz		1		
	0	VOL. LS 0.1				*
	0	VOL. MS 1.0				*
	0	BALANCE				*
	0	PGR. No.				*
	0	FM 0.1MHz				*
	0	FM 1.0MHz				*

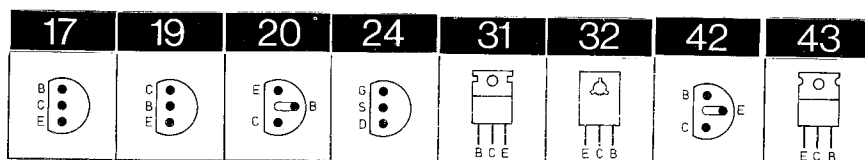
* SEE FUNCTION TABLE FOR 9IC1-2

FUNCTION TABLE MICROCOMPUTER 9IC4

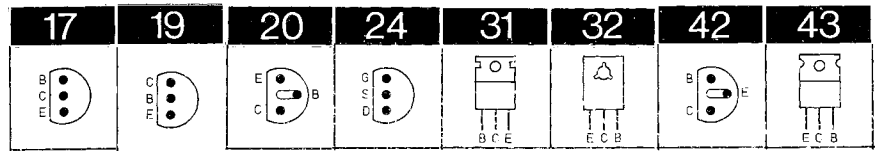
FUNCTION	PIN	14	15	16	22	23	31	32
PHONO		0	0	0	0	0	0	1
TAPE 1		0	0	0	1	0	0	0
TAPE 2		0	0	1	0	0	0	0
FM		0	0	0	0	1	0	0
MONITOR PH		0	0	0	1	0	1	0
MONITOR TP2		0	0	1	1	0	0	0
MONITOR FM		0	0	0	1	1	0	0
ST-BY		1	1	0	0	0	0	0
FILTERS ON		1						
FILTERS OFF		0						



LIST OF TRANSISTORS

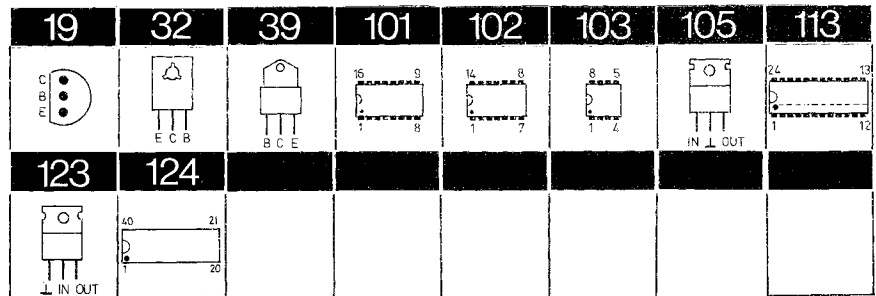


1TR1	8320285	20	BC 548C	5TR207	8320460	43	BF 857
						43	BD 849
1TR2	8320281	42	BF 199				
1TR3				5TR208	8320383	32	BD 135
						32	BD 165S
1TR4	8320108	20	BC 548B				
				5TR209	8320108	20	BC 548B
1TR5	8320104	20	BC 558B				
				5TR210	8320104	20	BC 558B
2TR1	8320108	20	BC 548B				
				5TR211	8320460	43	BF 857
2TR2	8320396	24	2N 5639			43	BD 849
		24	MPF 4392				
				6TR1	8320097	20	BC 547B
2TR3	8320104	20	BC 558B				
				6TR2	8320152	20	BC 557B
2TR4	8320242	20	BC 556B				
2TR5				6TR4	8320097	20	BC 547B
				6TR5			
2TR6	8320108	20	BC 548B				
2TR7				6TR7	8320316	20	BC 327-25
2TR10	8320396	24	2N 5639	6TR8	8320097	20	BC 547B
		24	MPF 4392				
				5TR9	8320104	20	BC 558B
2TR11	8320104	20	BC 558B				
				6TR10	8320295	20	BC 337-25
3TR101/201	8320344	20	BC 550B				
3TR102/202				6TR11	8320097	20	BC 547B
3TR103/203	8320365	19	MPS-H54	6TR12	8320104	20	BC 558B
3TR104/204	8320237	20	BC 546B	6TR15	8320104	20	BC 558B
4TR1	8320108	20	BC 548B	6TR16	8320097	20	BC 547B
4TR5				6TR17			
4TR101/201	8320396	24	2N 5639	6TR18	8320152	20	BC 557B
		24	MPF 4392				
				6TR19	8320295	20	BC 337-25
5TR200	8320365	19	MPS-H54				
				6TR20	8320316	20	BC 327-25
5TR201-	8320409	20	BC 546B	6TR21	8320152	20	BC 557B
5TR203							
				6TR22	8320295	20	BC 337-25
5TR204	8320408	20	BC 556B				
				6TR25	8320104	20	BC 558B
5TR205	8320104	20	BC 558B				
				6TR26	8320097	20	BC 547B
5TR206	8320454	17	BF 423				



8TR1	8320369	31	BD 534	8TR17	8320450	17	BC 369
8TR2	8320108	20	BC 548B	8TR18	8320104	20	BC 558B
8TR3				8TR19	8320450	17	BC 369
8TR4-	8320104	20	BC 558B	8TR22	8320108	20	BC 548B
8TR6				9TR1	8320104	20	BC 558B
8TR7	8320108	20	BC 548B	9TR5	8320104	20	BC 558B
8TR8	8320097	20	BC 547B	9TR7	8320104	20	BC 558B
8TR9	8320104	20	BC 558B	9TR8	8320323	19	MPS-A05
8TR12	8320108	20	BC 548B	9TR9	8320242	20	BC 556B
8TR13	8320369	31	BD 534	9TR10	8320108	20	BC 548B
8TR14	8320104	20	BC 558B	12TR1	8320331	20	BC 328- 25/18
8TR15	8320450	17	BC 369				
8TR16	8320104	20	BC 558B				

LIST OF IC's AND PE's



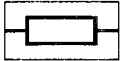
1IC1	8340198	101	TDA 1062	3IC1	8340195	103	LF 353N 103 TL 072CP
1IC2	8340233	101	CA 3189E			103	μ AF 772TC
1IC3	8340292	101	TCA 4500	3IC2	8340250	103	NE 5532N
2IC1	8340195	103	LF 353N 103 TL 072CP 103 μ AF 772TC	3IC3	8340224	103	TL 072CP
2IC3	8340195	103	LF 353N 103 TL 072CP 103 μ AF 772TC	3IC4	8340227	102	AD 10-192
2IC6	8340195	103	LF 353N 103 TL 072CP 103 μ AF 772TC	3IC5-	8340195	103	LF 353N
				3IC7		103	TL 072CP 103 μ AF 772TC
				3IC101/201	8340195	103	LF 353N 103 TL 072CP 103 μ AF 772TC

3IC102/202	8340248	102	AD 10-278	9IC1-	8340156	101	SN 74247N
				9IC2			
4IC1-	8340195	103	LF 353N				
4IC3		103	TL 072CP	9IC3	8340238	124	6500/1
		103	μ AF 772TC				MASTER
4IC4	8340227	102	AD 10-192	9IC4	8340239	124	6500/1
							SLAVE
4IC5	8340224	103	TL 072CP	9IC5	8340220	103	μ 264B
4IC6	8340251	103	TL 072 Spec	9IC6	8340225	101	TMS 3529
4IC9	8340141	103	LM 741CN	9IC7	8340221	102	HEF 40106B
		103	μ A 741CP	9IC8	8340261	102	HEF 4013BP
		103	μ A 741CN				F4013
		103	SFC 2741DC	12IC1	8340191	113	SN 76831
4IC10	8340195	103	LF 353N				M-24
		103	TL 072CP	20PE1	8330041		Opto-
		103	μ AF 772TC	20PE2			coupler
4IC101/201	8330027		GE H 11-F3				
4IC102/202	8340226	101	AD 7110				
5IC201-	8340042	39	TIP 141				
5IC203							
5IC204-	8340041	39	TIP 146				
5IC206							
6IC1	8340025	19	SPS 5431				
		19	MPSA 65				
6IC2	8340193	103	TDA 4050				
6IC4	8340065	105	LM 7805				
		105	μ A 7805				
		105	MC 7805				
6IC5	8340208	105	MC 78M15				
		105	μ A 78M15				
6IC6	8340222	123	μ A 79M15				
6IC9	8340282	32	BD 676				
6IC10	8340184	32	BD 675				
8IC1-	8340054	19	SPS 5418				
8IC4		19	MPSA 13				
		19	TPSA 13				
8IC7-	8340054	19	SPS 5418				
8IC9		19	MPSA 13				
		19	TPSA 13				

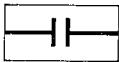
6D12	8300058	217	SFD 184	8D20	8300058	217	SFD 184
6D14		215	1N 4148	8D21		215	1N 4148
		209	1N 4148			209	1N 4148
6D15	8300028	209	ZPD 9.1V	8DP1	8330016		FNA 8199
6D16		209	BZX 79				
			C9V1	8DP2	8330015		FNA 8299
		209	BZX 83				
			C9V1	8DP3	8330013		FNA 8399
6D18	8300058	217	SFD 184	8DP4	8330012		FNA 8398
		215	1N 4148				
		209	1N 4148	9D1-	8300058	217	SFD 184
6D19	8300210	209	ZPD 30V	9D3		215	1N 4148
6D20		209	BZX 83			209	1N 4148
			C30V0	9D4	8300248	209	ZTK 33
		209	BZX 79			209	TDA 1550
			C30V0	9D5	8300058	217	SFD 184
6D21	8300102	209	1N4004			215	1N 4148
						209	1N 4148
6D22	8300058	217	SFD 184	9D6	8300201	209	ZPD 6.2V
		215	1N 4148			209	BZX 79
		209	1N 4148				C6V2
6D24-	8300058	217	SFD 184			209	BZX 83
6D26		215	1N 4148				C6V2
		209	1N 4148	9D8	8300058	217	SFD 184
6D27	6250105		IP SENSOR			215	1N 4148
						209	1N 4148
7D1	8300058	217	SFD 184	12D1	8300056	209	ZTE 1.5V
7D2		215	1N 4148				10%
		209	1N 4148	13D2-	8330022	203	LD 271
8D1-	8300058	217	SFD 184	13D4		203	V-290-P
8D5		215	1N 4148				
		209	1N 4148	30D1	8300323		KB 62-B
8D6	8300036	209	ZPD 4.7V	30D2			125/110-25
		209	BZX 79				
			C4V7				
		209	BZX 83				
			C4V7				
8D9-	8300058	217	SFD 184				
8D13		215	1N 4148				
		209	1N 4148				
8D16	8300056	209	ZTE 1.5				
8D17	8300058	217	SFD 184				
		215	1N 4148				
		209	1N 4148				

LIST OF ELECTRICAL PARTS

PC1, 8002416 FM
(Type 1901, 1905, 1907)



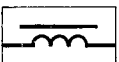
R1	5370225	50 kohms ±10% 0.1W LIN	R29	5010092	220 ohms ±5% 1/8W
R2	5370225	50 kohms ±10% 0.1W LIN	R30	5010059	10 kohms ±5% 1/8W
R3	5370225	50 kohms ±10% 0.1W LIN	R31	5010070	390 ohms ±5% 1/8W
R4	5370225	50 kohms ±10% 0.1W LIN	R32	5010045	47 kohms ±5% 1/8W
R5	5010079	22 kohms ±5% 1/8W	R33	5010083	270 kohms ±5% 1/8W
R6	5010053	15 kohms ±5% 1/8W	R34	5010059	10 kohms ±5% 1/8W
R7	5010062	68 kohms ±5% 1/8W	R35	5370061	50 kohms ±20% 0.1W LIN
R8	5010062	68 kohms ±5% 1/8W	R36	5010839	68 kohms ±5% 1/16W
R9	5010062	68 kohms ±5% 1/8W	R37	5010060	39 kohms ±5% 1/8W
R12	5010075	33 kohms ±5% 1/8W	R38	5010076	3.3 kohms ±5% 1/8W
R13	5010153	1.2 kohms ±5% 1/8W	R39	5370058	5 kohms ±20% 0.1W LIN
R15	5010053	15 kohms ±5% 1/8W	R40	5370058	5 kohms ±20% 0.1W LIN
R16	5010058	470 ohms ±5% 1/8W	R41	5370068	25 kohms ±20% 0.1W LIN
R17	5010144	680 ohms ±5% 1/8W	R42	5020347	100 ohms ±5% 2.5W
R18	5010067	560 ohms ±5% 1/8W	R43	5010040	1 kohms ±5% 1/8W
R20	5010092	220 ohms ±5% 1/8W	R44	5010154	8.2 kohms ±5% 1/8W
R21	5020345	47 ohms ±10% 1/4W	R45	5370058	5 kohms ±20% 0.1W LIN
R22	5010067	560 ohms ±5% 1/8W	R46	5010144	680 ohms ±5% 1/8W
R23	5010298	2.7 kohms ±5% 1/8W	R47	5370074	10 kohms ±20% 0.1W LIN
R24	5010044	330 ohms ±5% 1/8W	R50	5010059	10 kohms ±5% 1/8W
R25	5010070	390 ohms ±5% 1/8W	R51	5010059	10 kohms ±5% 1/8W
R26	5010448	22 ohms ±5% 1/8W	R52	5010135	18 kohms ±5% 1/8W
R27	5010044	330 ohms ±5% 1/8W	R53	5010135	18 kohms ±5% 1/8W
R28	5020347	100 ohms ±5% 2.5W	R54	5010153	1.2 kohms ±5% 1/8W



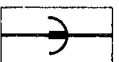
C1	4010060	22 nF -20 +80% 40V	C28	4010041	10 nF -20 +80% 40V
C2	4201058	0.47 μF 35V	C29	4010041	10 nF -20 +80% 40V
C3	4000104	4.7 pF ±0.25 pF 63V	C30	4010041	10 nF -20 +80% 40V
C4	4000099	3.3 pF ±0.25 pF 63V	C31	4200101	10 μF 16V
C5	4010027	1 nF ±10% 100V	C32	4010041	10 nF -20 +80% 40V
C6	4010027	1 nF ±10% 100V	C33	4010041	10 nF -20 +80% 40V
C7	4010027	1 nF ±10% 100V	C34	4010041	10 nF -20 +80% 40V
C8	4010027	1 nF ±10% 100V	C35	4201057	1 μF 35V
C9	4000106	8.2 pF ±0.25 pF 250V	C36	4201069	2.2 μF ±20% 35V
C11	4010087	470 pF ±10% 63V	C37	4200101	10 μF ±20% 16V
C12	4011022	4.7 nF -20 +80% 40V	C38	4010041	10 nF -20 +80% 40V
C13	4000105	5.6 pF ±0.25 pF 63V	C39	4000085	100 pF ±2% 63V
C14	4101007	220 pF ±5% 63V	C40	4010041	10 nF -20 +80% 40V
C16	4010087	470 pF ±10% 63V	C41	4010060	22 nF -20 +80% 40V
C17	4010087	470 pF ±10% 63V	C42	4200108	4.7 μF ±20% 25V
C18	4011022	4.7 nF -20 +80% 40V	C43	4130050	6.8 nF ±10% 250V
C19	4000107	68 pF ±2% 63V	C44	4201035	2.2 μF -10 +50% 63V
C20	4000109	56 pF ±2% 63V	C45	4200099	100 μF 16V
C21	4011022	4.7 nF -20 +80% 40V	C46	4130114	470 nF ±10% 100V
C22	4000082	3.9 pF ±0.25 pF 63V	C47	4130104	220 nF ±20% 100V
C23	4010041	10 nF -20 +80% 40V	C48	4101007	220 pF ±5% 63V
C24	4010041	10 nF -20 +80% 40V	C50	4130104	220 nF ±20% 100V
C25	4000085	100 pF ±2% 63V	C51	4010060	22 nF -20 +80% 40V
C26	4000110	82 pF ±5% 63V	C52	4101026	4.7 nF ±5% 63V
C27	4201065	10 μF 63V	C53	4101026	4.7 nF ±5% 63V



BP1	8030020	10.7 MHz
BP2	8030020	10.7 MHz
BP3	8030020	10.7 MHz
BP4	8030020	10.7 MHz

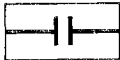


L2	8020322	Osc.	L9	8020369	IF 10.7 MHz
L3	8020321	RF	L10	8020361	Coil
L4	8020320	RF Coil			
L5	8020319	Aerial Coil		3304014	Cover for L2
L6	6850127	1.2 μH		3304014	Cover for L7
L7	8020323	IF 10.7 MHz		3304098	Cover for L8/L9
L8	8020368	IF 10.7 MHz		3302317	Cover for Osc.



P1	7220213	Plug 2 pins	P6	7220186	Plug 11 pins
P2	7220213	Plug 2 pins	P7	7220204	Plug 6 pins
P3	7220122	Plug 4/3 pins			

PC1, 8002449 FM (Type 1903)



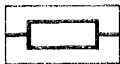
C54	4100076	2n7 ±5% 63V
C55	4100076	2n7 ±5% 63V

Øvrige komponenter som i styklisten for PC1, 8002416

Other components as in parts list for PC1, 8002416

Übrige Komponenten wie in Stückliste für PC1, 8002416

PC2, 8002398 FM Interface



R1	5010298	2.7 kohms ±5% 1/8W	R27	5010061	56 kohms ±5% 1/8W
R2	5370050	1 kohms ±20% 0.1W LIN	R28	5010074	680 kohms ±5% 1/8W
R3	5010247	1.5 kohms ±5% 1/8W	R29	5010054	1 Mohms ±5% 1/8W
R4	5010048	4.7 kohms ±5% 1/8W	R30	5010045	47 kohms ±5% 1/8W
R5	5010065	100 ohms ±5% 1/8W	R31	5010063	150 kohms ±5% 1/8W
R6	5010093	1.5 Mohms ±10% 1/8W	R32	5010063	150 kohms ±5% 1/8W
R7	5010049	100 kohms ±5% 1/8W	R33		
R8	5010083	270 kohms ±5% 1/8W	R35	5010638	10 Mohms ±10% 1/8W
R10	5010770	4.7 Mohms ±10% 1/8W	R36	5010053	15 kohms ±5% 1/8W
R11	5010060	39 kohms ±5% 1/8W	R37	5010045	47 kohms ±5% 1/8W
R12	5010063	150 kohms ±5% 1/8W	R38	5370050	1 kohms ±20% 0.1W LIN
R13	5010063	150 kohms ±5% 1/8W	R39	5010052	6.8 kohms ±5% 1/8W
R14	5010083	270 kohms ±5% 1/8W	R40	5010061	56 kohms ±5% 1/8W
R17	5010070	390 ohms ±5% 1/8W	R41	5010298	2.7 kohms ±5% 1/8W
R18	5010120	220 kohms ±5% 1/8W	R42	5010054	1 Mohms ±5% 1/8W
R19	5010077	470 kohms ±5% 1/8W	R44	5010048	4.7 kohms ±5% 1/8W
R20	5010120	220 kohms ±5% 1/8W	R45	5010048	4.7 kohms ±5% 1/8W
R21	5010298	2.7 kohms ±5% 1/8W	R46	5010135	18 kohms ±5% 1/8W
R22	5010040	1 kohms ±5% 1/8W	R47	5010061	56 kohms ±5% 1/8W
R23	5010054	1 Mohms ±5% 1/8W	R49	5010135	18 kohms ±5% 1/8W
R24	5370128	100 kohms ±20% 0.1W LIN	R50	5010061	56 kohms ±5% 1/8W
R25	5010247	1.5 kohms ±5% 1/8W	R51	5010135	18 kohms ±5% 1/8W
R26	5010061	56 kohms ±5% 1/8W	R52	5010135	18 kohms ±5% 1/8W



C1	4200092	47 µF 16V	C14	4100077	196 pF ±2.5% 63V
C2	4130155	1 µF ±10% 100V	C15	4100077	196 pF ±2.5% 63V
C3	4010041	10 nF -20 +80%	C16	4100078	4.02 nF ±2.5% 63V
C4	4010060	22 nF -20 +80% 40V	C17	4100080	866 pF ±2.5% 63V
C5	4010041	10 nF -20 +80% 40V	C18	4100078	4.02 nF ±2.5% 63V
C6	4000016	10 pF ±2% 55V	C19	4100080	866 pF ±2.5% 63V
C8	4010060	22 nF -20 +80% 40V	C20	4100079	590 pF ±2.5% 63V
C10	4130104	220 nF ±20% 100V	C21	4200325	1 µF ±10% 35V
C11	4201035	2.2 µF -10 +50% 63V	C22	4100079	590 pF ±2.5% 63V
C12	4201072	0.22 µF 35V	C23	4200325	1 µF ±10% 35V
C13	4201072	0.22 µF 35V			

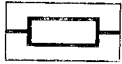


L1	8022079	78 Mh
L2	8022079	78 Mh
L3	8022079	78 Mh
L4	8022079	78 Mh

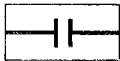


P6	7210110	Socket 11 pins
P7	7210273	Socket 6 pins
P8	7220210	Plug 4 pins
P9	7220211	Plug 5 pins
P10	7220122	Plug 4/3 pins

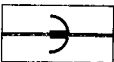
PC3, 8002399 Preamplifier



R1	5010040	1 kohms ±5% 1/8W	R230	5010048	4.7 kohms ±5% 1/8W
R10	5010059	10 kohms ±5% 1/8W	R231	5010049	100 kohms ±5% 1/8W
R11	5010076	3.3 kohms ±5% 1/8W	R234	5010070	390 ohms ±5% 1/8W
R12	5010059	10 kohms ±5% 1/8W	R235	5370231	470 ohms ±20% 0.2W LIN
R13	5010076	3.3 kohms ±5% 1/8W	R236	5010298	2.7 kohms ±5% 1/8W
R201	5010064	2.2 kohms ±5% 1/8W	R237	5020293	34 kohms ±1% 1/8W
R202	5010077	470 kohms ±5% 1/8W	R238	5010083	270 kohms ±5% 1/8W
R203	5010059	10 kohms ±5% 1/8W	R239	5010061	56 kohms ±5% 1/8W
R204	5010059	10 kohms ±5% 1/8W	R240	5020292	17.8 kohms ±1% 1/8W
R205	5370224	22 kohms ±20% 0.2W LIN	R241	5020294	82.5 kohms ±1% 1/8W
R206	5010154	8.2 kohms ±5% 1/8W	R242	5020291	3.32 kohms ±1% 1/8W
R214	5010059	10 kohms ±5% 1/8W	R243	5020344	4.12 kohms ±1% 1/8W
R215	5010047	120 kohms ±5% 1/8W	R244	5020295	178 kohms ±1% 1/8W
R216	5010047	470 kohms ±5% 1/8W	R245	5020293	34 kohms ±1% 1/8W
R217	5010040	1 kohms ±5% 1/8W	R249	5010041	5.6 kohms ±5% 1/8W
R220	5010064	2.2 kohms ±5% 1/8W	R250	5010049	100 kohms ±5% 1/8W
R221	5010077	470 kohms ±5% 1/8W	R251	5010041	5.6 kohms ±5% 1/8W
R222	5370224	22 kohms ±20% 0.2W LIN	R252	5010053	15 kohms ±5% 1/8W
R223	5010046	12 kohms ±5% 1/8W	R253	5010064	2.2 kohms ±5% 1/8W
R224	5010046	12 kohms ±5% 1/8W	R254	5010411	47 ohms ±5% 1/8W
R225	5010059	10 kohms ±5% 1/8W	R255	5010075	33 kohms ±5% 1/8W
R226	5010053	15 kohms ±5% 1/8W	R256	5010065	100 ohms ±5% 1/8W
R227	5010059	10 kohms ±5% 1/8W	R257	5010411	47 ohms ±5% 1/8W
R228	5010059	10 kohms ±5% 1/8W	R258	5010079	22 kohms ±5% 1/8W
R229	5010059	10 kohms ±5% 1/8W			



C1	4130150	100 nF ±20% 100V	C214	4000109	56 pF ±2% 63V
C2	4130150	100 nF ±20% 100V	C215	4201065	10 µF 63V
C3	4130150	100 nF ±20% 100V	C216	4000109	56 pF ±2% 63V
C4	4130150	100 nF ±20% 100V	C217	4000114	47 pF ±2% 63V
C5	4010060	22 nF -20 +80% 40V	C218	4200098	100 µF 10V
C6	4010060	22 nF -20 +80% 40V	C219	4130101	100 nF ±5% 250V
C10	4010060	22 nF -20 +80% 40V	C220	4200101	10 µF ±20% 16V
C11	4010060	22 nF -20 +80% 40V	C221	4130142	220 nF ±5% 100V
C201	4003136	100 pF ±2% 63V	C222	4130142	220 nF ±5% 100V
C202	4000109	56 pF ±2% 63V	C223	4100057	1.5 nF ±2.5% 63V
C203	4200342	10 µF ·10 +50% 63V	C224	4130181	680 nF ±5% 100V
C206	4000109	56 pF ±2% 63V	C225	4100146	2.2 nF ±2.5% 63V
C207	4200342	10 µF ·10 +50% 63V	C229	4000029	220 pF ±5% 63V
C211	4003136	100 pF ±2% 63V	C230	4201065	10 µF 63V
C212	4201065	10 µF 63V	C231	4000071	270 pF ±5% 63V
C213	4000109	56 pF ±2% 63V	C236	4000016	10 pF ±2% 63V

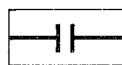


7500154 Contact pins

PC4, 8002403 Filter and Tone Controls



R1	5010044	330 ohms ±5% 1/8W	R38	5010079	22 kohms ±5% 1/8W
R2	5010065	100 ohms ±5% 1/8W	R201	5010120	220 kohms ±5% 1/8W
R3	5010059	10 kohms ±5% 1/8W	R202	5010048	4.7 kohms ±5% 1/8W
R4	5010049	100 kohms ±5% 1/8W	R203	5010048	4.7 kohms ±5% 1/8W
R5	5010059	10 kohms ±5% 1/8W	R204	5010076	3.3 kohms ±5% 1/8W
R6	5010059	10 kohms ±5% 1/8W	R210	5010059	10 kohms ±5% 1/8W
R8	5010059	10 kohms ±5% 1/8W	R211	5010059	10 kohms ±5% 1/8W
R9	5010059	10 kohms ±5% 1/8W	R212	5010076	3.3 kohms ±5% 1/8W
R10	5010076	3.3 kohms ±5% 1/8W	R213	5010066	1.8 kohms ±5% 1/8W
R11	5010076	3.3 kohms ±5% 1/8W	R214	5010066	1.8 kohms ±5% 1/8W
R12	5010062	68 kohms ±5% 1/8W	R215	5310094	2 x 20 kohms Lin
R14	5010059	10 kohms ±5% 1/8W	R216	5010076	3.3 kohms ±5% 1/8W
R15	5010049	100 kohms ±5% 1/8W	R217	5310094	2 x 20 kohms Lin
R20	5010079	22 kohms ±5% 1/8W	R218	5010040	1 kohms ±5% 1/8W
R21	5010046	12 kohms ±5% 1/8W	R219	5010076	3.3 kohms ±5% 1/8W
R22	5010135	18 kohms ±5% 1/8W	R220	5010066	1.8 kohms ±5% 1/8W
R23	5010040	1 kohms ±5% 1/8W	R221	5010066	1.8 kohms ±5% 1/8W
R24	5010059	10 kohms ±5% 1/8W	R224	5010120	220 kohms ±5% 1/8W
R25	5010072	180 kohms ±5% 1/8W	R226	5010048	4.7 kohms ±5% 1/8W
R26	5010072	180 kohms ±5% 1/8W	R227	5010049	100 kohms ±5% 1/8W
R30	5010059	10 kohms ±5% 1/8W	R228	5010298	2.7 kohms ±5% 1/8W
R31	5010059	10 kohms ±5% 1/8W	R229	5010040	1 kohms ±5% 1/8W
R32	5010076	3.3 kohms ±5% 1/8W	R230	5010120	220 kohms ±5% 1/8W
R33	5010059	10 kohms ±5% 1/8W	R235	5010120	220 kohms ±5% 1/8W
R34	5010076	3.3 kohms ±5% 1/8W	R236	5010074	680 kohms ±5% 1/8W
R36	5010120	220 kohms ±5% 1/8W	R237	5010083	270 kohms ±5% 1/8W

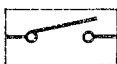


R238	5010120	220 kohms $\pm 5\%$ 1/8W	R243	5020099	86.6 kohms $\pm 1\%$ 1/8W
R239	5010062	68 kohms $\pm 5\%$ 1/8W	R244	5020130	150 kohms $\pm 1\%$ 1/8W
R240	5020162	100 ohms $\pm 1\%$ 1/8W	R245	5020099	86.6 kohms $\pm 1\%$ 1/8W
R241	5010751	680 ohms $\pm 2\%$ 1/8W	R246	5370061	47 kohms $\pm 20\%$ 0.1W
R242	5010758	1.8 kohms $\pm 2\%$ 1/8W	R247	5010638	10 Mohms $\pm 10\%$ 1/8W

C1	4010065	2.7 nF $\pm 10\%$ 63V	C203	4130141	8.2 nF $\pm 10\%$ 250V
C2	4000109	56 pF $\pm 2\%$ 63V	C204	4010067	1.5 nF $\pm 10\%$ 63V
C3	4010060	22 nF -20 +80% 40V	C205	4130150	100 nF $\pm 20\%$ 100V
C6	4010041	10 nF -20 +80% 40V	C206	4130150	100 nF $\pm 20\%$ 100V
C7	4010041	10 nF -20 +80% 40V	C207	4130109	10 nF $\pm 10\%$ 250V
C13	4200342	10 μ F -20 +50% 63V	C208	4130109	10 nF $\pm 10\%$ 250V
C14	4200342	10 μ F -20 +50% 63V	C211	4201035	2.2 μ F -20 +50% 63V
C15	4000110	82 pF $\pm 5\%$ 63V	C212	4010027	1 nF $\pm 10\%$ 100V
C18	4010041	10 nF -20 +80% 40 V	C213	4010024	470 pF $\pm 10\%$ 100V
C19	4010041	10 nF -20 +80% 40V	C214	4130106	330 nF $\pm 20\%$ 100V
C21	4010060	22 nF -20 +80% 40V	C215	4130101	100 nF $\pm 5\%$ 250V
C22	4010060	22 nF -20 +80% 40V	C220	4010088	220 pF $\pm 10\%$ 63V
C24	4010041	10 nF -20 +80% 40V	C221	4010088	220 pF $\pm 10\%$ 63V
C25	4010041	10 nF -20 +80% 40V	C222	4010088	220 pF $\pm 10\%$ 63V
C27	4010041	10 nF -20 +80% 40V	C223	4010088	220 pF $\pm 10\%$ 63V
C28	4010041	10 nF -20 +80% 40V	C224	4010088	220 pF $\pm 10\%$ 63V
C30	4010041	10 nF -20 +80% 40V	C225	4010088	220 pF $\pm 10\%$ 63V
C31	4010041	10 nF -20 +80% 40V	C228	4200108	4.7 μ $\pm 20\%$ 25V
C33	4010041	10 nF -20 +80% 40V	C230	4130079	22 nF $\pm 20\%$ 250V
C34	4010041	10 nF -20 +80% 40V	C231	4130100	68 nF $\pm 10\%$ 250V
C36	4201035	2.2 μ F -10 +50% 63V	C232	4130079	22 nF $\pm 20\%$ 250V
C201	4201035	2.2 μ F -10 +50% 63V	C233	4010027	1 nF $\pm 10\%$ 100V
C202	4010079	3.3 nF $\pm 10\%$ 100V	C234	4000016	10 pF $\pm 2\%$ 63V



ME1 8450044

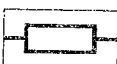


7400211	Switch ACT. TUNE	7400211	Switch FILTER 2
7400211	Switch M. PATH	7400211	Switch STEREO
7400211	Switch FILTER 1	7400211	Switch LOUDN.



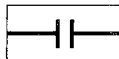
P24	7220145	Plug 5/5 pins	P28	7220226	Plug 8 pins
P25	7220134	Plug 2 pins	P29	7220220	Plug 6 pins
P26	7220212	Plug 3 pins	P30	7220212	Plug 3 pins
P27	7220122	Plug 4/3 pins	P31	7220220	Plug 6 pins

PC5, 8002404 Output Amplifier

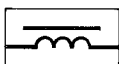


R200	5370236	100 ohms $\pm 20\%$ 0.1W	R229	5010061	56 kohms $\pm 5\%$ 1/8W
R201	5010144	680 ohms $\pm 5\%$ 1/8W	R230	5010061	56 kohms $\pm 5\%$ 1/8W
R202	5010076	3.3 kohms $\pm 5\%$ 1/8W	R231	5010000	270 ohms $\pm 5\%$ 1/8W
R203	5010059	10 kohms $\pm 5\%$ 1/8W	R232	5010000	270 ohms $\pm 5\%$ 1/8W
R204	5010067	560 ohms $\pm 5\%$ 1/8W	R233	5010061	56 kohms $\pm 5\%$ 1/8W
R205	5010046	12 kohms $\pm 5\%$ 1/8W	R234	5010144	680 ohms $\pm 5\%$ 1/8W
R206	5010067	560 ohms $\pm 5\%$ 1/8W	R235	5010144	680 ohms $\pm 5\%$ 1/8W
R207	5010040	1 kohms $\pm 5\%$ 1/8W	R236	5100224	0.18 ohms $\pm 10\%$ 2W
R208	5010247	1.5 kohms $\pm 5\%$ 1/8W	R237	5100224	0.18 ohms $\pm 10\%$ 2W
R209	5010069	3.9 kohms $\pm 5\%$ 1/8W	R238	5001033	1.8 kohms $\pm 10\%$ 1/2W
R210	5010751	680 ohms $\pm 2\%$ 1/8W	R239	5001033	1.8 kohms $\pm 10\%$ 1/2W
R211	5020114	11 kohms $\pm 1\%$ 1/8W	R240	5001029	1 kohms $\pm 10\%$ 1/2W
R212	5001042	10 kohms $\pm 10\%$ 1/2W	R241	5001021	330 ohms $\pm 10\%$ 1/2W
R213	5010151	56 ohms $\pm 5\%$ 1/8W	R242	5001021	330 ohms $\pm 10\%$ 1/2W
R214	5010120	220 kohms $\pm 5\%$ 1/8W	R243	5001032	1.5 kohms $\pm 10\%$ 1/2W
R215	5010061	56 kohms $\pm 5\%$ 1/8W	R244	5001029	1 kohms $\pm 10\%$ 1/2W
R216	5010061	56 kohms $\pm 5\%$ 1/8W	R245	5001021	330 ohms $\pm 10\%$ 1/2W
R217	5010079	22 kohms $\pm 5\%$ 1/8W	R246	5001021	330 ohms $\pm 10\%$ 1/2W
R218	5010411	47 ohms $\pm 5\%$ 1/8W	R247	5001030	1.2 kohms $\pm 10\%$ 1/2W
R219	5010058	470 ohms $\pm 5\%$ 1/8W	R248	5001030	1.2 kohms $\pm 10\%$ 1/2W
R220	5010151	56 ohms $\pm 5\%$ 1/8W	R249	5001032	1.5 kohms $\pm 10\%$ 1/2W
R223	5010061	56 kohms $\pm 5\%$ 1/8W	R250	5001026	680 ohms $\pm 10\%$ 1/2W
R224	5020349	100 ohms $\pm 5\%$ 1.6W	R251	5230008	50 ohms PTC
R225	5010065	100 ohms $\pm 5\%$ 1/8W	R252	5010045	47 kohms $\pm 5\%$ 1/8W
R226	5370208	160 ohms $\pm 20\%$ 0.1W	R253	5010047	120 kohms $\pm 5\%$ 1/8W
R227	5010411	47 ohms $\pm 5\%$ 1/8W	R254	5010047	120 kohms $\pm 5\%$ 1/8W
R228	5010253	33 ohms $\pm 5\%$ 1/8W	R255	5020087	4.7 ohms $\pm 10\%$ 0.7W

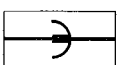
R256	5001022	390 ohms ±10% 1/2W
R257	5001024	470 ohms ±10% 1/2W
R258	5001026	680 ohms ±10% 1/2W
R260	5010065	100 ohms ±5% 1/8W



C200	4201061	4.7 µF 63V	C212	4130089	22 nF ±10% 250V
C201	4010027	1 nF ±10% 100V	C213	4130103	100 nF ±20% 250V
C202	4200368	100 µF 63V	C214	4200299	220 µF 40V
C203	4010060	22 nF -20 +80% 40V	C215	4200299	220 µF 40V
C204	4010060	22 nF -20 +80% 40V	C216	4130103	100 nF ±20% 250V
C205	4200330	100 µF -10 +50% 10V	C217	4130103	100 nF ±20% 250V
C206	4000112	56 pF ±5% 250V	C220	4010027	1 nF ±10% 100V
C207	4010041	10 nF -20 +80% 40V	C221	4010027	1 nF ±10% 100V
C208	4003124	56 pF ±2% 63V	C222	4010027	1 nF ±10% 100V
C209	4130109	10 nF ±10% 250V	C223	4010027	1 nF ±10% 100V
C210	4010041	10 nF -20 +80% 40V			
C211	4200330	100 µF -10 +50% 10V			

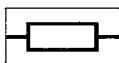


L201	6850114	0.5 µH
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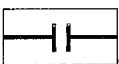


P38	7220212	Plug 3 pins
P39	7220129	Plug 2 pins
	7500124	Contact pins

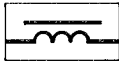
PC6, 8002402 Power Supply and Remote Receiver



R1	5010505	820 kohms ±5% 1/8W	R52	5010052	6.8 kohms ±5% 1/8W
R2	5010059	10 kohms ±5% 1/8W	R53	5010075	33 kohms ±5% 1/8W
R3	5010298	2.7 kohms ±5% 1/8W	R54	5010052	6.8 kohms ±5% 1/8W
R4	5010298	2.7 kohms ±5% 1/8W	R55	5002017	220 ohms ±10% 1W
R7	5010247	1.5 kohms ±5% 1/8W	R56	5002017	220 ohms ±10% 1W
R8	5010040	1 kohms ±5% 1/8W	R57	5010120	220 kohms ±5% 1/8W
R9	5010065	100 ohms ±5% 1/8W	R58	5010060	39 kohms ±5% 1/8W
R16	5010059	10 kohms ±5% 1/8W	R62	5010062	68 kohms ±5% 1/8W
R17	5010059	10 kohms ±5% 1/8W	R63	5010062	68 kohms ±5% 1/8W
R23	5010061	56 kohms ±5% 1/8W	R64	5010062	68 kohms ±5% 1/8W
R24	5010052	6.8 kohms ±5% 1/8W	R65	5010062	68 kohms ±5% 1/8W
R25	5010139	5.6 kohms ±10% 1/2W	R66	5010059	10 kohms ±5% 1/8W
R26	5010048	4.7 kohms ±5% 1/8W	R67	5010141	27 kohms ±5% 1/8W
R27	5010061	56 kohms ±5% 1/8W	R68	5010045	47 kohms ±5% 1/8W
R28	5002017	220 ohms ±10% 1W	R70	5010153	1.2 kohms ±5% 1/8W
R29	5010040	1 kohms ±5% 1/8W	R71	5010059	10 kohms ±5% 1/8W
R30	5010040	1 kohms ±5% 1/8W	R72	5010154	8.2 kohms ±5% 1/8W
R31	5010059	10 kohms ±5% 1/8W	R73	5010052	6.8 kohms ±5% 1/8W
R32	5010059	10 kohms ±5% 1/8W	R74	5010052	6.8 kohms ±5% 1/8W
R36	5010040	1 kohms ±5% 1/8W	R76	5010298	2.7 kohms ±5% 1/8W
R37	5010059	10 kohms ±5% 1/8W	R77	5010059	10 kohms ±5% 1/8W
R38	5010058	6.8 kohms ±5% 1/8W	R78	5010153	1.2 kohms ±5% 1/8W
R39	5010141	27 kohms ±5% 1/8W	R79	5010775	5.6 kohms ±5% 1/8W
R50	5010045	47 kohms ±5% 1/8W	R80	5010775	5.6 kohms ±2% 1/8W
R51	5010060	39 kohms ±5% 1/8W			



C1	4200016	22 µF -10 +50% 25V	C30	4130107	100 nF ±10% 250V
C2	4000023	150 pF ±5% 63V	C31	4200405	4700 µF 16V
C3	4130089	22 nF ±10% 250V	C32	4130106	330 nF ±20% 100V
C4	4010041	10 nF -20 +80% 40V	C33	4200406	2200 µF 40V
C5	4201069	2.2 µF ±20% 35V	C34	4200406	2200 µF 40V
C6	4201069	2.2 µF ±20% 35V	C35	4201065	10 µF 63V
C7	4100058	3.3 nF ±2.5% 63V	C36	4010027	1 nF ±10% 100V
C8	4100057	1.5 nF ±2.5% 63V	C37	4130106	330 nF ±20% 100V
C9	4100057	1.5 nF ±2.5% 63V	C38	4130106	330 nF ±20% 100V
C20	4130136	1 µF ±20% 100V	C39	4200403	100 µF 25V
C21	4201066	22 µF 63V	C40	4200403	100 µF 25V
C22	4010097	22 nF -20 +80% 40V	C43	4200342	10 µF -10 +50% 63V
C23	4010060	22 nF -20 +80% 40V	C44	4200342	10 µF -10 +50% 63V
C25	4200342	10 µF -10 +50% 63V	C45	4200342	10 µF -10 +50% 63V
C26	4200342	10 µF -10 +50% 63V	C46	4010041	22 nF -20 +80% 40V
C27	4010063	4.7 nF ±10% 63V	C47	4010041	22 nF -20 +80% 40V
C28	4130107	100 nF ±10% 250V	C51	4200380	1 µF -10 +50% 63V
C29	4130107	100 nF ±10% 250V			



L1	8022106	78 mH
L4	8020342	10 mH
L5	8020342	10 mH



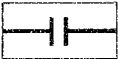
F1	6600009	2A-T/250V
	7500002	Holder for F1



P46	7220115	Plug 7/6 pins	P51	7220210	Plug 4 pins
P48	7220217	Plug 10 pins	P52	7220158	Plug 5 pins
P49	7220210	Plug 4 pins	P53	7220114	Plug 5/4 pins
P50	7220210	Plug 4 pins	P54	7220236	Plug 6 pins

3302326	Screen copper foil side
3304006	Screen

PC7, 8002407 Starting Up Circuit (Type 1901, 1905)



R1	5110043	5.6 ohms ±10% 5.5W
R2	5110043	5.6 ohms ±10% 5.5W



C1	4130191	330 nF ±20% 275V
F2	6600010	4A-T 250V S IEC 127
F3	6600000	250 mA-T 250V S IEC 127
	7500002	Holder for fuse

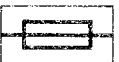


RL1	7600053
RL2	7600060

PC7, 8002425 Starting Up Circuit (Type 1903, 1907)



R1	5110043	5.6 ohms ±10% 5.5W
R2	5110043	5.6 ohms ±10% 5.5W
R3	5000194	3.3 Mohms ±10% 1/2W



C1	4130191	330 nF ±20% 275V
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F2	6600046	10A 250V
F3	6600033	0.5A-T 250V

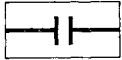
RL1	7600053
RL2	7600060

PC8, 8002406 Display

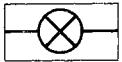


R1	5020101	0.15 ohms ±10% 1/2W	R23	5010052	6.8 kohms ±5% 1/8W
R2	5010144	580 ohms ±5% 1/8W	R24	5010092	220 ohms ±5% 1/8W
R3	5010049	100 kohms ±5% 1/8W	R25	5010076	3.3 kohms ±5% 1/8W
R4	5010053	15 kohms ±5% 1/8W	R26	5010052	6.8 kohms ±5% 1/8W
R5	5010039	68 ohms ±5% 1/8W	R27	5010092	220 ohms ±5% 1/8W
R6	5010059	10 kohms ±5% 1/8W	R28	5010076	3.3 kohms ±5% 1/8W
R7	5010120	220 kohms ±5% 1/8W	R29	5010052	6.8 kohms ±5% 1/8W
R8	5010052	6.8 kohms ±5% 1/8W	R30	5010092	220 ohms ±5% 1/8W
R9	5010057	150 ohms ±5% 1/8W	R33	5010045	47 kohms ±5% 1/8W
R10	5010065	100 ohms ±5% 1/8W	R34	5010092	220 ohms ±5% 1/8W
R11	5370050	1 kohms ±20% 0.1W	R35	5010045	47 kohms ±5% 1/8W
R12	5010052	12 kohms ±5% 1/8W	R36	5010092	220 ohms ±5% 1/8W
R13	5010075	33 kohms ±5% 1/8W	R37	5010045	47 kohms ±5% 1/8W
R14	5010048	4.7 kohms ±5% 1/8W	R38	5010092	220 ohms ±5% 1/8W
R15	5370050	1 kohms ±20% 0.1W	R40	5010092	220 ohms ±5% 1/8W
R16	5010092	220 ohms ±5% 1/8W	R41	5010059	10 kohms ±5% 1/8W
R17	5010069	3.9 kohms ±5% 1/8W	R42	5010071	560 kohms ±5% 1/8W
R20	5010144	680 ohms ±5% 1/8W	R43	5010061	56 kohms ±5% 1/8W
R21	5020101	0.15 ohms ±10% 1/2W	R46	5010040	1 kohms ±5% 1/8W
R22	5010076	3.3 kohms ±5% 1/8W	R47	5010040	1 kohms ±5% 1/8W

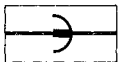
R48	5010040	1 kohms $\pm 5\%$ 1/8W	R63	5010039	68 ohms $\pm 5\%$ 1/8W
R49	5010039	68 ohms $\pm 5\%$ 1/8W	R64	5010411	47 ohms $\pm 5\%$ 1/8W
R50	5010039	68 ohms $\pm 5\%$ 1/8W	R65	5010039	68 ohms $\pm 5\%$ 1/8W
R51	5010039	68 ohms $\pm 5\%$ 1/8W	R66	5010039	68 ohms $\pm 5\%$ 1/8W
R52	5010039	68 ohms $\pm 5\%$ 1/8W	R67	5010039	68 ohms $\pm 5\%$ 1/8W
R53	5010044	330 ohms $\pm 5\%$ 1/8W	R68	5010039	68 ohms $\pm 5\%$ 1/8W
R56	5010039	68 ohms $\pm 5\%$ 1/8W	R69	5010039	68 ohms $\pm 5\%$ 1/8W
R57	5010039	68 ohms $\pm 5\%$ 1/8W	R70	5010039	68 ohms $\pm 5\%$ 1/8W
R58	5010039	68 ohms $\pm 5\%$ 1/8W	R71	5010039	68 ohms $\pm 5\%$ 1/8W
R59	5010039	68 ohms $\pm 5\%$ 1/8W	R72	5010039	68 ohms $\pm 5\%$ 1/8W
R60	5010039	68 ohms $\pm 5\%$ 1/8W	R73	5010039	68 ohms $\pm 5\%$ 1/8W
R61	5010039	68 ohms $\pm 5\%$ 1/8W	R74	5010039	68 ohms $\pm 5\%$ 1/8W
R62	5010039	68 ohms $\pm 5\%$ 1/8W			



C1	4010060	22 nF -20 +80% 40V	C10	4010061	2.2 nF $\pm 20\%$ 25V
C2	4010041	10 nF -20 +80% 40V	C11	4130114	470 nF $\pm 10\%$ 100V
C3	4200108	4.7 μ F $\pm 20\%$ 25V	C12	4010027	1 nF $\pm 10\%$ 100V
C4	4010061	2.2 nF $\pm 10\%$ 63V	C14	4010060	22 nF -20 +80% 40V
C5	4010061	2.2 nF $\pm 10\%$ 63V	C15	4010060	22 nF -20 +80% 40V
C6	4010061	2.2 nF $\pm 10\%$ 63V	C16	4010060	22 nF -20 +80% 40V
C7	4200342	10 μ F -10 +50% 63V			



IL1	8230060	6V 80 mA
IL2	8230060	6V 80 mA
IL3	8230060	6V 80 mA
IL4	8230060	6V 80 mA



P71	7220212	Plug 3 pins
P72	7210108	Socket 3 pins
P73	7210274	Socket 7 pins
P74	7210273	Socket 6 pins
P75	7210247	Socket 13 pins

PC9, 8002493 Micro-computer

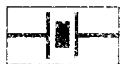


R1-R7	5010862	7 x 4.7 kohms $\pm 5\%$ 1/8W	R50	5010048	4.7 kohms $\pm 5\%$ 1/8W
R10	5010056	82 ohms $\pm 5\%$ 1/8W	R51	5010048	4.7 kohms $\pm 5\%$ 1/8W
R11	5010056	82 ohms $\pm 5\%$ 1/8W	R53	5010059	10 kohms $\pm 5\%$ 1/8W
R12	5010056	82 ohms $\pm 5\%$ 1/8W	R54	5010048	4.7 kohms $\pm 5\%$ 1/8W
R13	5010056	82 ohms $\pm 5\%$ 1/8W	R55	5010048	4.7 kohms $\pm 5\%$ 1/8W
R14	5010056	82 ohms $\pm 5\%$ 1/8W	R56	5010059	10 kohms $\pm 5\%$ 1/8W
R15	5010056	82 ohms $\pm 5\%$ 1/8W	R57	5010048	4.7 kohms $\pm 5\%$ 1/8W
R16	5010056	82 ohms $\pm 5\%$ 1/8W	R58	5010059	10 kohms $\pm 5\%$ 1/8W
R17	5010040	1 kohms $\pm 5\%$ 1/8W	R59	5010040	1 kohms $\pm 5\%$ 1/8W
R18	5010039	68 ohms $\pm 5\%$ 1/8W	R60	5010682	2.2 ohms $\pm 5\%$ 1/8W
R19	5010056	82 ohms $\pm 5\%$ 1/8W	R61	5010141	27 kohms $\pm 5\%$ 1/8W
R20	5010056	82 ohms $\pm 5\%$ 1/8W	R62	5010056	82 ohms $\pm 5\%$ 1/8W
R21	5010056	82 ohms $\pm 5\%$ 1/8W	R64	5010059	10 kohms $\pm 5\%$ 1/8W
R22	5010056	82 ohms $\pm 5\%$ 1/8W	R65	5010046	12 kohms $\pm 5\%$ 1/8W
R23	5010056	82 ohms $\pm 5\%$ 1/8W	R66	5010848	3.3 Mohms $\pm 5\%$ 1/8W
R24	5010056	82 ohms $\pm 5\%$ 1/8W	R67	5010049	100 kohms $\pm 5\%$ 1/8W
R25	5010056	82 ohms $\pm 5\%$ 1/8W	R69	5010048	4.7 kohms $\pm 5\%$ 1/8W
R26	5010058	470 ohms $\pm 5\%$ 1/8W	R70	5010048	4.7 kohms $\pm 5\%$ 1/8W
R27	5010040	1 kohms $\pm 5\%$ 1/8W	R71	5010403	27 ohms $\pm 5\%$ 1/8W
R28	5010092	220 ohms $\pm 5\%$ 1/8W	R72	5010079	22 kohms $\pm 5\%$ 1/8W
R29	5010079	22 kohms $\pm 5\%$ 1/8W	R73	5010079	22 kohms $\pm 5\%$ 1/8W
R30	5010298	2.7 kohms $\pm 5\%$ 1/8W	R74	5010049	100 kohms $\pm 5\%$ 1/8W
R31	5010298	2.7 kohms $\pm 5\%$ 1/8W	R75	5010049	100 kohms $\pm 5\%$ 1/8W
R32	5010298	2.7 kohms $\pm 5\%$ 1/8W	R76	5010048	4.7 kohms $\pm 5\%$ 1/8W
R33	5010059	10 kohms $\pm 5\%$ 1/8W	R77	5010048	4.7 kohms $\pm 5\%$ 1/8W
R34	5010059	10 kohms $\pm 5\%$ 1/8W	R78	5010059	10 kohms $\pm 5\%$ 1/8W
R35	5010049	100 kohms $\pm 5\%$ 1/8W	R79	5010059	10 kohms $\pm 5\%$ 1/8W
R36	5010052	6.8 kohms $\pm 5\%$ 1/8W	R80	5010059	10 kohms $\pm 5\%$ 1/8W
R37	5010049	100 kohms $\pm 5\%$ 1/8W	R81	5010059	10 kohms $\pm 5\%$ 1/8W
R38	5010049	100 kohms $\pm 5\%$ 1/8W	R82	5010058	470 ohms $\pm 5\%$ 1/8W
R39	5010049	100 kohms $\pm 5\%$ 1/8W	R83	5010092	220 ohms $\pm 5\%$ 1/8W
R40	5010049	100 kohms $\pm 5\%$ 1/8W	R84	5010059	10 kohms $\pm 5\%$ 1/8W
R41	5010362	180 ohms $\pm 5\%$ 1/8W	R85	5010059	10 kohms $\pm 5\%$ 1/8W
R42	5010362	180 ohms $\pm 5\%$ 1/8W	R86	5010059	10 kohms $\pm 5\%$ 1/8W
R43	5010079	22 kohms $\pm 5\%$ 1/8W	R87	5010059	10 kohms $\pm 5\%$ 1/8W
R45	5010048	4.7 kohms $\pm 5\%$ 1/8W	R88	5010059	10 kohms $\pm 5\%$ 1/8W
R46	5010048	4.7 kohms $\pm 5\%$ 1/8W	R89	5010059	10 kohms $\pm 5\%$ 1/8W
R47	5010048	4.7 kohms $\pm 5\%$ 1/8W	R90	5010059	10 kohms $\pm 5\%$ 1/8W
R48	5010048	4.7 kohms $\pm 5\%$ 1/8W	R91	5010059	10 kohms $\pm 5\%$ 1/8W
R49	5010048	4.7 kohms $\pm 5\%$ 1/8W	R92	5010059	10 kohms $\pm 5\%$ 1/8W

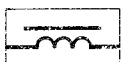
R93	5010059	10 kohms $\pm 5\%$ 1/8W	R103	5010058	470 ohms $\pm 5\%$ 1/8W
R94	5010059	10 kohms $\pm 5\%$ 1/8W	R104	5010058	470 ohms $\pm 5\%$ 1/8W
R95	5010059	10 kohms $\pm 5\%$ 1/8W	R105	5010058	470 ohms $\pm 5\%$ 1/8W
R98	5010045	47 kohms $\pm 5\%$ 1/8W	R106	5010058	470 ohms $\pm 5\%$ 1/8W
R99	5010049	100 kohms $\pm 5\%$ 1/8W	R109	5010040	1 kohms $\pm 5\%$ 1/8W
R100	5010058	470 ohms $\pm 5\%$ 1/8W	R110	5010040	1 kohms $\pm 5\%$ 1/8W
R101	5010058	470 ohms $\pm 5\%$ 1/8W	R111	5010040	1 kohms $\pm 5\%$ 1/8W
R102	5010058	470 ohms $\pm 5\%$ 1/8W	R112	5010040	1 kohms $\pm 5\%$ 1/8W



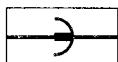
C1	4010027	1 nF $\pm 10\%$ 100V	C48	4010027	1 nF $\pm 10\%$ 100V
C2	4010027	1 nF $\pm 10\%$ 100V	C49	4010027	1 nF $\pm 10\%$ 100V
C3	4010027	1 nF $\pm 10\%$ 100V	C51	4010041	10 nF -20+80% 40V
C4	4010027	1 nF $\pm 10\%$ 100V	C52	4010041	10 nF -20+80% 40V
C5	4010027	1 nF $\pm 10\%$ 100V	C53	4010024	470 pF $\pm 10\%$ 100V
C6	4010027	1 nF $\pm 10\%$ 100V	C54	4010024	470 pF $\pm 10\%$ 100V
C7	4010027	1 nF $\pm 10\%$ 100V	C55	4010027	1 nF $\pm 10\%$ 100V
C8	4010041	10 nF -20+80% 40V	C57	4130142	220 nF $\pm 5\%$ 100V
C9	4010041	10 nF -20 +80% 40V	C58	4010041	10 nF -20 +80% 40V
C10	4010041	10 nF -20 +80% 40V	C59	4010041	10 nF -20 +80% 40V
C11	4010041	10 nF -20 +80% 40V	C60	4010041	10 nF -20 +80% 40V
C12	4010041	10 nF -20 +80% 40V	C61	4010027	1 nF $\pm 10\%$ 100V
C13	4010041	10 nF -20 +80% 40V	C62	4010027	1 nF $\pm 10\%$ 100V
C14	4010041	10 nF -20 +80% 40V	C63	4010027	1 nF $\pm 10\%$ 100V
C15	4010041	10 nF -20 +80% 40V	C64	4010027	1 nF $\pm 10\%$ 100V
C16	4010027	1 nF $\pm 10\%$ 100V	C65	4010027	1 nF $\pm 10\%$ 100V
C17	4000075	12 pF $\pm 2\%$ 63V	C66	4000069	100 pF $\pm 5\%$ 63V
C18	4000075	12 pF $\pm 2\%$ 63V	C67	4000069	100 pF $\pm 5\%$ 63V
C19	4010041	10 nF -20 +80% 40V	C68	4000069	100 pF $\pm 5\%$ 63V
C20	4010041	10 nF -20 +80% 40V	C69	4000069	100 pF $\pm 5\%$ 63V
C21	4010041	10 nF -20 +80% 40V	C70	4010027	1 nF $\pm 10\%$ 100V
C22	4010041	10 nF -20 +80% 40V	C71	4000069	100 pF $\pm 5\%$ 63V
C23	4010041	10 nF -20 +80% 40V	C72	4000069	100 pF $\pm 5\%$ 63V
C24	4010041	10 nF -20 +80% 40V	C73	4000069	100 pF $\pm 5\%$ 63V
C25	4010041	10 nF -20 +80% 40V	C74	4000069	100 pF $\pm 5\%$ 63V
C26	4010041	10 nF -20 +80% 40V	C75	4000069	100 pF $\pm 5\%$ 63V
C27	4010041	10 nF -20 +80% 40V	C76	4000069	100 pF $\pm 5\%$ 63V
C28	4010041	10 nF -20 +80% 40V	C77	4000069	100 pF $\pm 5\%$ 63V
C29	4010041	10 nF -20 +80% 40V	C78	4000069	100 pF $\pm 5\%$ 63V
C30	4010027	1 nF $\pm 10\%$ 100V	C79	4000069	100 pF $\pm 5\%$ 63V
C31	4010027	1 nF $\pm 10\%$ 100V	C80	4000069	100 pF $\pm 5\%$ 63V
C32	4010027	1 nF $\pm 10\%$ 100V	C81	4000069	100 pF $\pm 5\%$ 63V
C33	4010027	1 nF $\pm 10\%$ 100V	C82	4000069	100 pF $\pm 5\%$ 63V
C34	4000069	100 pF $\pm 5\%$ 63V	C85	4200013	22 μ F -10 +50% 25V
C36	4201057	1 μ F 35V	C86	4010041	10 nF -20 +80% 40V
C37	4010041	10 nF -20 +80% 40V	C88	4010041	10 nF -20 +80% 40V
C38	4010027	1 nF $\pm 10\%$ 100V	C94	4030010	100 nF -20 +100% 16V
C39	4010027	1 nF $\pm 10\%$ 100V	C95	4000075	12 pF $\pm 2\%$ 63V
C40	4010027	1 nF $\pm 10\%$ 100V	C97	4000075	12 pF $\pm 2\%$ 63V
C41	4010027	1 nF $\pm 10\%$ 100V	C98	4010041	10 nF -20 +80% 40V
C42	4010041	10 nF -20 +80% 40V			
C43	4010027	1 nF $\pm 10\%$ 100V			
C44	4010027	1 nF $\pm 10\%$ 100V			
C45	4010027	1 nF $\pm 10\%$ 100V			
C46	4010027	1 nF $\pm 10\%$ 100V			
C47	4010027	1 nF $\pm 10\%$ 100V			



X1	8090006	2 MHz
X2	8090006	2 MHz



L1	8020342	10 μ H
L2	8020341	
L3	8020342	10 μ H
L4	8020342	10 μ H
L7	8020342	10 μ H
L8	8020342	10 μ H
L9	8020342	10 μ H
L10	8020342	10 μ H

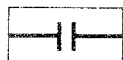


P72	7220214	Plug 3 pins	P77	7220213	Plug 2 pins
P73	7220216	Plug 7 pins	P84	7220213	Plug 2 pins
P74	7220204	Plug 6 pins	P85	7220230	Plug 5 pins
P75	7220218	Plug 13 pins		7500154	Contact pin
P76	7220217	Plug 10 pins			

7200044	Socket for IC6
7200045	Socket for IC3/IC4

3302344	Screen for μ C top
3302345	Screen for μ C bottom

PC12, 8002496 Terminal Trans- mitter



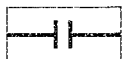
R1	5010064	2.2 kohms \pm 5% 1/8W
R2	5001164	3.3 ohms \pm 10% 1/2W
R3	5010040	1 kohms \pm 5% 1/8W



C1	4010024	470 pF \pm 10% 100V	C6	4010021	220 pF \pm 10% 100V
C2	4010024	470 pF \pm 10% 100V	C7	4010021	220 pF \pm 10% 100V
C5	4010021	220 pF \pm 10% 100V	C8	4010021	220 pF \pm 10% 100V

X1	8030013	455 kHz
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Module 22, Socket Panel



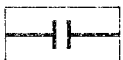
R1	5010058	470 ohms \pm 5% 1/8W
R2	5010058	470 ohms \pm 5% 1/8W



C1	4011005	2.2 nF -20 +50%
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T1	8020341
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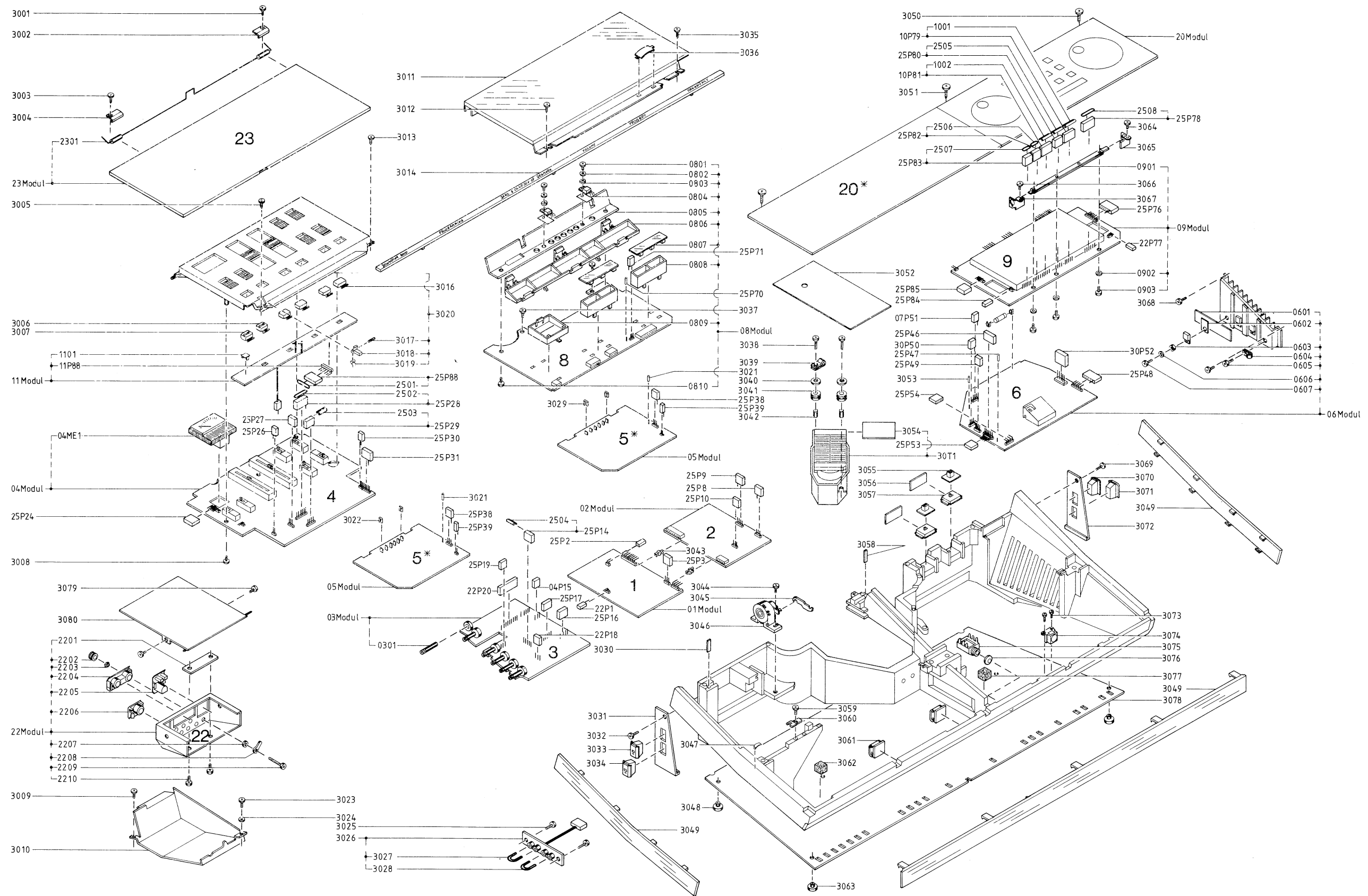
Module 30, Trans- former



R1	5010362	180 ohms \pm 5% 1/8W
R2	5010362	180 ohms \pm 5% 1/8W

C1	4200409	10000 μ F 63V
C2	4200409	10000 μ F 63V
C3	4200409	10000 μ F 63V
C4	4200409	10000 μ F 63V

MEKANISK STYKLISTE
LIST OF MECHANICAL PARTS



Main Chassis, Secondary Operating Panel

01Modul 8002416	PC, FM	01Modul 8002449	PC, FM type 1903
<hr/>			
02Modul 8002398	PC, FM interface		
<hr/>			
03Modul 8002399	PC, preamplifier	0301	2830087 Shaft
<hr/>			
04Modul 8002403	PC, tone control	04P15	6273912 Lead with socket
04ME1 8450044	Signal meter		
<hr/>			
05Modul 8002404	PC, output amplifier with heatsink		
<hr/>			
06Modul 8002402	PC, power supply	0604	2515001 Wire holder
0601	3014056 Insulation	0605	2039027 Screw AM3 x 6
0602	2622248 Mica sheet	0606	2624032 Washer
0603	2938140 Bushing	0607	2039027 Screw AM3 x 6
<hr/>			
07P51	6273898	Lead with socket	
<hr/>			
08Modul 8002406	Display, assembled	0806	3015089 Holder
0801	2039035	0807	3320051 Window
0802	2624032	0808	3131178 Housing
0803	2938140	0809	3015090 Holder
0804	2622248	0810	2013099 Screw 2.8 x 6.5 black
0805	3358160	Heatsink	
<hr/>			
09Modul 8002493	PC, µC	0902	2622014 Fibre washer
0901	2566047	0903	2039026 Screw AM3 x 4 black
<hr/>			
1001	7229025	10P79	6273888 Lead with socket
1002	7229025	10P81	6273888 Lead with socket
<hr/>			
11Modul 8002412	PC, secondary operation	11P88	7220221 Plug 8/8 pole
1101	7500148	Contact spring	
<hr/>			
20Modul 3168113	Primary operating panel		
<hr/>			
22Modul 7219028	Socket panel	2206	7210221 Socket »PHONO«
2201	3151203	2207	2625002 Washer
2202	2382009	2208	7530082 Solder tag
2203	2380112	2209	2039034 Screw AM3 x 12 black
2204	7210179	2210	2039028 Screw AM3 x 8 black
2205	7210279	Socket »FM«	
<hr/>			
22P1	6273993	22P20	6273995 Lead with socket
22P18	6273994	22P77	6273996 Lead with socket
<hr/>			
23Modul 3162134	Cover for secondary operation	2301	2819150 Spring with bearings
<hr/>			
2501	2732056	2505	7229024 Cap
2502	2732056	2506	2732055 O-ring
2503	7229024	2507	2732056 O-ring
2504	7229023	2508	2732056 O-ring
<hr/>			
25P2	6273992	25P24	6275437 P24/P38/P39/P54
25P3	6273906	25P26	6273906 P26/P3 with cable
25P8	6273896	25P27	6273986 P27/P16 with cable
25P9	6273892	25P28	6273890 P28/P83 with cable
25P10	6273987	25P29	6273891 P29/P80 with cable
25P14	6273901	25P30	6273915 P30/P71 with cable
25P16	6273986	25P31	6273989 P31/P53 with cable
25P17	6273988	25P38	6275437 P24/P38/P39/P54
25P19	6273987	25P39	6275437 P24/P38/P39/P54

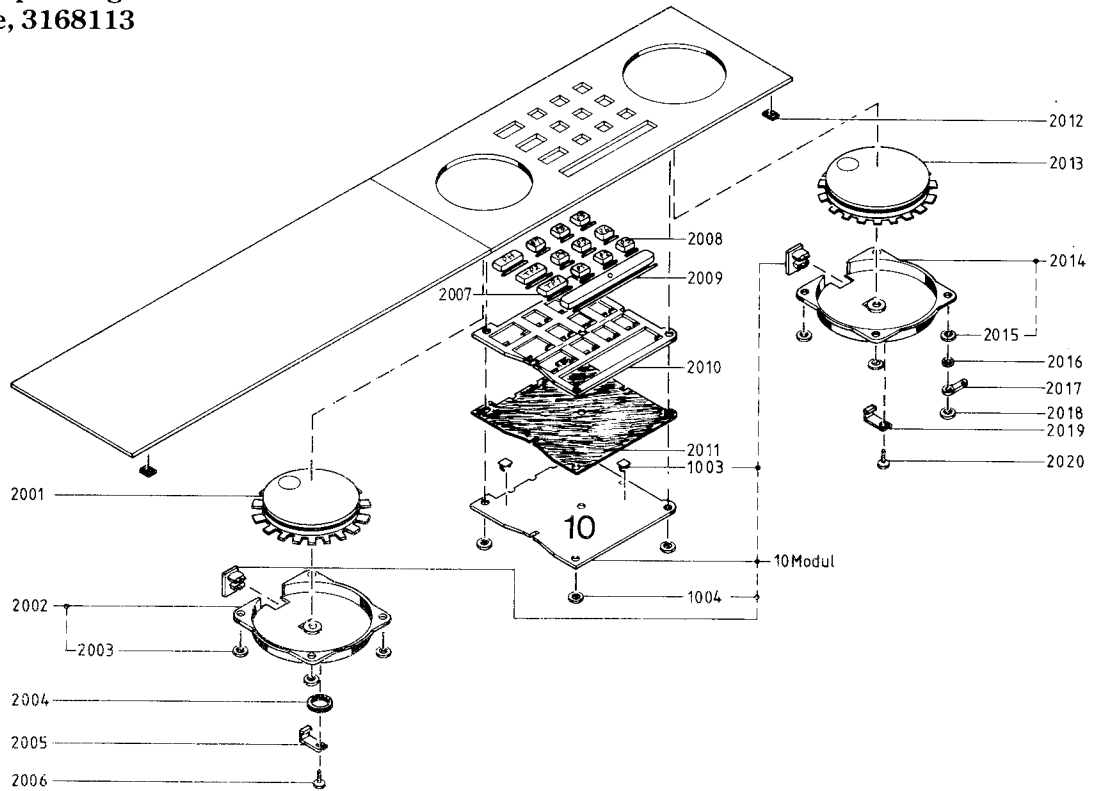
25P46	6273988	P46/P17 with cable	25P76	6273893	P76/P48 with cable
25P47	6273902	P47/P70 with cable	25P78	6273894	P78/P88 with cable
25P48	6273893	P48/P76 with cable	25P80	6273891	P80/P29 with cable
25P49	6273896	P49/P8 with cable	25P82	6273901	P82/P14 with cable
25P53	6273989	P53/P31 with cable	25P83	6273890	P83/P28 with cable
25P54	6275437	P24/P38/P39/P54	25P84	6273992	P84/P2 with cable
25P70	6273902	P70/P47 with cable	25P85	6273892	P85/P9 with cable
25P71	6273915	P71/P30 with cable	25P88	6273894	P88/P78 with cable

3001	2013067	Screw 2.8 x 12.7 black	3043	3152063	Holder
3002	3014046	Mounting hardware	3044	2013080	Screw 2.8 x 9.5 black
3003	2013067	Screw 2.8 x 12.7 black	3045	2851107	Arm
3004	3014054	Mounting hardware	3046	3130061	Damping system
3005	2013067	Screw 2.8 x 12.7 black	3047	2815008	Spring
3006	2775747	Pushbutton »STORE«	3048	3035031	Rubber foot
3007	2775747	Pushbutton »STORE«	3049	3413621	Cabinet, teak
3008	2013099	Screw 2.8 x 6.5 black		3413623	Cabinet, rosewood
3009	2013080	Screw 2.8 x 9.5 black		3413624	Cabinet, oak
3010	3302304	Bracket		3413625	Cabinet, white
3011	3112243	Glass plate	3050	2015065	Screw 3.5 x 12.7 black
3012	2915065	Screw 3.5 x 12.7 black	3051	2015065	Screw 3.5 x 12.7 black
3013	2013067	Screw 2.8 x 12.7 black	3052	3302335	Insulation plate
3014	2568581	Profile	3053	7500014	Contact bushing
3016	2775728	Pushbutton	3054	3170146	Insulation
3017	2830071	Pin	3055	2775748	Button
3018	3034043	Lock	3056	3170187	Insulation plate
3019	2819151	Spring	3057	7400230	Loudspeaker switch
3020	3168169	Panel with lock	3058	2645032	Spacer
3021	7500014	Contact bushing	3059	2013080	Screw 2.8 x 9.5 black
3022	7500147	Socket	3060	2548171	Bracket
3023	2013080	Screw 2.8 x 9.5 black	3061	2515033	Cable clamp
3024	2625002	Washer	3062	3947032	Spacer
3025	2013080	Screw 2.8 x 9.5 black	3063	3035031	Rubber foot
3026	7210323	Ext. filter output	3064	2013080	Screw 2.8 x 9.5 black
3027	2510131	Clamp	3065	3030051	Hinge
3028	2510131	Clamp	3066	2013080	Screw 2.8 x 9.5 black
3029	7500147	Socket	3067	3030052	Hinge
3030	2645032	Spacer	3068	2013099	Screw 2.8 x 6.5 black
3031	3151187	Holder for socket	3069	2013080	Screw 2.8 x 9.5 black
3032	2013080	Screw 2.8 x 9.5 black	3070	7211047	Socket 2-pole DIN
3033	7211047	Socket 2-pole DIN	3071	7211047	Socket 2-pole DIN
3034	7211047	Socket 2-pole DIN	3072	3151186	Holder for socket
3035	2015065	Screw 3.5 x 12.7 black	3073	2011005	Screw 2.2 x 9.5
3036	2816174	Spring	3074	3152289	Holder
3037	2013080	Screw 2.8 x 9.5 black	3075	7210151	Jack socket
3038	2013106	Screw 2.9 x 16 black	3076	2389045	Nut
3039	2515001	Wire holder	3077	3947032	Spacer
3040	2622024	Washer	3078	3454258	Bottom plate
3041	2938125	Bushing	3079	2039024	Screw AM3 x 6 black
3042	2930084	Brass tube	3080	3112249	Cover for socket panel

30P50	6273910	Lead with socket	30P52	6273904	Lead with socket
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30T1	8013222	Transformer, type 1901, 220V	8013231	Transformer, type 1905 240V
	8013227	Transformer, type 1903, 120V	8013235	Transformer, type 1907 110V/220V

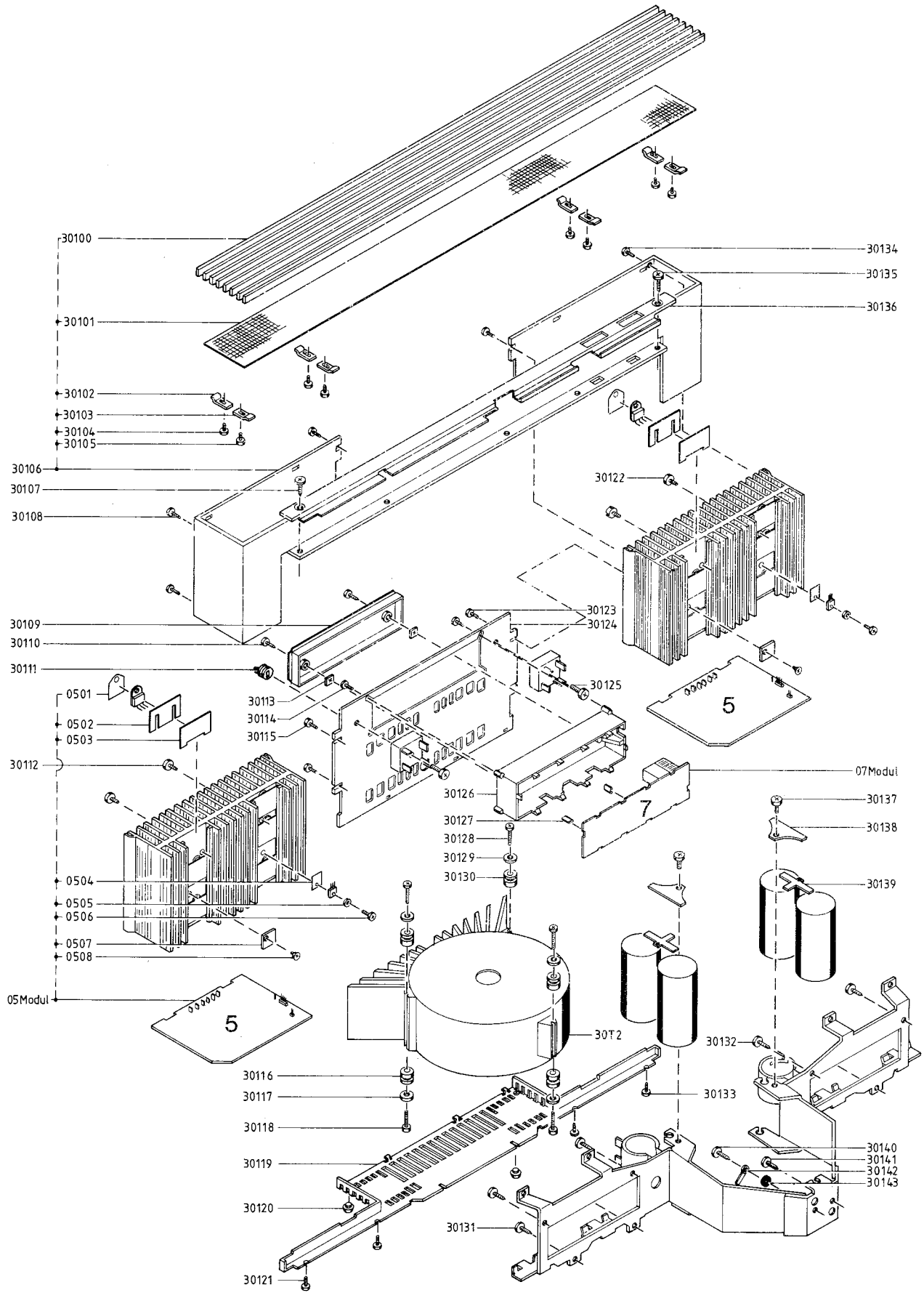
Primary Operating Panel Complete, 3168113



10Modul 8002400 PC, primary operation
1003 7500148 Contact spring

1004 2395034 Spire

2001	2794080	Wheel for volume	2011	3170184	Foil
2002	3130067	Housing for wheel	2012	2620078	Felt washer
2003	2395034	Spire	2013	2794079	Wheel for frequency
2004	2732056	O-ring	2014	3130067	Housing for wheel
2005	2568550	Adjustment rail	2015	2395034	Spire
2006	2011005	Screw 2.2 x 9.5	2016	2625002	Tooth-lock washer
2007	2775734	Set of buttons, large	2017	7530082	Solder tag
2008	2775735	Set of buttons, small	2018	2395034	Spire
2009	2775858	Button »0«	2019	2568550	Adjustment rail
2010	3014045	Holder	2020	2011005	Screw 2.2 x 9.5



LF Output and Cooling Tower

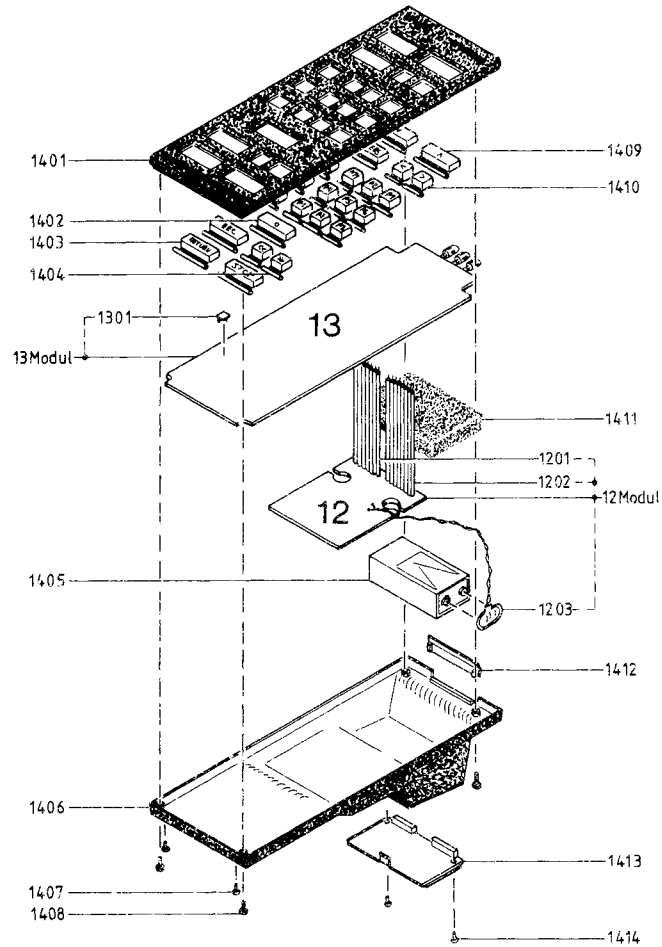
05Modul 8002404	Output amplifier with heatsink	0504	2622248	Mica sheet	
0501	2622250	Mica sheet	0505	2622052	Fibre washer
0502	3014055	Insulation	0506	2039028	Screw AM3x8 black
0503	2816187	Plate	0507	6140622	PC-board
			0508	2039024	Screw AM3 x 6 black

07Modul 8002407	PC, starting-up circuit 1901/1905	07Modul 8002425	PC, starting-up circuit 1903/1907
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30100	3444121	Cooling grill	30124	3452343	Back plate 1901
30101	3911074	Fibre glass mesh		3452348	Back plate 1903
30102	3151183	Bracket		3452363	Back plate 1905
30103	3151183	Bracket		3452343	Back plate 1907
30104	2039020	Screw AM3 x 5 black	30125	2043021	Screw AM4 x 16 black
30105	2039020	Screw AM3 x 5 black	30126	3131184	Housing
30106	3358159	Cooling tower, complete	30127	7500147	Socket
30107	2015065	Screw 3.5 x 12.7 black	30128	2043900	Screw AM4 x 20
30108	2013080	Screw 2.8 x 9.5 black	30129	2622024	Washer
30109	3164377	Cover	30130	2938162	Spacer
30110	2013067	Screw 2.8 x 12.7 black	30131	2015065	Screw 3.5 x 12.7 black
30111	3034045	Wire holder	30132	2015065	Screw 3.5 x 12.7 black
30112	2043011	Screw AM4 x 8 black	30133	2013080	Screw 2.8 x 9.5 black
30113	2390020	Locking washer	30134	2013080	Screw 2.8 x 9.5 black
30114	2013080	Screw 2.8 x 9.5 black	30135	2015065	Screw 3.5 x 12.7 black
30115	2013080	Screw 2.8 x 9.5 black	30136	2560081	Decorative rail
30116	2938162	Spacer	30137	2043020	Screw AM4 x 6
30117	2622024	Washer	30138	2510128	Bracket
30118	2043900	Screw AM4 x 20	30139	7530077	Bracket
30119	3454263	Bottom	30140	2015065	Screw 3.5 x 12.7 black
30120	3035032	Rubber foot	30141	2015065	Screw 3.5 x 12.7 black
30121	2013080	Screw 2.8 x 9.5 black	30142	7330091	Solder tag
30122	2043011	Screw AM4 x 8 black	30143	2625003	Tooth-lock washer
30123	2013080	Screw 2.8 x 9.5 black			

30T2	8013250	Transformer type 1901, 220V	8013252	Transformer type 1905, 240V
	8013251	Transformer type 1903, 120V	8013253	Transformer type 1907, 110V/220V

Beolab Terminal



12Modul	8002496	PC, remote transmitter	1202	6200036	Set of leads, 8 leads
120i	6200016	Set of leads, 7 leads	1203	7229020	Battery connection
<hr/>					
13Modul	8002492	PC, operation	1301	7500148	Contact spring
<hr/>					
14Modul	8052142	Beolab terminal complete	1407	3010007	Stop
			1408	2011023	Screw 2.2 x 6.5 black
1401	3164379	Cover	1409	2775736	Set of buttons, large, black
1402	2775761	Button »0«	1410	2775737	Set of buttons, small, black
1403	2775760	Set of buttons, large, blue	1411	3917036	Foam
1404	2775759	Set of buttons, small, blue	1412	3322058	Window
1405	8700008	Battery 9V	1413	3160031	Cover
1406	3454289	Bottom	1414	3010007	Stop

Parts Not Shown

3532148	Diagram	6270213	PU lead
3391564	Outer carton	6270222	Signal lead
3397418	Foam packing, bottom and cover	3391630	Packing for Beolab Terminal
		3390001	Plastic bag for Beolab Terminal
6271133	Mains lead with Euro socket	7220252	Connector accessories
6100060	Mains lead for type 1903		
3917049	Insert		

Cable Survey

Cable Pos. No.	Order No.	Length mm	Pin/Socket		Connection	
			Ex. 1	6	From	To
25P2/P84	6273992	257	2	2	01P2	09P84
25P3/P26	6273906	342	4	3	01P3	04P26
25P8/P49	6273896	177	4	4	02P8	06P49
25P9/P85	6273892	170	5	5	02P9	09P85
25P10/P19	6273987	340	4	4	02P10	03P19
25P14/P82	6273901	492	5	5	03P14	09P82
25P16/P27	6273986	336	5	4	03P16	04P27
25P17/P46	6273988	439	6	7	03P17	06P46
25P28/P83	6273890	500	8	8	04P28	09P83
25P29/P80	6273891	530	6	6	04P29	09P80
25P30/P71	6273915	507	3	3	04P30	08P71
25P31/P53	6273989	450	6	5	04P31	06P53
25P47/P70	6273902	234	1	1	06P47	08P70
25P48/P76	6273893	185	10	10	06P48	09P76
25P78/P88	6273894	610	8	8	09P78	11P88
25P24/P39	6275437	705	6	2 2	04P24	05P39 05P39
25P38/P54	6275437	388	3 3	6	05P38 05P38	06P54

Survey of packings for module transport

Module No.	Designation	Packing No.	Remarks
01	FM	3391574	
02	FM interface	3391574	
03	Preamplifier	3391574	
04	Tone control	3391576	
05	Output amplifier	3391573	PC-board and heat-sink unfolded
06	Power supply	3391576	
07	Starting up circuit	3391574	
08	Display	3391575	
09	Micro-computer	3391575	
10	Keyboard primary	sample bag	
11	Keyboard secondary	sample bag	
12	Terminal transmitter	3391574	
13	Keyboard terminal	sample bag	

GUIDE TO ADJUSTMENTS

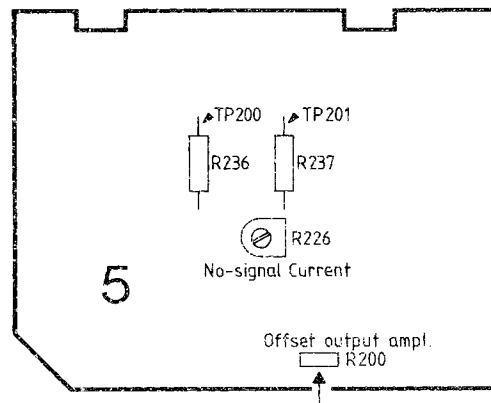
The following adjustments refer to some test points (TP). It is pointed out that in a number of receivers manufactured the test points are not shown in the component print of the PC-units.

In the cases where identical adjustments are to be made for the right-hand and the left-hand channels, the following applies: component nominations without brackets indicate the right-hand channel while component nominations in brackets refer to the left hand channel.

No-load current

The no-load current can be adjusted by means of a DC voltmeter as described in point 1, or by means of a milliammeter as described in point 2.

To both methods it applies that the no-load current adjustments are to be made while the receiver is in a cold state and with the volume control turned down. Loudspeakers must not be connected to the receiver.



1. Connect a millivoltmeter across the two emitter resistors 5R236 and 5R237 in TP200 and TP201.

Adjust with the potentiometer 5R226 until a reading of 18 mV is obtained.

2. Insert a milliammeter in series with the collector of 5IC203.

Adjust with the potentiometer 5R226 until a reading of 50 mA is obtained.

Offset output amplifier

Prior to making this adjustment the receiver must have been ON for at least 30 seconds.

The volume control **must** be fully turned down.

Connect a DC millivoltmeter to the loudspeaker output.

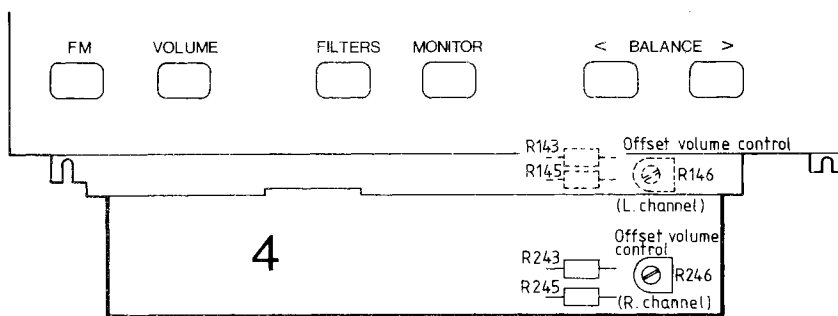
Adjust with the potentiometer 5R200 until a reading of 0V (± 5 mV) is obtained.

Offset volume control

Switch on the receiver and turn down the volume control until the display shows »0.0«.

Connect an oscilloscope to the right-hand (left-hand) loudspeaker output. Switch off the X deflection, (»Ext. X position«). Set the Y input to the sensitivity of 5 mV/cm and in the DC mode. (If the trimmer is very much out of balance, it may be necessary to use a lower sensitivity at the start of this adjustment).

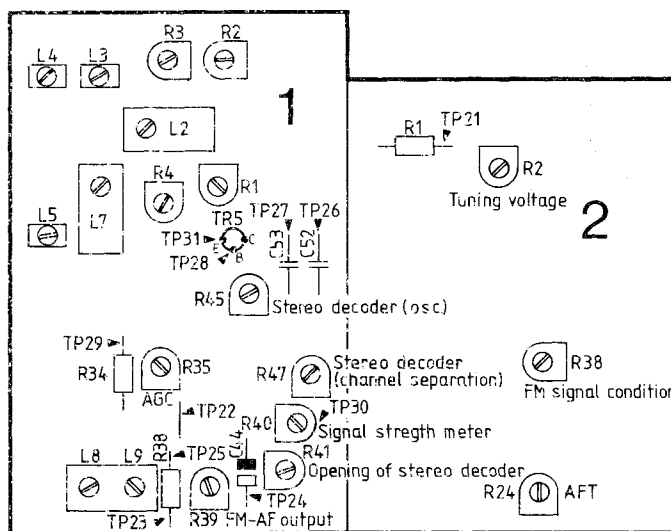
Now turn the volume forwards and backwards between »0.0« and »0.1«. Some DC jumps will appear on the scope screen and if they are sufficiently strong, they will also be audible as a crackling noise in the loudspeakers.



Adjust with the potentiometer 4R246 (4R146) until minimum DC jumps appear on the scope screen (<3 mV).

If the field of adjustment of the potentiometer is too narrow this is extendable by disconnecting the resistors 4R243 (4R143) or 4R245 (4R145). If it is necessary to turn the potentiometer further to the right than is possible, disconnect 4R245 (4R145). If it is necessary to turn the potentiometer further to the left than is possible, disconnect 4R243 (4R143).

NB: With a view to possible later adjustments the resistor should be disconnected by lifting the one feed line off the print. Place the resistor temporarily in such a way that there is no risk of short-circuiting other components.



Tuning voltage

Connect a DC voltmeter to 2TP21.

Adjust with the potentiometer 2R2 until a reading of 3.0V is obtained.

Tuner (Front-end) and IF section

Set the receiver in the »Manual Tune« mode and set it to 87.5 MHz.

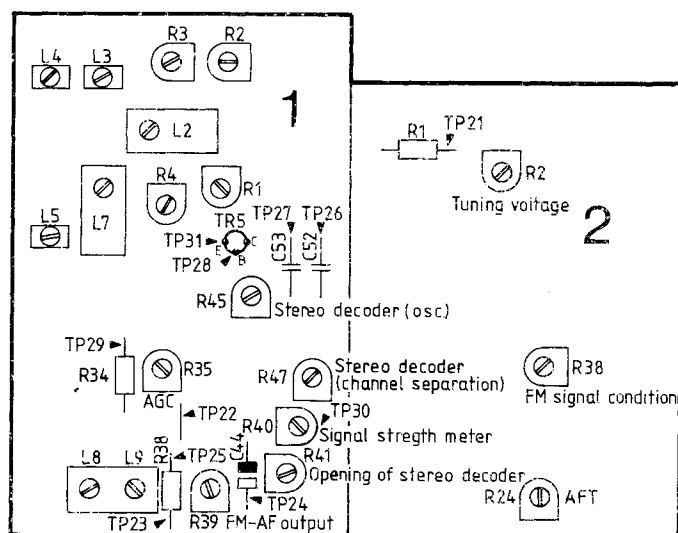
Tuner (Front-end)/IF

Connect a sweep generator to the aerial input and set the receiver to 87.5 MHz.

Connect an oscilloscope to 1TP22 via an RC-probe.

Adjust with 1L2, 1L3, 1L4, 1L5, and 1L7 for maximum and symmetrical IF curve (repeat this procedure, if necessary).

Now set the receiver and the sweep generator to 108 MHz. Adjust with the potentiometers 1R1, 1R2, 1R3 and 1R4 for maximum and symmetrical IF curve.



Detector

A distortion meter is required in order to make a correct adjustment of the detector, as described in point 1. If a distortion meter is not available, it is possible to make a fairly good adjustment by following the procedure described in point 2.

1. Connect a signal generator to the aerial input.

Connect a distortion meter to the loudspeaker output.

Connect a DC voltmeter between 1TP23 and 1TP25.

Adjust with 1L8 until minimum distortion is measured. Then adjust with 1L9 until a reading of 0V is obtained.

Repeat both adjustments until they are OK.

2. Make the adjustment by means of the »S curve«, but it will always be uncertain whether the receiver is within its distortion data.

Set the receiver to, e.g. 94 MHz.

Connect a sweep generator to the aerial input and set it to the same frequency as the receiver.

Connect an oscilloscope to 1TP24 and insert a DC voltmeter between 1TP23 and 1TP25.

Adjust with 1L8 and 1L9 for maximum and symmetrical S curve.

Then adjust with 1L9 until a reading of 0V is obtained.

NB: When the adjustments of the tuner/IF and the detector have been finished it is necessary to check the following, if the receiver is to be used in a geographical area where transmitter frequencies outside the 100 kHz grid can be received (i.e. transmitter frequencies not dividable by 100 kHz):

Set the receiver to the relevant transmitter station which is outside the 100 kHz grid.

Set the receiver in the »Aut. Tune« mode.

Check if the last two digits in the frequency display are flickering between two digits. If so, adjust with the potentiometer 2R24 until the last digit stays stable. If 2R24 is turned clockwise (as seen from the component side), the number is rounded off to the next higher one, and if 2R24 is turned anti-clockwise, the number is rounded off to the next lower one.

FM-AF output

Connect a signal generator to the aerial input and set it to, e.g. 94 MHz and to yield 1 mV EMF, $\Delta \pm 75$ kHz.

Set the receiver to the same frequency as the signal generator.

Connect an AC voltmeter to 1TP26.

Adjust with the potentiometer 1R39 until a reading of 0.7 V is obtained.

AGC

Connect a signal generator to the aerial input, and set it to, e.g. 94 MHz and to yield 1 mV EMF, $\Delta \pm 75$ kHz.

Set the receiver to the same frequency as the signal generator.

Connect a DC voltmeter to 1TP29.

Adjust with the potentiometer 1R35 until a reading of 3.5 V (± 0.2 V) is obtained.

Signal strength meter

Connect a signal generator to the aerial input, and set it to, e.g. 94 MHz and to yield 1 mV EMF, $\Delta \pm 75$ kHz.

Set the receiver to the same frequency as the signal generator.

Connect a DC voltmeter to 1TP30

Adjust with the potentiometer 1R40 until a reading of 2.0 V is obtained.

Opening of stereo decoder

Connect a signal generator to the aerial input, and set it to, e.g. 94 MHz and to yield 25 μ V EMF, $\Delta \pm 75$ kHz.

Set the receiver to the same frequency as the signal generator.

Connect a DC voltmeter to 1TP28.

Adjust with the potentiometer 1R41 until a reading of 0.6 V is obtained.

NB: The channel separation must be 10 dB (± 2 dB).

Stereo decoder

Oscillator

In order to make this adjustment in a correct way the following instruments are required as described in point 1: a frequency counter or a Bang & Olufsen voltmeter RV11 and a frequency probe PF5. If these instruments are not available, a fairly good adjustment is possible by following the procedure described in point 2.

1. Solder a 220 kohm resistor onto the plug P6 (the male part) from pin 6 to pin 5 (co-ordinate B1).

Set the receiver to a mono station.

Connect a frequency counter (or RV11/PF5) to TP31.

Adjust with the potentiometer 1R45 until a reading of 19 kHz (± 50 Hz) is obtained.

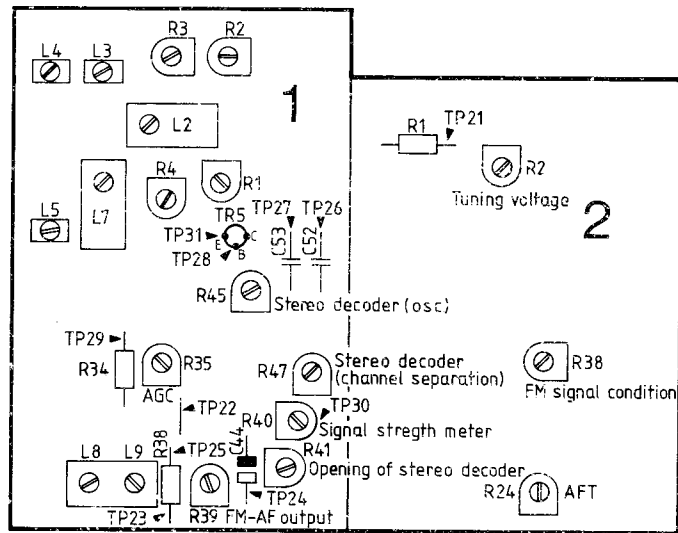
After the adjustment is finished, remove the soldered-on resistor.

2. Solder a 220 kohm resistor onto the plug P6 (the male part) from pin 6 to pin 5 (co-ordinate B1).

Set the receiver to a stereo station.

Turn the potentiometer 1R45 anti-clockwise (as seen from the component side) until the stereo effect just ceases to be heard. Then turn 1R45 clockwise until the stereo effect just ceases to be heard. Now adjust 1R45 exactly between the two positions and an approximately correct adjustment has been achieved.

After the adjustment is finished, remove the soldered-on resistor.



Channel separation

Connect a stereo (incoder) to the aerial input.

Connect a wattmeter or an AC voltmeter to the loudspeaker output.

Adjust with the potentiometer 1R47 until minimum signal is obtained in the non-modulated channel.

**AFT
(Automatic Fine Tuning)**

In order to be able to make this adjustment correctly it is a requirement that the tuner/IF and detector adjustments are perfect.

Connect a signal generator to the aerial input, and set it to, e.g. 94 MHz and to yield 1 mV EMF $\Delta \pm 75$ kHz.

Set the receiver to the same frequency as the signal generator and in the »Aut. Tune« mode.

Connect an oscilloscope to 1TP22.

Adjust with the potentiometer 2R24 until at least two harmonics of the signal are obtained, as shown in the curve.



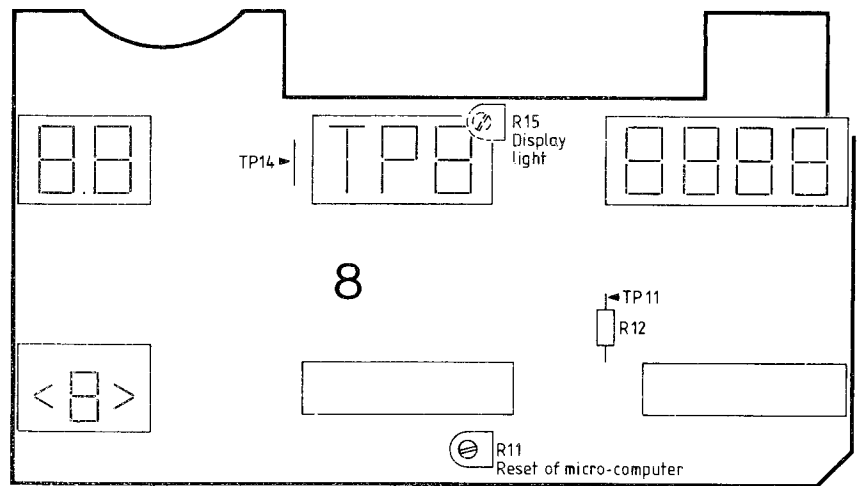
FM signal condition

Connect a signal generator to the aerial input, and set it to, e.g. 94 MHz and to yield 10 μ V EMF $\Delta \pm 75$ kHz.

Set the receiver to the same frequency as the signal generator and in the »Aut. Tune« mode.

Adjust with the potentiometer 2R38 until the point where the signal just cuts in.

NB: 2R38 is accessible from the bottom of the receiver, and consequently is easy to re-adjust, should local receiving conditions or customer's requirements make this desirable.



Resetting of microcomputer

Switch the receiver ON at a random programme.

Connect a DC voltmeter to 8TP11.

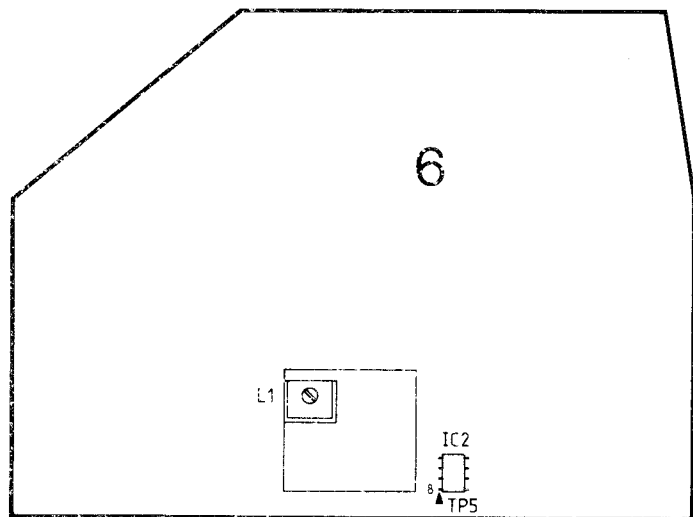
Adjust with the potentiometer 8R11 until a reading of 6.5 V (± 100 mV) is obtained.

Display light

Switch the receiver ON at a random programme.

Connect a DC voltmeter to 8TP14.

Adjust with the potentiometer 8R15 until a reading of 5.0 V is obtained.



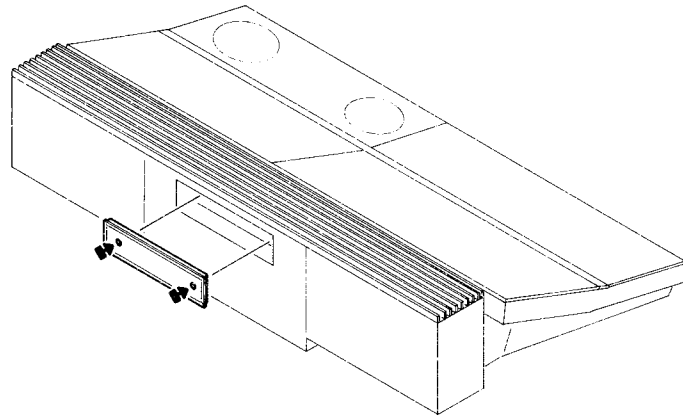
Remote control receiver

Connect an oscilloscope to 6TP5.

Activate a random button on the Beolab Terminal, while holding it indirectly or at some distance from the receiver to avoid overdriving of 6IC1.

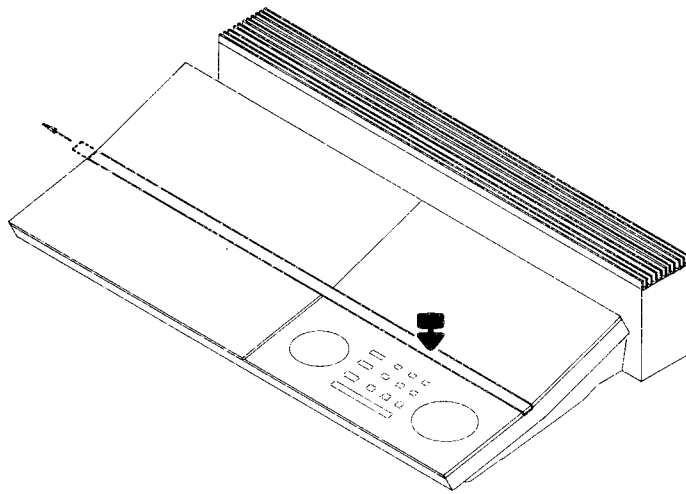
Adjust with 6L1 until max. signal is obtained.

DISMANTLING

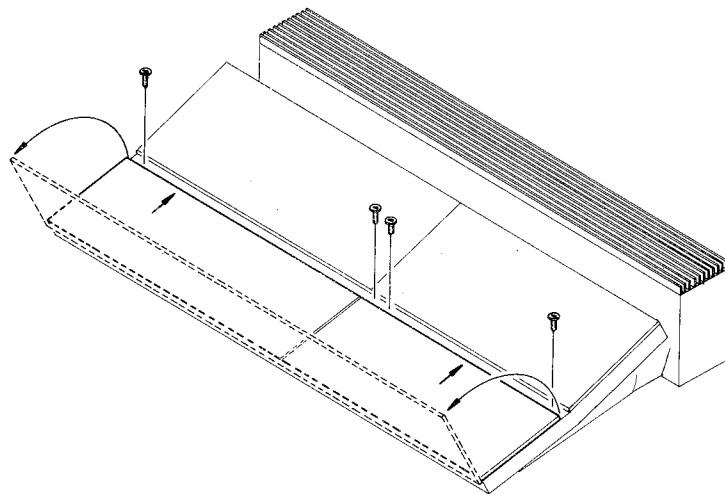
Replacement of
mains fuses

Remove the screws shown and pull-out the cover panel.

Removal of release rail

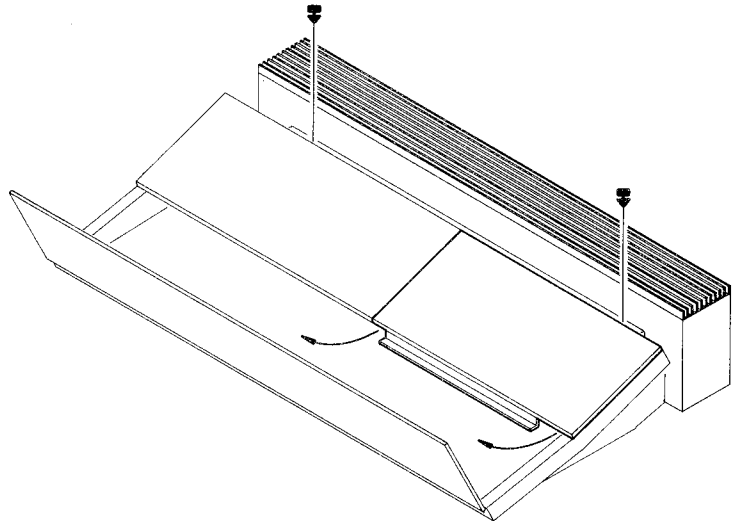


Push-down on the release rail at »Program« while simultaneously pushing the rail to the left.

Dismantling of the primary
operating panel

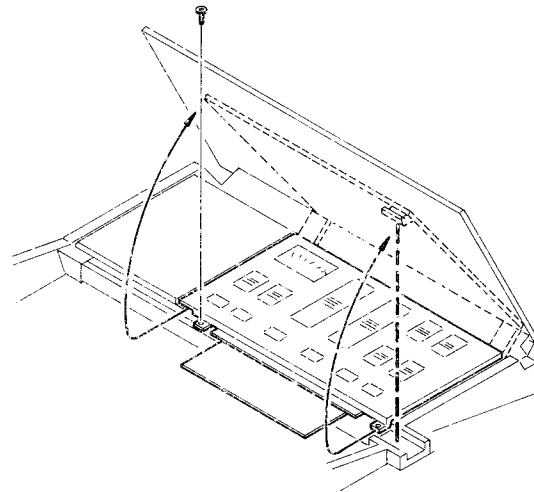
1. Remove the release rail.
 2. Remove the screws shown and push the panel inwards. It can now be lifted into servicing position as shown.
-

Removal of the glass dust cover



1. Remove the release rail.
2. Put the primary operating panel into servicing position.
3. Loosen the 2 cooling tower screws, as shown. Lift the front edge of the glass dust cover upwards while simultaneously pulling it outwards.

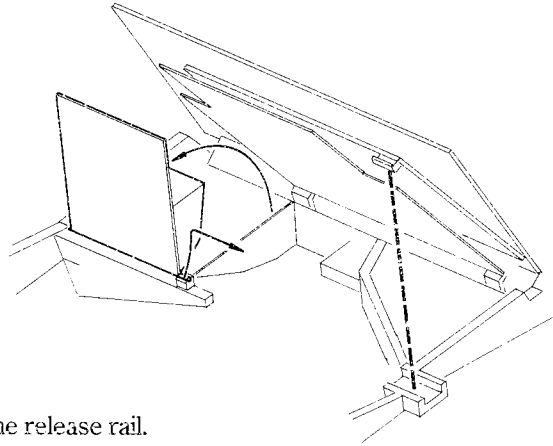
Dismantling of the secondary operating panel



1. Remove the release rail.
2. Put the primary operating panel into servicing position.
3. Remove the screw shown while simultaneously pulling-out and lifting the panel upwards.

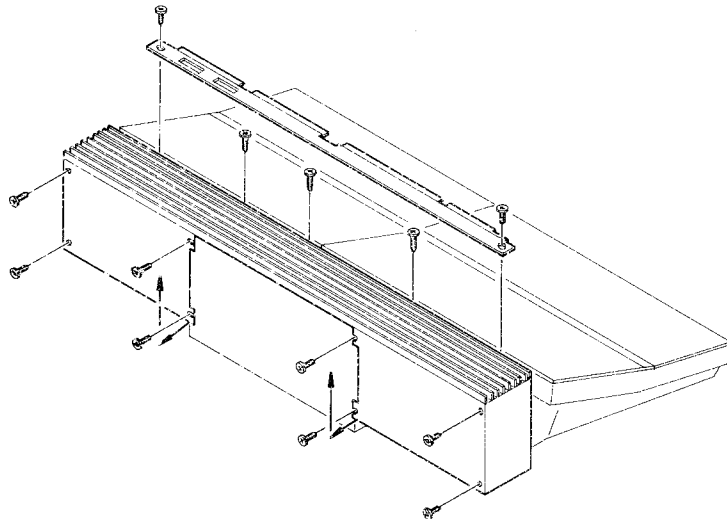
The panel can be put into servicing position by placing a screwdriver or something similar in the position indicated by the bold dash line.

Dismantling of socket panel



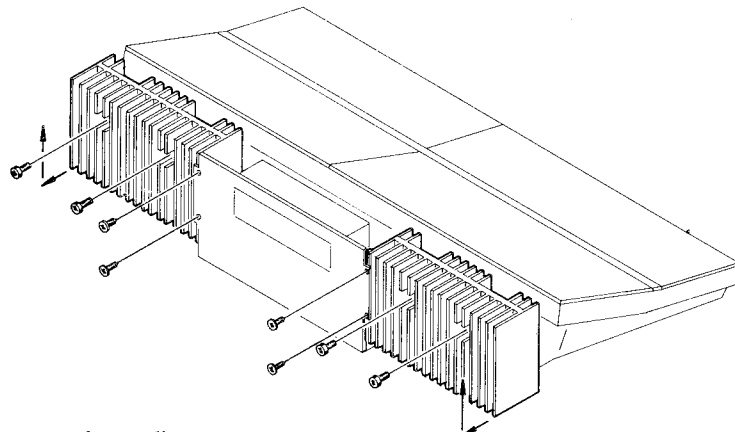
1. Remove the release rail.
2. Put the primary and secondary operating panels into servicing position.
3. Lift the socket panel upwards while simultaneously pushing to the right.

Removal of the cooling tower



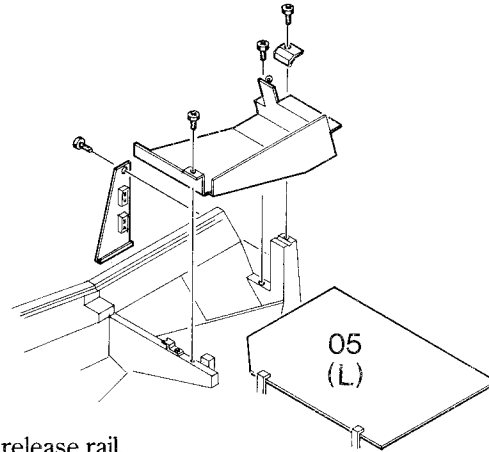
1. Remove the trim rail and the screws as shown.
2. Pull the cooling tower rearwards at the right and left sides while simultaneously pushing it upwards.

Removal of the right-hand and left-hand heat sinks



1. Remove the cooling tower.
2. Remove the screws shown. Pull rearwards at the bottom of the heat sink while simultaneously pushing it upwards.

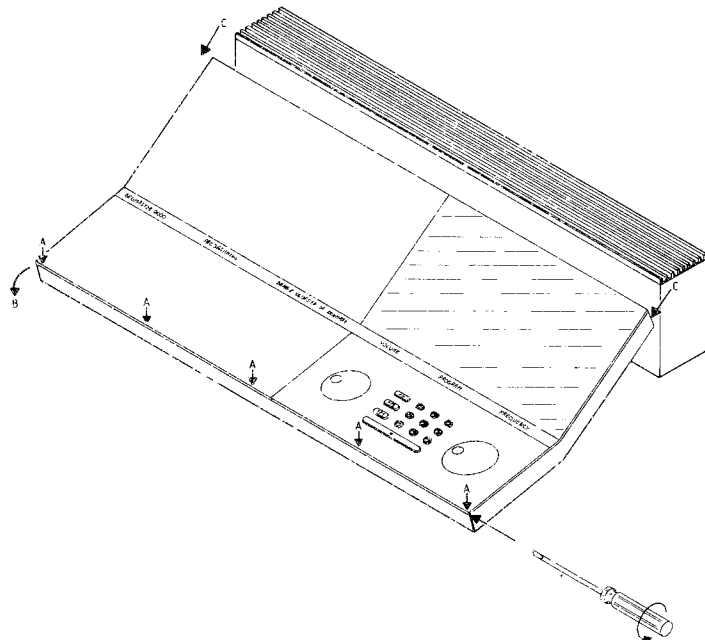
Removal of the left-hand output amplifier



1. Remove the release rail.
2. Put the primary operating panel into servicing position and remove the secondary operating panel.
3. Remove the socket panel.
4. Remove the cover and hinge shown, and remove the angle bracket with the loudspeaker sockets (left-hand channel) from the chassis.
5. Remove all plugs from PC5 and release the printed circuit board from the retainer fingers.

Pull PC5 towards the front of the receiver and turn it 90° clockwise (in the horizontal plane). PC5 can now be pulled rearwards free of the receiver.

Removal of the cabinet panels



When removing the cabinet panels, the front panel must be removed first and for re-fitting it must be put back on as the last one.

The front panel

Twist, by means of a fine screwdriver, the top edge of the front panel forwards at the 5 locking fingers indicated by the arrows »A«. The front panel can now be tilted forwards and removed.

The side panels

1. Remove the cabinet front panel.
2. The side panels can now be pushed towards the front edge of the receiver and removed.

Replacement of the mains transformer 30T2

1. Remove the cooling tower.
2. Remove the rear base plate under the cooling tower.
3. Remove the rear plate onto which the receiver serial number label is affixed, and release PC7 (Starting Up Circuit) from the rear plate.
4. Remove the two rectifier diodes on the rear plate.
5. Solder off the wires from the mains transformer on the electrolytic capacitors, the rectifier diodes and on PC7.
6. Remove the 3 top and the 3 bottom transformer fixing screws and pull the transformer rearwards.

N.B.: When re-fitting the transformer the 3 top fixing screws must be fitted first in order not to ruin the elasticity of the suspension.

TECHNICAL SPECIFICATIONS	BEOMASTER 8000
Type no.	1901-1903-1905-1907
Amplifier section, standard for measurements (AF)	IHF A-202
Continuous power output per channel	150 watts at 4 ohms
Continuous power output per channel	100 watts at 8 ohms
Rated bandwidth	20-20,000 Hz
Total harmonic distortion	<0.05%
Dynamic headroom	2 dB/4 ohms, 1 dB/8 ohms
IHF intermodulation	<0.1%
Response vs frequency:	
Phono (excl. filter)	20-20,000 Hz \pm 0.5 dB
Tape	20-20,000 Hz +0 -0.5 dB
Wideband damping factor	>65
Input sensitivity/impedance:	
Phono	0.18 mV - 0.4 mV/47 kohms
Tape	23 mV - 170 mV/470 kohms
Line	500 mV/10 kohms
Overload level:	
Phono	55 mV - 125 mV
Tape	7 V
Signal-to-noise ratio:	
A-weighted phono	>75 dB
A-weighted tape	>77 dB
Channel separation	>55 dB
Output:	
Tape DIN 5 pin	115 mV/100 kohms
Tape	575 mV/4.7 kohms
Line	500 mV/1 kohms
Headphones	Max. 16 V/200 ohms
Bass control at 40 Hz	\pm 10 dB
Treble control at 12,500 Hz	\pm 10 dB
Filter 1 cutoff frequency	7000 Hz/12 dB/octave
Filter 2 cutoff frequency	10,000 Hz/6 dB/octave
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	13 dBf - 1.2 μ V/75 ohms
Usable sensitivity stereo with automatic channel blend	15 dBf - 1.5 μ V/75 ohms
50 dB quieting sensitivity mono	19 dBf - 2.5 μ V/75 ohms
50 dB quieting sensitivity stereo with automatic channel blend	34 dBf - 14 μ V/75 ohms
Signal-to-noise ratio at 65 dBf mono	>76 dB
Signal-to-noise ratio at 65 dBf stereo	>72 dB
Frequency response	20-15,000 Hz \pm 1 dB
Distortion at 65 dBf mono	<0.1%
Distortion at 65 dBf stereo	<0.1%
Intermodulation distortion mono	<0.05%
Intermodulation distortion stereo	<0.1%
Capture ratio	<1.8 dB
Adjacent channel selectivity	>10 dB
Alternate channel selectivity	>65 dB
Spurious response	>110 dB
Image response ratio	>86 dB
IF response ratio	>120 dB
AM suppression	>63 dB
Stereo channel separation 100-10,000 Hz	>40 dB
Subcarrier product rejection	>72 dB

Other data:

Power supply	type 1901	220 volts
	type 1903	120 volts
	type 1905	240 volts
	type 1907	110 volts
Power frequency	50-60 Hz	
Power consumption	10-700 watts	
Dimensions W x H x D	67 x 15 x 37 cm 26 3/8" x 6" x 14 1/2"	
Weight	21 kg 46.3 lbs	

Subject to change without notice

INSULATION TEST

Insulation test for Beomaster 8000

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

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 tuning 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 it there for 1 second, then turn slowly the voltage down again.

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

FINAL TESTING

By following the below testing procedure it can be checked whether the mechanical and electrical functions are in working order.

This testing can be made without the use of test instruments.

Testing procedure

Prior to the testing, set »Loudn.«, »Filter 1« and »Filter 2« in the OFF position. Set the woofer and tweeter controls in the neutral positions.

Check Point	Comments
1) Connect: 4 loudspeakers GR 8000 to PHONO BE 8000 to TAPE 1 Another BE to TAPE 2	Check all sockets mechanically.
2) Connect mains voltage	Light in ST.BY indicator.
3) Check µC test programme*	»TP« in program display if test is OK.
4) P1	»P1« in program display. »3.0« in volume display. »Blank« balance display. Random frequency in frequency display.
5) SPEAKER SWITCHES	With receiver in position MAN. TUNE adjust to FM noise. Same level in right and left channel. Check speaker 1 and speaker 2 switch.
6) Headphone socket	
7) Keyboard P2 – P9.	»P2« – »P9« in program display.
8) PH	GR 8000 starts when activating »PH«. »PH« in program display. Check replay function.
9) TP1	BE 8000 starts when activating »TP1«. »TP1« in program display. Check record/replay function.
10) TP2	Check record/replay function.
11) FM TUNING CONTROL	With receiver in position MAN. TUNE tune through the FM band. Check upper and lower band limit (87,5 – 108 MHz). Program display shows frequencies in »STORE« with program number. (»Px«).
12) VOLUME CONTROL	Smooth up/down regulation of sound. Must be checked min. between »0.0« and »3.0«. (Slight sound at »0.0« is acceptable). Check display from »0.0« to »6.0«. Above 3.0 the check can be made with speakers switched off.
13) BALANCE CONTROL	Check display in all positions. Muting in extreme positions.
14) »STORE« VOL and FM	a. Adjust to e.g. VOL »3.0« BAL »<1« FM »100.0« b. »STORE« VOL and FM (e.g. P1). c. Set VOL and FM to other values. d. Go to ST.BY with »0« e. Switch on again with »0«. f. Same values as before switching off must appear in display. g. Go to ST.BY with »0«. h. Switch on again with »P1«. i. »STORE« values must appear in display.

Check Point	Comments
15) AUT. TUNE/MAN. TUNE	a. In position MAN. TUNE light in »MANUAL« in display. b. In position AUT. TUNE Silent tuning between stations. c. Check automatic frequency control functions.
16) SIGNAL-MULTIPATH METER	a. Deflection on stations. b. Must not stick. c. MPX lights on stereo stations.
17) SIGNAL-M. PATH SWITCH	No meter deflection difference with OK aerial signal.
18) FILTERS	a. With »FILTERS« on, »FILTERS« must light in display. b. With tone controls in max. check that »FILTERS« OFF cancels the tone control.
19) BASS/TREBLE FILTER 1/FILTER 2 LOUDNESS	Check with »FILTERS« ON.
20) STEREO/MONO SWITCH	a. »MONO« lights in display in position MONO. b. Right and left channel added.
21) MONITOR	»TP1« flashes in program display.
22) CLIPPING	a. Set receiver to FM noise. b. Switch off speakers. c. With max. volume »CLIPPING« must flash/light in display with balance control in both right and left extreme position.
23) Tapping noise	Switch to TAPE 2 and connect loudspeaker. At »non-destructive« tapping on the set, no noise must be heard in the loudspeakers.
24) Remote receiver	Check ON/OFF, VOLΛ/VOLV, PH and TP1.
25) Set all controls to neutral positions	AUT. TUNE SIGNAL FILTERS: OFF BASS/TREBLE: 0 FILTER 1/2: OFF STEREO LOUDN: OFF BAL: 0 VOL: 3.0
26) Lid for secondary operating panel	Smooth opening must not »bounce« in top position.
27) All operating buttons	Test all operating buttons for their proper mechanical function.

*The integral test program of the microcomputer is activated as follows:

1. Set the receiver in position »Stand by«.
2. Activate the »Monitor«-button simultaneously with the »Stand by«-button.

If the microcomputer is in working order, the program display will read »TP« (Test Passed). If on the other hand, an error is present, the display will read »TE« (Test Error) while the frequency display will show a number which indicates the location of the error, cf. the diagram page 10-3.

If further information is required regarding the microcomputer and the test programme, reference is made to Technical Product Information for Beo-master 8000, Beolab Terminal.

TE	Defect IC	or short IC pin to chassis
1	9IC3 (RAM)	
2	9IC3 (ROM)	3**
3	9IC3	31
4	9IC3	4** - 25 - 27 - 28 - 29
5	9IC3	19 - (17 - 18 - 19 - 20)** - (15 - 16)***
6	9IC3	6 - 7 - 8 - 9 - (2 - 5)**
7	9IC4 (RAM)	
8	9IC4 (RAM)	10 - 11
9	9IC4 (ROM)	
10	9IC4	31 - 32 - 33 - 34 - 35 - 36 - 37 - 38
11	9IC4	22 - 23 - 24 - 25 - 26 - 27 - 28 - 29
12	9IC4	14 - 15 - 16 - 17 - 18 - 19 - 20
13	9IC4	6 - 8 - 9

** Due to the fact that these IC pins are the control leads for the display, the display will show wrongly if this is where the error is located.

*** Is testable only by short-circuiting the contact pin »Test Prg.« (pin 40 of 9IC3) to chassis on PC9 (co-ordinate E2).

SERVICE TIPS AND MODIFICATIONS

Method to locate fault in the FM tuning system

It may be difficult to decide whether a fault in the FM tuning system must be looked for somewhere around the »Pulse Height Modulator« and »Integrator« circuits or the »Counter« circuit (9IC5, 9IC8) and the microcomputer (9IC4). When in doubt, use the following method:

1. Preparations prior to an examination of the tuning system.

- A. Dismantle the socket of P84 on PC9 (co-ordinate A3).
- B. Cut the connection through pin 4 of P85 on PC9 (co-ordinate A2).

N.B.! The easiest way of cutting the connection through pin 4 of P85 is to dismantle the female socket and to bend the plug pin down against the printed circuit board and subsequently to remount the female socket.

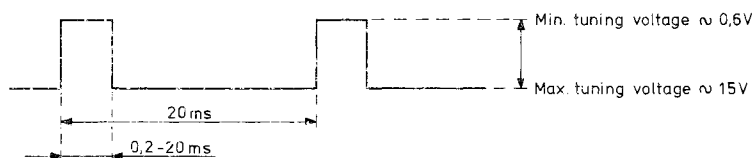
- C. Connect an oscilloscope to pin 1 of 2IC1 (co-ordinate A1).
- D. Connect a DC voltmeter to the collector of 2TR1 (co-ordinate A1).
- E. Connect an FM signal generator to the male plug P84 on PC9, and set it at, e.g. 110.7 MHz and to generate $>50\mu\text{V}$, EMF.

2. Control of the counter function of the microcomputer.

- A. Set the receiver in »Aut. Tune« mode.
The frequency display of the receiver will now show a frequency that is 10.7 MHz below the generator frequency, i.e. 100 MHz. If this is the case, the counter function of the microcomputer is OK.

3. Control of the »Pulse Height Modulator« and »Integrator« circuits.

- A. Now set the receiver in »Man. Tune« mode. (Input the frequency displayed as a reference frequency in the RAM of the microcomputer).
- B. Vary the generator frequency by means of the frequency control of the signal generator. Settings to higher frequencies will by the microcomputer be interpreted as oscillator drift towards a higher frequency and that will result in corrective pulses from pin 24 of 9IC4 (FM down). On the scope this will result in positive pulses (Lower frequency = negative pulses).



N.B.! Small »Detuning« = short pulse time.

If an explanation of the functioning of the FM tuning system is required, reference is made to Technical Product Information for Beomaster 8000, Beolab Terminal.

To be remembered when replacing 9IC6

When replacing 9IC6 (Non Volatile Memory) all 9 preset FM programmes **should** be programmed (Store) with a random frequency (e.g. 87.5 MHz) prior to handing over the receiver to the customer.

This is needed for the following reason: in the new IC some values may be stored which do not correspond to the stations between 87.5 and 108 MHz. In the receiver this will have the following consequence: when adjusting to a station the P in the program display will light-up as it should, but after a short while it will go out again even though the receiver is still tuned in on the station.

MODIFICATIONS

Re the »Spike Suppression« circuit on PC4

In receivers from and including Serial No. 2322001 the »Spike Suppression« circuit on PC4 has been removed.

Diagram 2 with the »Spike Suppression« circuit is shown on page 11-5.

Re PC9 (Microcomputer)

In the current production PC9 (Microcomputer) will be modified to a new version which has the index No. 8002493.

The two versions are fully compatible.

Diagram 3 with the earlier version of PC9 is shown on page 11-6.

**Table of Input/Output levels
(Monitor function of »Tape 1«)**

As it will appear from the table, the »Monitor« function is effected via »Tape 1«.

		DIN sockets		RCA phono plugs	
		IHF measurements	DIN measurements	IHF measurements	DIN measurements
PHONO Record player	Sensitivity/ impedance	0.23 mV/47 kohms adjustable 0.18 mV-0.4 mV	2 mV/47 kohms adjustable 1.6 mV-3.6 mV	0.23 mV/47 kohms adjustable 0.18 mV-0.4 mV	2 mV/47 kohms adjustable 1.6 mV-3.6 mV
	Overload level	70 mV adjustable 55 mV-125 mV	70 mV adjustable 55 mV-125 mV	70 mV adjustable 55 mV-125 mV	70 mV adjustable 55 mV-125 mV
TAPE 1 Beocord 8000 7 pin or MONITOR RCA phono plugs	Input sensitivity	23 mV/470 kohms adjustable 23 mV-170 mV	200 mV/470 kohms adjustable 200 mV-1.5 V	23 mV/470 kohms adjustable 23 mV-170 mV	200 mV/470 kohms adjustable 200 mV-1.5 V
	Overload level	7 V	7 V	7 V	7 V
	Output	575 mV/4.7 kohms	750 mV/4.7 kohms at FM ± 40 kHz. 235 mV/4.7 kohms at FM ± 12.5 kHz	575 mV/4.7 kohms	750 mV/4.7 kohms at FM ± 40 kHz. 235 mV/4.7 kohms at FM ± 12.5 kHz
TAPE 2 5 pin DIN	Input sensitivity	23 mV/470 kohms adjustable 23 mV-170 mV	200 mV/470 kohms adjustable 200 mV-1.5 V		
	Overload level	7 V	7 V		
	Output	115 mV/100 kohms	150 mV/100 kohms at FM ± 40 kHz. 45 mV/100 kohms at FM ± 12.5 kHz.		
LINE IN-OUT external unit	Input			25 mV/10 kohms	500 mV/10 kohms
	Output			575 mV/1 kohms	700 mV/1 kohms at FM ± 40 kHz 235 mV/1 kohms at FM ± 12.5 kHz.

N.B. ! At some time in the current production the »Monitor« function will be transferred from »Tape 1« to »Tape 2«. Then the table on page 11-4 will apply.

Table of Input/Output levels
(Monitor function of »Tape 2«)

		DIN sockets		RCA phono plugs	
		IHF measurements	DIN measurements	IHF measurements	DIN measurements
PHONO Record player	Sensitivity/ impedance	0.23 mV/47 kohms adjustable 0.18 mV-0.4 mV	2 mV/47 kohms adjustable 1.6-3.6 mV	0.23 mV/47 kohms adjustable 0.18 mV-0.4 mV	2 mV/47 kohms adjustable 1.6-3.6 mV
	Overload level	70 mV adjustable 55 mV-125 mV	70 mV adjustable 55 mV-125 mV	70 mV adjustable 55 mV-125 mV	70 mV adjustable 55 mV-125 mV
TAPE 1 Beocord 8000 7 pin	Input sensitivity	23 mV/470 kohms adjustable 23 mV-170 mV	200 mV/470 kohms adjustable 200 mV-1.5 V		
	Overload level	7 V	7 V		
	Output	575 mV/4.7 kohms	750 mV/4.7 kohms at FM ±40 kHz. 235 mV/4.7 kohms at FM ±12.5 kHz		
TAPE 2 MONITOR 5 pin DIN or RCA phono plugs	Input sensitivity	23 mV/470 kohms adjustable 23 mV-170 mV	200 mV/470 kohms adjustable 200 mV-1.5 V	23 mV/470 kohms adjustable 23 mV-170 mV	200 mV/470 kohms adjustable 200 mV-1.5 V
	Overload level	7 V	7 V	7 V	7 V
	Output	115 mV/100 kohms	150 mV/100 kohms at FM ±40 kHz. 45 mV/100 kohms at FM ±12.5 kHz.	575 mV/4.7 kohms	750 mV/4.7 kohms at FM ±40 kHz. 235 mV/4.7 kohms at FM ±12.5 kHz.
LINE IN-OUT external unit	Input			25 mV/10 kohms	500 mV/10 kohms
	Output			575 mV/1 kohms	700 mV/1 kohms at FM ±40 kHz 235 mV/1 kohms at FM ±12.5 kHz

Table of cables

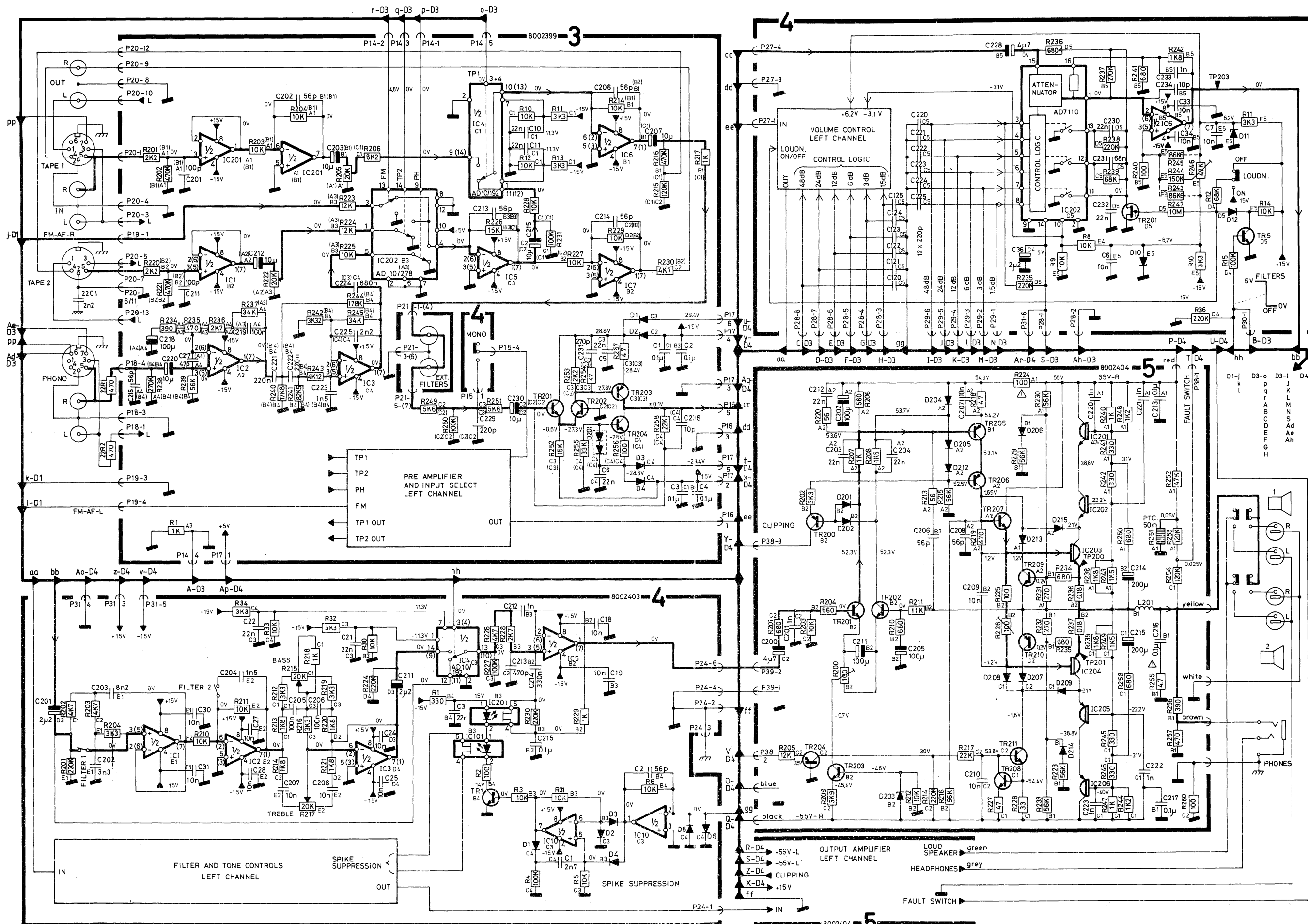
	Beomaster 8000	Beocord 8000	Beogram 8000
	For Beocord 8000: TP 1, 6270222 7 pins (4 signals, 2 data link)	For other Beomaster's, or other receivers with DIN socket: 0961014 5 pins DIN standard (4 signals)	For other Beomaster's, or other receivers with DIN socket: 6270204 5 pins DIN standard (2 signals)
Cables as extra accessories		For receivers with RCA phono plugs: 6270215 (2 x 2 signals)	For receivers with RCA phono plugs: 6270216 (2 signals)

DIAGRAM 2 FOR BEOMASTER 8000 TYPE 1901, 1903, 1905, 1907

Indeholdende »Spike Suppression« kredsløbet på PC4.

Includes the »Spike Suppression« circuit on PC4.

Enthält den »Spike Suppression« Schaltkreis auf PC4.

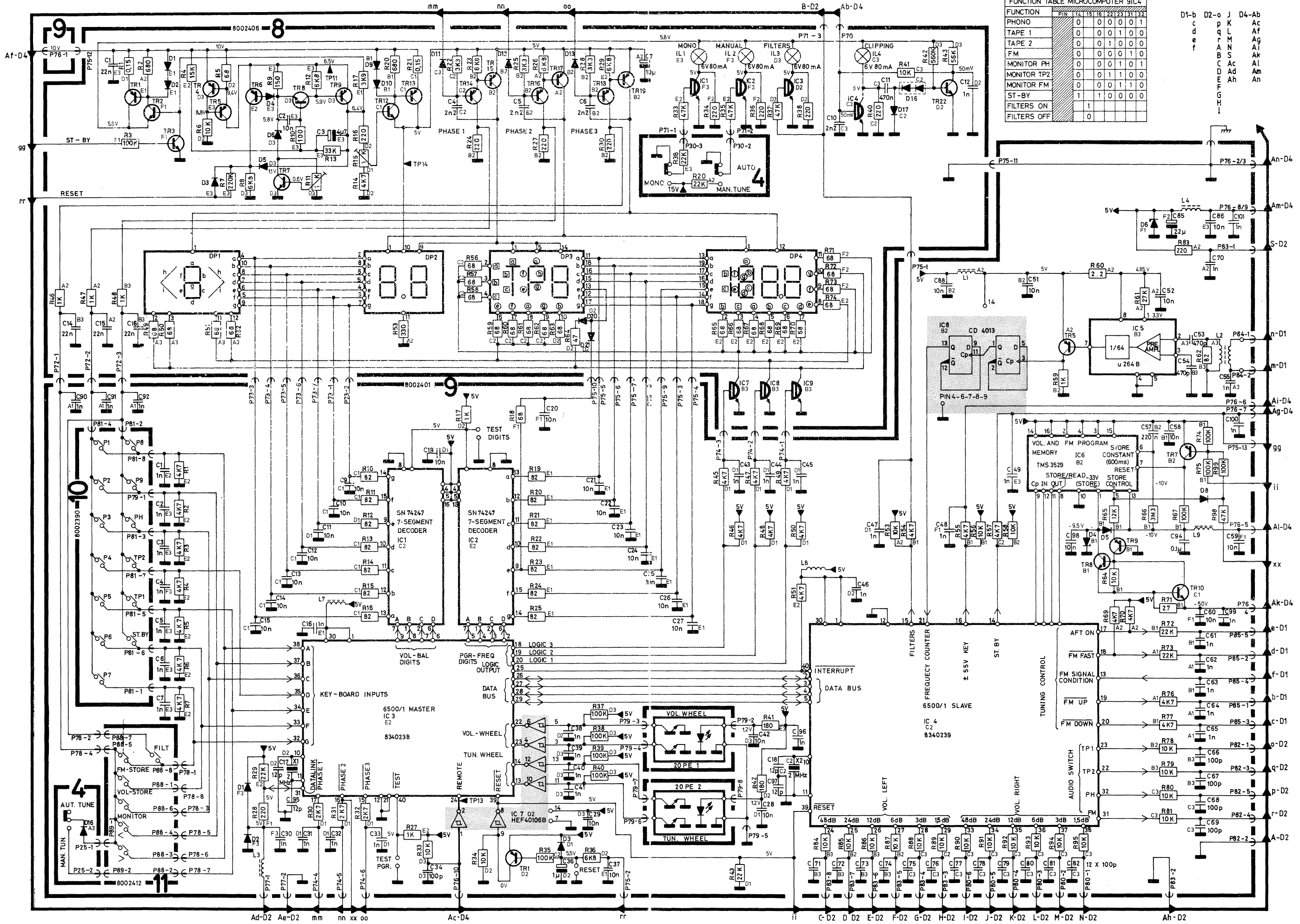


Indeholdende den tidligere version af PC9, 8002401 (Microcomputer).

Includes the previous version of PC9, 8002401 (Microcomputer).

Inthält die frühere Version der PC9, 8002401 (Microcomputer).

DIAGRAM 3 FOR BEOMASTER 8000 TYPE 1901, 1903, 1905, 1907



FUNCTION TABLE MICROCOMPUTER 91C4

FUNCTION	Pin 14	Pin 15	Pin 16	Pin 23	Pin 31	Pin 32
PHONO	0	0	0	0	0	1
TAPE 1	0	0	0	1	0	0
TAPE 2	0	0	1	0	0	0
FM	0	0	0	0	1	0
MONITOR PH	0	0	0	1	0	1
MONITOR TP2	0	0	1	1	0	0
MONITOR FM	0	0	0	1	1	0
ST-BY	1	1	0	0	0	0
FILTERS ON	1	1	0	0	0	0
FILTERS OFF	0	0	0	0	0	0

D1-b D2- J D4-Ab
 p K L M N S Ac
 q r A B C D E F G H I
 c d e f