

Receiver 70FR563/00

2

Service
Service
Service



42 113 A12

Service Manual

INHOUDSOPGAVE

Blz.			
2	Specificaties	22-23	Eindtrap prinipeschema
3	Aansluitingen en bedieningsorganen	24	Afregel lay-out
4	Voedingspaneel en DC spanningstabèl	24+28	H.F. afregelingen en controles en service-wenken
5-6	Voedingsprincieschema		L.F. instellingen en controles en service-wenken
7-8	R.F. printpaneel	29-30	Bedradingstekening
9-11	R.F. princieschema		Exploded view
12-13	DE-emphasis princieschema	31+34	Mechanische stuklijst
14	Bedieningsprincieschema	35-36	Symbolen overzicht
15-16	Bedieningsprintpaneel	37	Electrische stuklijst
17-18	A.F. printpaneel	37-38	
19+21	A.F. princieschema	39	

SPECIFICATIE

Algemeen

	Nominale waarde	Typische waarde
Netspanning	: 220 V~	: 220 V~
Netfrequentie	: 50-60 Hz	: 50-60 Hz
Opgenomen vermogen	: W max	: W max
Afmetingen (BxHxD)	: 420x110x250 mm approx.	: 420x104x210 mm approx.
Gewicht	: kg	: kg

Tuner: FM gedeelte

Afstembereik	: 87,5 MHz tot 108 MHz	: 87,5 MHz tot 108 MHz
Antenne ingang	: 75 Ω coaxiaal	: 75 Ω coaxiaal

Gevoeligheid	mono : ≤ 1 μV 26 dB S/N bij 98 MHz, 75 Ω	: 1 μV 26 dB S/N Δf 40 kHz
	stereo : ≤ 35 μV 46 dB S/N Δf = 40 kHz	: 35 μV 46 dB S/N bij 75 Ω
Selectiviteit	: ≥ 70 dB bij 600 kHz bandbreedte	: 70 dB bij 600 kHz bandbreedte

Onderdrukking	MF-AM : ≥ 110 dB - ≥ 54 dB	: 110 dB - ≥ 55 dB
	piloottoon : ≥ 55 dB	: 55 dB
	spiegelfrequentie : ≥ 75 dB	: 75 dB

Kanaalscheiding	: ≥ 30 dB	: 30 dB
Vervorming T.H.D. mono (DIN)	: ≤ 0,3%	: 0,3%
stereo (DIN)	: ≤ 0,45%	: 0,45%
Signaal/ruisverhouding	mono : ≥ 70 dB	: 78 dB
	stereo : ≥ 63 dB	: 69 dB

Tuner: AM gedeelte

Golbereiken	MW : 520 kHz tot 1620 kHz (577-185 m)	: 520 kHz tot 1620 kHz
	LW : 153 kHz tot 353 kHz (1960-850 m)	: 153 kHz tot 353 kHz
Gevoeligheid	: ≤ 11 μV 26 dB S/N bij 1 MHz	: 100 μV 26 dB S/N bij 600 kHz
Selectiviteit	: ≥ 34 dB bij 9 kHz bandbreedte	: 34 dB bij 9 kHz bandbreedte
Onderdrukking	MF : ≥ 56 dB	: 56 dB

Amplifier

Uitgangsvermogen	: 2x50 W muziekvermogen	: 2x50 W muziekvermogen
	: 2x32 W in 8 Ω (DIN)	: 2x32 W in 8 Ω (DIN)
	: 2x30 W in 8 Ω (IEC)	: 2x30 W in 8 Ω (IEC)
Vervorming T.H.D.	: ≤ 0,15% bij 1 kHz en 30 W	: 0,15% bij 1 kHz en 30 W
	: ≤ 0,5 % bij 40 Hz-20 kHz	:
Intermodulatie	: ≤ 0,4 % bij 250/8000 Hz 4:1	: 0,4 % bij 30 W
Frekwentiekarakteristiek		
Phono ingang	toonregeling : van 10 Hz - 50 kHz ≤ 3 dB (RIAA)	: van 10 Hz - 50 kHz ± 1,5 dB (RIAA)
Andere ingangen	neutraal : van 10 Hz - 30 kHz ≤ 3 dB	: van 10 Hz - 30 kHz ± 1,5 dB
Lage tonenregeling	: bij 40 Hz + 12 dB tot -11 dB	: bij 40 Hz + 12 dB tot -11 dB
Hoge tonenregeling	: bij 16 kHz + 11 dB tot -13 dB	: bij 16 kHz + 11 dB tot -13 dB
Loudness	: bij 40 Hz + 17 dB	: bij 40 Hz + 8 dB
	: bij 16 kHz + 7,5 dB	: bij 16 kHz + 6 dB
	uitgangs-niveau : -40 dB	

Signaal/ruisverhouding gewogen (A-curve)

Phono ingang	: voor 30 W uitgang ≥ 81 dB (IEC)	: voor 30 W uitgang 0,1 dB
Andere ingangen	: voor 30 W uitgang ≥ 93 dB (IEC)	: voor 30 W uitgang 93 dB
Kanaalscheiding	: bij 1000 Hz ≥ 60 dB	: bij 1000 Hz 60 dB
	: bij 20 Hz - 20 kHz ≥ 40 dB	: bij 250 Hz - 10 kHz 40 dB

Ingangsgevoeligheid

Phono MD	: ≤ 2 mV bij 47 kΩ	: 2 mV bij 47 kΩ
Tape	: ≤ 200 mV bij 130 kΩ	: 200 mV bij 130 kΩ
CD	: ≤ 200 mV bij 130 kΩ	: 200 mV bij 130 kΩ

Uitgangen

Tape	: mV bij	: 450 mV bij 800 Ω
Luidsprekers	: 15,5 V nij 8 Ω 30 W	:
Hoofdtelefoon	: mV nij Ω (8-1000 Ω)	: 8-1000 Ω

Veiligheidsbepalingen vereisen, dat het apparaat in zijn oorspronkelijke toestand wordt teruggebracht en dat onderdelen, identiek aan de gespecificeerde, worden toegepast.

Documentation Technique Service Dokumentation Documentazione di Servizio Huolto-Ohje Manual de Servicio Manual de Servicio

Subject to modification

4822 725 21429

Printed in The Netherlands

© Copyright reserved

PHILIPS

Published by
Service Consumer Electronics

AANSLUITINGEN EN BEDIENINGSORGANEN

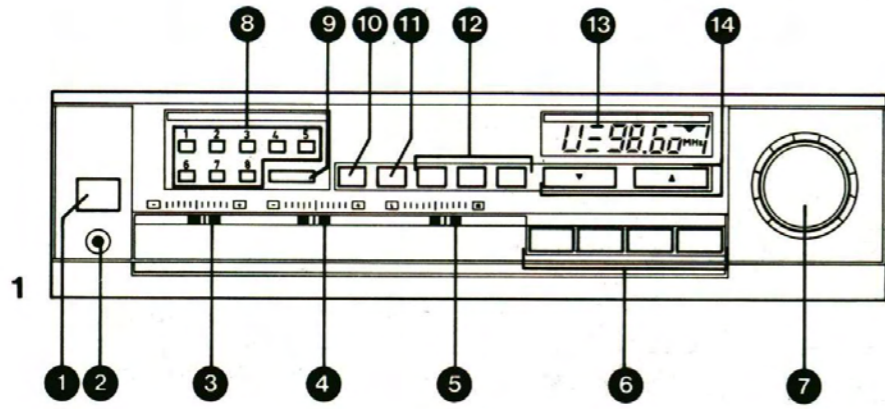


Fig. 1

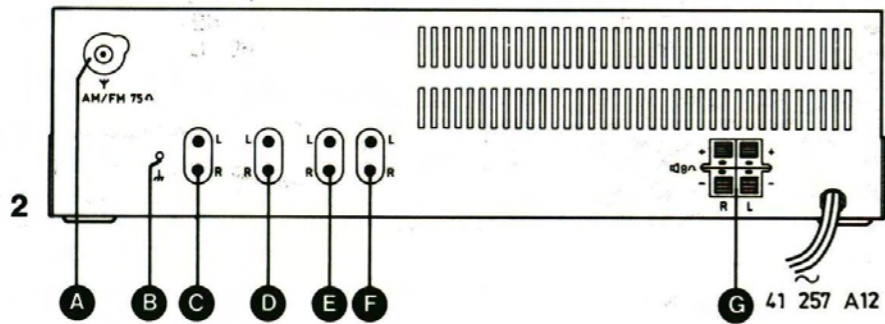
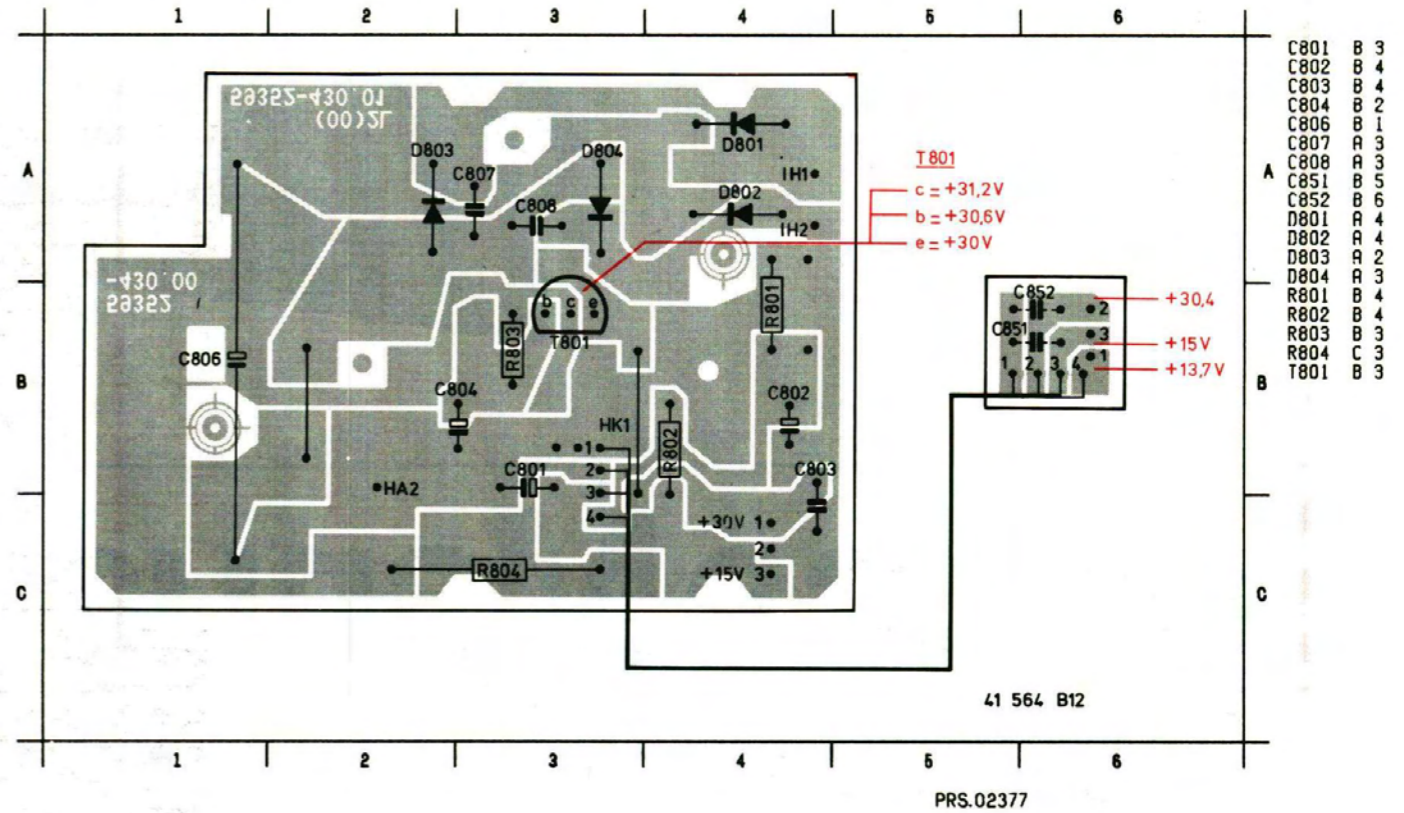


Fig. 2

- Fig. 1**
- | | | |
|--|--------------------------|-----------|
| 1. Aan/uitschakelaar | "ON/OFF" | SK1 |
| 2. Aansluitbus voor stereo hoofdtelefoon | "PHONES" | BU1 |
| 3. Lage toneregelaar | "BASS" | R769/R773 |
| 4. Hoge toneregelaar | "TREBLE" | R771/R772 |
| 5. Balansregelaar | "BALANCE" | R752 |
| 6. Keuzetoetsen voor bron | "CD, TAPE, PHONE, TUNER" | SK2+5 |
| 7. Geluidsterkte regelaar | "VOLUME" | R705/R706 |
| 8. Toetsen voor voorkeuzestations | "PRESET 1+6" | - |
| 9. Geheugentoets | "STORE" | - |
| 10. Toets voor automatisch zoeken | "AUTO/MANUAL" | - |
| 11. Mono toets | "MONO/STEREO" | - |
| 12. Golfbereik toetsen | "FM/MW/LW" | - |
| 13. Display | "FREQUENCY DISPLAY" | DP101 |
| 14. Afstemtoetsen | "UP/DOWN" | - |

- Fig. 2**
- | | | |
|-------------------------------------|----------------|-----|
| A. Aansluitbus voor antenne | "AM/FM 75" | - |
| B. Aardcontact | "PHONO GROUND" | GND |
| C. Aansluitbussen | "PHONO" | BU2 |
| D. Aansluitbussen | "TAPE IN" | BU3 |
| E. Aansluitbussen | "TAPE OUT" | BU4 |
| F. Aansluitbussen | "C.D." | BU5 |
| G. Aansluitbussen voor luidsprekers | | BU6 |

SUPPLY PANEL

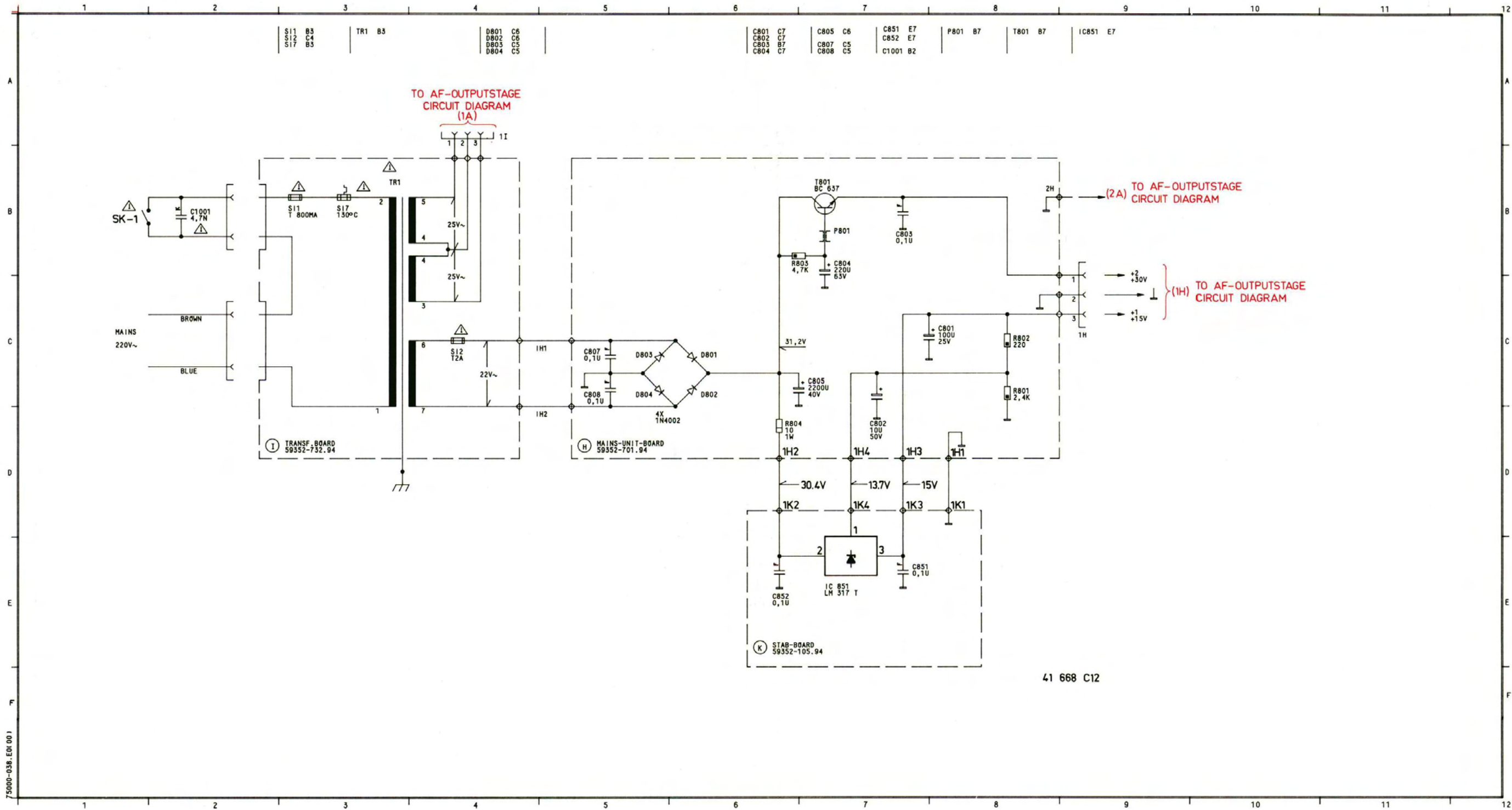


SK	SIGNAL	VOLUME	POWER SUPPLY	RIPPLE (Vpp)	OUTPUT
TAPE	1 kHz	MIN.	+1 = +15 V	0,2 mVpp	-
			+2 = +30 V	2 mVpp	-
SK3	170-190 mV	MAX.	+3 = +33,5 V	190 mVpp	-
			-1 = -33,5 V	200 mVpp	-
			+1 =	19 mVpp	BU6
			+2 =	15 mVpp	16 V
			+3 =	3 Vpp	32 W
			-1 =	3 Vpp	

SUPPLY CIRCUIT DIAGRAM

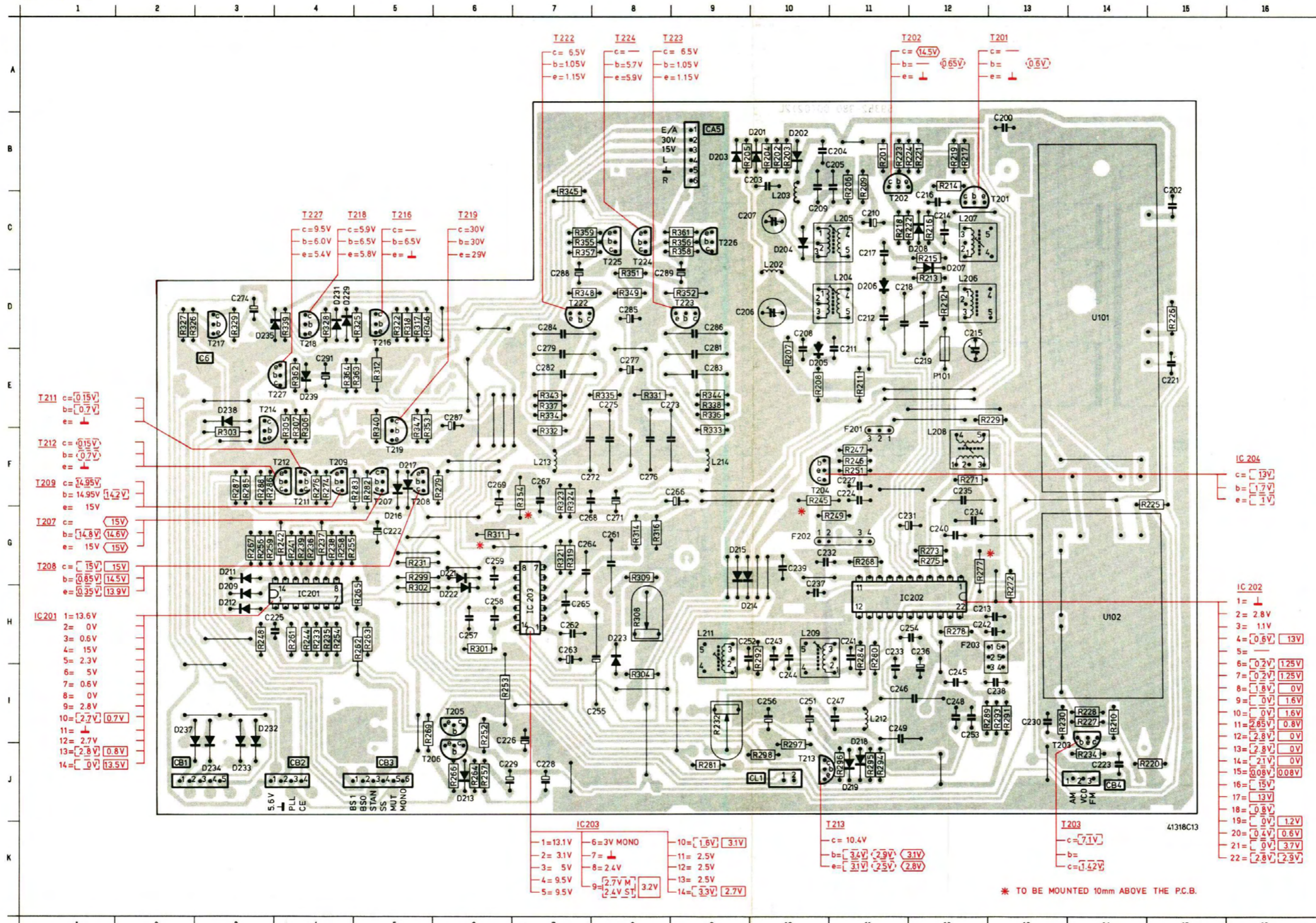
5

6

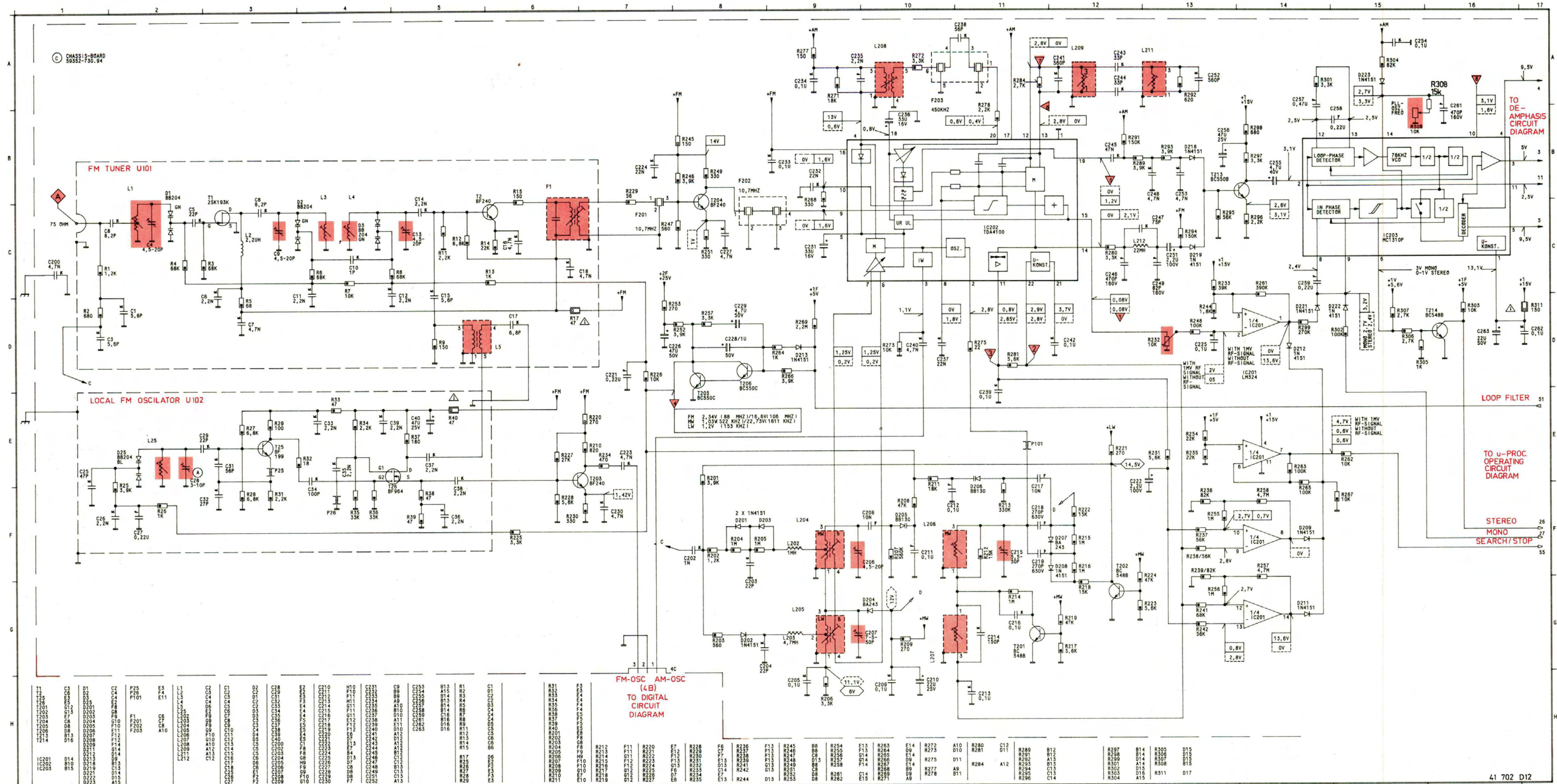


41 668 C12

75000-038. E01.00.1



C 6	E 3	D217	F 5	R275	G12
C200	B13	D218	J11	R276	F 4
C202	C15	D218	J11	R277	G12
C203	B10	D219	J11	R278	H12
C204	B11	D221	G 6	R279	F 6
C205	B11	D222	H 6	R280	H11
C206	D 9	D223	H 8	R281	J 9
C207	C 9	D229	D 4	R282	F 5
C208	D10	D231	D 4	R283	F 5
C209	C10	D232	I 3	R284	H11
C210	C11	D233	J 3	R285	F 3
C211	E11	D234	J 3	R286	F 3
C212	D11	D235	D 3	R287	F 3
C213	H12	D237	I 2	R288	F 3
C214	C12	D238	E 3	R289	I13
C215	D12	D239	E 4	R291	I13
C216	C12	F201	F11	R292	H10
C217	C11	F202	G10	R293	I13
C218	D11	F203	H12	R294	J11
C219	E12	IC201	H 4	R295	J11
C221	E15	IC202	H12	R296	J11
C222	G 5	IC203	H 7	R297	J10
C223	J14	L202	C10	R298	J10
C224	F11	L203	C10	R299	G 5
C225	H 4	L204	D11	R301	H 6
C226	I 6	L205	C11	R302	H 5
C227	F11	L206	D12	R303	F 3
C228	J 7	L207	C12	R304	I 8
C229	J 6	L208	F12	R305	E 4
C230	I13	L209	H10	R306	E 4
C231	G11	L211	H 9	R307	E 4
C232	G10	L212	I11	R308	H 8
C233	H11	L213	F 7	R309	G 8
C234	G12	L214	F 9	R311	G 6
C235	F12	P101	E12	R312	E 5
C236	H12	R201	B11	R314	G 8
C237	H10	R202	B10	R316	G 8
C238	I13	R203	B10	R317	D 5
C239	G10	R204	B10	R318	D 5
C240	G12	R205	B10	R319	G 7
C241	H11	R206	B11	R321	G 7
C242	H12	R207	E10	R322	D 5
C243	H10	R208	E10	R323	F 7
C244	I10	R209	B11	R324	F 7
C245	I12	R210	I14	R325	D 5
C246	I11	R211	E11	R326	D 3
C248	I12	R212	D12	R327	D 2
C249	I11	R213	D12	R328	D 4
C251	I10	R214	B12	R331	F 7
C252	H10	R215	C12	R332	E 7
C253	I12	R216	C12	R333	F 9
C254	H12	R217	B12	R334	E 7
C255	I 8	R218	C11	R335	E 8
C256	I10	R219	B12	R336	E 8
C257	H 6	R220	J15	R337	E 7
C258	H 6	R221	B12	R338	E 7
C259	G 6	R222	C12	R339	D 4
C261	G 8	R223	B11	R340	E 5
C262	H 7	R224	B12	R343	E 9
C263	H 7	R225	F15	R344	E 9
C264	G 7	R226	D15	R345	E 9
C265	H 7	R227	I14	R346	D 7
C266	F 9	R228	I14	R347	E 5
C267	F 7	R229	E13	R348	D 7
C268	G 7	R230	I13	R349	D 8
C269	F 6	R231	G 5	R351	D 8
C271	G 8	R232	I 9	R352	D 8
C272	F 8	R233	H 4	R353	E 6
C273	E 9	R234	J14	R354	F 7
C274	D 3	R235	H 4	R355	C 7
C275	E 8	R236	G 4	R356	C 7
C276	F 8	R237	G 4	R357	C 7
C277	E 8	R238	G 4	R358	C 7
C279	E 7	R239	D 3	R359	C 7
C281	E 9	R239	G 4	R361	C 4
C282	E 7	R241	G 4	R362	E 4
C283	E 9	R242	G 4	R363	E 4
C284	D 7	R244	H 4	R364	E 4
C285	D 8	R245	F10	T201	C13
C286	D 9	R246	F11	T202	C11
C287	E 6	R247	F11	T203	J13
C288	D 7	R248	H 3	T204	F10
C289	D 8	R249	G11	T205	I 6
C291	E 4	R251	F11	T206	J 5
CB 5	B 9	R252	I 6	T207	F 5
CB 1	J 2	R253	I 6	T208	F 5
CB 2	J 4	R254	H 4	T209	F 4
CB 3	J 5	R255	G 5	T211	F 4
CB 4	J14	R256	G 3	T212	F 4
CL 1	J10	R257	J 6	T213	J10
D201	B10	R258	G 4	T214	E 3
D202	B10	R259	G 3	T216	D 5
D203	B 9	R261	H 4	T217	D 3
C10	C10	R262	H 5	T218	D 4
D205	E10	R263	H 5	T219	F 5
D206	D11	R264	J 6	T222	D 7
D207	C12	R265	H 5	T223	D 9
D208	C12	R266	J 6	T224	C 8
D209	H 3	R267	G 3	T225	C 8
D211	H 3	R268	G11	T226	C 9
D212	H 3	R269	I 5	T227	E 4
D213	J 6	R271	F12	U101	D14
D214	H 9	R272	G13	U102	H14
D215	G 9	R273	G12		
D216	G 5	R274	F 4		

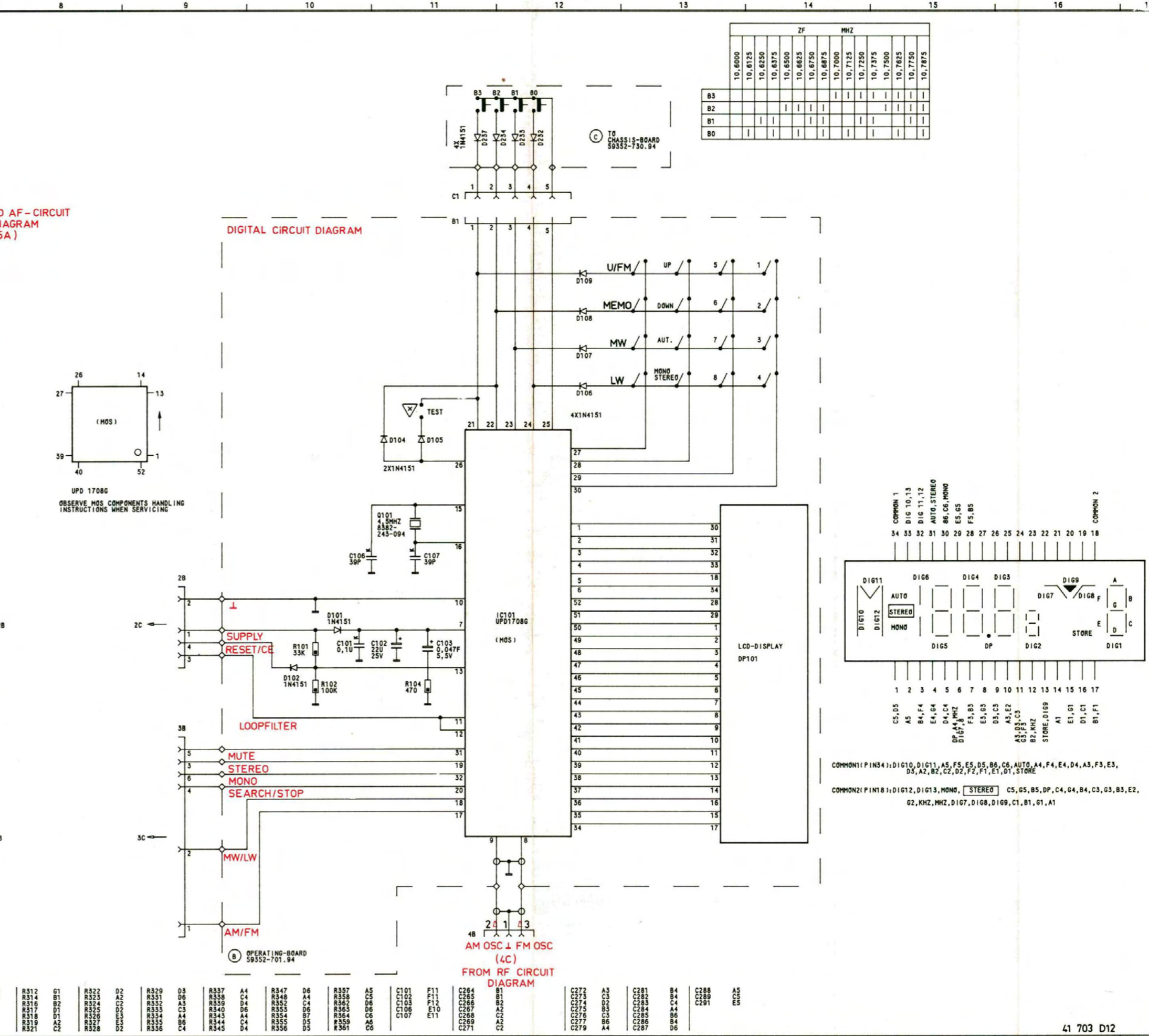
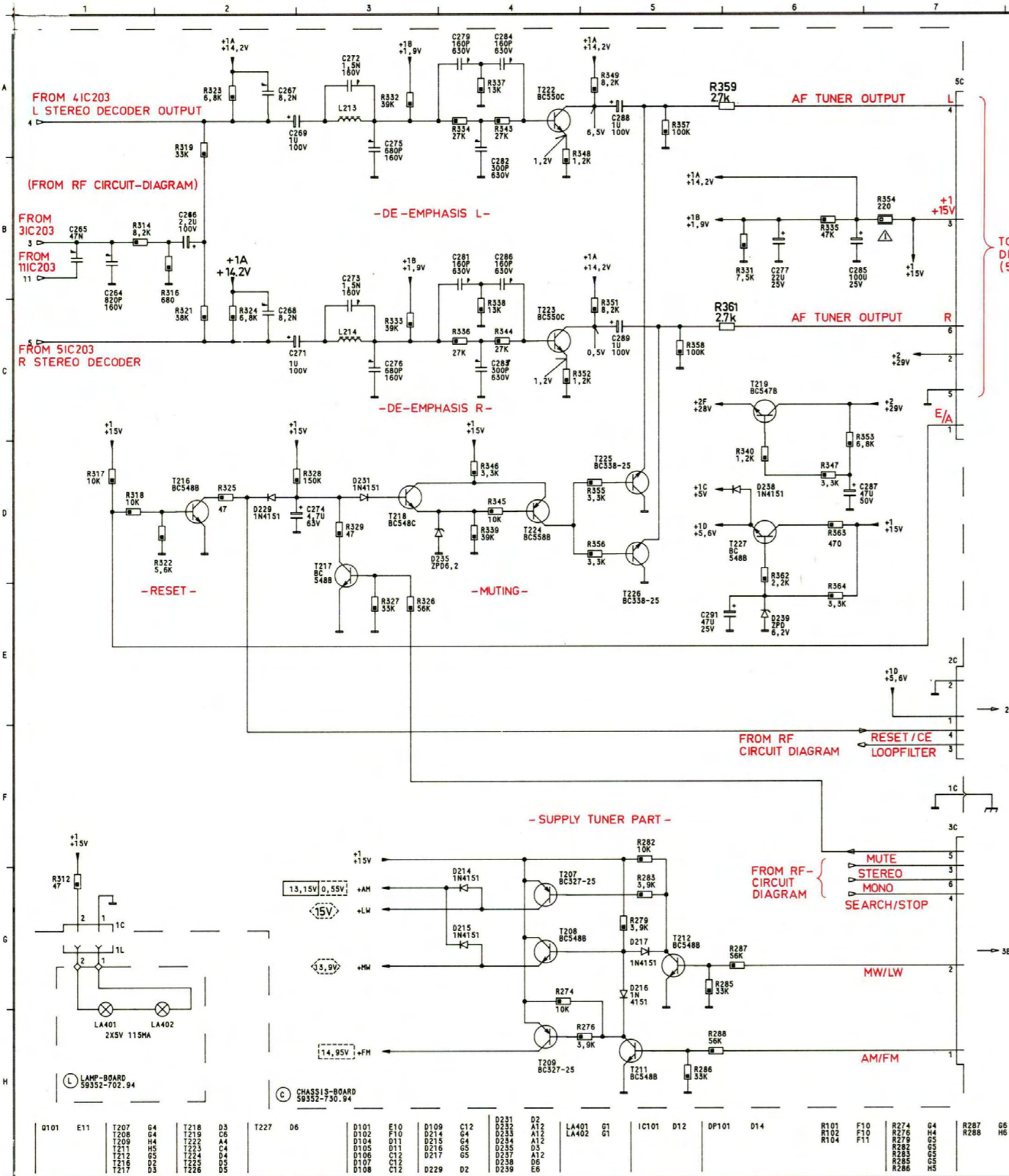


TO DE-AMPHASIS CIRCUIT DIAGRAM

LOOP FILTER

TO u-PROC OPERATING CIRCUIT DIAGRAM

STEREO MONO SEARCH/STOP

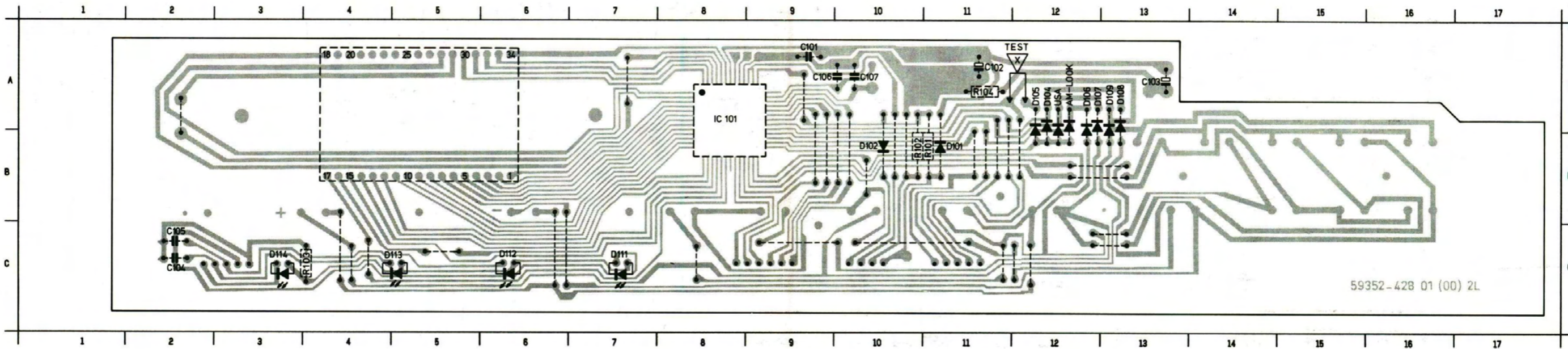


ZF	MHZ															
	10,6000	10,6125	10,6250	10,6375	10,6500	10,6625	10,6750	10,6875	10,7000	10,7125	10,7250	10,7375	10,7500	10,7625	10,7750	10,7875
B3																
B2																
B1																
B0																

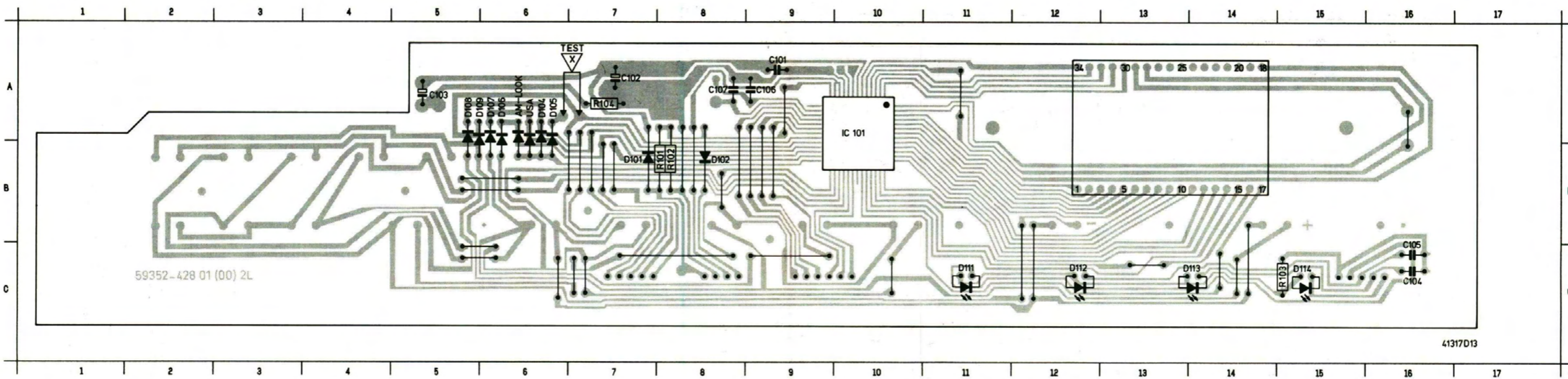
0101	E11	T207	G4	T218	D3	T227	D6	D101	F10	D102	F11	D231	D2	D232	A12	LA401	G1	IC101	D12	DP101	D14	R101	F10	R274	G4	R287	G6	R312	G1	R322	D2	R329	D3	R337	A4	R347	D6	R357	A5	C101	F11	C264	B1	C272	A3	C281	B4	C288	A5
T208	G4	T219	C6	T220	A4	T221	C4	D103	D11	D215	G5	D233	A12	D234	A12	LA402	G1	D12	D12	D14	R102	F11	R275	H4	R288	H6	R313	B1	R323	A2	R330	D6	R338	C5	R348	A4	R358	C5	C102	F12	C265	B1	C273	C3	C282	B4	C289	C5	
T209	H4	T222	A4	T223	C4	T224	D4	D104	D11	D216	G5	D235	D5	D237	A12						R104	F11	R276	G5	R289	H5	R314	B1	R324	C2	R331	C3	R340	D6	R350	D6	C103	F12	C266	B2	C274	A2	C283	A4	C291	E5			
T210	H5	T225	C4	T226	D4	T227	D5	D105	D11	D217	G5	D236	D5	D238	D6								R277	G5	R290	H6	R315	B2	R325	C2	R332	C3	R341	D6	R351	D6	C104	F12	C267	B2	C275	B5	C284	A4					
T211	D3	T228	D5	T229	D5	T230	D5	D106	C12	D218	D2	D238	D6	D239	E6								R278	G5	R291	H6	R316	B2	R326	C5	R333	A4	R342	A4	R352	D6	C105	E10	C268	B2	C276	C3	C285	B6					
T212	D3	T231	D5	T232	D5	T233	D5	D107	C12	D219	D2	D239	E6										R279	G5	R292	H6	R317	D1	R327	D2	R334	A4	R343	A4	R353	D5	C106	F11	C269	B2	C277	B6	C286	B4					
T213	D3	T234	D5	T235	D5	T236	D5	D108	C12	D220	D2												R280	H6	R293	H6	R318	C2	R328	D2	R335	C4	R344	C4	R354	B6	C107	E11	C270	B6	C278	A4	C287	D6					

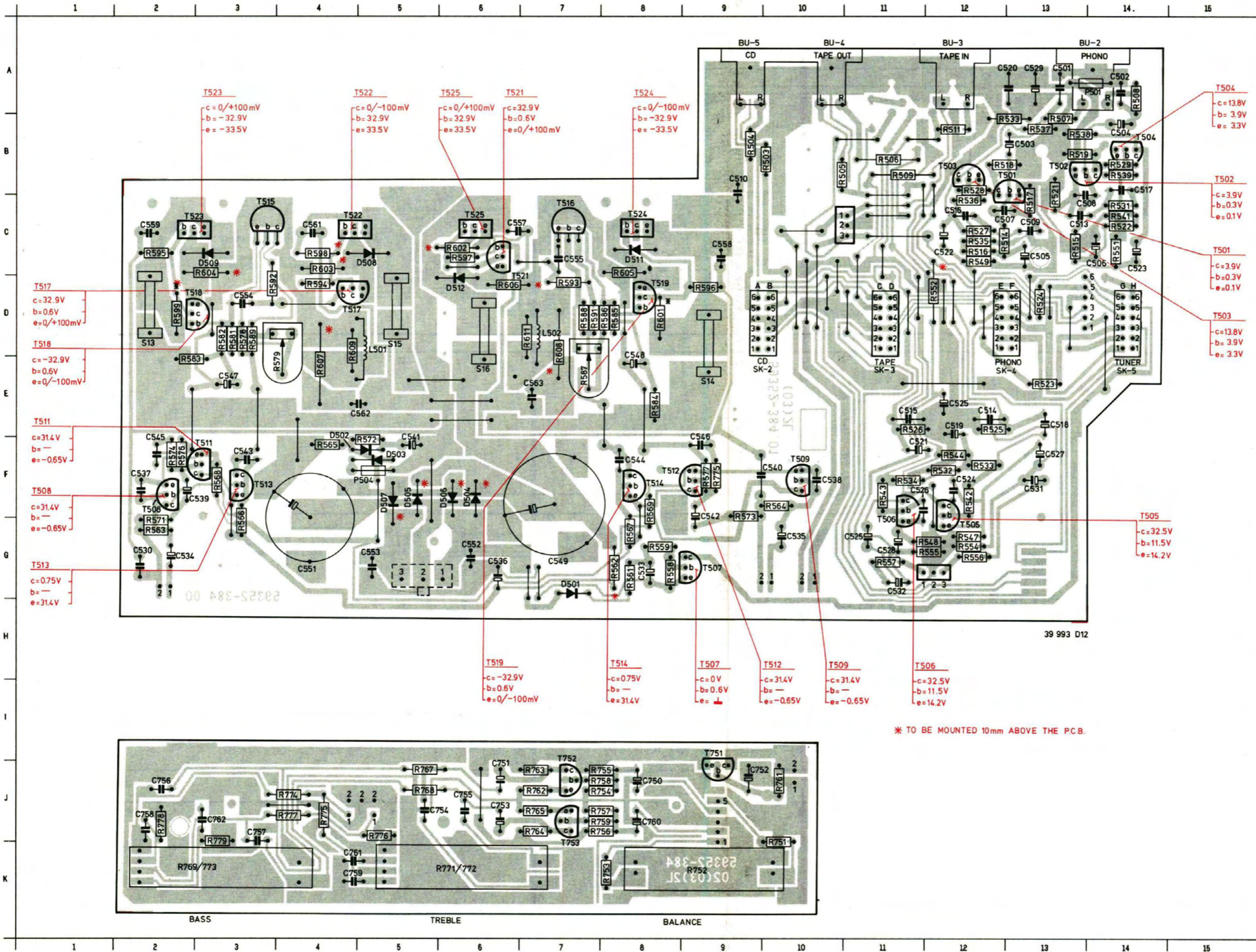
OPERATING PANEL

C101 A 9 C103 A13 C105 C 2 C107 A10 D102 B10 D105 A12 D107 A13 D109 A13 D112 C 6 D114 C 3 R101 B11 R103 C 4
 C102 A11 C104 C 2 C106 A 9 D101 B11 D104 A12 D106 A12 D108 A13 D111 C 7 D113 C 4 IC101 A 8 R102 B10 R104 A11



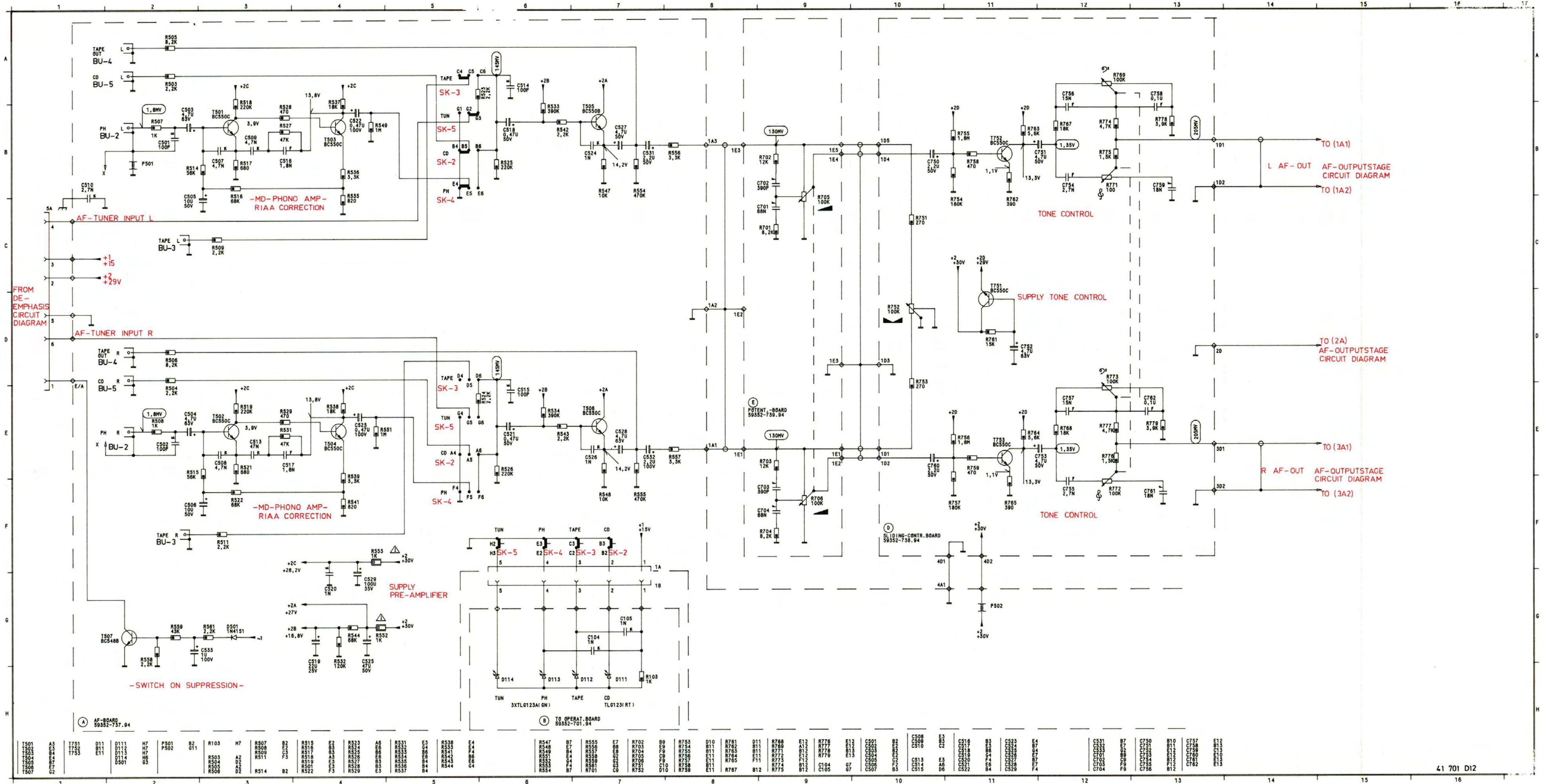
C101 A 9 C103 A 5 C105 B16 C107 A 8 D102 B 8 D105 A 6 D107 A 6 D109 A 6 D112 C12 D114 C15 R101 B 8 R103 C15
 C102 A 7 C104 C16 C106 A 9 D101 B 7 D104 A 6 D106 A 6 D108 A 5 D111 C11 D113 C14 IC101 A10 R102 B 8 R104 A 7





BU 2	R14	R523	E13	SK 4	E13
BU 3	R12	R524	D13	SK 5	E14
BU 4	R10	R525	E12	T501	B13
BU 5	R 9	R526	E11	T502	B13
C501	R13	R527	C12	T503	B12
C502	R14	R528	B12	T504	B14
C503	B13	R529	B14	T505	G12
C504	B14	R531	C14	T506	G11
C505	C13	R532	F12	T507	G 9
C506	C14	R533	B13	T508	F 2
C507	C12	R533	F12	T509	F 10
C508	C14	R534	F11	T511	F 3
C509	C13	R535	C12	T512	F 8
C510	B 9	R536	C12	T513	F 8
C513	C13	R537	B13	T514	F 8
C514	E12	R538	B14	T515	C 3
C515	E11	R539	B13	T516	C 7
C516	C12	R541	C14	T517	D 4
C517	B14	R542	F12	T518	D 8
C518	E13	R543	F11	T519	D 8
C519	E12	R544	F12	T521	C 7
C520	R13	R547	G12	T522	C 4
C521	F11	R548	G12	T523	C 2
C522	C12	R549	C12	T524	C 6
C523	C14	R551	C14	T525	C 6
C524	F12	R552	D12	T751	C 9
C525	E12	R554	G12	T752	C 1
C525	G11	R555	G12	T753	K 7
C526	F11	R556	G12		
C527	F13	R557	G11		
C528	G11	R558	G 8		
C529	R13	R559	G 8		
C530	G 2	R561	G 8		
C531	F13	R562	G 8		
C532	G11	R563	G 2		
C533	G 8	R564	F10		
C534	G 2	R565	F 4		
C535	G10	R566	F 3		
C536	G 6	R567	G 8		
C537	F 2	R568	F 3		
C538	F10	R569	F 2		
C539	F 3	R571	D 2		
C540	F10	R572	F 5		
C541	E 5	R573	F 9		
C542	F 9	R574	F 2		
C543	F 3	R576	F 2		
C544	F 8	R577	F 9		
C545	F 2	R578	D 3		
C546	E 9	R579	E 4		
C547	E 3	R581	D 3		
C548	D 8	R582	D 3		
C549	G 7	R584	E 8		
C551	G 4	R585	D 8		
C552	G 6	R586	D 8		
C553	G 5	R587	E 7		
C554	D 3	R588	D 7		
C555	C 7	R589	D 3		
C557	C 6	R591	D 7		
C558	C 9	R592	D 3		
C559	C 2	R593	D 7		
C561	C 4	R594	D 4		
C562	E 5	R595	C 2		
C563	E 7	R596	D 9		
C750	J 8	R597	C 6		
C751	I 6	R598	C 4		
C752	J10	R599	D 2		
C753	J 6	R601	D 8		
C754	J 6	R602	C 6		
C755	J 6	R603	C 4		
C756	J 2	R604	C 3		
C757	J 3	R605	C 8		
C758	J 2	R606	D 6		
C759	K 4	R607	E 4		
C760	J 8	R608	D 7		
C761	K 4	R609	D 4		
C762	J 3	R611	D 7		
D501	G 7	R751	J10		
D502	E 4	R752	K 9		
D503	F 5	R753	K 8		
D504	F 6	R754	J 8		
D505	F 5	R755	J 8		
D506	F 6	R756	J 8		
D507	F 5	R757	J 8		
D508	C 5	R758	J 8		
D509	C 3	R759	J 8		
D511	C 8	R761	J10		
D512	D 6	R762	J 7		
L501	D 5	R763	J 7		
L502	D 7	R764	J 7		
P504	R14	R765	J 7		
R503	B10	R768	J 5		
R504	B 9	R769	K 2		
R505	B11	R771	K 6		
R506	B11	R774	J 4		
R507	B13	R775	J 4		
R508	R14	R775	F 9		
R509	B11	R776	J 5		
R511	B12	R777	J 4		
R514	C13	R778	J 2		
R515	C13	R779	J 3		
R516	C12	S 13	D 9		
R517	C13	S 14	E 9		
R518	B13	S 15	D 5		
R519	B13	S 16	E 6		
R521	B13	SK 2	E10		
R522	C14	SK 3	E11		

* TO BE MOUNTED 10mm ABOVE THE PCB.



T501	A3	T751	D11	D111	H7	P501	B2	R103	H7	R507	B2	R515	E2	R523	A6	R538	E4	R547	E7	R555	E7	R702	B9	R754	D10	R761	D11	R768	E12	R776	E12	C508	E3	C516	B3	C523	E4	C531	B7	C750	B10	C757	E12	T502	B4	T752	D11	D111	H7	P502	D11	R508	B2	R516	E3	R524	A6	R539	E4	R548	E7	R556	E7	R703	B9	R755	D10	R762	D11	R769	E12	R777	E12	C509	E3	C517	B3	C524	E4	C532	B7	C751	B10	C758	E12	T503	B4	T753	D11	D111	H7	R509	B2	R517	E3	R525	A6	R540	E7	R549	E7	R557	E7	R704	B9	R756	D10	R763	D11	R770	E12	C510	E3	C518	B3	C525	E4	C533	B7	C752	B10	C759	E12	T504	B4	T754	D11	D111	H7	R510	B2	R518	E3	R526	A6	R541	E7	R550	E7	R705	B9	R757	D10	R764	D11	R771	E12	C511	E3	C519	B3	C526	E4	C534	B7	C753	B10	C760	E12	T505	B4	T755	D11	D111	H7	R511	B2	R519	E3	R527	A6	R542	E7	R551	E7	R706	B9	R758	D10	R765	D11	R772	E12	C512	E3	C520	B3	C527	E4	C535	B7	C754	B10	C761	E12	T506	B4	T756	D11	D111	H7	R512	B2	R520	E3	R528	A6	R543	E7	R552	E7	R707	B9	R759	D10	R766	D11	R773	E12	C513	E3	C521	B3	C528	E4	C536	B7	C755	B10	C762	E12	T507	B4	T757	D11	D111	H7	R513	B2	R521	E3	R529	A6	R544	E7	R553	E7	R708	B9	R760	D10	R767	D11	R774	E12	C514	E3	C522	B3	C529	E4	C537	B7	C756	B10	C763	E12
------	----	------	-----	------	----	------	----	------	----	------	----	------	----	------	----	------	----	------	----	------	----	------	----	------	-----	------	-----	------	-----	------	-----	------	----	------	----	------	----	------	----	------	-----	------	-----	------	----	------	-----	------	----	------	-----	------	----	------	----	------	----	------	----	------	----	------	----	------	----	------	-----	------	-----	------	-----	------	-----	------	----	------	----	------	----	------	----	------	-----	------	-----	------	----	------	-----	------	----	------	----	------	----	------	----	------	----	------	----	------	----	------	----	------	-----	------	-----	------	-----	------	----	------	----	------	----	------	----	------	-----	------	-----	------	----	------	-----	------	----	------	----	------	----	------	----	------	----	------	----	------	----	------	-----	------	-----	------	-----	------	----	------	----	------	----	------	----	------	-----	------	-----	------	----	------	-----	------	----	------	----	------	----	------	----	------	----	------	----	------	----	------	-----	------	-----	------	-----	------	----	------	----	------	----	------	----	------	-----	------	-----	------	----	------	-----	------	----	------	----	------	----	------	----	------	----	------	----	------	----	------	-----	------	-----	------	-----	------	----	------	----	------	----	------	----	------	-----	------	-----	------	----	------	-----	------	----	------	----	------	----	------	----	------	----	------	----	------	----	------	-----	------	-----	------	-----	------	----	------	----	------	----	------	----	------	-----	------	-----

SERVICE-WENKEN

1. Keramische resonatoren F201-F202

Bij het vervangen van één van de keramische resonatoren dient men erop te letten dat de kleurcode van F201 en F202 hetzelfde is.

Tevens dient men te controleren of de juist FM-IF offset dioden gemonteerd zijn. Zie service-wenk 6.

2. ESD



Alle IC's en vele andere halfgeleiders zijn gevoelig voor electrostatische ontladingen (ESD).

Onzorgvuldig behandelen tijdens reparatie kan de levensduur drastisch doen verminderen.

Zorg ervoor dat u tijdens reparatie via een polsband met weerstand verbonden bent met hetzelfde potentieel als de massa van het apparaat.

Houd componenten en hulpmiddelen ook op ditzelfde potentiaal.

Zie hiervoor service informatie A86-1000.

3. Preset programming

Het programma van de μ -processor maakt het mogelijk vaste frequenties op te slaan in de diverse presets. Deze vaste frequenties, kunnen in de normale applicatie, worden gebruikt voor afregeldoelinden.

Hier toe dient men de testbrug ∇ te sluiten en daarna toets STORE drukken.

In de tabel zijn de opgeslagen frequenties weergegeven.

RAM loading

PRESET	FM/U 87,5 MHz	MW 522 kHz	LW 153 kHz
1	87,5	522	153
2	88	1611	164
3	106	612	317
4	95	1503	353
5	91	520	200
6	100	1620	153
7	108	558	153
8	98	999	153

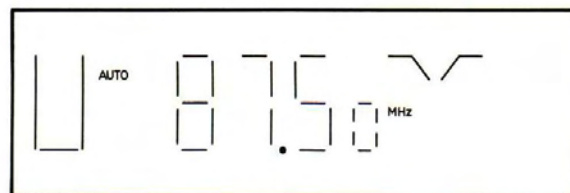
4. Display test

Met de display test is het mogelijk alle segmenten van het display te laten oplichten. Hiertoe dient men de testbrug ∇ te sluiten en daarna toets AUTO te drukken.



41 734 A12

Als toets AUTO wordt losgelaten zal onderstaand figuur worden weergegeven.



41 735 A12

5. Display DP101

Bij het testen van de display met externe spanningen dienen de verbindingen met IC101 onderbroken te worden. De outputs van de display drivers in IC101 zijn niet beveiligd tegen externe overspanningen.

6. FM-IF offset dioden

Indien de keramische resonatoren F201, F202 worden vervangen, moet opnieuw de FM-IF offset worden bepaald, zodat de μ -processor met de juiste IF rekening houdt. Deze programmering geschiedt door de soldeerbruggen B0+B3 al dan niet te sluiten. Zie hiervoor de tabel in het digital circuit diagram. De bepaling geschiedt als volgt.

- 1) Stem tuner af (exakt) op zender.
- 2) Is de spanning op meetpunt ∇ ± 250 mV hoger dan op meetpunt ∇ dan de IF offset 50 kHz verhogen.
Bij ± 125 mV, 25 kHz verhogen.
Bij ± 60 mV, 12,5 kHz verhogen.
- 3) Is de spanning op meetpunt ∇ ± 250 mV lager dan op meetpunt ∇ dan de IF offset 50 kHz verlagen.
Bij ± 125 mV, 25 kHz verlagen.
Bij ± 60 mV, 12,5 kHz verlagen.
- 4) De tolerantie bij juiste afregeling van detector ± 10 mV.

7. Vervangen van Flat Pack IC's

In service information A86-1000 zijn service-wenken gegeven voor het vervangen van Flat Pack IC's.

SK... WAVE RANGE SWITCH	SIGNAL	TO	DISPLAY TUNE IN	DETUNE	ADJUST	OSCILLOSCOPE	D.C. METER INDICATOR
-------------------------------	--------	----	--------------------	--------	--------	--------------	-------------------------

FM-IF






FM	98 MHz Δf 250 kHz (50 Hz)		Display 98.0 MHz			1 1 center		f0		
	f0 = f generator Δf 250 kHz (50 Hz)					F1			symmetrical MAX. 1 2	
	98 MHz Δf 75 kHz 10 μ V					L209			L211	symmetrical 3
	98 MHz Δf 75 kHz 1 kHz mod. 1 mV					L209				2 3
							2 3	0 V \pm 10 mV		
							9	4		

FM-RF (Oscillator)

FM	106 MHz 1 kHz mod. Δf 22.5 kHz		Display 106 MHz	C28	max. \sim or 1	4 16.16 V \pm 200 mV
	88 MHz 1 kHz mod. Δf 22.5 kHz		Display 88.0 MHz			L25

FM-RF



FM	106 MHz 1 kHz mod. Δf 22.5 kHz		Display 106 MHz	C4 C9 C13	max. \sim or 1	
	88 MHz 1 kHz mod. Δf 22.5 kHz		Display 88.0 MHz			






SK... WAVE RANGE SWITCH	 SIGNAL	 TO	DISPLAY TUNE IN	DETUNE	 ADJUST	 OSCILLOSCOPE	 D.C. METER INDICATOR
-------------------------------	--	--	--------------------	--------	--	--	---

Stereo decoder



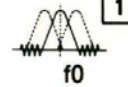
FM	98 MHz 1 mV unmodulated		Display 98.0 MHz		R308	8 Frequency counter 19 kHz \pm 10 Hz
----	-------------------------------	---	---------------------	--	------	---

FM stereo-tuning indicator-tuning level - search stop


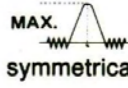
FM	98 MHz 1 kHz mod. 90% (L-R) 9% pilot 25 μ V		Display 98.0 MHz	no adjustment provided	R232	DP101 stereo on tuning on
	98 MHz 1 kHz mod. 90% (L-R) 9% pilot 10 μ V					DP101 stereo off tuned off
	98 MHz 1 kHz mod. 90% (L-R) 9% pilot 1 mV					9 > 500 mV < 800 mV DP101 stereo on tuned on
	98 MHz 1 kHz mod. 1 mV 98 MHz \pm 35 kHz					DP101 tuned on
FM AUTO	98 MHz unmodulated 20 μ V		Display 99.0 MHz			

SK... WAVE RANGE SWITCH	 SIGNAL	 TO	DISPLAY TUNE IN	DETUNE	 ADJUST	 OSCILLOSCOPE	 D.C. METER INDICATOR
-------------------------------	--	--	--------------------	--------	--	--	---


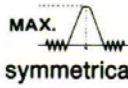
AM-IF

MW	612 kHz Δ f 10 kHz (50 Hz)		Display 612 kHz		5 center 
	f0 = f generator Δ f 10 kHz (50 Hz)				L208

AM-RF (Oscillator)

MW	522 kHz Mod.: 1 kHz 30%		Display 522 kHz	L206	max. ~ or 5	4 1,03 V \pm 50 mV
	1611 kHz Mod.: 1 kHz 30%		Display 1611 kHz			C215
LW	153 kHz Mod.: 1 kHz 30%		Display 153 kHz	L207	MAX. symmetrical 	4 1,2 V \pm 50 mV

AM-RF

MW	612 kHz 1 kHz mod. 30%		Display 612 kHz	L204	max. ~ or 5 MAX. symmetrical 
MW	1503 kHz 1 kHz mod. 30%		Display 1503 kHz	C206	
LW	153 kHz 1 kHz mod. 30%		Display 153 kHz	L205	
LW	317 kHz 1 kHz mod. 30%		Display 317 kHz	C207	

↓ Repeat - Herhalen - Répéter - Wiederholen - Ricominciare - Repetera - Gentage - Gjentagelse - Toista

ELEKTRISCHE CONTROLES EN INSTELLINGEN VOOR LF-GEDEELTE

Algemene voorwaarden

- * Alle controles en instellingen zijn gegeven voor het linkerkanaal. De corresponderende testpunten en afregel-elementen voor het rechterkanaal zijn tussen haakjes geplaatst.
- * Signalen toevoeren via 22 k Ω op tape in BU-3.
- * Belastingweerstand 8 Ω , 1%, 80 W aansluiten op BU-6.
- * Balans en toonregelaars in middenpositie.
- * Bij distortiemetingen dient het apparaat ingekast te zijn.

Benodigde meetinstrumenten

- * Universeel meter
- * AC mV-meter
- * DC mV-meter
- * LF generator
- * Vervormingsmeter
- * Oscilloscoop

Offsetspanning LF eintrap

- * Na instelling van de ruststroom mag de gelijkspanning op de, onbelaste, luidspreker uitgang BU-6 niet hoger zijn dan ± 150 mV, gemeten zonder ingangssignaal.

Ruststroom instelling

- * Apparaat in koude toestand, geen belasting aansluiten en geen signaal toevoeren.
- * Instel potentiometers R579 (L) en R587 (R) geheel linksom draaien (minimale ruststroom).
- * DC mV-meter aansluiten over weerstanden R603 en R604 (L) en/of R605 en R606 (R). Meetpunten ∇ en ∇ .
- * Ruststroom instellen voor:
Linkerkanaal met R579, zodat 4 mV (-10%, +30%) over R603 en R604 staat.
Rechterkanaal met R587, zodat 4 mV (-10%, +30%) over R605 en R606 staat.
- * Controleer na ± 10 min. de ruststroom.
De spanning over de weerstanden mag nu niet hoger zijn dan 15 mV $\pm 10\%$ gemeten zonder ingangssignaal. Is deze spanning te hoog, herhaal dan de afregelprocedure en controleer of voldoende siliconenpasta is aangebracht tussen de eindtransistoren en het koellichaam.
Transistoren T515 en T516 dienen in de uitsparing van het koellichaam gemonteerd te zijn.
Voor service-doeleinden kan gebruik worden gemaakt van de extra uitsparingen in het koelblok.

SERVICE-WENKEN

Demonteren RF-paneel

- * Voor metingen aan het AF-paneel kan het RF-paneel geheel worden verwijderd, door 5 paneel bevestigingsschroeven en 2 schroeven aan de antennebus los te draaien. Tevens dienen alle elektrische verbindingen losgemaakt te worden.

DC-spanningen AF Part

- * Indien het RF-paneel verwijderd is, kan het AF-gedeelte "normaal" functioneren. Het display zal echter blank worden.
Bij het meten van de gelijkspanningen dient men er rekening mee te houden dat de waarden van de +2 voeding $\pm 10\%$ lager liggen dan de opgegeven waarden in het schema.

Rated output power and distortion (THD)

SK... SWITCH	SIGNAL	TO	VOLUME	Measure on BU-6 across R _L and R _R		
				FTC 2 x 25 W $\pm 14,14$ V	IEC 2 x 30 W $\pm 15,49$ V	DIN 2 x 32 W ± 16 V
TAPE SK-3	40 Hz	BU-3 via 22 k Ω	max.	D $\leq 0.04\%$		
	63 Hz				D $\leq 0.7\%$	
	1 kHz			D $\leq 0.01\%$	D $\leq 0.3\%$	$\leq 0.7\%$
	12.5 kHz				D $\leq 0.7\%$	
	20 kHz			D $\leq 0.04\%$		

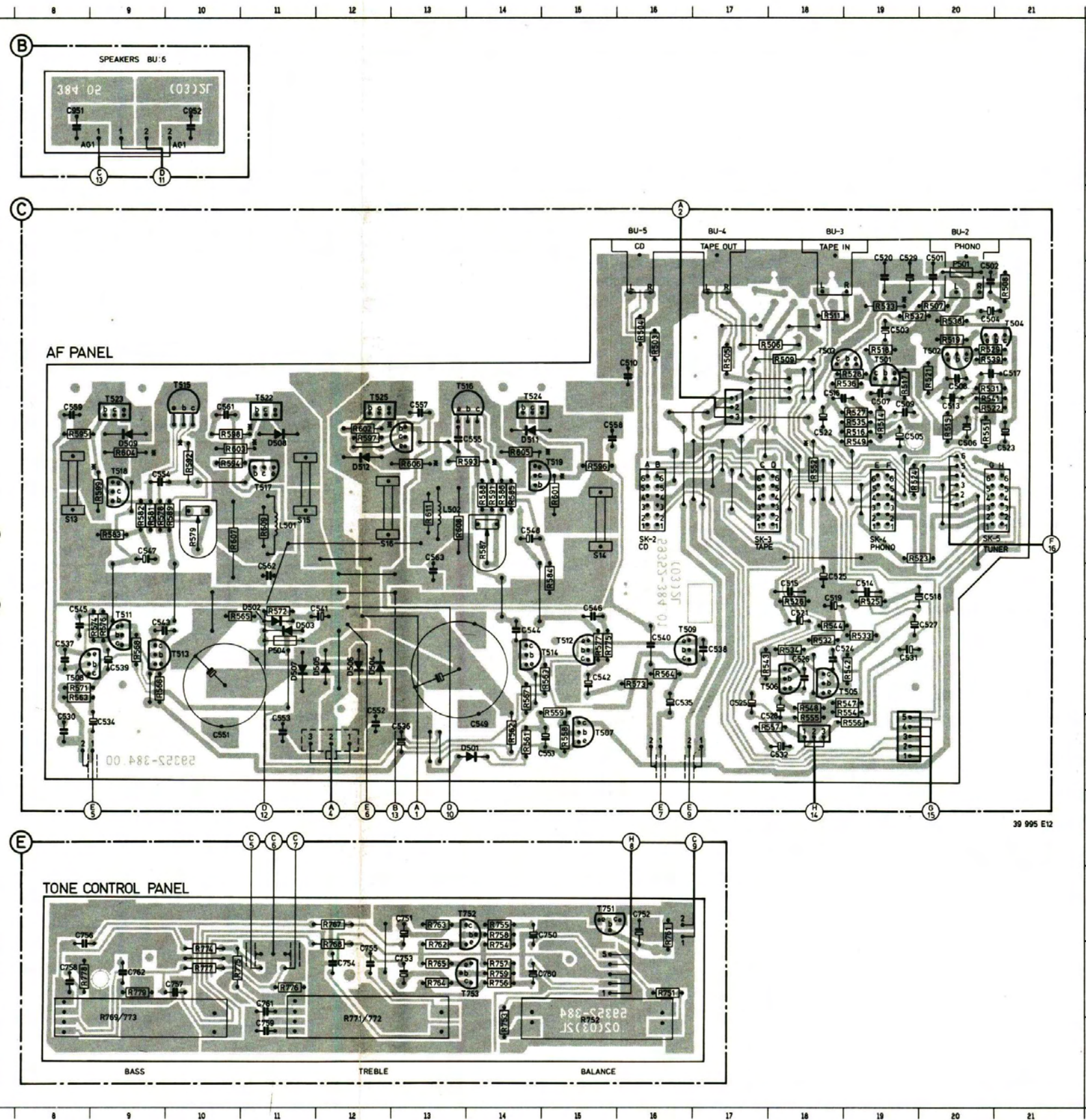
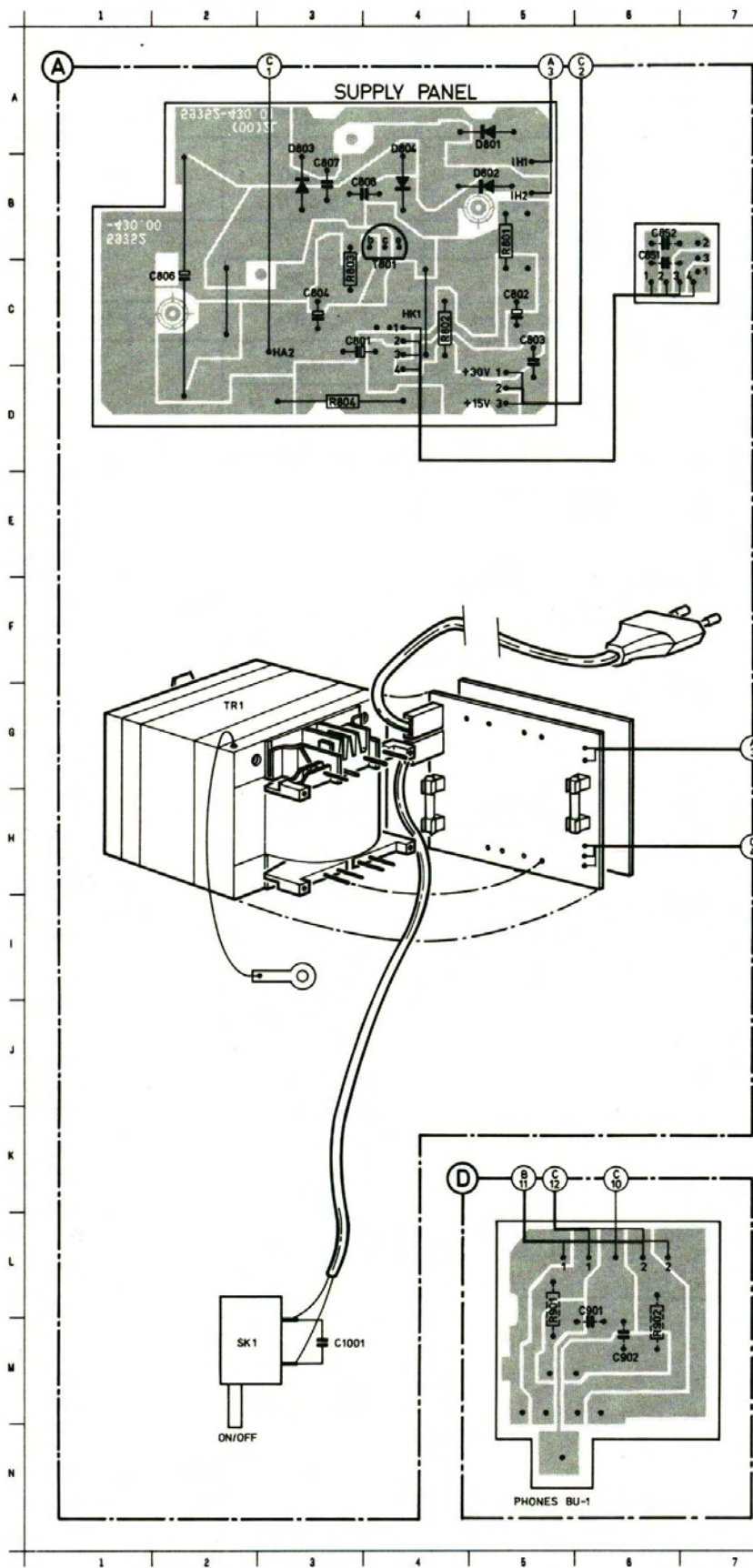
SK... SWITCH	SIGNAL	TO	TERMINATE	VOLUME	BASS	TREBLE	LOUDNESS	MEASURE ON

AF sensitivity

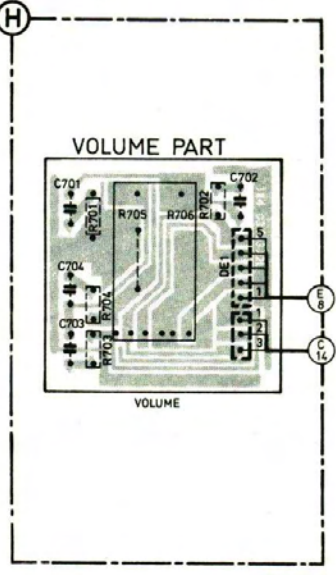
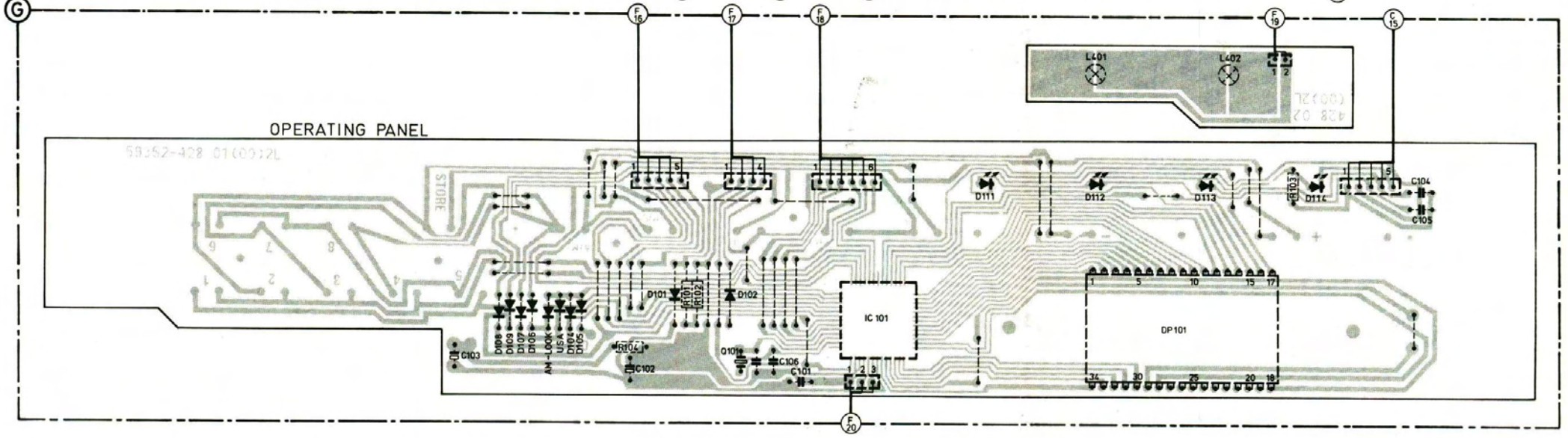
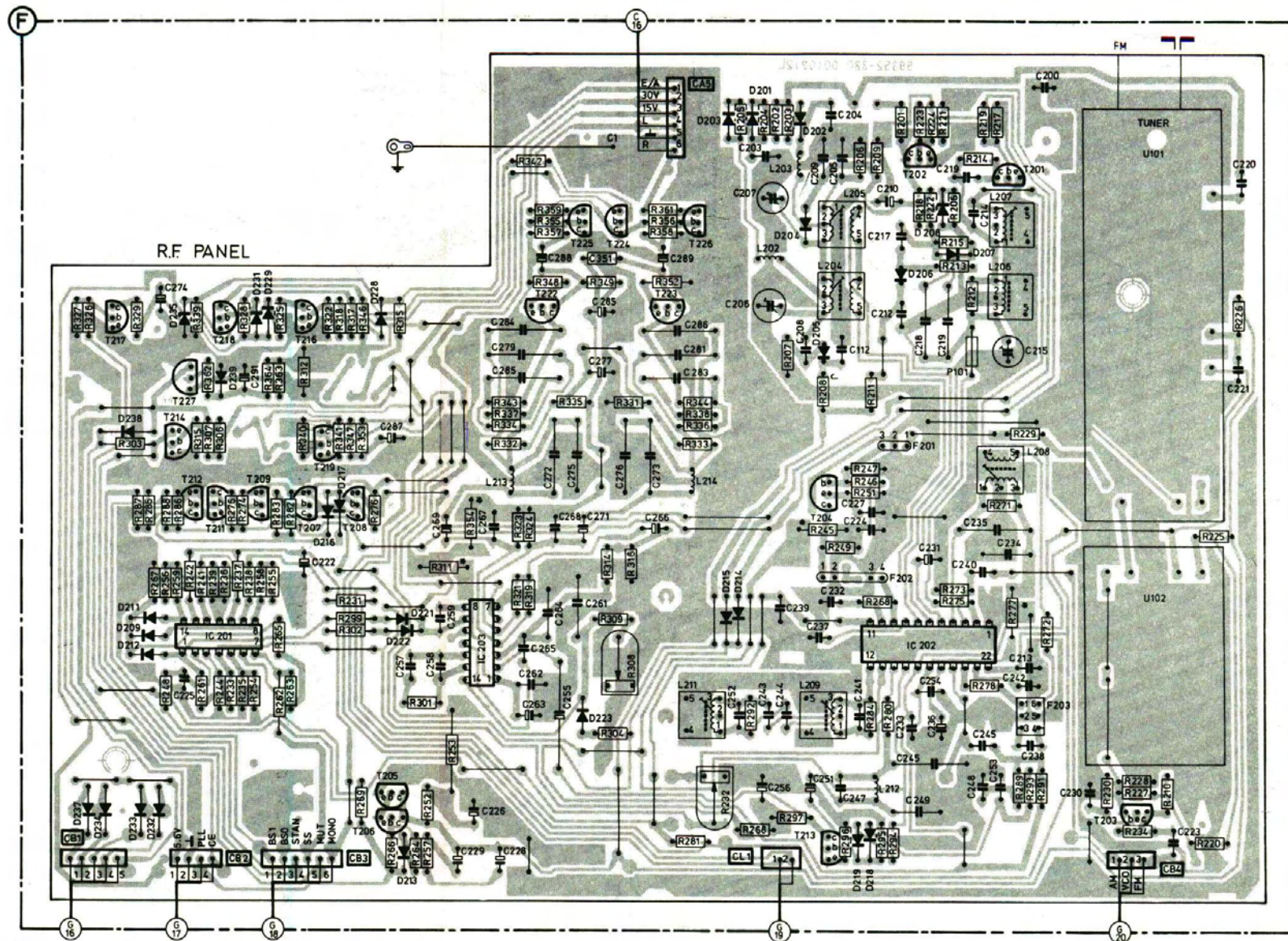
Tape SK-3	1 kHz	BU-3 via 22 k						
CD SK-2	170+190 mV	BU-5 via 22 k		max.				BU-6 across R _L (R _R) 2 x 30 W $\pm 15,49$ V
Phono SK-4	1,7+2 mV	BU-2 via 2k2		max.				

Tone control (± 2 dB)

Tape SK-3	1 kHz	BU-3 via 22 k Ω	max	MID	MID	BU-6 0,775 V = 0 dB across R _L (R _R)	
				MAX	MID		+12 dB
				MIN	MID		-11 dB
				MID	MAX		+10 dB
				MID	MIN		-14 dB



BU 1	N 6	R529	E20	T751	L15
BU 2	C20	R531	E20	T752	L14
BU 3	C18	R532	I18	T753	M14
BU 4	C17	R533	O19	T801	C 4
BU 5	C16	R533	I19	TR 1	G 2
BU 6	R 9	R534	I18		
C1001	M 3	R535	F19		
C501	C20	R536	I18		
C502	O20	R537	O19		
C503	O19	R538	O20		
C504	O20	R539	E20		
C505	F19	R541	E20		
C506	F20	R542	I19		
C507	E19	R543	I18		
C508	E20	R544	I18		
C509	E19	R547	I19		
C510	E16	R548	I18		
C513	E20	R549	F19		
C514	M19	R551	F20		
C515	M18	R552	F18		
C516	E18	R554	I19		
C517	E21	R555	J18		
C518	H20	R556	J19		
C519	M18	R557	J18		
C520	O19	R558	J15		
C521	I17	R559	J15		
C522	F18	R561	J14		
C523	F21	R562	J14		
C524	I19	R563	I 8		
C525	M18	R564	I16		
C526	I17	R565	M10		
C527	H20	R567	I14		
C528	J18	R568	I 9		
C529	O19	R569	I15		
C530	O 8	R571	O 8		
C531	I19	R572	H11		
C532	J18	R573	I16		
C534	J 9	R574	H 9		
C535	I16	R575	I15		
C536	J13	R576	H 9		
C537	I 8	R577	I15		
C538	I17	R578	O 9		
C539	I 9	R579	O10		
C540	I16	R581	O 9		
C541	H12	R582	O 9		
C542	I15	R583	O 9		
C543	H 9	R584	M15		
C544	M14	R585	O14		
C545	H 8	R586	O14		
C546	M15	R587	O14		
C547	O 9	R588	O14		
C548	O14	R589	O10		
C549	J14	R591	O14		
C551	J10	R592	F10		
C552	I12	R593	F14		
C553	J11	R594	F10		
C554	F 9	R596	F15		
C555	F14	R597	F12		
C557	E13	R598	F10		
C558	E 5	R599	O 9		
C559	O 8	R600	O15		
C561	E10	R602	F12		
C562	M11	R603	F10		
C563	O13	R604	F 9		
C564	L15	R605	F14		
C565	L13	R606	F13		
C566	L16	R607	O10		
C567	M13	R608	O13		
C568	M12	R609	O11		
C569	M12	R611	O13		
C570	L 8	R611	M16		
C571	M10	R612	M15		
C572	H 8	R613	M14		
C573	M11	R614	M14		
C574	M 9	R615	M14		
C575	C 3	R616	M14		
C576	C 5	R617	L16		
C577	C 3	R618	M13		
C578	C 2	R619	L13		
C579	O 3	R620	M13		
C580	O 4	R621	M13		
C581	O 6	R622	L12		
C582	O 6	R623	M12		
C583	L 6	R624	N 9		
C584	O 6	R625	M12		
C585	O 8	R626	M10		
C586	O 8	R627	M10		
C587	J14	R628	M11		
C588	M11	R629	M10		
C589	M11	R630	M 8		
C590	I12	R631	M 9		
C591	I12	R632	M 9		
C592	I12	R633	M 9		
C593	I12	R634	M 5		
C594	I12	R635	C 4		
C595	I11	R636	C 3		
C596	F11	R637	O 3		
C597	F 9	R638	L 5		
C598	F14	R639	M 6		
C599	F12	R640	S 13		
C600	A 2	R641	S 14		
D801	A 2	R642	S 15		
D802	B 5	R643	S 15		
D803	A 3	R644	S 16		
D804	A 4	R645	S 16		
L501	O11	R646	SK 2		
L502	O13	R647	SK 3		
P501	O20	R648	SK 4		
P504	I11	R649	SK 5		
R501	E16	R650	E19		
R504	O16	R651	E20		
R505	E17	R652	E18		
R506	E18	R653	E21		
R507	O21	R654	E18		
R508	E18	R655	E15		
R509	E18	R656	E15		
R510	O18	R657	E18		
R511	O18	R658	E18		
R514	F19	R659	E16		
R515	F20	R660	E19		
R516	F19	R661	E15		
R517	E19	R662	E10		
R518	E19	R663	E15		
R519	E20	R664	E14		
R520	E20	R665	E11		
R521	E20	R666	E14		
R522	E20	R667	E11		
R523	O19	R668	F 9		
R524	F20	R669	F15		
R525	M19	R670	E11		
R526	M18	R671	E 9		
R527	F19	R672	E14		
R528	E19	R673	E12		



C101	D10	D238	E 9	R323	F13
C102	D 8	D239	D10	R324	F13
C103	0.6	DE 1	M21	R325	D10
C104	M17	DP101	N14	R326	D 8
C105	M17	F201	E14	R327	D 8
C106	0.9	F202	G17	R328	D10
C112	D17	F203	M19	R329	D 9
C200	R19	IC101	N10	R331	E14
C203	R15	IC201	D10	R332	E13
C204	R17	IC202	D17	R333	E13
C205	R16	IC203	D13	R334	E13
C206	D15	L202	C16	R335	E14
C207	R15	L203	R16	R336	E15
C208	R16	L204	C15	R337	E13
C209	R16	L205	R17	R338	E15
C210	R17	L206	C18	R339	D10
C212	D17	L207	R18	R340	E11
C213	D18	L208	E19	R341	E11
C214	C18	L209	M16	R342	E13
C215	D19	L211	M15	R343	E13
C217	C17	L212	I17	R344	E15
C218	D17	L213	F13	R346	D11
C219	R18	L214	F15	R347	E11
C221	D18	L401	K15	R348	C13
C220	R21	L402	K15	R349	C14
C221	E21	P101	D18	R352	C15
C222	F11	Q101	0.9	R353	E11
C223	I20	R101	N 8	R354	E13
C224	F17	R102	N 8	R355	C13
C225	H 9	R103	M15	R356	C15
C226	I13	R104	0.8	R357	C13
C227	F17	R201	R17	R358	C15
C228	J13	R202	R16	R359	C13
C229	J13	R203	R16	R361	C15
C230	I19	R204	R16	R362	D10
C231	F17	R205	R15	R363	D11
C232	G16	R206	R17	R364	D10
C233	M17	R206	C18	R701	L18
C234	F18	R207	D16	R702	L20
C235	F18	R208	E16	R703	N20
C236	M17	R209	R17	R704	N20
C237	G16	R210	I20	R705	L20
C238	M18	R211	E17	R706	L20
C239	G16	R212	D18	T201	R19
C240	F18	R213	C18	T202	R17
C241	M17	R214	R18	T203	F11
C242	M18	R215	C18	T204	F16
C243	M16	R217	R18	T205	I12
C244	M16	R218	C17	T206	I11
C245	M18	R219	R18	T207	F11
C246	E15	R220	I20	T208	F11
C247	I17	R221	R18	T209	F10
C248	I18	R222	C17	T211	F10
C249	I17	R223	R17	T212	F10
C251	I16	R224	R17	T213	I16
C252	M15	R225	F20	T214	E 9
C253	I18	R226	D21	T216	D11
C254	M17	R227	I20	T217	D 9
C255	H14	R228	I20	T218	D10
C256	I16	R229	E18	T219	E11
C257	M12	R230	I19	T222	D13
C258	G12	R231	G11	T223	D15
C259	G12	R232	I15	T224	C14
C261	G14	R233	H10	T225	C14
C262	M13	R234	I20	T226	C15
C263	M13	R235	M10	T227	E 9
C264	D13	R236	D10	T228	E10
C265	G13	R237	G10	T229	D10
C266	F15	R238	G10	T230	D10
C267	F13	R239	G10	T231	D10
C268	F14	R241	G10	T232	D10
C269	F12	R242	G10	T233	D10
C271	F14	R244	H10	T234	D10
C272	E13	R245	F16	T235	D10
C273	E15	R246	F17	T236	D10
C274	C 9	R247	E17	T237	D10
C275	E14	R248	H 9	T238	D10
C276	E14	R249	F16	T239	D10
C277	D14	R251	F17	T240	D10
C278	D13	R252	I12	T241	D10
C281	D15	R253	H12	T242	D10
C283	D15	R254	H10	T243	D10
C284	D13	R255	G10	T244	D10
C285	D14	R256	0.9	T245	D10
C286	D13	R257	I12	T246	D10
C287	E12	R259	0.9	T247	D10
C288	C13	R261	H10	T248	D10
C289	C15	R262	H11	T249	D10
C291	D10	R263	H11	T250	D10
C292	C14	R264	J12	T251	D10
C293	L19	R265	G10	T252	D10
C294	L21	R266	J12	T253	D10
C295	M19	R267	0.9	T254	D10
C296	M19	R268	I16	T255	D10
C297	M19	R269	I11	T256	D10
C298	M19	R270	F18	T257	D10
C299	M19	R271	F18	T258	D10
C300	M19	R272	D19	T259	D10
C301	M19	R273	D18	T260	D10
C302	M19	R274	F10	T261	D10
C303	M19	R275	D18	T262	D10
C304	M19	R276	F10	T263	D10
C305	M19	R277	F12	T264	D10
C306	M19	R278	G18	T265	D10
C307	M19	R279	G18	T266	D10
C308	M19	R280	H17	T267	D10
C309	M19	R281	I15	T268	D10
C310	M19	R282	F11	T269	D10
C311	M19	R283	F10	T270	D10
C312	M19	R284	H17	T271	D10
C313	M19	R285	F 9	T272	D10
C314	M19	R286	F 9	T273	D10
C315	M19	R287	F 9	T274	D10
C316	M19	R288	F 9	T275	D10
C317	M19	R289	H18	T276	D10
C318	M19	R291	I19	T277	D10
C319	M19	R292	H16	T278	D10
C320	M19	R293	I19	T279	D10
C321	M19	R294	I17	T280	D10
C322	M19	R295	I17	T281	D10
C323	M19	R296	I17	T282	D10
C324	M19	R297	I16	T283	D10
C325	M19	R299	G11	T284	D10
C326	M19	R301	H12	T285	D10
C327	M19	R302	G11	T286	D10
C328	M19	R303	E 9	T287	D10
C329	M19	R304	H14	T288	D10
C330	M19	R305	E10	T289	D10
C331	M19	R307	E10	T290	D10
C332	M19	R308	G14	T291	D10
C333	M19	R309	G14	T292	D10
C334	M19	R311	G12	T293	D10
C335	M19	R312	D11	T294	D10
C336	M19	R314	F14	T295	D10
C337	M19	R315	D12	T296	D10
C338	M19	R315	D12	T297	D10
C339	M19	R315	D12	T298	D10
C340	M19	R315	D12	T299	D10
C341	M19	R315	D12	T300	D10
C342	M19	R315	D12	T301	D10
C343	M19	R315	D12	T302	D10
C344	M19	R315	D12	T303	D10
C345	M19	R315	D12	T304	D10
C346	M19	R315	D12	T305	D10
C347	M19	R315	D12	T306	D10
C348	M19	R315	D12	T307	D10
C349	M19	R315	D12	T308	D10
C350	M19	R315	D12	T309	D10
C351	M19	R315	D12	T310	D10
C352	M19	R315	D12	T311	D10
C353	M19	R315	D12	T312	D10
C354	M19	R315	D12	T313	D10
C355	M19	R315	D12	T314	D10
C356	M19	R315	D12	T315	D10
C357	M19	R315	D12	T316	D10
C358	M19	R315	D12	T317	D10
C359	M19	R315	D12	T318	D10
C360	M19	R315	D12	T319	D10
C361	M19	R315	D12	T320	D10
C362	M19	R315	D12	T321	D10
C363	M19	R315	D12	T322	D10
C364	M19	R315	D12	T323	D10
C365	M19	R315	D12	T324	D10
C366	M19	R315	D12	T325	D10
C367	M19	R315	D12	T326	D10
C368	M19	R315	D12	T327	D10
C369	M19	R315	D12	T328	D10
C370	M19	R315	D12	T329	D10
C371	M19	R315	D12	T330	D10
C372	M19	R315	D12	T331	D10
C373	M19	R315	D12	T332	D10
C374	M19	R315	D12	T333	D10
C375	M19	R315	D12	T334	D10
C376	M19	R315	D12	T335	D10
C377	M19	R315	D12	T336	D10
C378	M19	R315	D12	T337	D10
C379	M19	R315	D12	T338	D10
C380	M19	R315	D12	T339	D10
C381	M19	R315	D12	T340	D10
C382	M19	R315	D12	T341	D10
C383	M19	R315	D12	T342	D10
C384	M19	R315	D12	T343	D10
C385	M19	R315	D12	T344	D10
C386	M19	R315	D12	T345	D10
C387	M19	R315	D12	T346	D10
C388	M19	R315	D12	T347	D10
C389	M19	R315	D12	T348	D10
C390	M19	R315	D12	T349	D10
C391	M19	R315	D12	T350	D10
C392	M19	R315	D12	T351	D10
C393	M19	R315	D12	T352	D10
C394	M19	R315	D12	T353	D10
C395	M19	R315	D12	T354	D10
C396	M19	R315	D12	T355	D10
C397	M19	R315	D12	T356	D10
C398	M19	R315	D12	T357	D10
C399	M19	R315	D12	T358	D10

401	4822 266 20126	412	4822 410 25519	424	4822 267 40713	436	4822 267 20321
402	4822 146 21222	413	4822 413 70247	426	4822 462 71463	437	4822 267 20319
403	4822 276 12149	414	4822 404 20927	427	4822 410 25516	439	4822 277 21112
404	4822 276 12148	416	4822 411 61292	428	4822 410 25518	441	4822 321 22273
406	4822 267 30802	417	4822 532 61052	429	4822 412 20663	442	4822 256 40065
407	4822 410 25514	418	4822 466 92109	430	4822 410 25517	443	4822 325 50164
408	4822 426 51146	419	4822 492 60063	431	4822 100 30058	444	4822 462 71462
409	4822 410 25623	421	4822 466 92108	432	4822 462 71465	446	4822 255 40766
410	4822 410 25515	422	4822 532 51852	433	4822 214 51612	447	4822 532 21276
411	4822 333 30177	423	4822 466 92109	434	4822 214 51613	448	4822 380 20259
						449	4822 404 20928
						450	4822 380 20258

SUBJECT TO ALTERATION

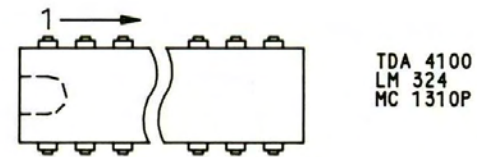
⚠ ABSOLUTELY NECESSARY FOR THE SAFETY OF THE SET. THESE COMPONENTS MEET THE SAFETY REQUIREMENTS ACCORDING TO VDE OR IEC. RESP. AND MUST BE REPLACED BY PARTS OF SAME SPECIFICATION ONLY.

AM FM MW LW

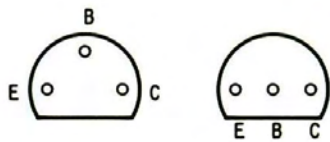
IF NOT OTHERWISE INDICATED ALL VOLTAGES ARE MEASURED AGAINST CHASSIS WITH A VOLTMETER (R1=10MΩ). THE VALUES ARE VALID FOR 220V AC MAINS VOLTAGES.



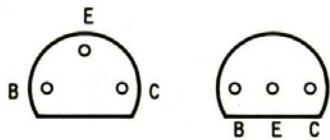
AF-VOLTAGES AT 15W/8 Ω $\hat{=}$ 10,95V AND 1KHZ, MAX. VOLUME.



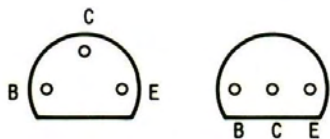
TDA 4100
LM 324
MC 1310P



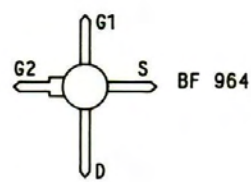
BC 327 BC 546
BC 547 BC 556
BC 548 BC 558
BC 550



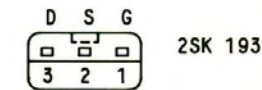
BF 240



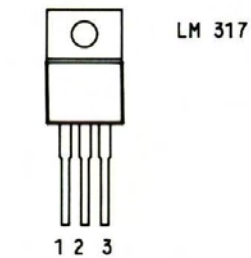
BC 637
BC 639
BC 640



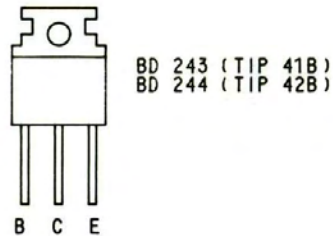
BF 964



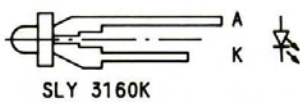
2SK 193



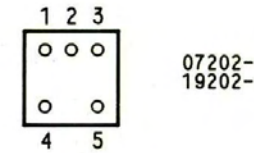
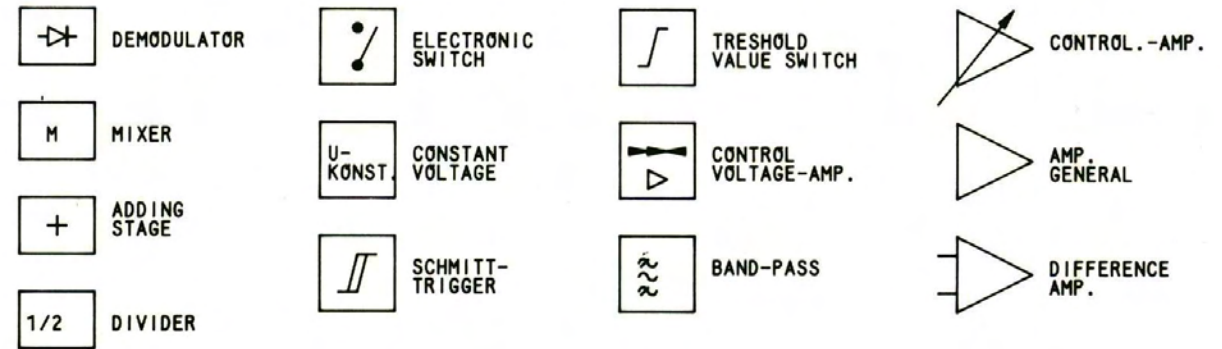
LM 317



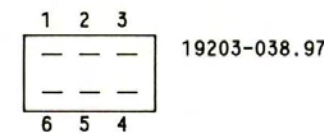
BD 243 (TIP 41B)
BD 244 (TIP 42B)



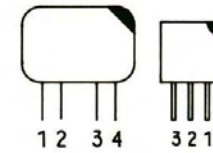
SLY 3160K



07202-19202-



19203-038.97









19203-075.97

- KSW 0204 DIN (CR16) 0,2W
- KSW 0207 DIN (CR25) 0,33W
- MSW 0204 DIN (SFR16T) 0,33W
- KSW 0411 DIN (CR37) 0,5W
- KSW 0617 DIN (CR52) 0,67W
- LOW FLAMMABILITY
- SAFETY RESISTOR
- METAL OXYDE
- MSW 0207 DIN (SFR25H) 0,6W

- ELECTROLYTIC
- TANTALUM ELECTROLYTIC
- FOIL
- CERAMIC
- MULTILAYER
- POLYPROPYLEN (KS/KP)

41 670 B12

			
BA 243	4822 130 30971	P101	Ferrite core 4822 158 10774
BB 130	5322 130 32281	P501	Ferrite core 4822 158 10774
BY 602	4822 130 50326	P502	Ferrite core 4822 158 10774
GREEN, TLG 123A	4822 130 80147	P504	Ferrite core 4822 158 10774
RED, TLR 123	5322 130 34957		
ZPD 6.2	4822 130 31576		
1N4002	5322 130 30684		
1N4151	5322 130 34321	C103	Elco 0.047 F 5.5 V 4822 124 41347
8.2 C	4822 130 80146	C206	Trimmer 4,5/20 PF 4822 125 50329
6.2 B 0.5 W	4822 158 10773	C207	Trimmer 7,5/50 PF 4822 125 50332
		C215	Trimmer 5.5/30 PF 4822 125 50331
		C804	Foil 220 μF 50 V 4822 121 51109
BC 327-25	4822 130 41246	 	
BC 338-25	4822 130 40958	R232	Trimmer 10 K LIN 4822 100 11113
BC 546 B	4822 130 44461	R308	Trimmer 10 K LIN 4822 100 11115
BC 547 B	4822 130 40959	R311	Safety 150 5% 4822 111 30539
BC 548 B	4822 130 40937	R354	Safety 220 5% 4822 111 30544
BC 548 C	4822 130 44196	R579	Trimmer 100 LIN 4822 100 11114
BC 550 B	5322 130 44454	R587	Trimmer 100 LIN 4822 100 11114
BC 550 C	4822 130 41096	R607	Safety 10 10% 4822 111 30508
BC 556 C	4822 130 60539	R608	Safety 10 10% 4822 111 30508
BC 558 C	4822 130 60538	R705	Volume 2x100 K 4822 100 30058
BC 637	4822 130 41025	R752	Balance 100 K 4822 105 10901
BC 639	4822 130 41053	R769	Bass 2x100 K 4822 105 10902
BC 640	4822 130 41078	R771	Treble 2x100 K 4822 105 10902
BC 338-25	4822 130 40958	R804	Metal 10 10% 4822 116 80182
BC 548 C	4822 130 44196		
BD 243 B	4822 130 60541		
BD 244 B	4822 130 60542		
BF 240	4822 130 40902		
		Miscellaneous	
		F201	Ceram filter 10.7 4822 242 71676
		F203	Ceram filter 450 F9 4822 242 71675
		Q101	Crystal 4.5 MHz 4822 242 71679
		DP101	Display 4822 130 90404
		SI 1	Fuse 4822 253 30019
		SI 2	Fuse 4822 253 30025
		SI 3	Fuse 1.25 AT 4822 253 30022
		SI 4	Fuse 1.25 AT 4822 253 30022
		SI 5	Fuse 1.25 AT 4822 253 30022
		SI 6	Fuse 1.25 AT 4822 253 30022
		SI 7	Fuse 4822 252 20185
		U101	FM tuner 4822 214 51612
		U102	FM oscillator 4822 214 51613
			Lamp 5 V 115 mA 4822 134 40829
			
LM 324 N	4822 209 80587		
MC 1310 P	4822 209 71375		
TDA 4100	4822 209 71374		
UPD 1708	4822 209 71365		
			
L202	Coil 1 MH + -10% 4822 157 52899		
L203	Coil 4.7 MH + -10% 4822 157 52894		
L204	Coil RF 4822 156 21408		
L205	Coil RF 4822 156 21407		
L206	Coil MW oscillator 4822 157 52891		
L207	Coil LW oscillator 4822 157 52892		
L208	Coil IF 4822 157 52888		
L209	Coil 4822 157 52889		
L211	Coil 4822 157 52889		
L212	Coil 22 MH + -5% 4822 157 52893		
L213	Coil 47 MH + -5% 4822 157 52901		
L214	Coil 47 MH + -5% 4822 157 52901		