

# Service Manual



**Smartradio CD**    **GHL3100**

## Inhaltsverzeichnis

	Seite
<b>Schaltpläne und Platinenabbildungen .....</b>	<b>2... 23</b>
Schaltpläne	
HF-Teil .....	2
Prozessor-Teil .....	4
CD-Teil .....	8
Klangsteller .....	10
NF-Teil .....	12
Bedienplatte links .....	16
Bedienplatte rechts .....	17
Anschluss-Platte .....	18
Platinenabbildungen .....	20
<b>Ersatzteilliste .....</b>	<b>24 ... 25</b>

## Table of Contents

	Page
<b>Circuit Diagrams and Layout of the PCBs .....</b>	<b>2 ... 23</b>
Circuit Diagrams	
RF Part .....	2
Processor Part .....	4
CD Part .....	8
Sound Control .....	10
AF Part .....	12
Operating Board left .....	16
Operating Board right .....	17
Connection Board .....	18
Layout of the PCBs .....	20
<b>Spare Parts List .....</b>	<b>24 ... 25</b>

Zusätzlich erforderliche Unterlagen für den Komplettservice  
Additionally required Documents for the Complete Service



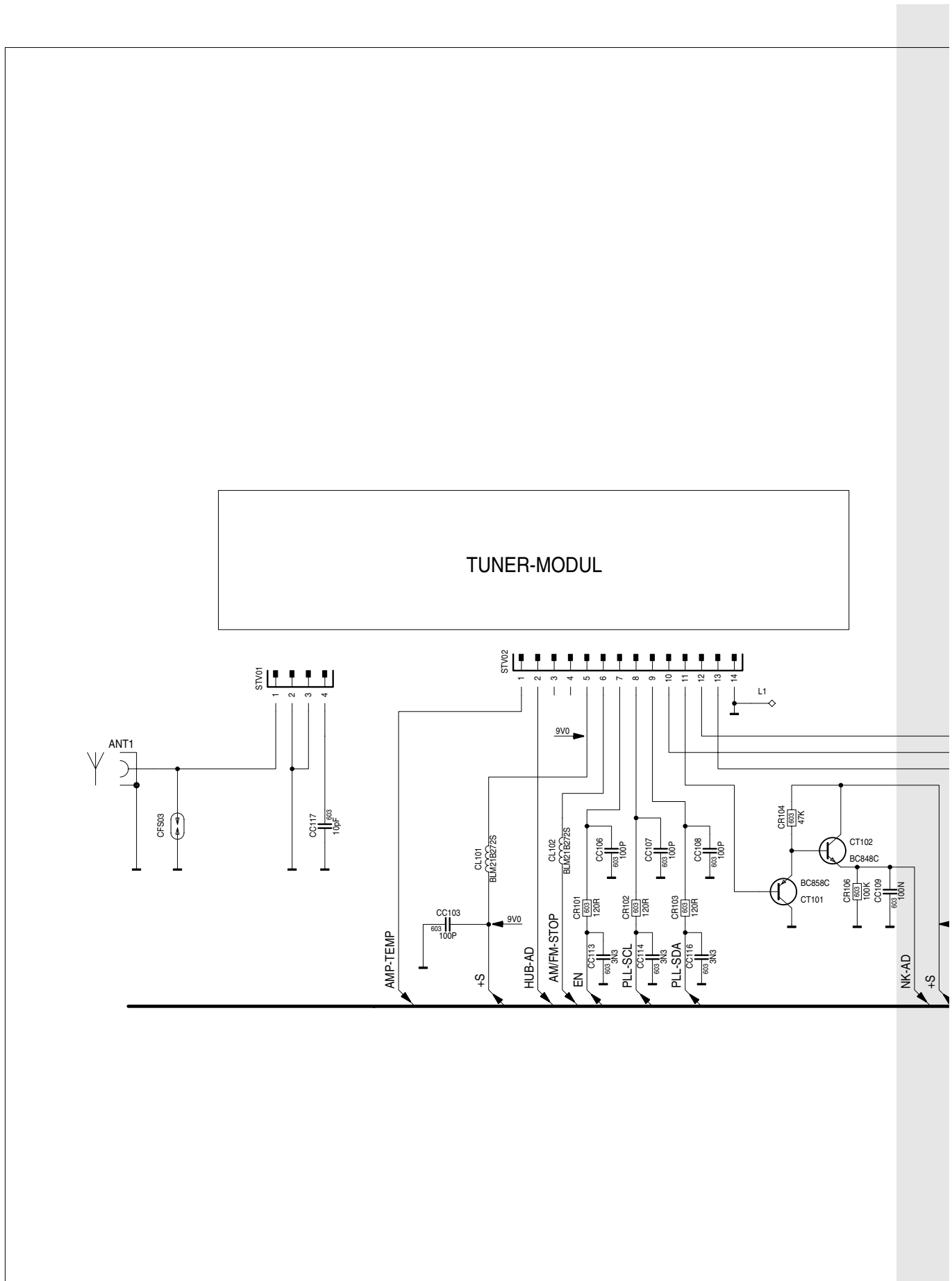
Dieses Service Manual ist nur in Datenform verfügbar  
This Service Manual is only available as data

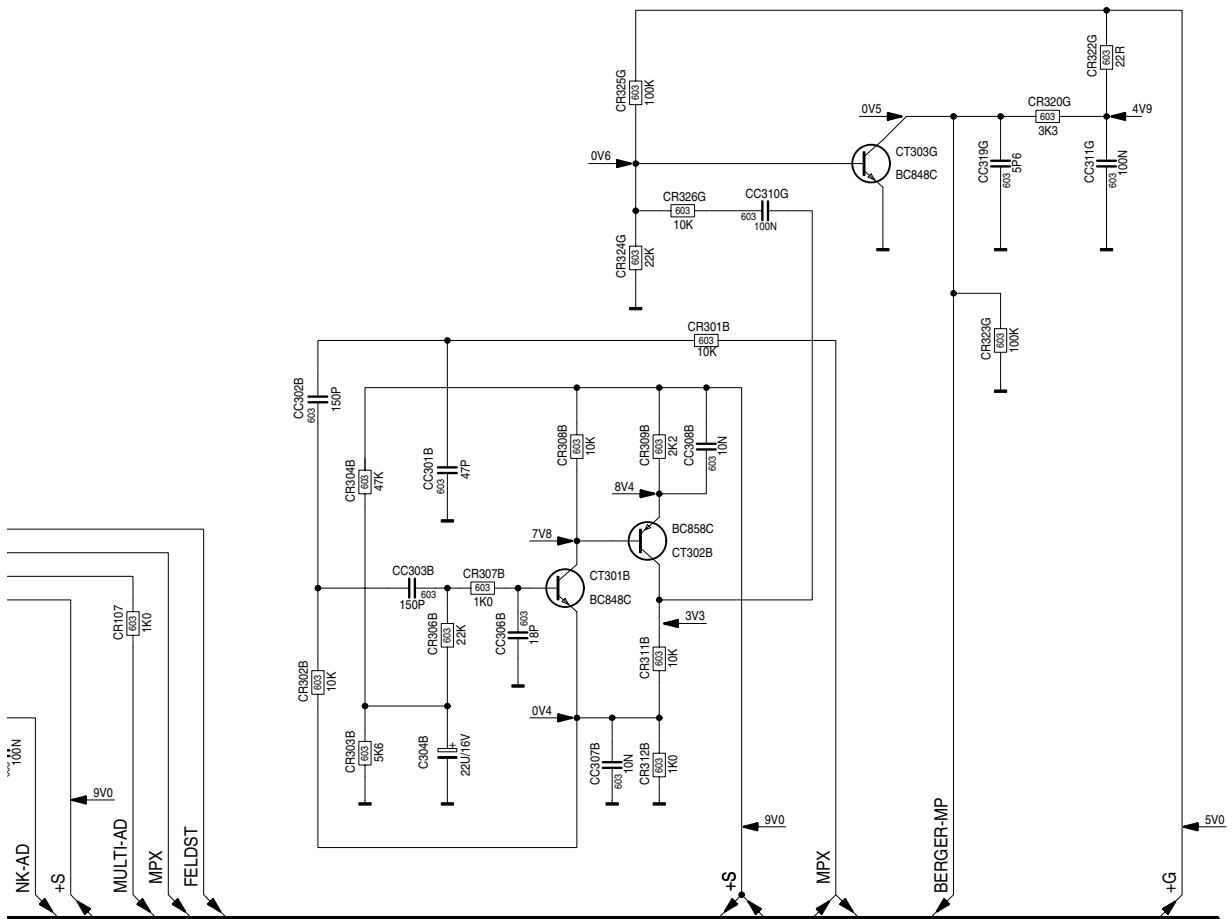
Änderungen vorbehalten  
Subject to alteration

Made by GRUNDIG in Germany  
E-BS-SA 16 0501 720108500500  
<http://www.grundig.com>

# Schaltpläne und Druckplattenabbildungen / Circuit Diagrams and Layout of PCBs

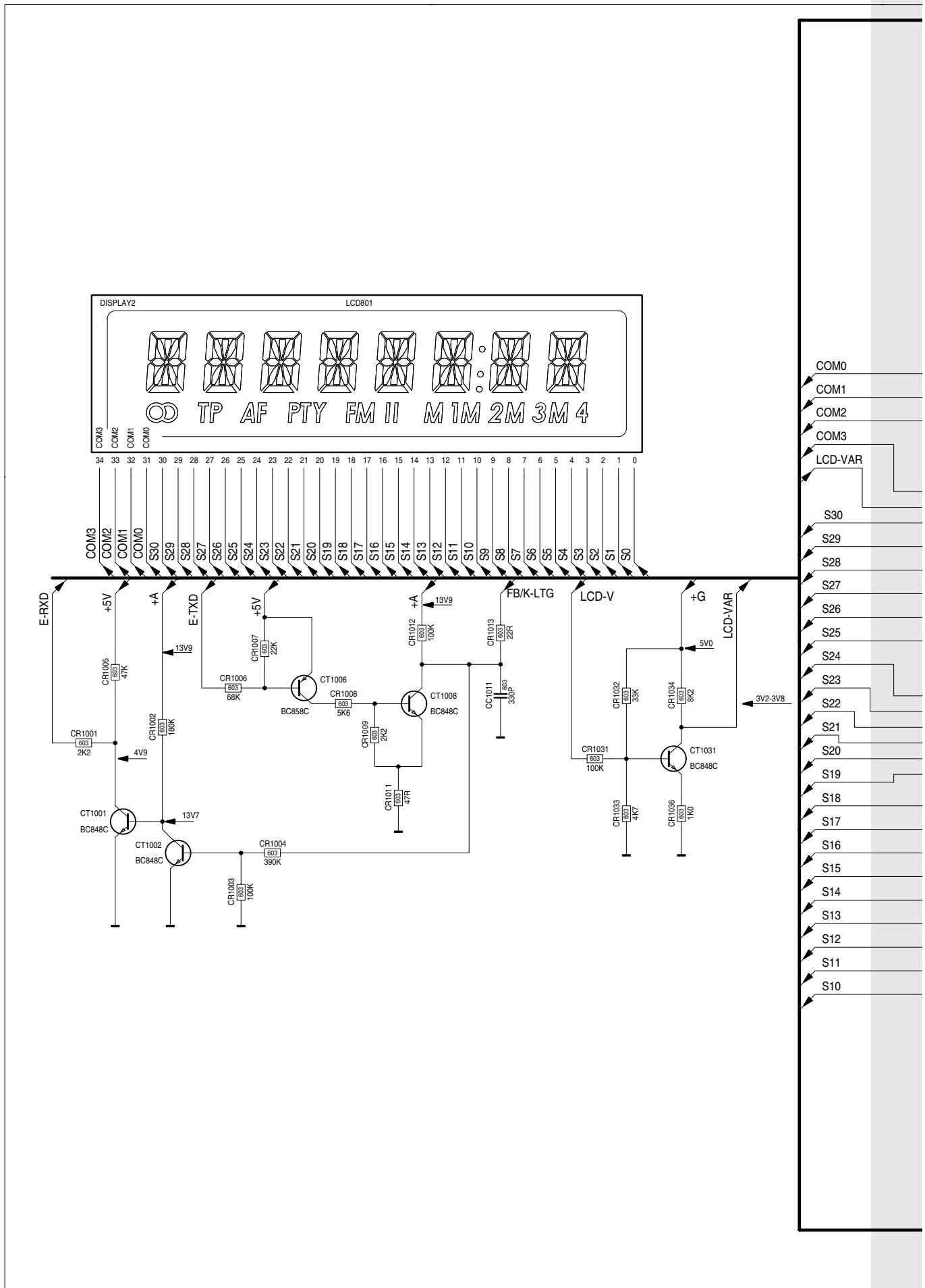
## HF-Teil / RF Part



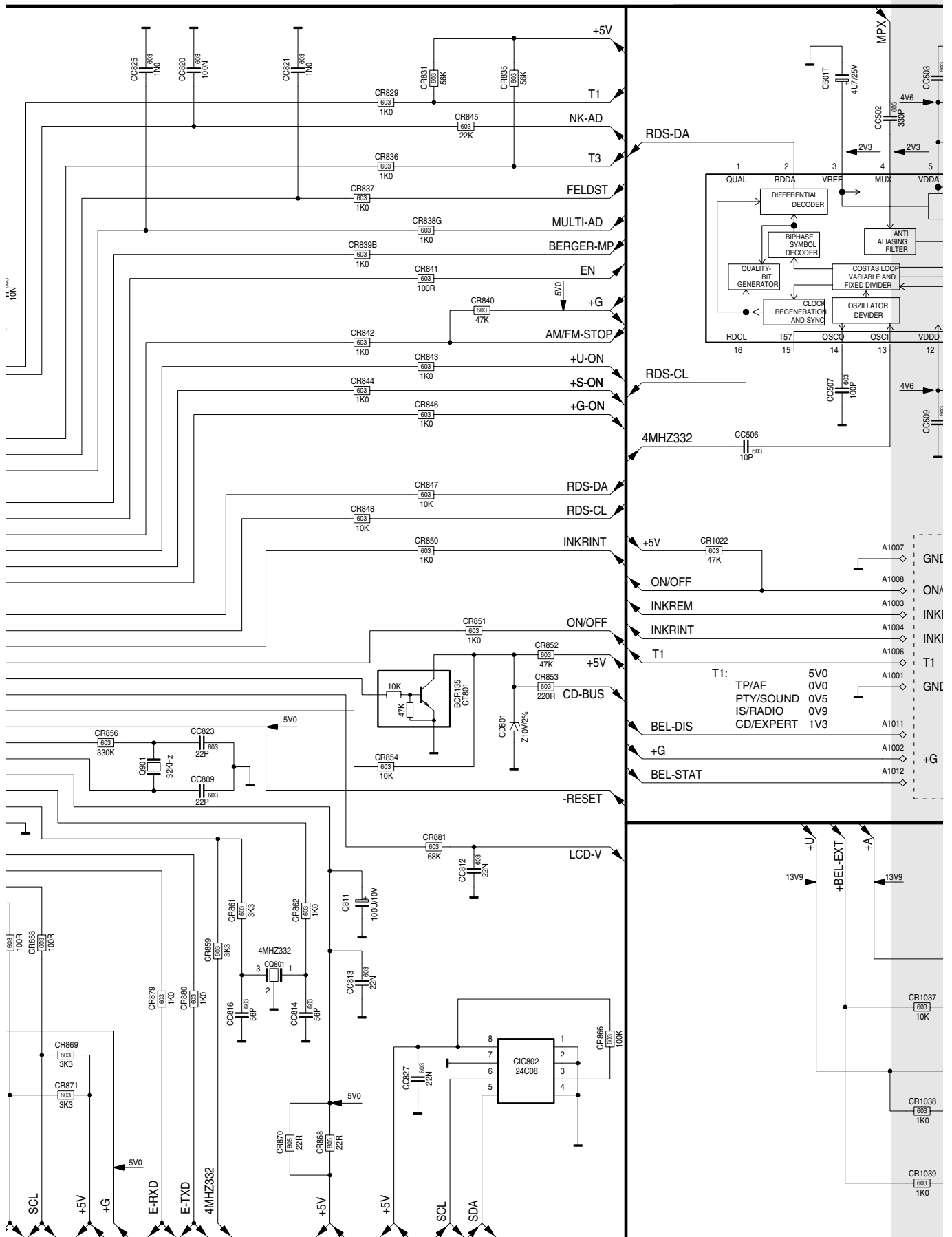


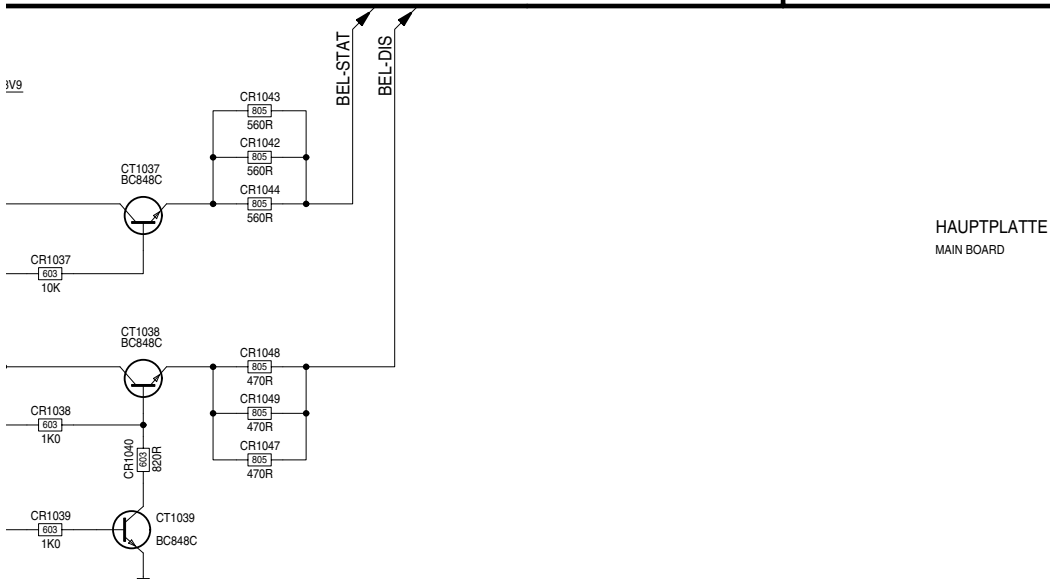
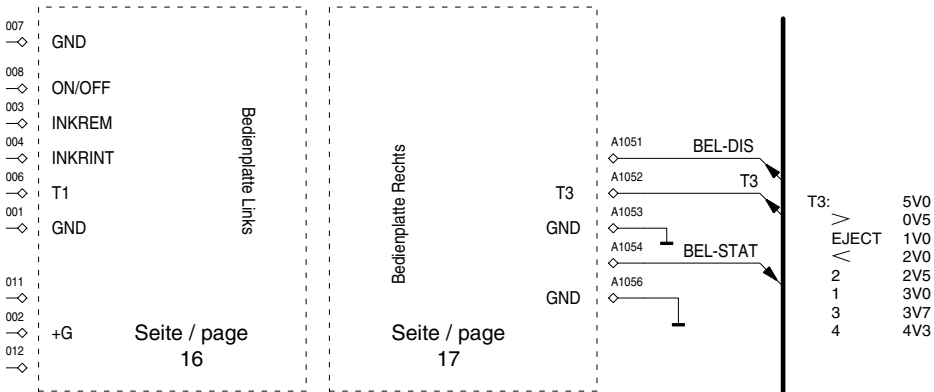
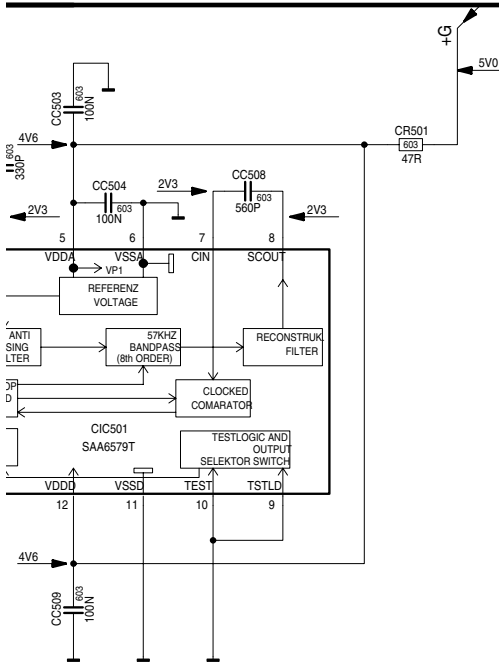
HAUPTPLATTE  
MAIN BOARD

Prozessor-Teil / Processor Part

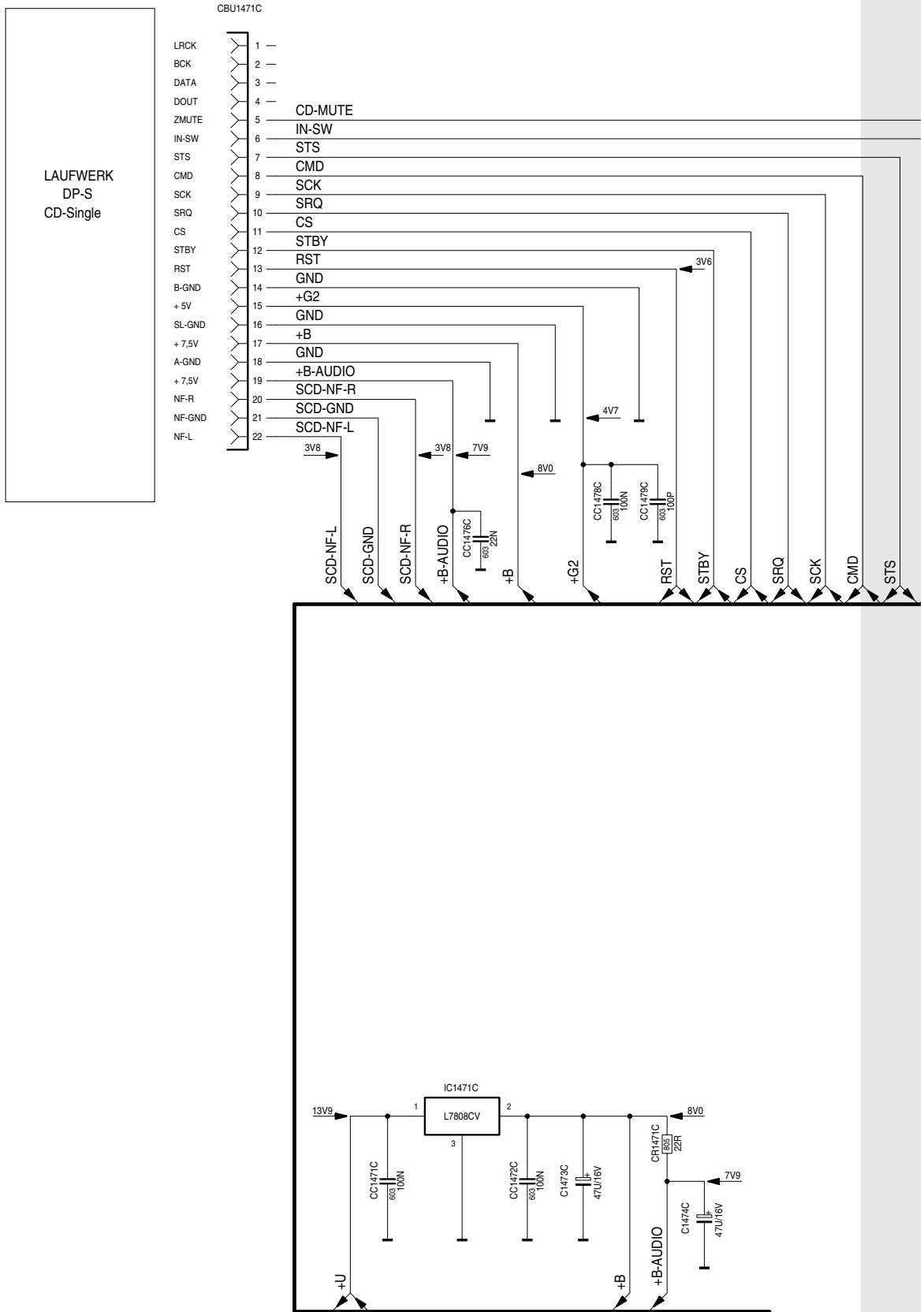








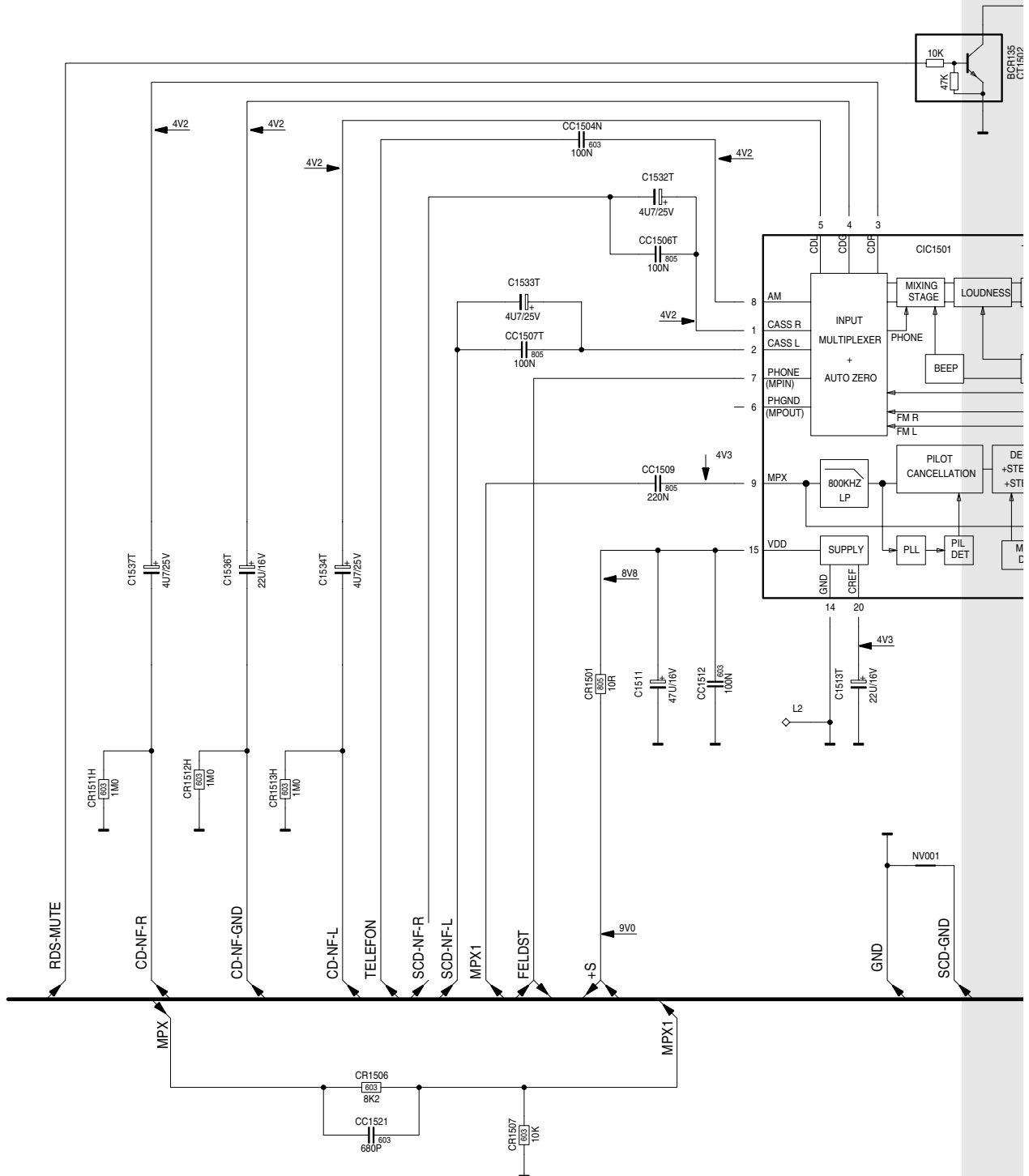
CD-Teil / CD Part

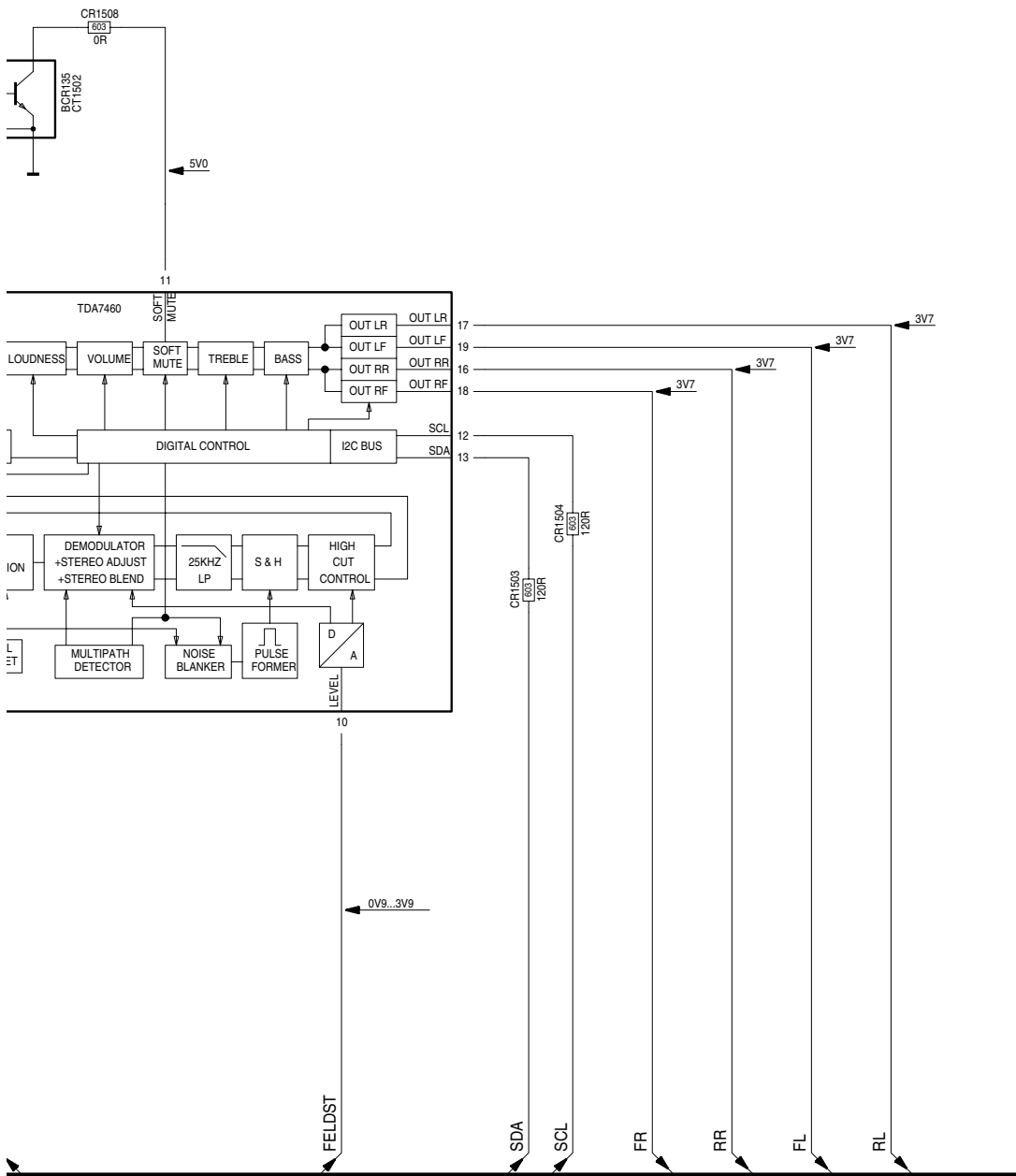






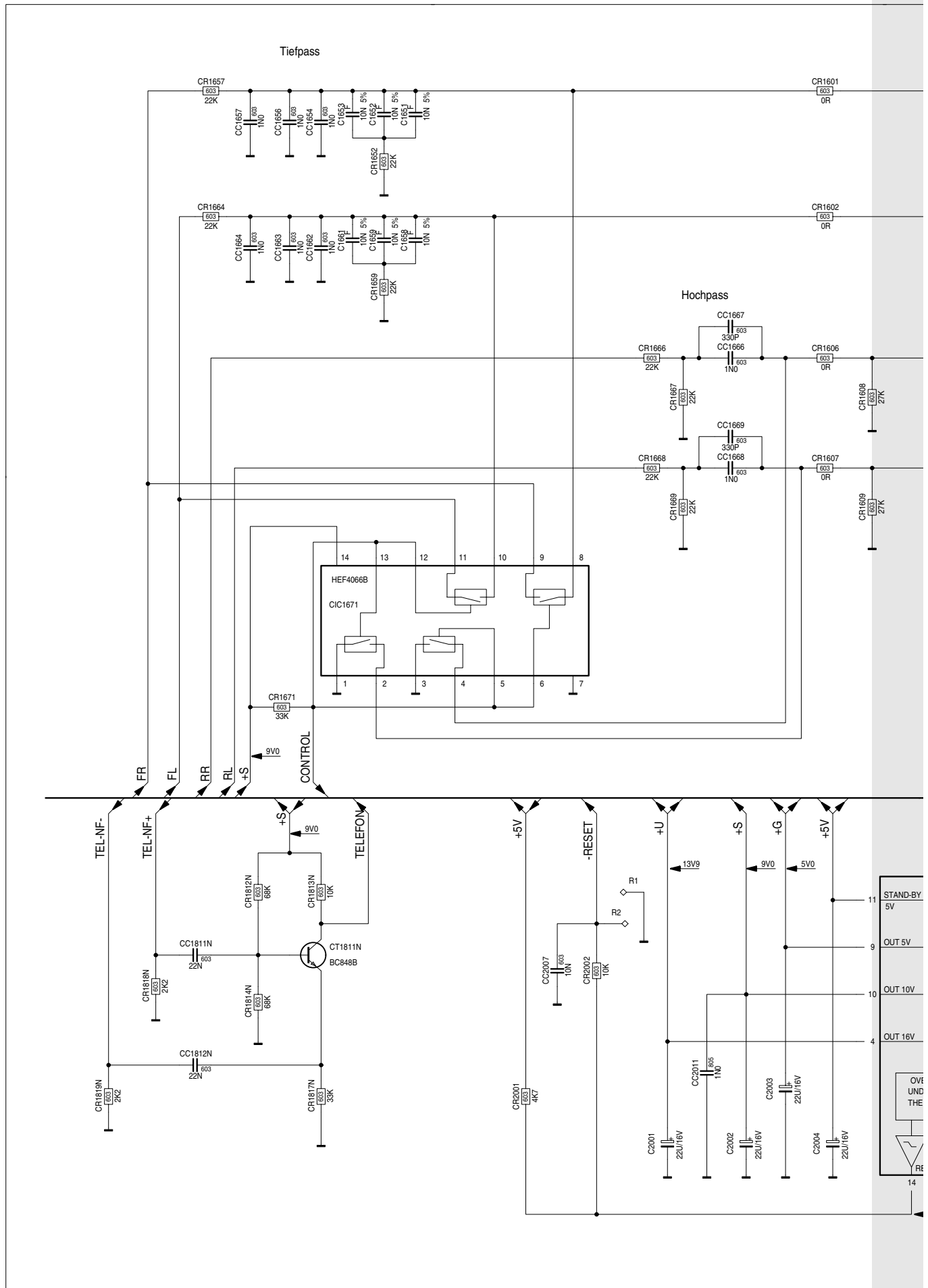
Klangsteller / Sound Control

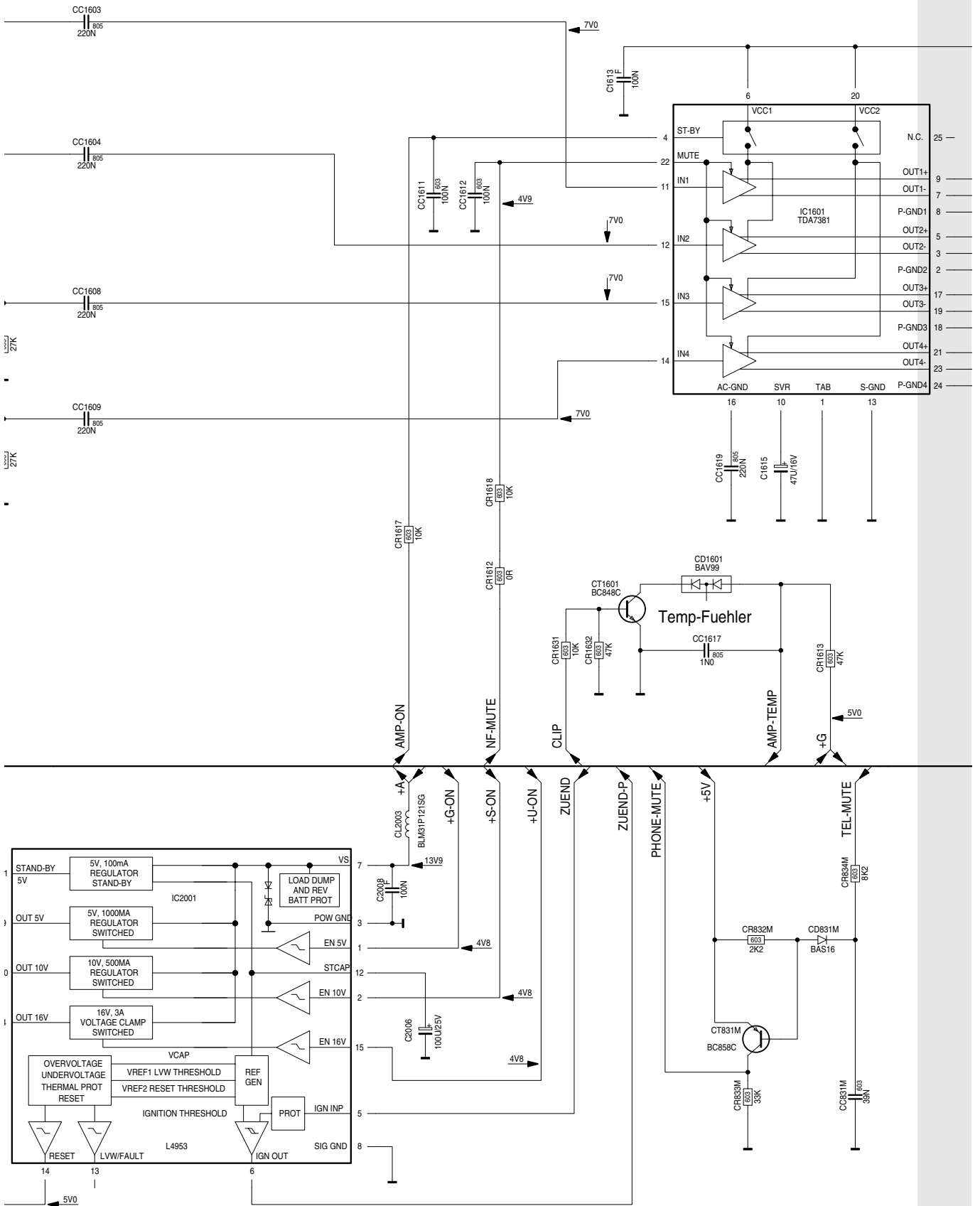


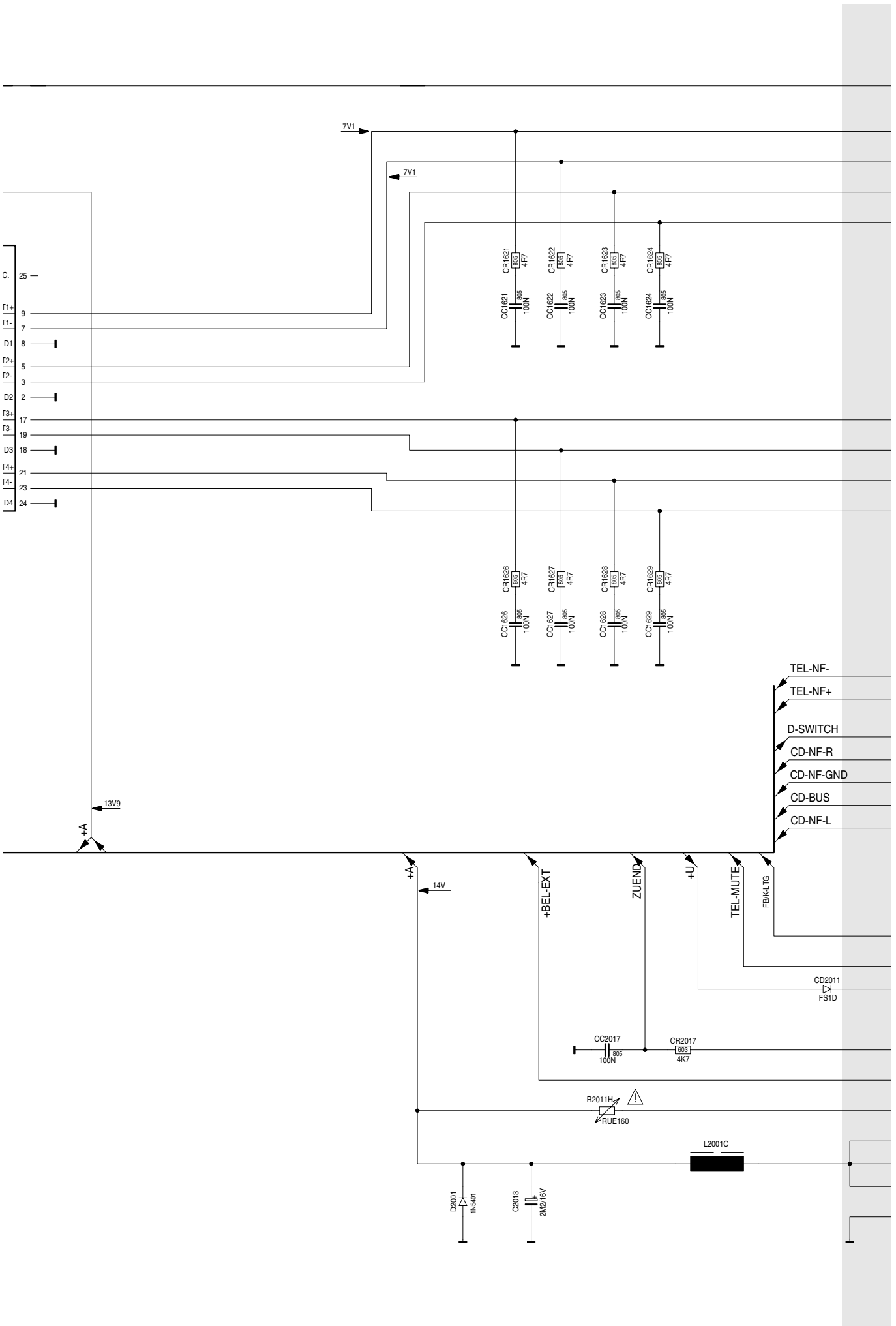


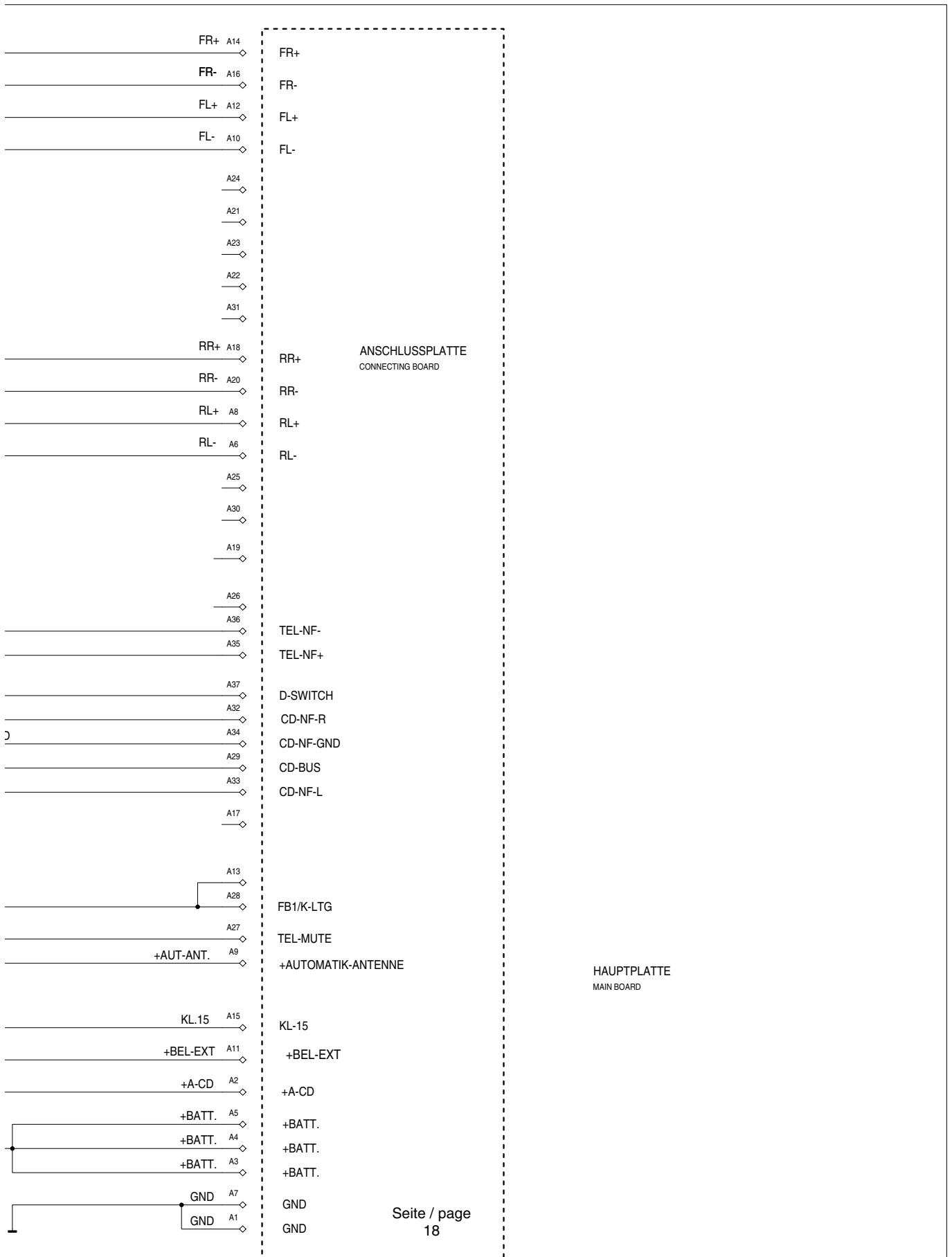
HAUPTPLATTE  
MAIN BOARD

NF-Teil / AF Part

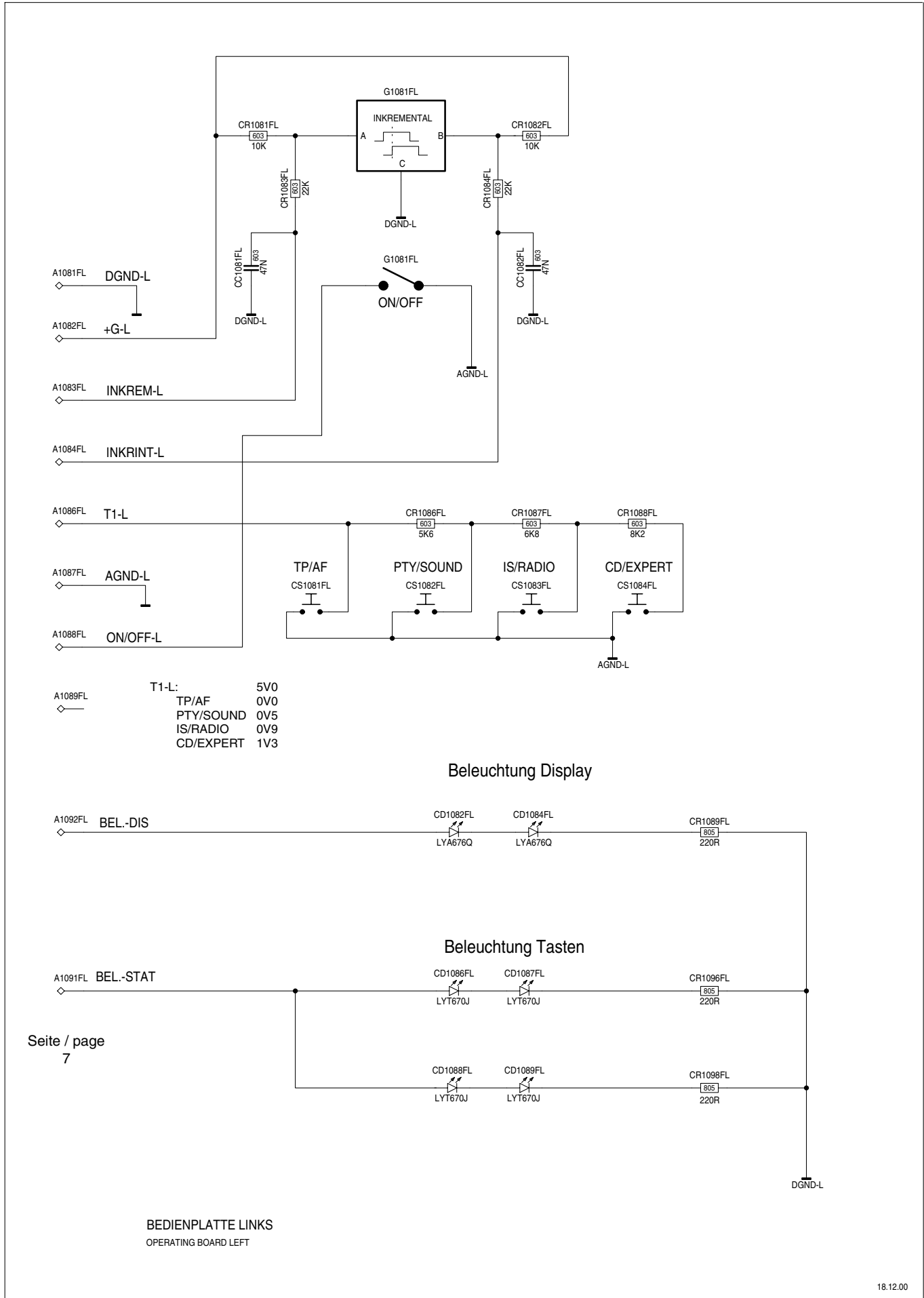






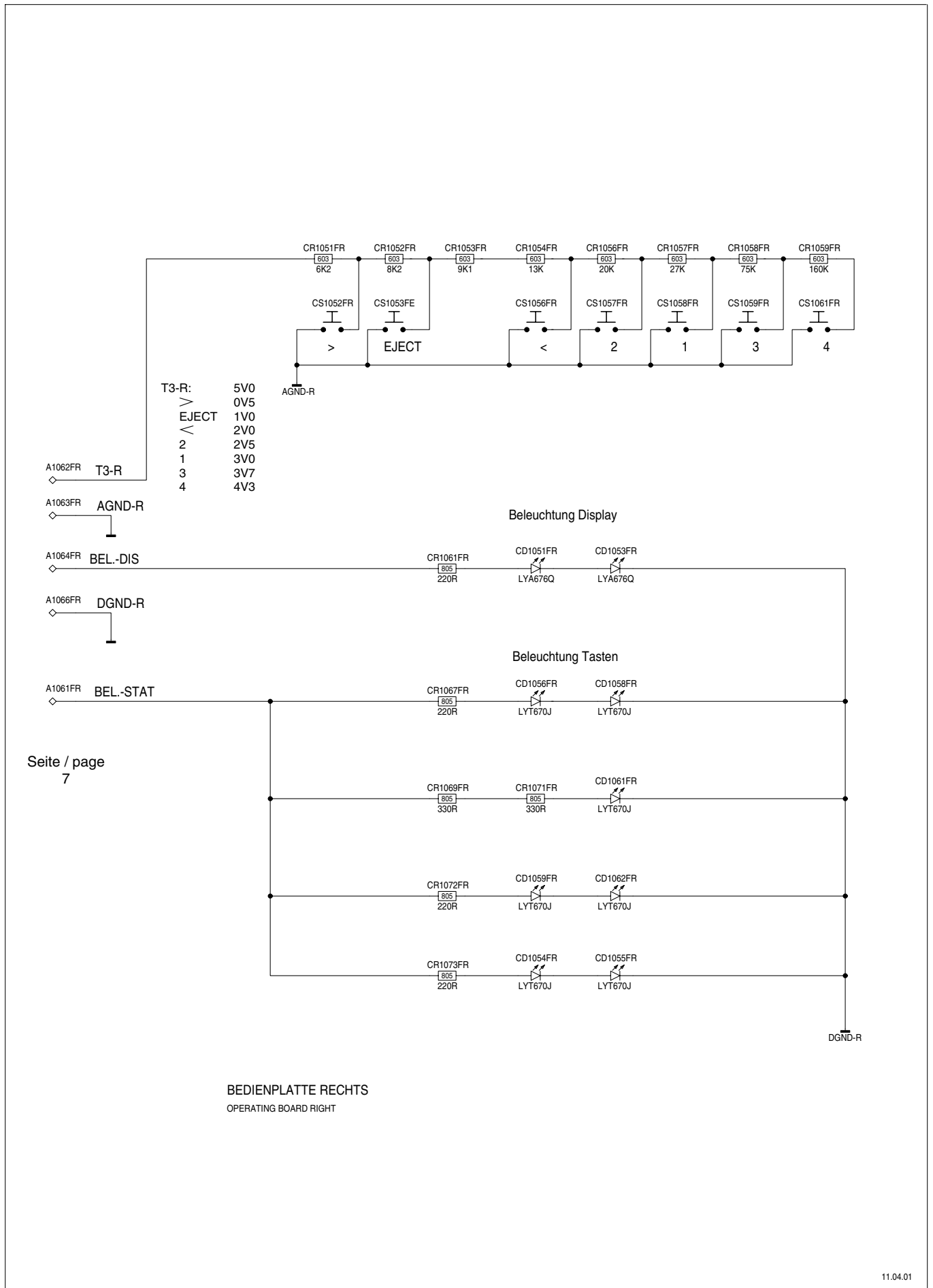


### Bedienplatte links / Operating Board left

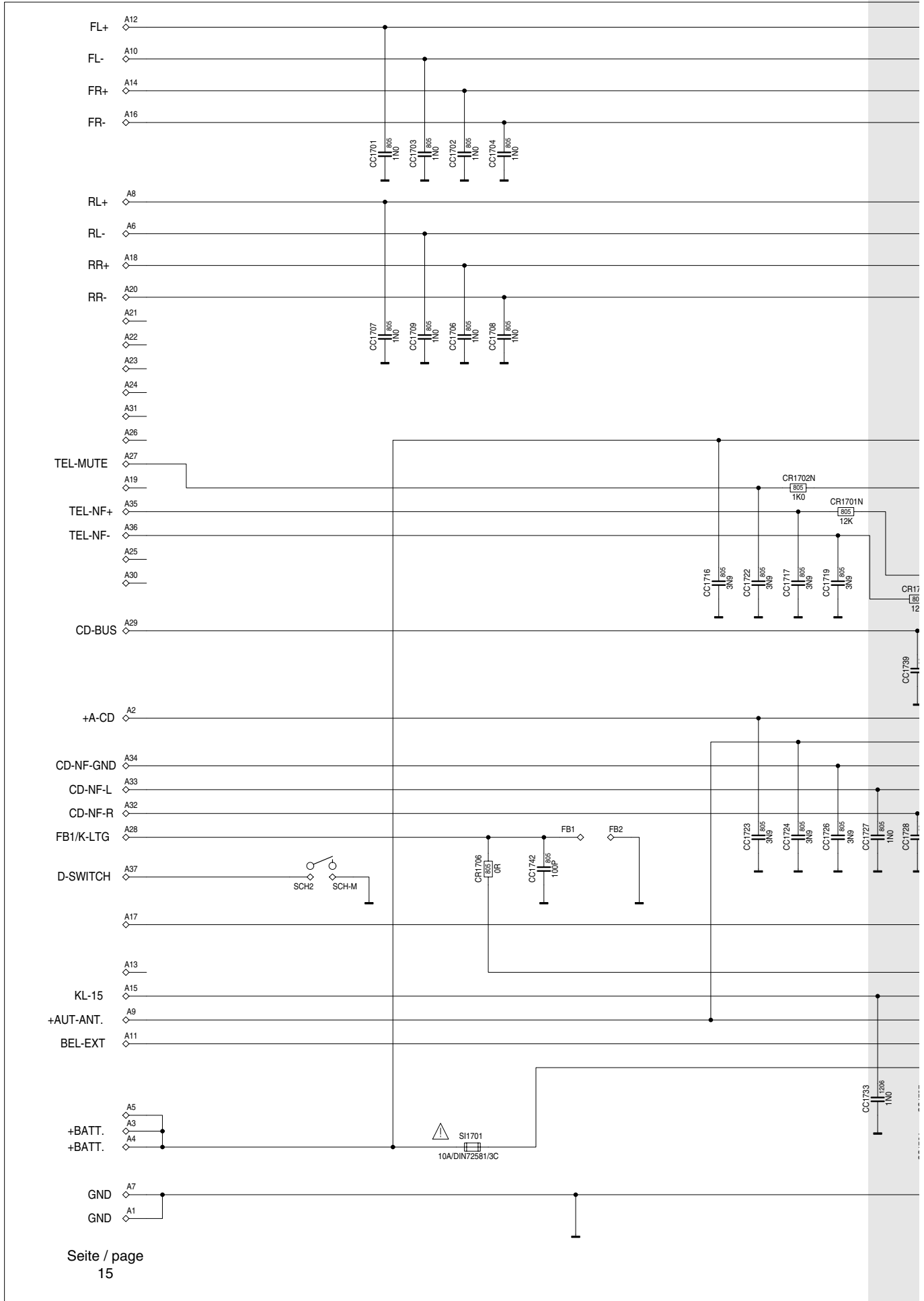


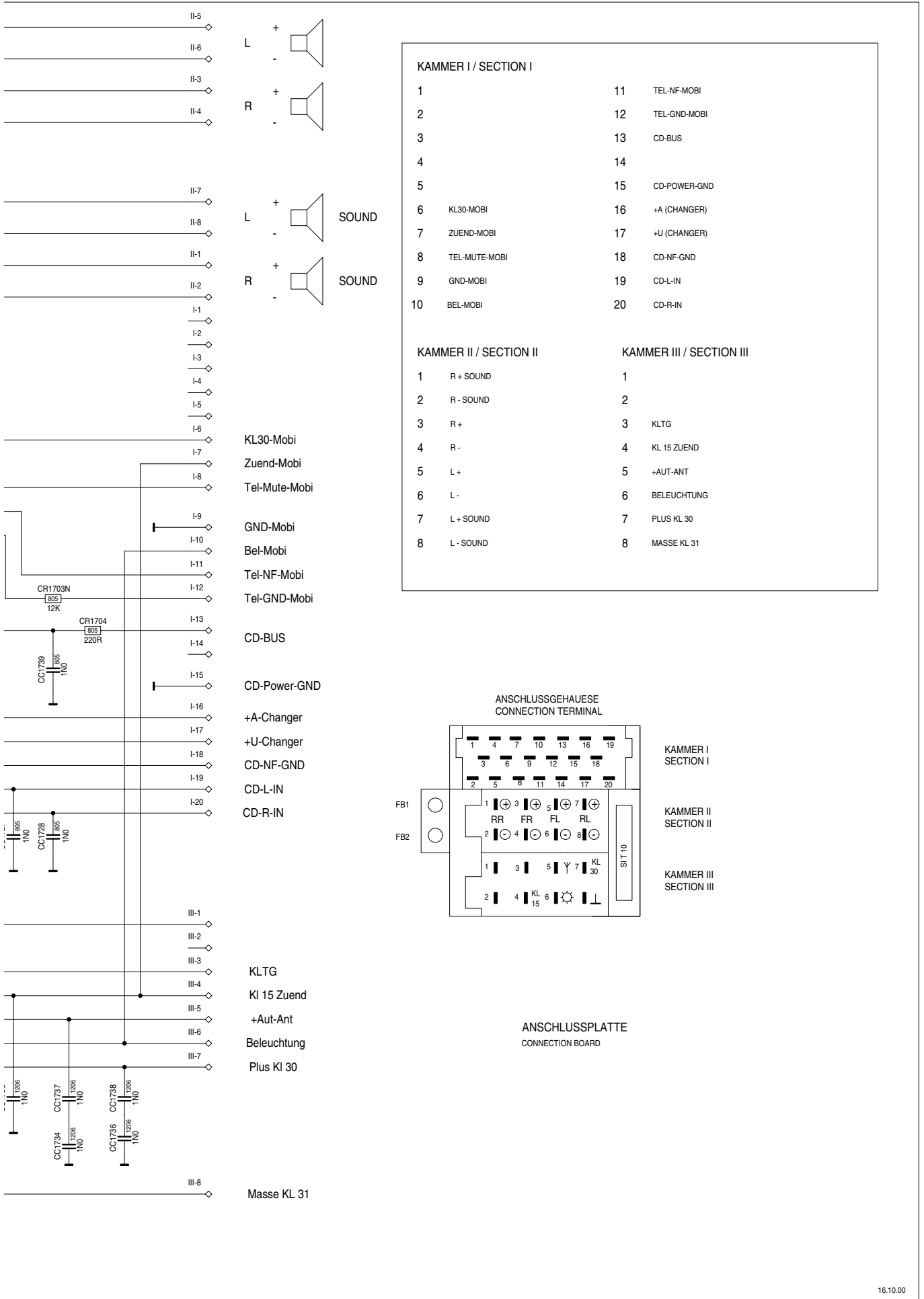


# Bedienplatte rechts / Operating Board right



# Anschluss-Platte / Connection Board





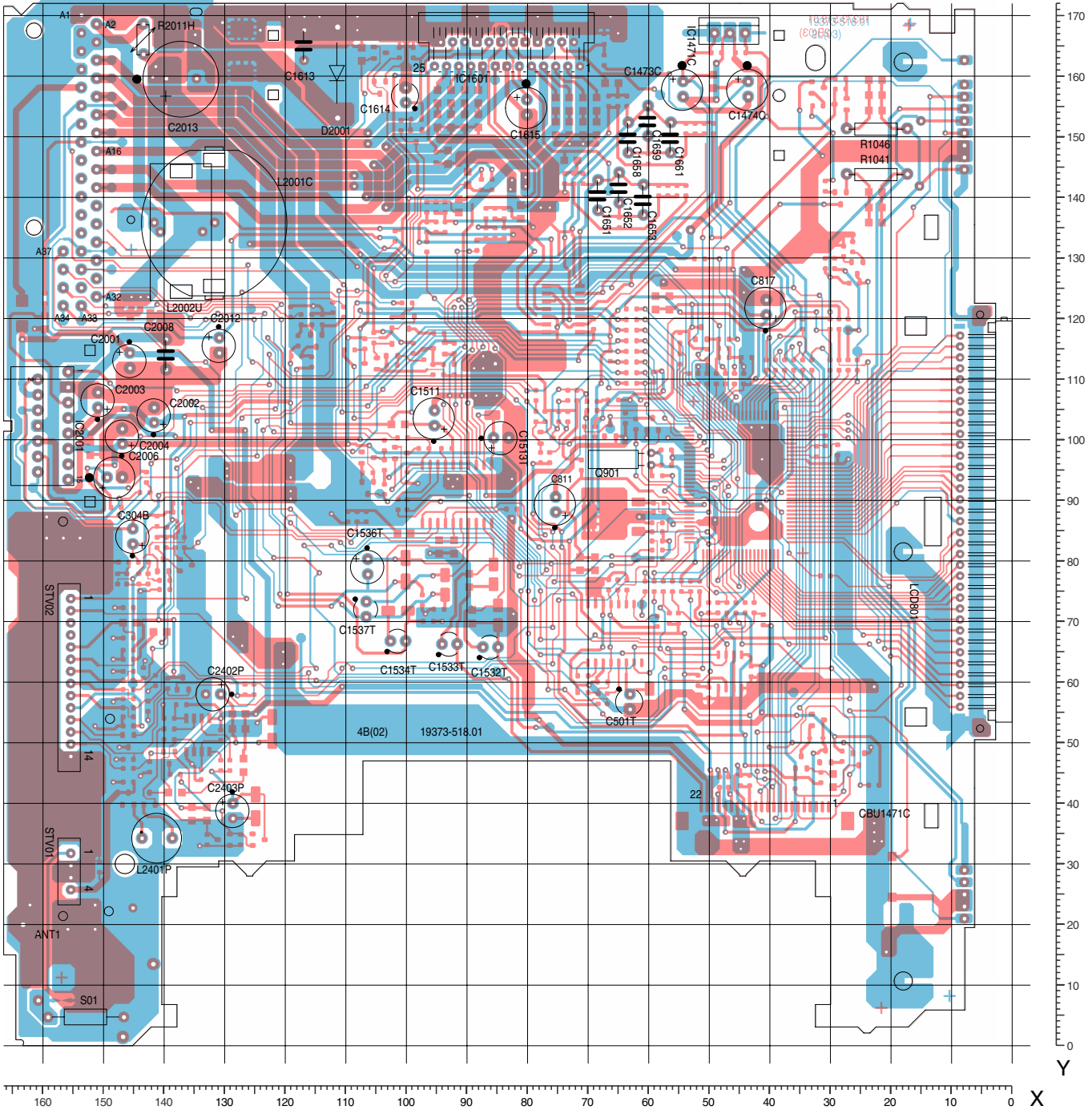


**Bauteil-Koordinaten der Bauteile der Bestückungsseite**  
**Coordinates of components on the component side**

Pos.-Nr./ Pos. No.	Koordinaten/ Coordinates		Pos.-Nr./ Pos. No.	Koordinaten/ Coordinates		Pos.-Nr./ Pos. No.	Koordinaten/ Coordinates		Pos.-Nr./ Pos. No.	Koordinaten/ Coordinates		Pos.-Nr./ Pos. No.	Koordinaten/ Coordinates				
	X	Y		X	Y		X	Y		X	Y		X	Y	X	Y	
C304B	146	84	CC1011	94	111	CL102	141	68	CR867	51	58	CR1627	91	157	S01	153	5
C501T	64	57	CC1471C	45	164	CL2003	144	120	CR868	69	79	CR1628	93	157			
C811	76	89	CC1472C	50	164				CR869	56	71	CR1629	95	157	STV01	156	29
C817	41	122	CC1476C	49	44	Q0801	67	87	CR870	72	79	CR1631	100	143	STV02	156	61
C1473C	55	158	CC1477C	48	44				CR871	57	71	CR1632	102	164			
						CR101	147	60									
C1474C	44	158	CC1478C	44	44	CR102	147	59	CR872	48	72	CR1652	66	136			
C1511	96	103	CC1479C	45	44	CR103	147	56	CR873	52	76	CR1657	54	141			
C1513T	85	100	CC1501H	94	76	CR104	140	60	CR874	49	72	CR1659	61	146			
C1532T	87	66	CC1502H	101	79	CR106	126	59	CR875	54	76	CR1664	50	151			
C1533T	94	66	CC1503H	102	72				CR877	43	72	CR1666	89	132			
						CR107	147	46									
C1534T	102	67	CC1504N	116	113	CR108	143	46	CR878	42	70	CR1667	84	134			
C1536T	107	79	CC1506T	90	71	CR301B	148	77	CR879	59	80	CR1668	97	132			
C1537T	107	72	CC1507T	90	77	CR302B	145	77	CR880	59	82	CR1669	94	135			
C1613	118	165	CC1509	101	84	CR303B	142	87	CR881	28	112	CR1671	70	119			
C1614	101	157	CC1512	94	99				CR882	29	98	CR1812N	119	116			
						CR304B	139	86									
C1615	81	155	CC1516K	93	82	CR306B	144	80	CR883	33	98	CR1813N	119	114			
C1651	69	140	CC1517K	95	82	CR307B	140	77	CR884	46	72	CR1814N	116	120			
C1652	66	142	CC1518	100	94	CR308B	142	83	CR886M	45	72	CR1817N	114	120			
C1653	61	140	CC1521	107	87	CR309B	140	83	CR1001	110	115	CR1818N	120	121			
C1658	64	150	CC1523D	86	71				CR1002	106	117	CR1819N	113	122			
						CR311B	137	83									
C1659	61	152	CC1524D	86	78	CR312B	138	90	CR1003	103	112	CR2001	148	89			
C1661	57	150	CC1528D	84	104	CR320G	74	107	CR1004	98	114	CR2002	144	91			
C2001	146	113	CC1601	74	143	CR322G	77	97	CR1005	108	116	CR2017	160	123			
C2002	142	104	CC1602	67	156	CR323G	73	107	CR1006	100	123	CR2401P	127	46			
C2003	152	107	CC1603	73	146				CR1007	103	119	CR2402P	131	51			
						CR324G	78	104									
C2004	147	101	CC1604	67	159	CR325G	78	97	CR1008	95	118	CR2403P	134	45			
C2006	149	94	CC1606	84	137	CR326G	79	104	CR1009	93	115	CR2404P	138	56			
C2008	140	114	CC1607	94	138	CR501	69	57	CR1011	93	111	CR2406P	140	54			
C2012	132	116	CC1608	82	137	CR502	59	70	CR1012	99	115	CR2407P	139	42			
C2013	138	160	CC1609	92	138				CR1013	96	111	CR2408P	140	51			
						CR804	32	100									
C2402P	132	58	CC1611	68	166	CR805	26	112	CR1022	24	43	CR2409P	140	52			
C2403P	129	39	CC1612	99	164	CR806	29	119	CR1031	30	129	CR2411P	139	45			
			CC1617	108	163	CR807	29	112	CR1032	32	129	CR2412P	131	46			
CBU1471C	42	36	CC1618	90	143	CR808	31	119	CR1033	28	131	CR2413P	130	46			
			CC1619	94	146				CR1034	27	126	CR2414P	128	55			
CC101	147	67				CR809	31	112									
CC102	147	64	CC1621	76	151	CR812	34	112	CR1036	27	132	CR2416P	128	52			
CC103	147	65	CC1622	74	151	CR813	35	119	CR1037	32	142	CR2417P	134	38			
CC104	147	72	CC1623	71	151	CR814	35	112	CR1038	29	158	CR2418P	136	38			
CC106	147	62	CC1624	69	151	CR816C	37	112	CR1039	33	155	CR2419P	128	34			
			CC1626	89	152				CR1040	29	160	CR2421P	147	44			
CC107	147	57				CR817C	38	112									
CC108	147	54	CC1627	91	152	CR818C	40	112	CR1042	23	138	CT101	147	50			
CC109	127	59	CC1628	93	152	CR819	41	112	CR1043	23	141	CT102	137	60			
CC111	147	47	CC1629	95	152	CR820	59	123	CR1044	23	136	CT301B	141	79			
CC112	147	53	CC1654	59	141	CR821	52	130	CR1047	23	157	CT302B	137	79			
			CC1656	58	141				CR1048	23	154	CT303G	77	100			
CC113	144	62				CR822	57	123									
CC114	142	60	CC1657	56	141	CR823	47	110	CR1049	23	159	CT801	60	102			
CC116	143	56	CC1662	54	151	CR824	48	110	CR1471C	50	159	CT831M	107	92			
CC117	151	30	CC1663	53	151	CR826	48	117	CR1472C	36	43	CT1001	106	112			
CC301B	147	80	CC1664	51	151	CR827	48	113	CR1481C	32	44	CT1002	103	115			
			CC1666	87	134				CR1482C	30	44	CT1006	100	119			
CC302B	147	77				CR828	50	110									
CC303B	143	77	CC1667	86	134	CR829	51	110	CR1483C	29	48	CT1008	95	115			
CC306B	140	75	CC1668	96	135	CR831	51	114	CR1501	102	102	CT1031	26	128			
CC307B	138	88	CC1669	97	135	CR832M	107	94	CR1502K	83	89	CT1037	29	140			
CC308B	139	83	CC1811N	118	120	CR833M	104	92	CR1503	100	89	CT1038	29	155			
			CC1812N	111	121				CR1504	102	89	CT1039	33	158			
CC310G	79	107				CR834M	104	99									
CC311G	74	104	CC2007	144	94	CR835	56	117	CR1506	109	87	CT1481C	35	47			
CC319G	76	104	CC2011	153	99	CR836	56	113	CR1507	110	87	CT1482C	26	47			
CC502	68	57	CC2017	160	119	CR837	70	105	CR1508	98	99	CT1502	102	98			
CC503	71	58	CC2401P	134	34	CR838G	64	109	CR1509T	101	100	CT1601	105	158			
			CC2404P	125	40				CR1511H	95	72	CT1811N	115	116			
CC504	68	60				CR839B	70	106									
CC506	66	76	CC2406P	123	52	CR840	67	114	CR1512H	98	74	CT2401P	143	41			
CC507	64	76				CR841	64	111	CR1513H	97	70	CT2403P	131	34			
CC508	71	61	CD801	67	101	CR842	64	113	CR1601	71	143	CT2404P	140	47			
CC509	67	76	CD826	52	118	CR843	64	115	CR1602	64	156						
			CD831M	107	97				CR1603	73	143	D2001	112	160			
CC511D	60	57	CD1481C	32	48	CR844	64	116									
CC809	58	98	CD1482C	33	54	CR845	54	110	CR1604	66	156	IC1471C	47	167			
CC812	28	119				CR846	64	118	CR1606	87	137	IC1601	84	166			
CC813	72	96	CD1483C	33	51	CR847	60	76	CR1607	97	138	IC2001	161	102			
CC814	59	88	CD1601	105	164	CR848	61	76	CR1608	86	137						
			CD1602	99	150				CR1609	96	138	L01	86	112			
CC816	59	86	CD2002	128	164	CR849	64	120				L02	146	22			
CC818	45	110	CD2011	164	121	CR850	32	77	CR1612	102	152	L2001C	132	136			
CC819	48	115				CR851	64	121	CR1613	102	134	L2002U	138	134			
CC820	52	110	CD2401P	125	34	CR852	69	101	CR1615	86	142	L2401P	142	34			
CC821	65	103	CD2402P	147	41	CR853	71	101	CR1616	96	146						
									CR1617	68	162	LCD801	5	87			
CC822B	67	107	CIC501	66	68	CR854	63	102									
CC823	58	96	CIC801	45	92	CR856	59	94	CR1618	99	153	Q901	65	97			
CC824	44	113	CIC802	47	62	CR857	58	76	CR1620	88	142			</			

# Hauptplatte / Main Board

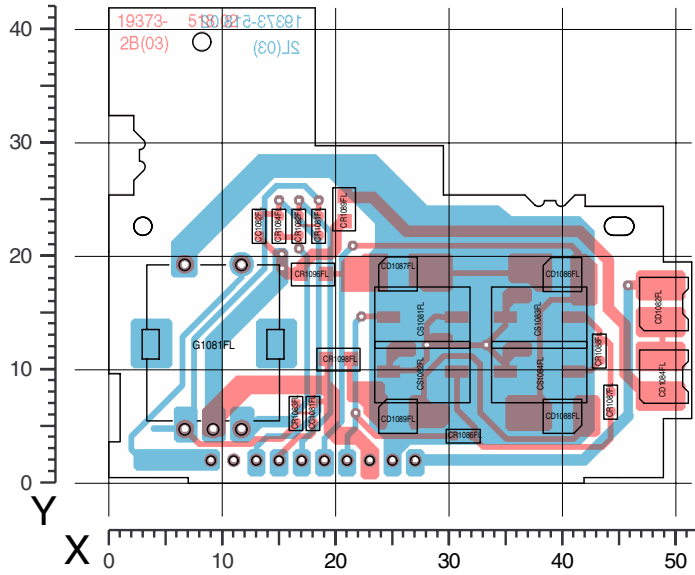
Bedrahtete Bauteile, Sicht auf Lötseite / Wired Components, view on solder side



Pos.-Nr./ Pos. No.	Koordinaten/ Coordinates		Pos.-Nr./ Pos. No.	Koordinaten/ Coordinates		Pos.-Nr./ Pos. No.	Koordinaten/ Coordinates	
	X	Y	X	Y	X	Y	X	Y
C304B	146	84	C1658	64	150	L01	86	112
C501T	64	57	C1659	61	152	L02	146	22
C811	76	89	C1661	57	150	L2001C	132	136
C817	41	122	C2001	146	113	L2002U	138	134
C1473C	55	158	C2002	142	104	L2401P	142	34
C1474C	44	158	C2003	152	107	LCD801	5	87
C1511	96	103	C2004	147	101	Q901	65	97
C1513T	85	100	C2006	149	94	R01	20	24
C1532T	87	66	C2008	140	114	R02	20	31
C1533T	94	66	C2012	132	116	R1041	23	144
C1534T	102	67	C2013	138	160	R1046	23	151
C1536T	107	79	C2402P	132	58	R1046	23	151
C1537T	107	72	C2403P	129	39	R2011H	144	166
C1613	118	165	D2001	112	160	S01	153	5
C1614	101	157	IC1471C	47	167	STV01	156	29
C1615	81	155	IC1601	84	166	STV02	156	61
C1651	69	140	IC2001	161	102			
C1652	66	142						
C1653	61	140						

### Bedien-Platte links / Operating Board left

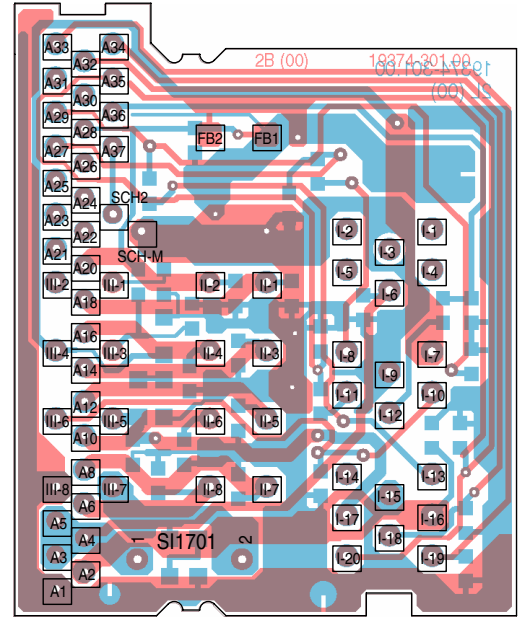
Sicht auf Bestückungsseite / View on component side



Pos.-Nr./ Pos. No.	Koordinaten/ Coordinates X Y	Pos.-Nr./ Pos. No.	Koordinaten/ Coordinates X Y	Pos.-Nr./ Pos. No.	Koordinaten/ Coordinates X Y
CC1081FL	17 6	CR1081FL	18 23	CR1098FL	20 11
CC1082FL	13 23	CR1082FL	16 23	CS1081FL	27 15
CD1082FL	48 16	CR1083FL	16 6	CS1082FL	27 10
CD1084FL	48 10	CR1084FL	14 23	CS1083FL	37 15
CD1086FL	39 18	CR1086FL	31 4	CS1084FL	37 10
CD1087FL	25 19	CR1087FL	44 7	G1081FL	9 12
CD1088FL	39 6	CR1088FL	43 12		
CD1089FL	25 6	CR1089FL	20 24		
		CR1096FL	17 18		

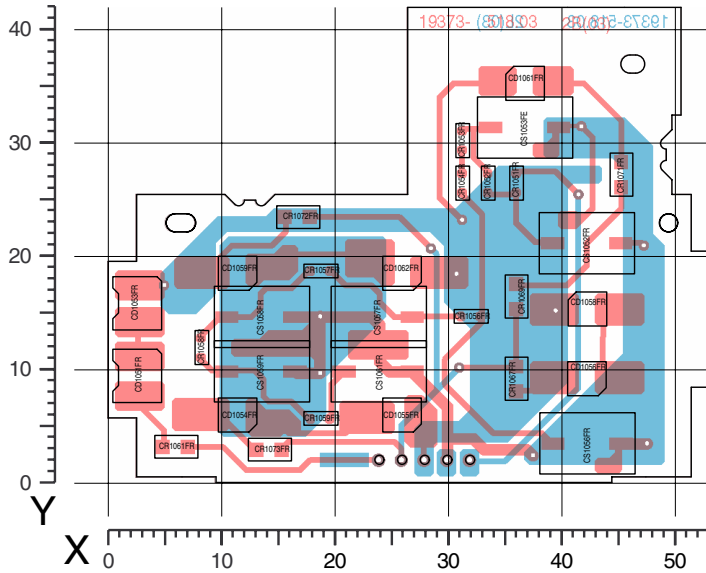
### Anschluss-Platte / Connection Board

Sicht auf Bestückungsseite / View on component side



### Bedien-Platte rechts / Operating Board right

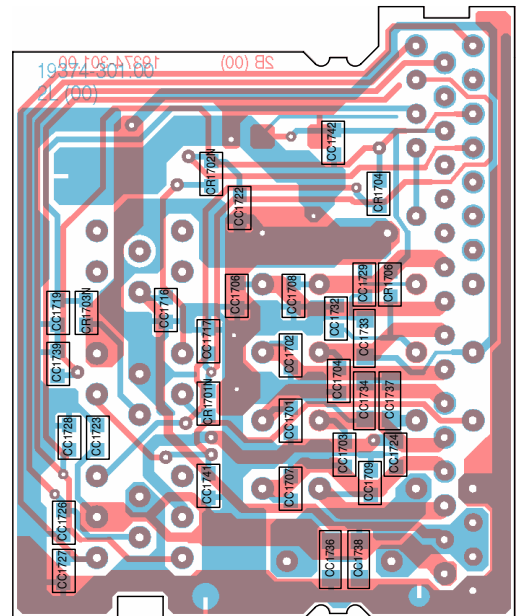
Sicht auf Bestückungsseite / View on component side



Pos.-Nr./ Pos. No.	Koordinaten/ Coordinates X Y	Pos.-Nr./ Pos. No.	Koordinaten/ Coordinates X Y	Pos.-Nr./ Pos. No.	Koordinaten/ Coordinates X Y
CD1051FR	2 10	CR1052FR	33 27	CR1071FR	45 27
CD1053FR	2 16	CR1053FR	31 30	CR1072FR	16 23
CD1054FR	11 6	CR1054FR	31 27	CR1073FR	14 3
CD1055FR	25 6	CR1056FR	32 15	CS1052FR	42 21
CD1056FR	42 9	CR1057FR	18 19	CS1053FE	36 31
CD1058FR	42 15	CR1058FR	8 12	CS1056FR	42 4
CD1059FR	11 19	CR1059FR	18 6	CS1057FR	23 15
CD1061FR	36 35	CR1061FR	6 3	CS1058FR	13 15
CD1062FR	25 19	CR1067FR	36 9	CS1059FR	13 10
CR1051FR	36 27	CR1069FR	36 17	CS1061FR	23 10

### Anschluss-Platte / Connection Board

Sicht auf Lötseite / View on solder side



# Ersatzteilliste Spare Parts List

# GRUNDIG CAR AUDIO

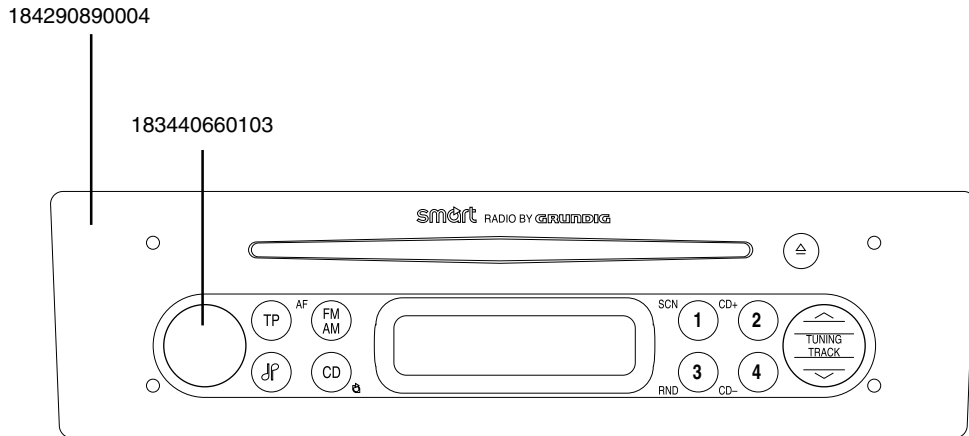
## 4 / 2001

## SMART CD

MATERIAL-NR. / PART NO.: 918429815200  
BESTELL-NR. / ORDER NO.: GH13100

POS. NR. POS. NO.	ABB. FIG.	MATERIAL-NR. PART NUMBER	ANZ. QTY.	BEZEICHNUNG <b>(D)</b>	DESCRIPTION <b>(GB)</b>
		918429815200		SMART CD AUTOSUPER M.CD-L KEIN E-TEIL	SMART CD AUTOSUPER W.CD D NO SPARE PART
0002.000	1	184290890004		BLLENDE MONT.KPL	MASK MOUNT.CPL
0005.000	1	183440660103		DREHKNOPF	KNOB
0010.000		197202590000		LCD DISPLAY SYSTEMS	LCD DISPLAY SYSTEMS
0011.000		197202590100		LCD RUTRONIK	LCD RUTRONIK
0025.000		197716170100		ANSCHLUSSGEHAEUSE	CONNECTION TERMINAL
0027.000		183000990100		ANTENNENBUCHSE KPL	ANTENNA SOCKET CPL
0032.000		184290230003		EINBAUFEDER LINKS	MOUNTING SPRING LHS
0033.000		184290240003		EINBAUFEDER RECHTS	MOUNTING SPRING RHS
0045.000		193732200000		TUNERMODUL (AUDI)	TUNER MODULE (AUDI)
0050.000		197230510000		LAUFWERK ALPINE DP23S37G	DRIVE MECHANISM ALPINE DP
2800.000		096248449100		CAR-AUDIO IDENTITY CARD	CAR-AUDIO IDENTITY CARD
		184299412100		BEDIENUNGSANLEITUNG (SMART CD) D/GB/I/F/NL/E	OPERATING INSTRUCTION (SMART CD) D/GB/I/F/NL/E

**1**



ÄNDERUNGEN VORBEHALTEN / SUBJECT TO ALTERATION



POS. NR. POS. NO.	MATERIAL-NR. PART NUMBER	BEZEICHNUNG DESCRIPTION	POS. NR. POS. NO.	MATERIAL-NR. PART NUMBER	BEZEICHNUNG DESCRIPTION
C 02013	845324210700	ELKO 2200UF 16V 105C RM5	D 02001	830921540100	DIODE 1N5401G GI/FAG AV6
CD 00801	830938410100	SMD Z-DIODE BZX84B10	G 01081	194110280000	ENCODER ALPS
CD 00831	830921001600	SMD DIODE BAS16 AV215 -G8	IC 01471	830500780800	IC 7808 5% SGS
CD 01051	832601367600	SMD LE-DIODE LYA676-Q/R E	IC 01601	830533738100	IC TDA7381
CD 01053	832601367600	SMD LE-DIODE LYA676-Q/R E	IC 02001	830520495300	IC L4953G SGS
CD 01054	830997367000	SMD LE-DIODE LYT670K/L E9	L 02001	814052289000	DR 97UH 15% LIEGEND LION
CD 01055	830997367000	SMD LE-DIODE LYT670K/L E9	Q 00901	838220079700	SCHWINGQUARZ 32,768 KHZ /
CD 01056	830997367000	SMD LE-DIODE LYT670K/L E9	R 02011	△ 831510016000	SI POLYSWITCH 1,6A 30V RU
CD 01058	830997367000	SMD LE-DIODE LYT670K/L E9	SI 01701	△ 831570310000	FLACH-SI. 10 A
CD 01059	830997367000	SMD LE-DIODE LYT670K/L E9			
CD 01061	830997367000	SMD LE-DIODE LYT670K/L E9			
CD 01062	830997367000	SMD LE-DIODE LYT670K/L E9			
CD 01082	832601367600	SMD LE-DIODE LYA676-Q/R E			
CD 01084	832601367600	SMD LE-DIODE LYA676-Q/R E			
CD 01086	830997367000	SMD LE-DIODE LYT670K/L E9			
CD 01087	830997367000	SMD LE-DIODE LYT670K/L E9			
CD 01088	830997367000	SMD LE-DIODE LYT670K/L E9			
CD 01089	830997367000	SMD LE-DIODE LYT670K/L E9			
CD 01481	830921001600	SMD DIODE BAS16 AV215 -G8			
CD 01483	832531206000	SMD DIODE BAT60J STM			
CD 01601	830931309900	SMD DIODE BAV99			
CD 02011	832532801000	SMD DIODE BYG10D TEMIC/ F			
CIC 00080	720085384000	SMD IC BR24C08F			
CIC 00501	830582657900	SMD IC SAA6579T PHI AV215			
CIC 00801	830587831200	SMD IC UPD780308GF-039-3B			
CIC 00801	830587840800	SMD IC UPD78P0308GF NEC			
CIC 00802	720085384000	SMD IC BR24C08F SMART CD			
CIC 01501	830584746000	SMD IC TDA7460			
CIC 01671	830573406600	SMD IC HEF4066BT PHI AV21			
CQ 00801	838270404300	SMD QUARZ #43 4,332MHZ			
CS 01052	194011070000	TASTSCHALTER SKQYP ALPS			
CS 01056	194011070000	TASTSCHALTER SKQYP ALPS			
CS 01057	194011070000	TASTSCHALTER SKQYP ALPS			
CS 01058	194011070000	TASTSCHALTER SKQYP ALPS			
CS 01059	194011070000	TASTSCHALTER SKQYP ALPS			
CS 01061	194011070000	TASTSCHALTER SKQYP ALPS			
CS 01081	194011070000	TASTSCHALTER SKQYP ALPS			
CS 01082	194011070000	TASTSCHALTER SKQYP ALPS			
CS 01083	194011070000	TASTSCHALTER SKQYP ALPS			
CS 01084	194011070000	TASTSCHALTER SKQYP ALPS			
CT 00101	830100685800	SMD TRANS BC858C/ BC857C			
CT 00102	830100684800	SMD TRANS BC848C/ BC847C			
CT 00301	830100684800	SMD TRANS BC848C/ BC847C			
CT 00302	830100685800	SMD TRANS BC858C/ BC857C			
CT 00303	830100684800	SMD TRANS BC848C/ BC847C			
CT 00801	830116013500	SMD TRANS BCR135 SIE AV21			
CT 00831	830100685800	SMD TRANS BC858C/ BC857C			
CT 01001	830100684800	SMD TRANS BC848C/ BC847C			
CT 01002	830100684800	SMD TRANS BC848C/ BC847C			
CT 01006	830100685800	SMD TRANS BC858C/ BC857C			
CT 01008	830100684800	SMD TRANS BC848C/ BC847C			
CT 01031	830100684800	SMD TRANS BC848C/ BC847C			
CT 01037	830100684800	SMD TRANS BC848C/ BC847C			
CT 01038	830100684800	SMD TRANS BC848C/ BC847C			
CT 01039	830100684800	SMD TRANS BC848C/ BC847C			
CT 01481	830100680800	SMD TRANS BC808-40/ BC807			
CT 01482	830116013500	SMD TRANS BCR135 SIE AV21			
CT 01502	830116013500	SMD TRANS BCR135 SIE AV21			
CT 01601	830100684800	SMD TRANS BC848C/ BC847C			
CT 01811	830100484800	SMD TRANS BC848B/ BC847B			

Es gelten die Vorschriften und Sicherheitshinweise gemäß dem Service Manual "Sicherheit", Mat.-Nummer 720108000000, sowie zusätzlich die eventuell abweichenden, landesspezifischen Vorschriften!



The regulations and safety instructions shall be valid as provided by the "Safety" Service Manual, part number 720108000000, as well as the respective national deviations.

ÄNDERUNGEN VORBEHALTEN / SUBJECT TO ALTERATION