
TECHNICAL DOCUMENTATION

PROJECT: MicroWave II XT

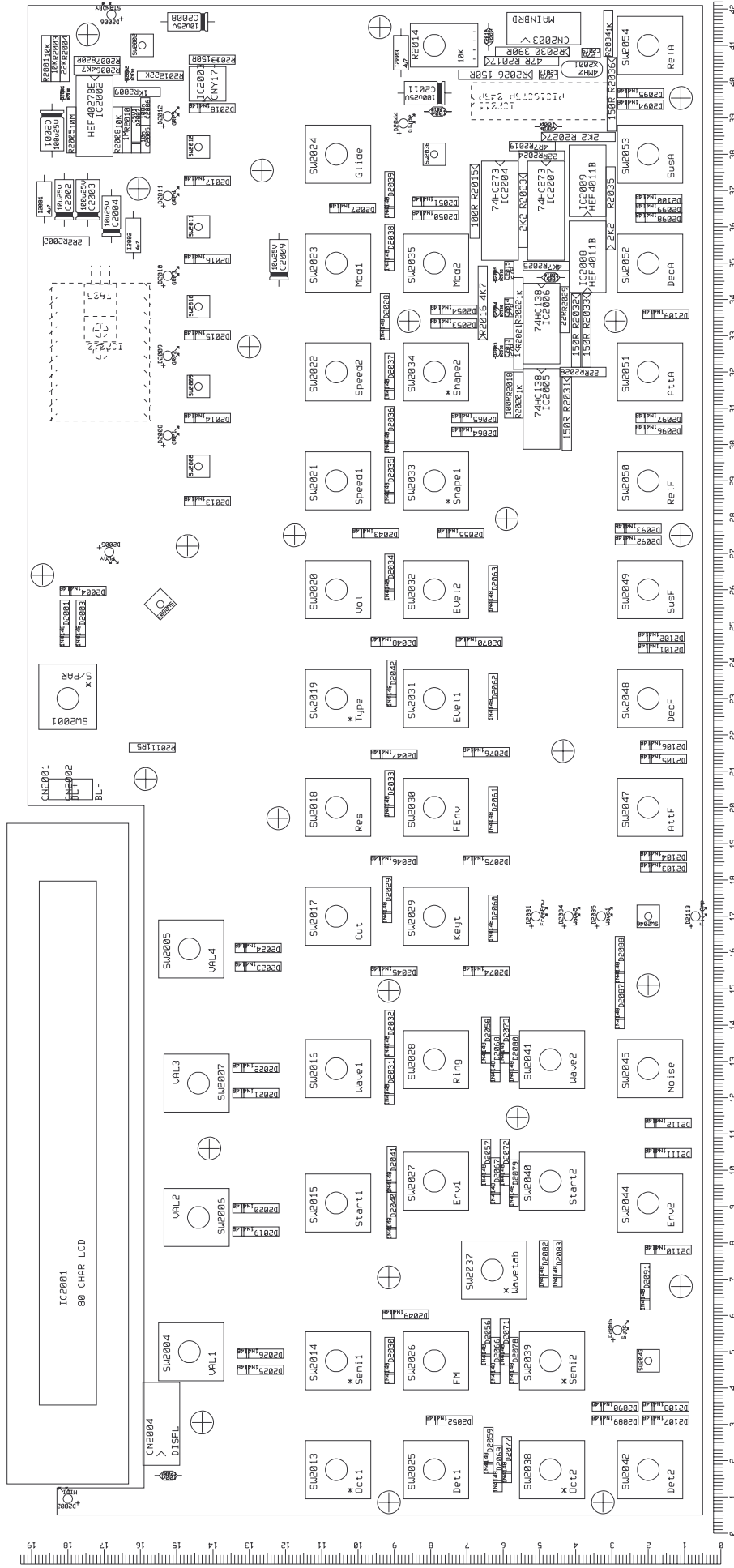
PART : Front PCB (MWXL20)
REV : 2.0
DATE : 18.05.98

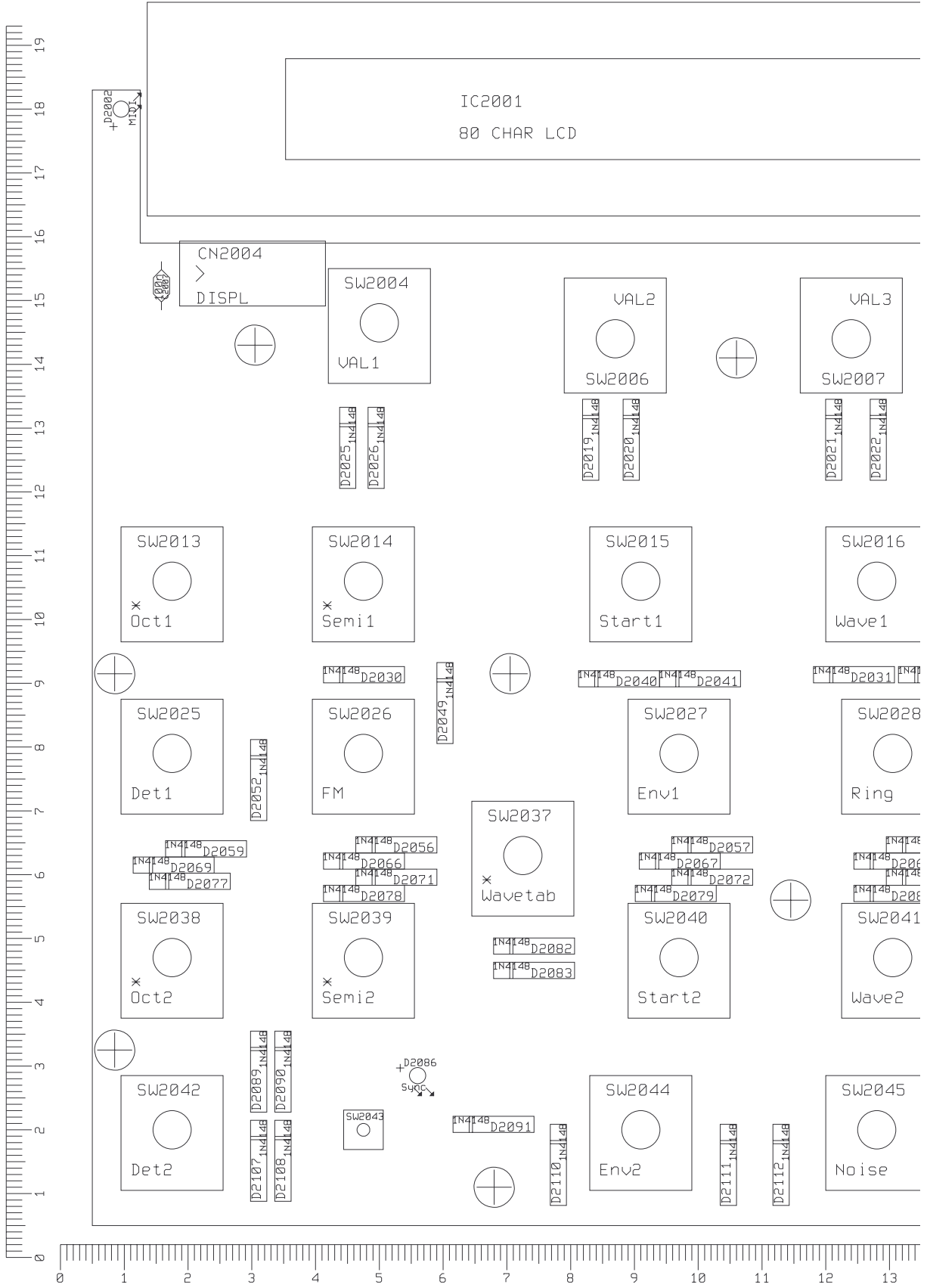
Document-Name: MWXL20.PDF

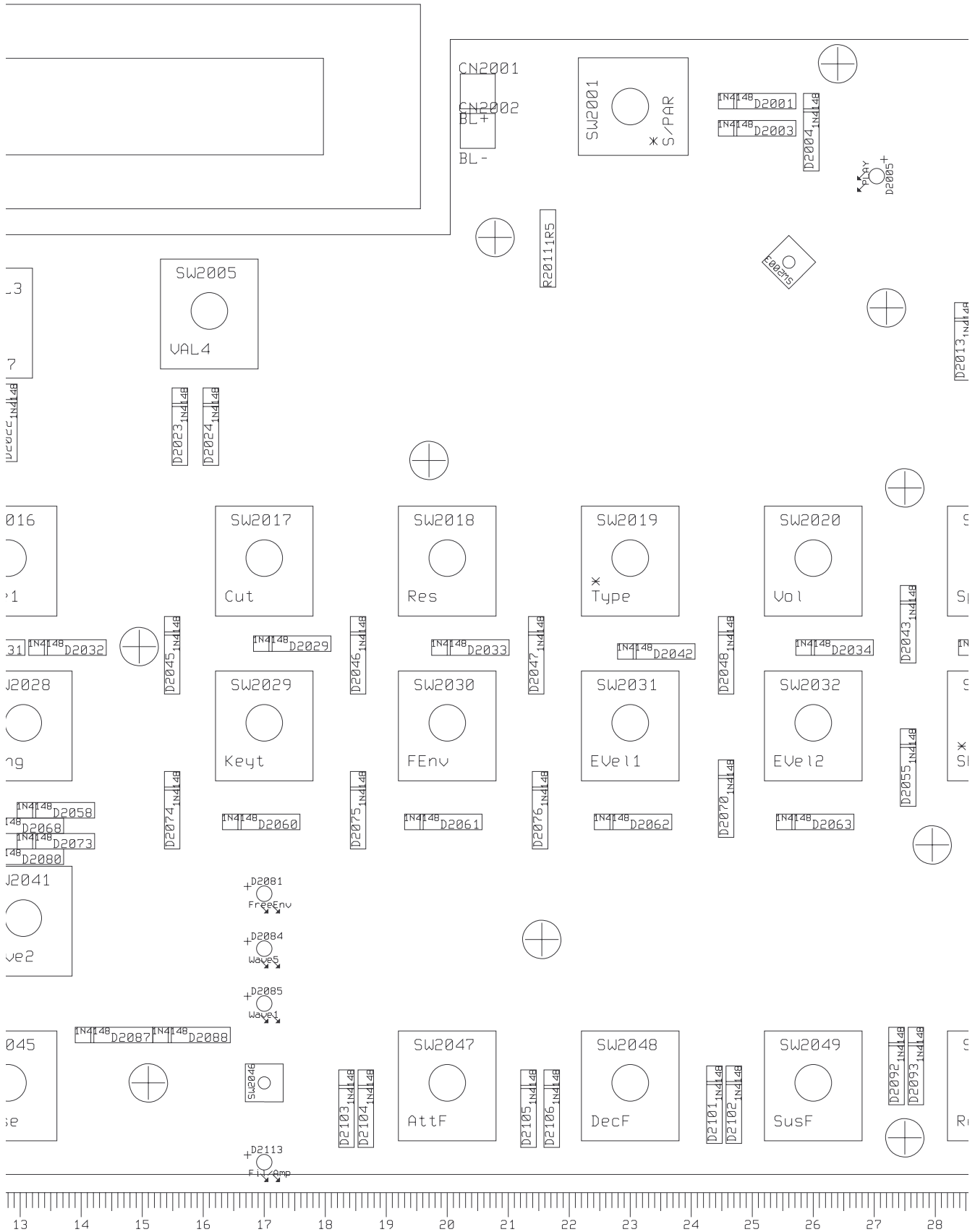
© Copyright Waldorf Electronics GmbH
Neustrasse 9 - D 53498 Waldorf

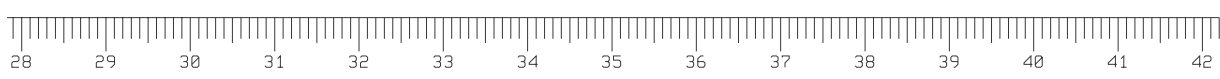
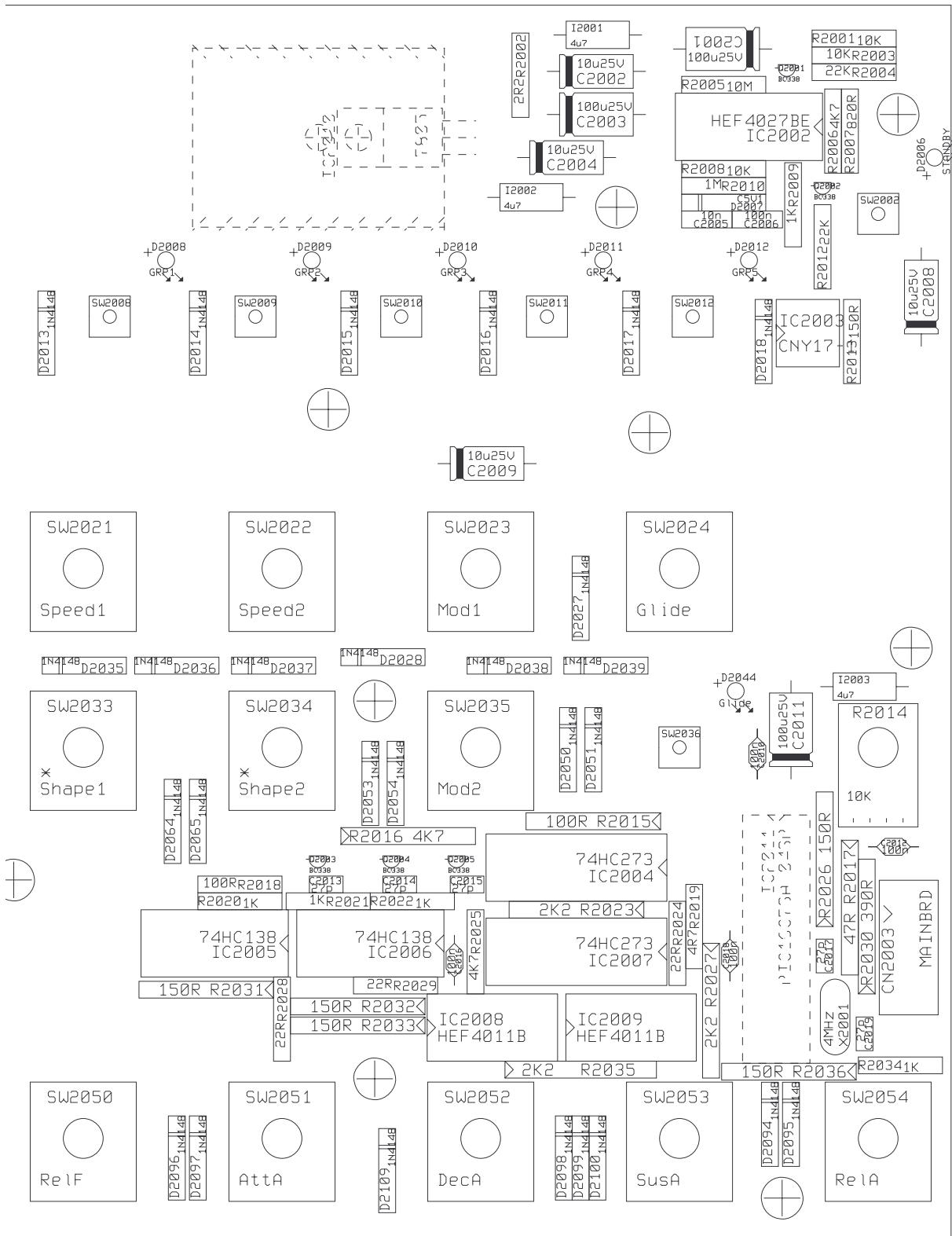


waldorf



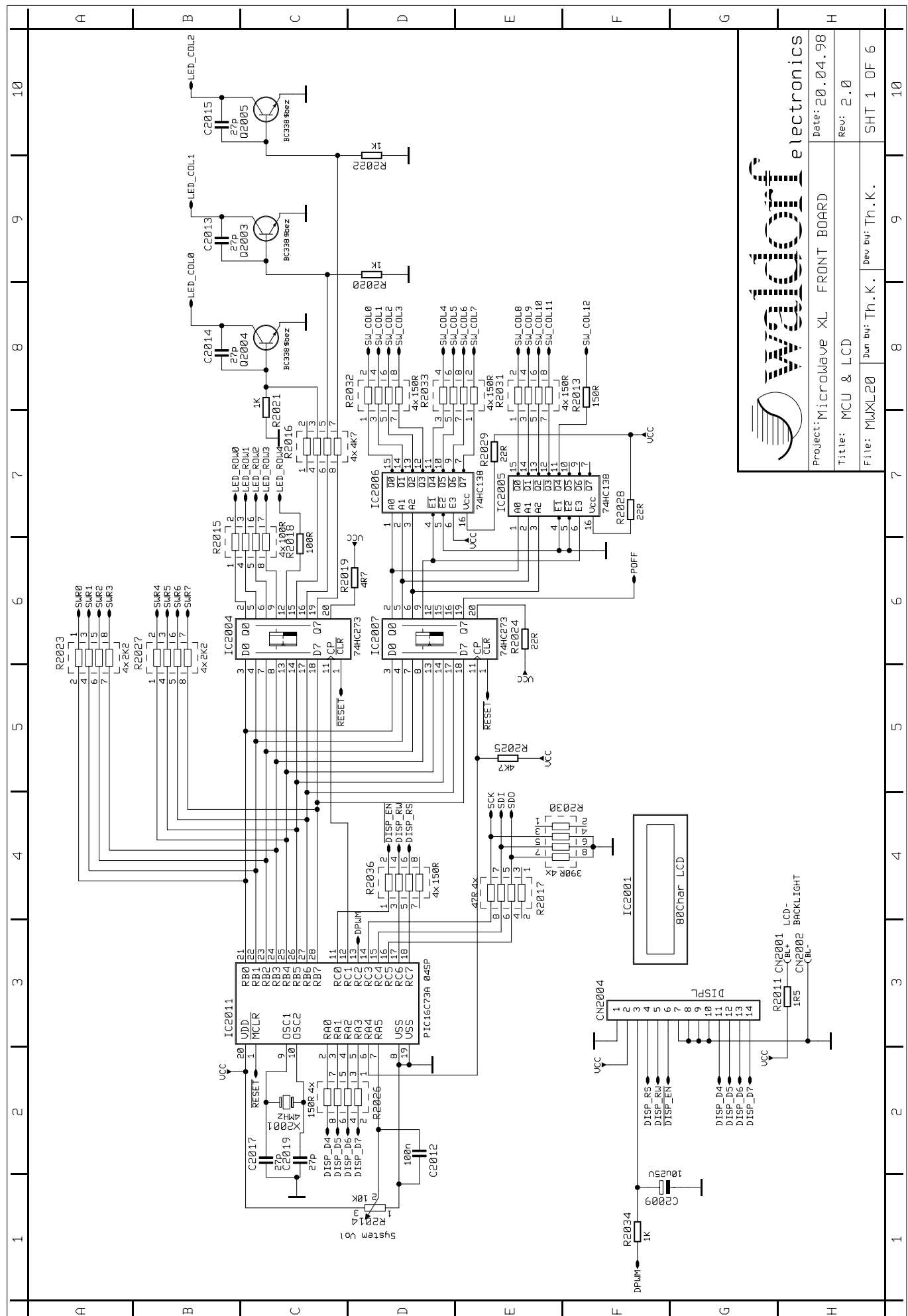


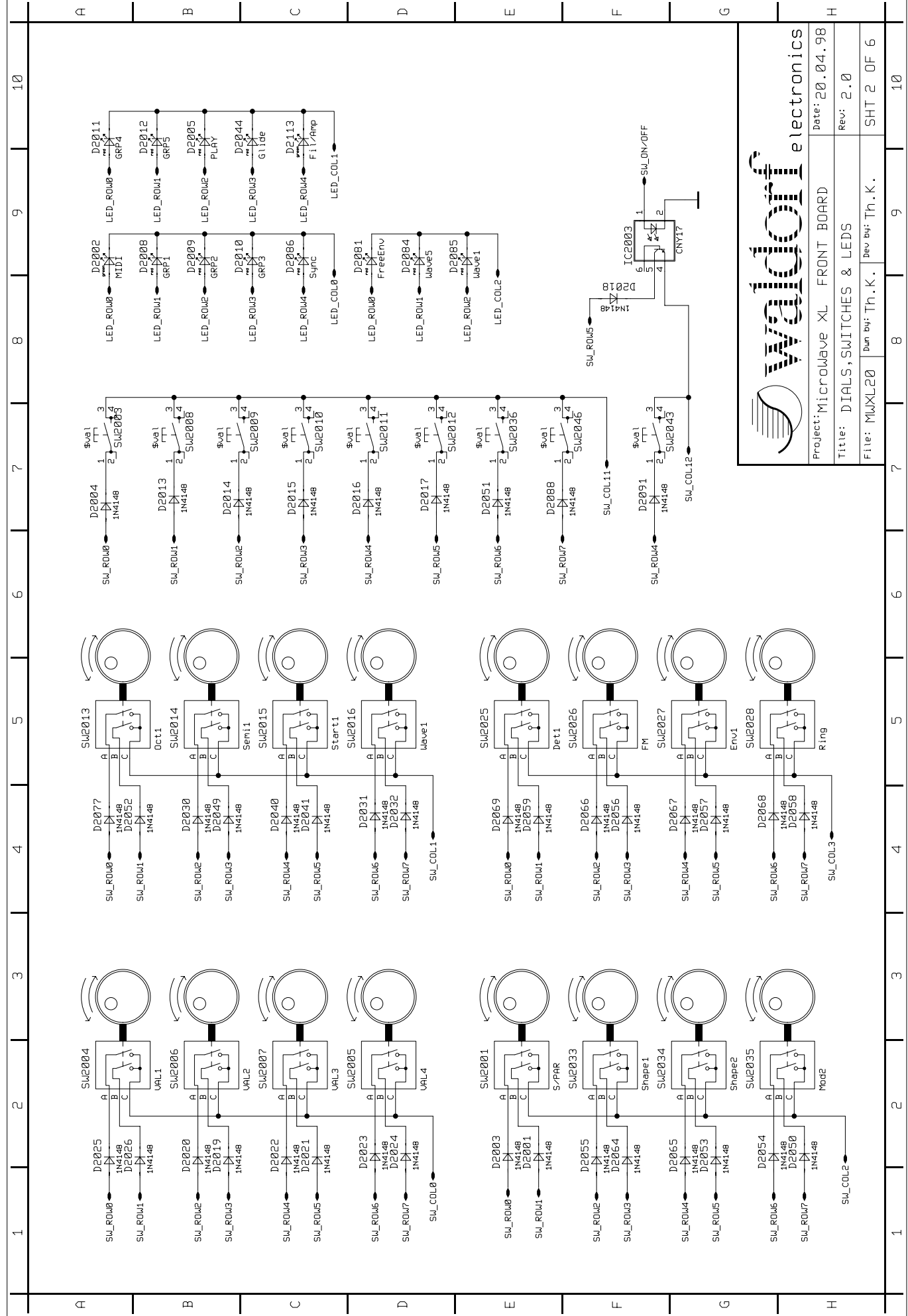




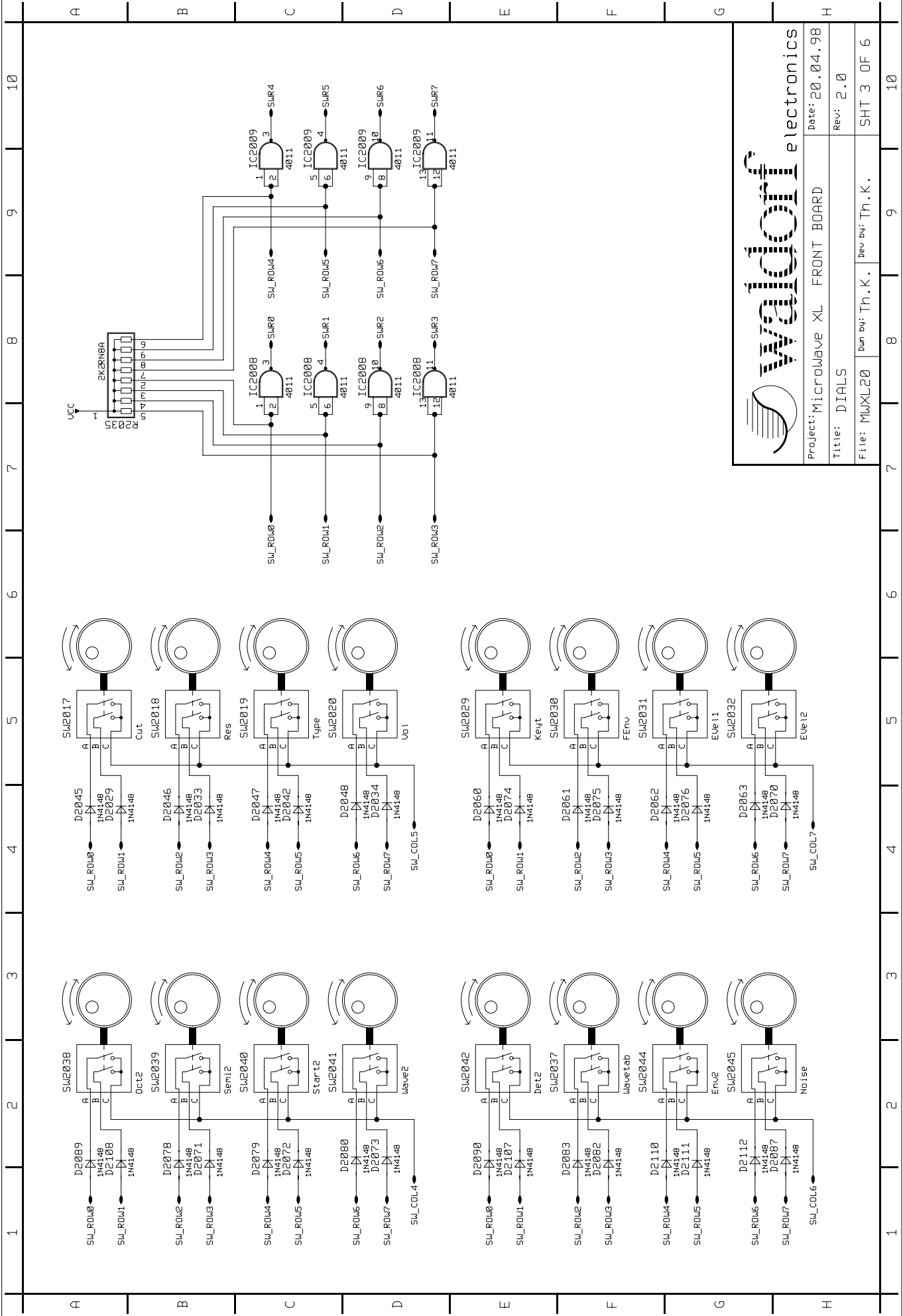


Project: Microwave XL FRONT BOARD
 Date: 20.04.98
 Title: MCU & LCD
 Rev: 2.0
 File: MvXL20
 Dev by: Th.K.
 SHT 1. OF 6





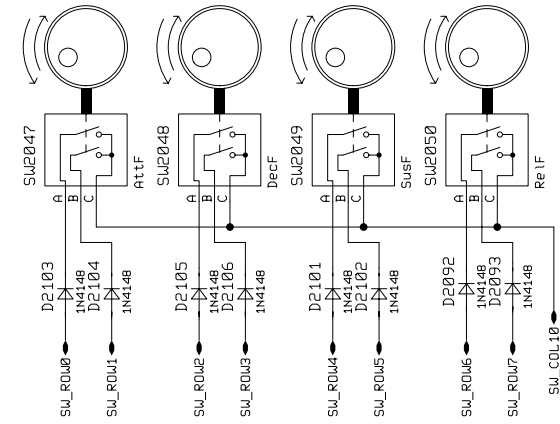
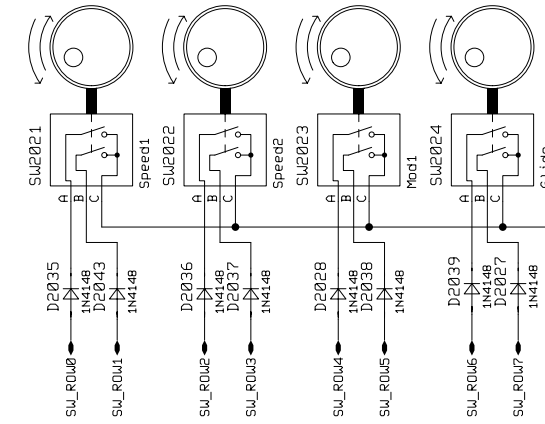
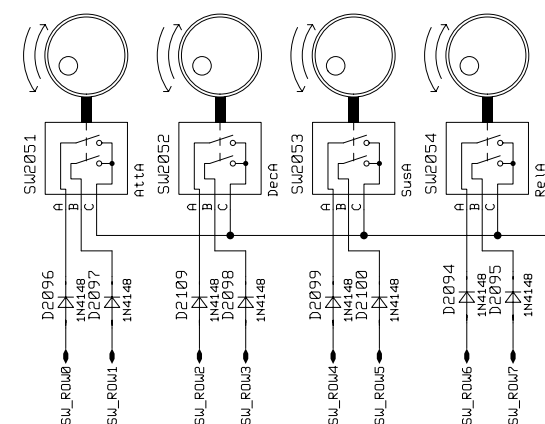
Project: Microwave XL FRONT BOARD
 Title: DIALS, SWITCHES & LEDS
 File: MWXL20
 Date: 20.04.98
 Rev: 2.0
 Dev by: Th.K.
 SHT 2 OF 6



Project: Microwave XL FRONT BOARD
 Title: DIALS
 File: MWXL20
 Date: 20.04.98
 Rev: 2.0
 Dev by: Th.K.
 SHT 3 OF 6



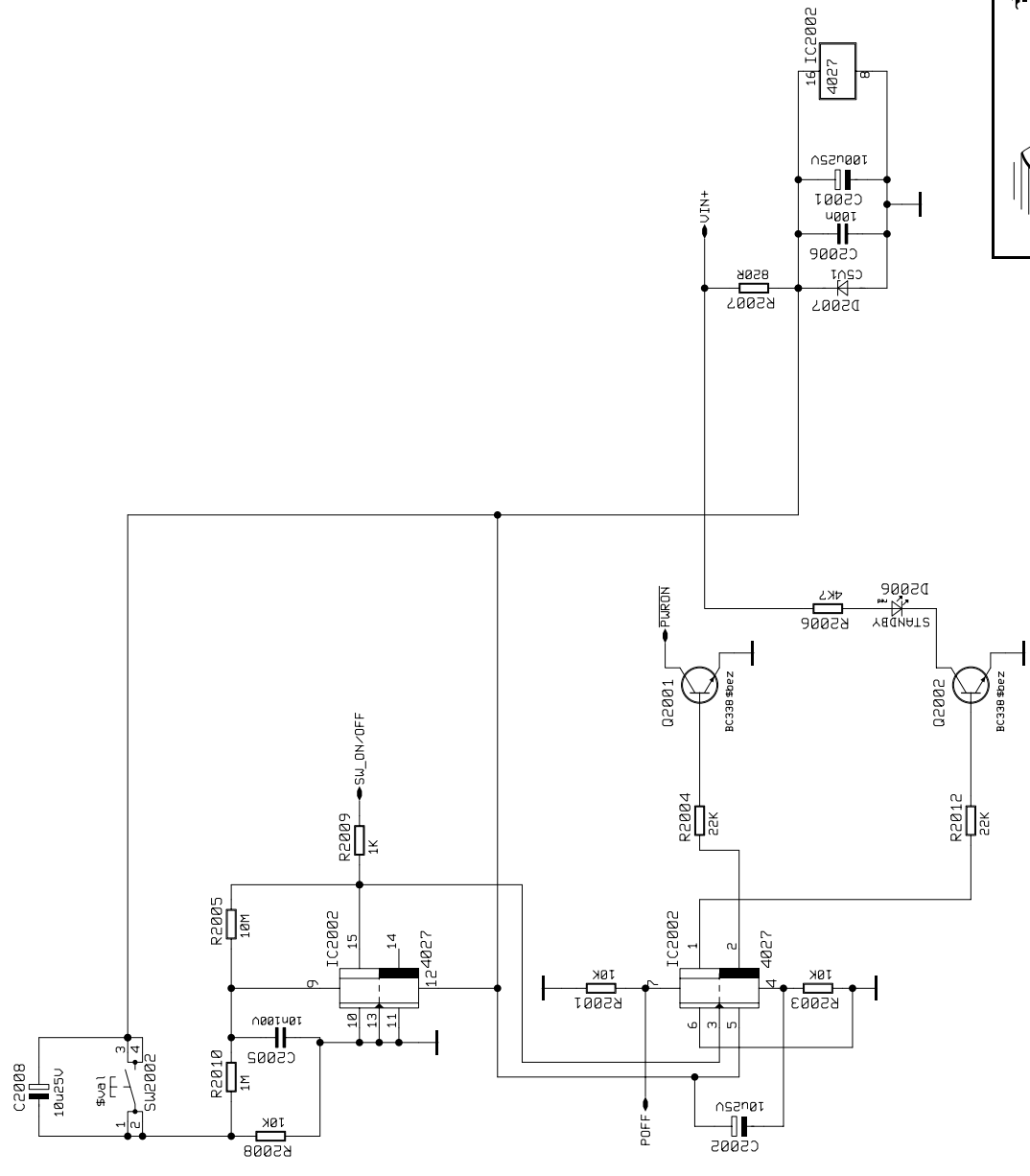
Project: Microlove XL FRONT BOARD
 Title: DIALS
 File: MvXL20
 Date: 20.04.98
 Rev: 2.0
 Dev By: Th.K.
 SHT 4 OF 6



1	2	3	4	5	6	7	8	9	10
A	B	C	D	E	F	G			
A	B	C	D	E	F	G			
							Project: Microlove XL FRONT BOARD Title: DIALS File: MvXL20		
							Date: 20.04.98 Rev: 2.0 Dev By: Th.K.		
							SHT 4 OF 6		
1	2	3	4	5	6	7	8	9	10



Project: Microwave XL FRONT BOARD
Date: 20.04.98
Title: ON/OFF CIRCUIT
Rev: 2.0
File: MxXL20
Dev By: Th.K.
SHT 5 OF 6



1	2	3	4	5	6	7	8	9	10
A	B	C	D	E	F	G	H		

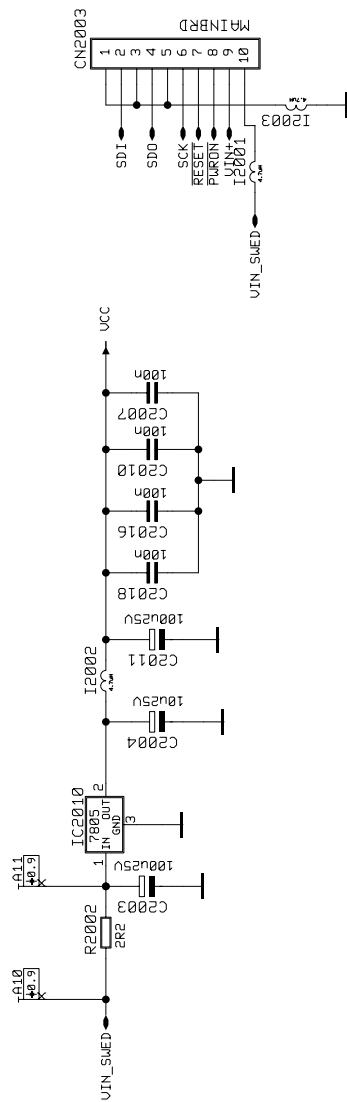


Waldorf electronics

Project: MicroWave XL FRONT BOARD Date: 20.04.98

Title: SUPPLY & MAIN CONNECTOR Rev: 2.0

File: M\XL20 Drawn by: Th.K. Dev by: Th.K. SHT 6 OF 6



1	2	3	4	5	6	7	8	9	10
A	B	C	D	E	F	G	H		

IC's:

NAME	WERT	FOOTPRNT	BESCHREIBUNG	POS X,Y
IC2001	80 CHAR LCD	80CDISPL	PVC400201PYL02	107,179
IC2002	HEF4027BE	DIL16	DUAL JK-FLIP FLOP	399,176
IC2003	CNY17-1	DIL6	OPTO-COUPLER	396,137
IC2004	74HC273	DIL20	LATCH	375, 64
IC2005	74HC138	DIL16	DECODER	318, 53
IC2006	74HC138	DIL16	DECODER	342, 53
IC2007	74HC273	DIL20	LATCH	375, 51
IC2008	HEF4011B	DIL14	4-fach NAND	344, 32
IC2009	HEF4011B	DIL14	4-fach NAND	365, 32
IC2010	7805	TO220	REGULATOR	331,171
IC2011	PIC16C73A 04	DIL28S	MICROCONTROLLER	398, 66

Q's:

NAME	WERT	FOOTPRNT	BESCHREIBUNG	POS X,Y
Q2001	BC338	TRANSIST	NPN TRANSISTOR	394,181
Q2002	BC338	TRANSIST	NPN TRANSISTOR	400,163
Q2003	BC338	TRANSIST	NPN TRANSISTOR	324, 62
Q2004	BC338	TRANSIST	NPN TRANSISTOR	335, 62
Q2005	BC338	TRANSIST	NPN TRANSISTOR	345, 62

C's:

NAME	WERT	TYP	BESCHREIBUNG	POS X,Y
C2001	100u25V	RM15 d=6,l=10	ELKO Axial 20%	393,184
C2002	10u25V	RM15 d=5,l=10	ELKO Axial 20%	360,181
C2003	100u25V	RM15 d=6,l=10	ELKO Axial 20%	360,174
C2004	10u25V	RM15 d=5,l=10	ELKO Axial 20%	355,168
C2005	10n	BF014 D 0103K	FOLIE 100V 10% RM5	386,158
C2006	100n	TYP II X7R RM5	KER. VIELSCH. 10%	394,158
C2007	100n	SE 53D2946	KER. VIELSCH. 10% axial	15,156
C2008	10u25V	RM15 d=5,l=10	ELKO Axial 20%	416,139
C2009	10u25V	RM15 d=5,l=10	ELKO Axial 20%	343,121
C2010	100n	SE 53D2946	KER. VIELSCH. 10% axial	391, 81
C2011	100u25V	RM15 d=6,l=10	ELKO Axial 20%	396, 74
C2012	100n	SE 53D2946	KER. VIELSCH. 10% axial	408, 63
C2013	27p	TYP1 RM2.5	KER. SCHEIBENK. 2%	325, 58
C2014	27p	TYP1 RM2.5	KER. SCHEIBENK. 2%	336, 58
C2015	27p	TYP1 RM2.5	KER. SCHEIBENK. 2%	346, 58
C2016	100n	SE 53D2946	KER. VIELSCH. 10% axial	346, 50
C2017	27p	TYP1 RM2.5	KER. SCHEIBENK. 2%	401, 48
C2018	100n	SE 53D2946	KER. VIELSCH. 10% axial	387, 43
C2019	27p	TYP1 RM2.5	KER. SCHEIBENK. 2%	407, 37

R's:

NAME	WERT	TOL. / TYP	BESCHREIBUNG	POS X,Y
R2001	10K	5% 0.25W TK200	KOHLE-SCHICHTW. 0207	401,185
R2002	2R2	5% 0.25W TK200	KOHLE-SCHICHTW. 0207	355,185
R2003	10K	5% 0.25W TK200	KOHLE-SCHICHTW. 0207	411,183
R2004	22K	5% 0.25W TK200	KOHLE-SCHICHTW. 0207	411,180
R2005	10M	5% 0.25W TK200	KOHLE-SCHICHTW. 0207	381,178
R2006	4K7	5% 0.25W TK200	KOHLE-SCHICHTW. 0207	403,166
R2007	820R	5% 0.25W TK200	KOHLE-SCHICHTW. 0207	405,166
R2008	10K	5% 0.25W TK200	KOHLE-SCHICHTW. 0207	381,166
R2009	1K	5% 0.25W TK200	KOHLE-SCHICHTW. 0207	397,165
R2010	1M	5% 0.25W TK200	KOHLE-SCHICHTW. 0207	391,163
R2011	1R5	5% 0.25W TK200	KOHLE-SCHICHTW. 0207	216,151
R2012	22K	5% 0.25W TK200	KOHLE-SCHICHTW. 0207	401,149
R2013	150R	5% 0.25W TK200	KOHLE-SCHICHTW. 0207	406,135
R2014	10K		POTI	410, 79
R2015	100R	2% 0.2W TK200/ L08-3	RNET 4-FACH B	375, 67
R2016	4K7	2% 0.2W TK200/ L08-3	RNET 4-FACH B	330, 65
R2017	47R	2% 0.2W TK200/ L08-3	RNET 4-FACH B	405, 63
R2018	100R	5% 0.25W TK200	KOHLE-SCHICHTW. 0207	318, 58
R2019	4R7	5% 0.25W TK200	KOHLE-SCHICHTW. 0207	382, 57
R2020	1K	5% 0.25W TK200	KOHLE-SCHICHTW. 0207	308, 55
R2021	1K	5% 0.25W TK200	KOHLE-SCHICHTW. 0207	332, 55
R2022	1K	5% 0.25W TK200	KOHLE-SCHICHTW. 0207	334, 55
R2023	2K2	2% 0.2W TK200/ L08-3	RNET 4-FACH B	373, 54
R2024	22R	5% 0.25W TK200	KOHLE-SCHICHTW. 0207	379, 54
R2025	4K7	5% 0.25W TK200	KOHLE-SCHICHTW. 0207	349, 53
R2026	150R	2% 0.2W TK200/ L08-3	RNET 4-FACH B	401, 53
R2027	2K2	2% 0.2W TK200/ L08-3	RNET 4-FACH B	384, 48
R2028	22R	5% 0.25W TK200	KOHLE-SCHICHTW. 0207	320, 43
R2029	22R	5% 0.25W TK200	KOHLE-SCHICHTW. 0207	342, 43
R2030	390R	2% 0.2W TK200/ L08-3	RNET 4-FACH B	408, 43
R2031	150R	2% 0.2W TK200/ L08-3	RNET 4-FACH B	317, 42
R2032	150R	2% 0.2W TK200/ L08-3	RNET 4-FACH B	340, 39
R2033	150R	2% 0.2W TK200/ L08-3	RNET 4-FACH B	340, 37
R2034	1K	5% 0.25W TK200	KOHLE-SCHICHTW. 0207	408, 31
R2035	2K2	2% 0.125W TK200/ L09	RNET 8-FACH A	354, 30
R2036	150R	2% 0.2W TK200/ L08-3	RNET 4-FACH B	405, 30

D's:

NAME	WERT	TYP	BESCHREIBUNG	POS X,Y
D2001	1N4148		DIODE	255,180
D2002	MIDI		LED 3mm gruen	9,179
D2003	1N4148		DIODE	255,176
D2004	1N4148		DIODE	259,170
D2005	PLAY		LED 3mm rot	270,168
D2006	STANDBY		LED 3mm rot	418,168
D2007	C5V1		ZENER DIODE	391,161
D2008	GRP1		LED 3mm rot	302,152
D2009	GRP2		LED 3mm rot	324,152
D2010	GRP3		LED 3mm rot	346,152
D2011	GRP4		LED 3mm rot	368,152
D2012	GRP5		LED 3mm rot	390,152

D's: (Fortsetzung)

NAME	WERT	TYP	BESCHREIBUNG	POS X,Y
D2013	1N4148		DIODE	284,136
D2014	1N4148		DIODE	307,136
D2015	1N4148		DIODE	330,136
D2016	1N4148		DIODE	351,136
D2017	1N4148		DIODE	372,136
D2018	1N4148		DIODE	392,135
D2019	1N4148		DIODE	83,123
D2020	1N4148		DIODE	89,123
D2021	1N4148		DIODE	121,123
D2022	1N4148		DIODE	128,123
D2023	1N4148		DIODE	156,122
D2024	1N4148		DIODE	161,122
D2025	1N4148		DIODE	45,121
D2026	1N4148		DIODE	49,121
D2027	1N4148		DIODE	365, 96
D2028	1N4148		DIODE	340, 92
D2029	1N4148		DIODE	179, 91
D2030	1N4148		DIODE	52, 91
D2031	1N4148		DIODE	129, 91
D2032	1N4148		DIODE	142, 91
D2033	1N4148		DIODE	208, 91
D2034	1N4148		DIODE	268, 91
D2035	1N4148		DIODE	295, 91
D2036	1N4148		DIODE	309, 91
D2037	1N4148		DIODE	323, 91
D2038	1N4148		DIODE	359, 91
D2039	1N4148		DIODE	373, 91
D2040	1N4148		DIODE	92, 90
D2041	1N4148		DIODE	105, 90
D2042	1N4148		DIODE	239, 90
D2043	1N4148		DIODE	275, 90
D2044	Glide		LED 3mm rot	388, 87
D2045	1N4148		DIODE	154, 84
D2046	1N4148		DIODE	185, 84
D2047	1N4148		DIODE	214, 84
D2048	1N4148		DIODE	245, 84
D2049	1N4148		DIODE	60, 81
D2050	1N4148		DIODE	363, 73
D2051	1N4148		DIODE	366, 73
D2052	1N4148		DIODE	31, 69
D2053	1N4148		DIODE	333, 68
D2054	1N4148		DIODE	337, 68
D2055	1N4148		DIODE	275, 66
D2056	1N4148		DIODE	57, 64
D2057	1N4148		DIODE	107, 64
D2058	1N4148		DIODE	140, 64
D2059	1N4148		DIODE	27, 64
D2060	1N4148		DIODE	174, 62
D2061	1N4148		DIODE	204, 62
D2062	1N4148		DIODE	235, 62
D2063	1N4148		DIODE	265, 62
D2064	1N4148		DIODE	303, 62

D's: (Fortsetzung)

NAME	WERT	TYP	BESCHREIBUNG	POS X,Y
D2065	1N4148		DIODE	307, 62
D2066	1N4148		DIODE	52, 62
D2067	1N4148		DIODE	102, 62
D2068	1N4148		DIODE	135, 62
D2069	1N4148		DIODE	22, 61
D2070	1N4148		DIODE	245, 61
D2071	1N4148		DIODE	57, 59
D2072	1N4148		DIODE	107, 59
D2073	1N4148		DIODE	140, 59
D2074	1N4148		DIODE	154, 59
D2075	1N4148		DIODE	185, 59
D2076	1N4148		DIODE	215, 59
D2077	1N4148		DIODE	25, 58
D2078	1N4148		DIODE	52, 57
D2079	1N4148		DIODE	101, 57
D2080	1N4148		DIODE	135, 57
D2081	FreeEnv		LED 3mm rot	169, 51
D2082	1N4148		DIODE	79, 48
D2083	1N4148		DIODE	79, 44
D2084	Wave5		LED 3mm rot	169, 42
D2085	Wave1		LED 3mm rot	169, 33
D2086	Sync		LED 3mm rot	55, 28
D2087	1N4148		DIODE	150, 27
D2088	1N4148		DIODE	163, 27
D2089	1N4148		DIODE	31, 24
D2090	1N4148		DIODE	34, 24
D2091	1N4148		DIODE	72, 20
D2092	1N4148		DIODE	273, 17
D2093	1N4148		DIODE	276, 17
D2094	1N4148		DIODE	393, 17
D2095	1N4148		DIODE	396, 17
D2096	1N4148		DIODE	304, 11
D2097	1N4148		DIODE	307, 11
D2098	1N4148		DIODE	362, 11
D2099	1N4148		DIODE	365, 11
D2100	1N4148		DIODE	367, 11
D2101	1N4148		DIODE	243, 11
D2102	1N4148		DIODE	246, 11
D2103	1N4148		DIODE	183, 10
D2104	1N4148		DIODE	186, 10
D2105	1N4148		DIODE	213, 10
D2106	1N4148		DIODE	217, 10
D2107	1N4148		DIODE	31, 10
D2108	1N4148		DIODE	34, 10
D2109	1N4148		DIODE	335, 10
D2110	1N4148		DIODE	78, 9
D2111	1N4148		DIODE	104, 9
D2112	1N4148		DIODE	112, 9
D2113	Fil/Amp		LED 3mm gruen	169, 7

I's:

NAME	WERT	TYP	BESCHREIBUNG	POS X,Y
I2001	4u7	SETRON 29617	FASTRON TYP SMCC	361,186
I2002	4u7	SETRON 29617	FASTRON TYP SMCC	351,162
I2003	4u7	SETRON 29617	FASTRON TYP SMCC	401, 88

MISC's:

NAME	BESCHREIBUNG	POS X,Y
CN2001	BL+	LOETAUGE 205,182
CN2002	BL-	LOETAUGE 205,176
CN2003	MAINBRD	SETRON 13757 Stiftw. 10p/180 413, 53
CN2004	DISPL	SETRON 13758 Stiftw. 14p/180 22,155
M1		Abst.Bolzen+M3Schr. 415, 94
M10		Abst.Bolzen+M3Schr. 327,130
M100	FK225/SA-L1	Heatsink 344,171
M11		Abst.Bolzen+M3Schr. 413,174
M12		Abst.Bolzen+M3Schr. 275,117
M13		Abst.Bolzen+M3Schr. 8, 32
M14		Abst.Bolzen+M3Schr. 68, 10
M15		Abst.Bolzen+M3Schr. 8, 91
M16		Abst.Bolzen+M3Schr. 151, 20
M17		Abst.Bolzen+M3Schr. 395, 10
M18		Abst.Bolzen+M3Schr. 333, 28
M19		Abst.Bolzen+M3Schr. 197,122
M2		Abst.Bolzen+M3Schr. 370,160
M20		Abst.Bolzen+M3Schr. 333, 86
M21		Abst.Bolzen+M3Schr. 375,126
M22		Abst.Bolzen+M3Schr. 149, 91
M23		Abst.Bolzen+M3Schr. 279, 59
M24		Abst.Bolzen+M3Schr. 272,147
M3		Abst.Bolzen+M3Schr. 275, 10
M4		Abst.Bolzen+M3Schr. 30,143
M5		Abst.Bolzen+M3Schr. 264,187
M6		Abst.Bolzen+M3Schr. 70, 91
M7		Abst.Bolzen+M3Schr. 106,141
M8		Abst.Bolzen+M3Schr. 207,158
M9		Abst.Bolzen+M3Schr. 215, 43
SW2001	S/PAR	DIAL w. click 229,180
SW2002		Taster XT 410,159
SW2003		Taster XT 256,154
SW2004	VAL1	DIAL w/o click 50,146
SW2005	VAL4	DIAL w/o click 161,146
SW2006	VAL2	DIAL w/o click 87,144
SW2007	VAL3	DIAL w/o click 123,144
SW2008		Taster XT 294,144
SW2009		Taster XT 316,144
SW2010		Taster XT 338,144
SW2011		Taster XT 360,144
SW2012		Taster XT 382,144
SW2013	Oct1	DIAL w. click 17,106
SW2014	Sem1	DIAL w. click 47,106
SW2015	Start1	DIAL w/o click 90,106
SW2016	Wave1	DIAL w/o click 128,106

MISC's: (Fortsetzung)

NAME	BESCHREIBUNG	POS X,Y
SW2017	Cut	DIAL w/o click 169,106
SW2018	Res	DIAL w/o click 199,106
SW2019	Type	DIAL w. click 229,106
SW2020	Vol	DIAL w/o click 259,106
SW2021	Speed1	DIAL w/o click 289,106
SW2022	Speed2	DIAL w/o click 320,106
SW2023	Mod1	DIAL w/o click 350,106
SW2024	Glide	DIAL w/o click 380,106
SW2025	Det1	DIAL w/o click 17, 79
SW2026	FM	DIAL w/o click 47, 79
SW2027	Env1	DIAL w/o click 97, 79
SW2028	Ring	DIAL w/o click 130, 79
SW2029	Keyt	DIAL w/o click 169, 79
SW2030	FEnv	DIAL w/o click 199, 79
SW2031	EVel1	DIAL w/o click 229, 79
SW2032	EVel2	DIAL w/o click 259, 79
SW2033	Shapel	DIAL w. click 289, 79
SW2034	Shape2	DIAL w. click 320, 79
SW2035	Mod2	DIAL w/o click 350, 79
SW2036		Taster XT 380, 79
SW2037	Wavetab	DIAL w. click 72, 63
SW2038	Oct2	DIAL w. click 17, 47
SW2039	Semi2	DIAL w. click 47, 47
SW2040	Start2	DIAL w/o click 97, 47
SW2041	Wave2	DIAL w/o click 130, 47
SW2042	Det2	DIAL w/o click 17, 20
SW2043		Taster XT 47, 20
SW2044	Env2	DIAL w/o click 90, 20
SW2045	Noise	DIAL w/o click 128, 20
SW2046		Taster XT 169, 20
SW2047	AttF	DIAL w/o click 199, 20
SW2048	DecF	DIAL w/o click 229, 20
SW2049	SusF	DIAL w/o click 259, 20
SW2050	RelF	DIAL w/o click 289, 20
SW2051	AttA	DIAL w/o click 320, 20
SW2052	DecA	DIAL w/o click 350, 20
SW2053	SusA	DIAL w/o click 380, 20
SW2054	RelA	DIAL w/o click 410, 20
X2001	4MHz	HC49U70 QUARZ 403, 35