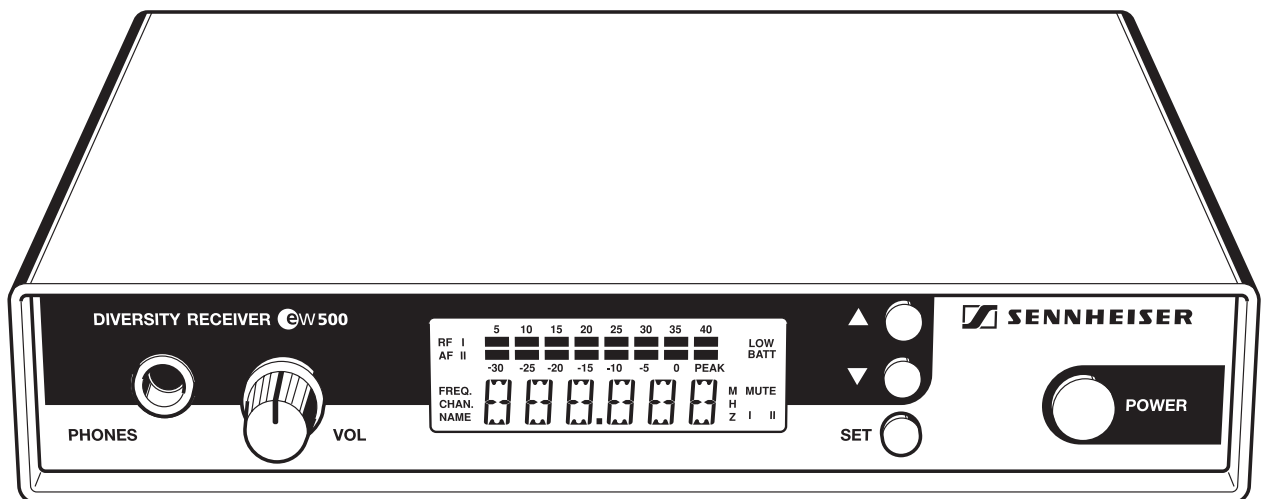


# EM 100 EM 300 EM 500

## Part 1



## TECHNISCHE DATEN

(Werte in Klammern entsprechen typischen Werten)

### HF-TEIL

Frequenzbereiche	518 ... 550 MHz 630 ... 662 MHz 740 ... 772 MHz 790 ... 822 MHz 838 ... 870 MHz
Empfängerprinzip	True Diversity
Schaltbandbreite	32 MHz
Empfangsfrequenzen	1280
Kanalabstand	> 400 kHz
Frequenzraster	25 kHz
1. Oszillatorfrequenz	$f_e - 110,6$ MHz
1. Zwischenfrequenz	110,6 MHz
2. Oszillatorfrequenz	121,4 MHz
2. Zwischenfrequenz	10,8 MHz
Modulationsart	Breitband-FM
Nennhub	24 kHz
Spitzenhub	48 kHz
Schaltsschwelle der Rauschsperr	0 $\mu$ V ... 100 $\mu$ V
S/N=80 dB (unbewertet mit HDX)	< 10 $\mu$ V (6 $\mu$ V)
S/N max (Spitzenhub mit HDX)	> 110 dB(A) (117 dB(A))
Antenneneingänge	HF-Eingang: 2x BNC 50 $\Omega$

### NF-TEIL

Kompondersystem	HDX
NF-Ausgangsspannung (Nennhub)	500 mV <sub>eff</sub> ; EM 300: 770 mV <sub>eff</sub>
NF-Ausgangsspannung (Spitzenhub)	unsymmetr. 1,3 V <sub>eff</sub> 4 dBu; EM 300: symmetr. 2,6 V <sub>eff</sub> 10 dBu
Klirrfaktor bei 1 kHz und Nennhub	< 1% (0,3%)
NF-Frequenzgang	50 Hz ... 18 kHz; -3dB
Pegel des Monitorausgangs / Last	ausschließlich EM 500: >100 mW / 32 $\Omega$
Steckverbinder	NF-Ausgang: 6,35 mm Klinke; EM300/EM 500 zusätzlich XLR 3 Stecker

### ALLGEMEIN

Nennspannung	12 V
Betriebsspannung	10,5 ... 16 V
Stromverbrauch bei Nennspannung	typ. 150 mA
Ruhestromaufnahme	typ. 10 mA
Zulassung	D801 488L RF

## TECHNICAL DATA

(Values in brackets are typical values)

### RF STAGE

Frequency ranges _____	518 ... 550 MHz 630 ... 662 MHz 740 ... 772 MHz 790 ... 822 MHz 838 ... 870 MHz
Diversity system _____	True Diversity
Switching bandwidth _____	32 MHz
Receiver frequencies _____	1280
Channel spacing _____	> 400 kHz
Channel grid _____	25 kHz
1 <sub>st</sub> oscillator frequency _____	$f_e - 110.6$ MHz
1 <sub>st</sub> intermediate frequency _____	110.6 MHz
2 <sub>nd</sub> oscillator frequency _____	121.4 MHz
2 <sub>nd</sub> intermediate frequency _____	10.8 MHz
Modulation _____	Wideband FM
Nominal deviation _____	24 kHz
Peak deviation _____	48 kHz
Squelch threshold _____	0 $\mu$ V ... 100 $\mu$ V
S/N=80 dB (unweighted with HDX) _____	< 10 $\mu$ V (6 $\mu$ V)
S/N max (peak deviation with HDX) _____	> 110 dB(A) (117 dB(A))
Connectors _____	RF input: 2x BNC 50 $\Omega$

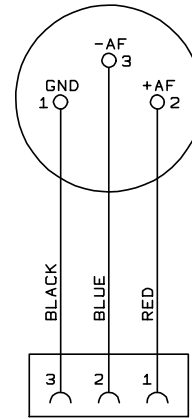
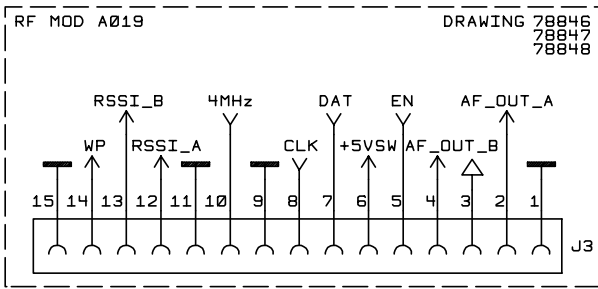
### AF STAGE

Compander system _____	HDX
AF output voltage (nominal deviation) _____	500 mV <sub>eff</sub> ; EM 300: 770 mV <sub>eff</sub>
AF output voltage (peak deviation) _____	unbalanced 1.3 V <sub>eff</sub> 4 dBu; EM 300: balanced 2.6 V <sub>eff</sub> 10 dBu
THD at 1 kHz and nominal deviation _____	< 1% (0.3%)
AF-Frequency response _____	50 Hz ... 18 kHz; -3dB
Monitor level / load _____	exclusive EM 500: >100 mW / 32 $\Omega$
Connectors _____	AF output: 6.35 mm jack; EM300/EM 500 additional XLR 3 jack

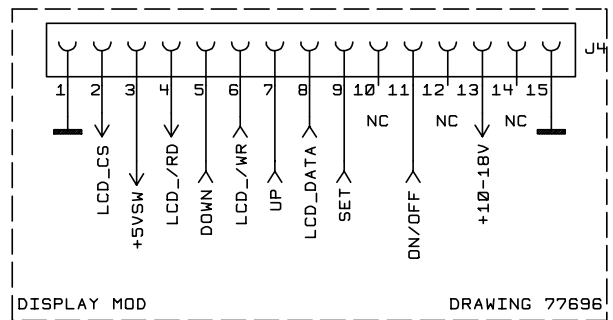
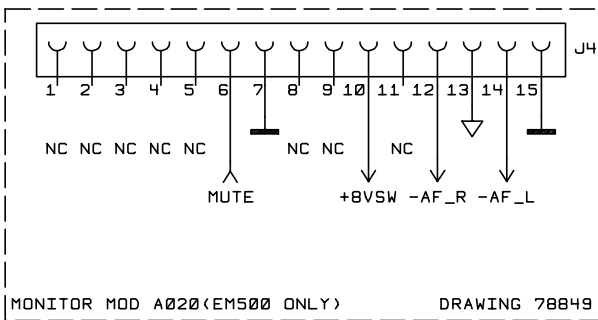
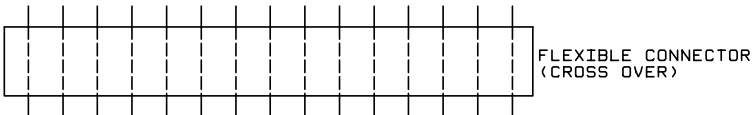
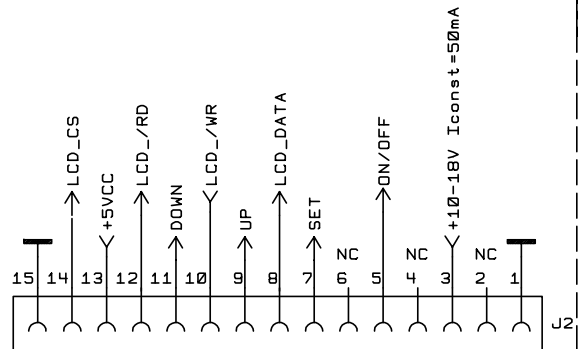
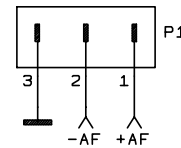
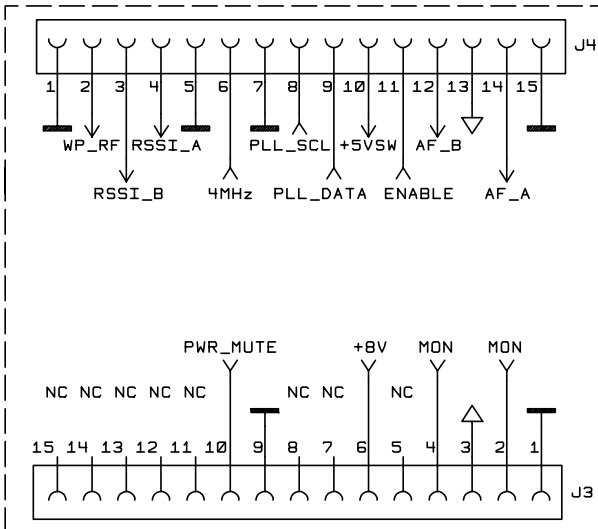
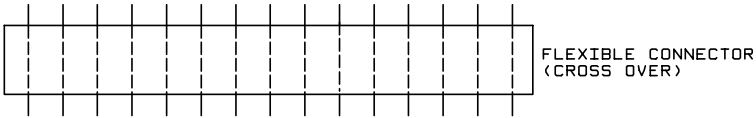
### GENERAL

Nominal supply voltage _____	12 V
Operating voltage _____	10.5 ... 16 V
Current consumption at nominal voltage _____	typ. 150 mA
Stand-by current _____	typ. 10 mA
Approbation _____	D801 488L RF

BALANCED AF OUT  
(EM300/500 ONLY)

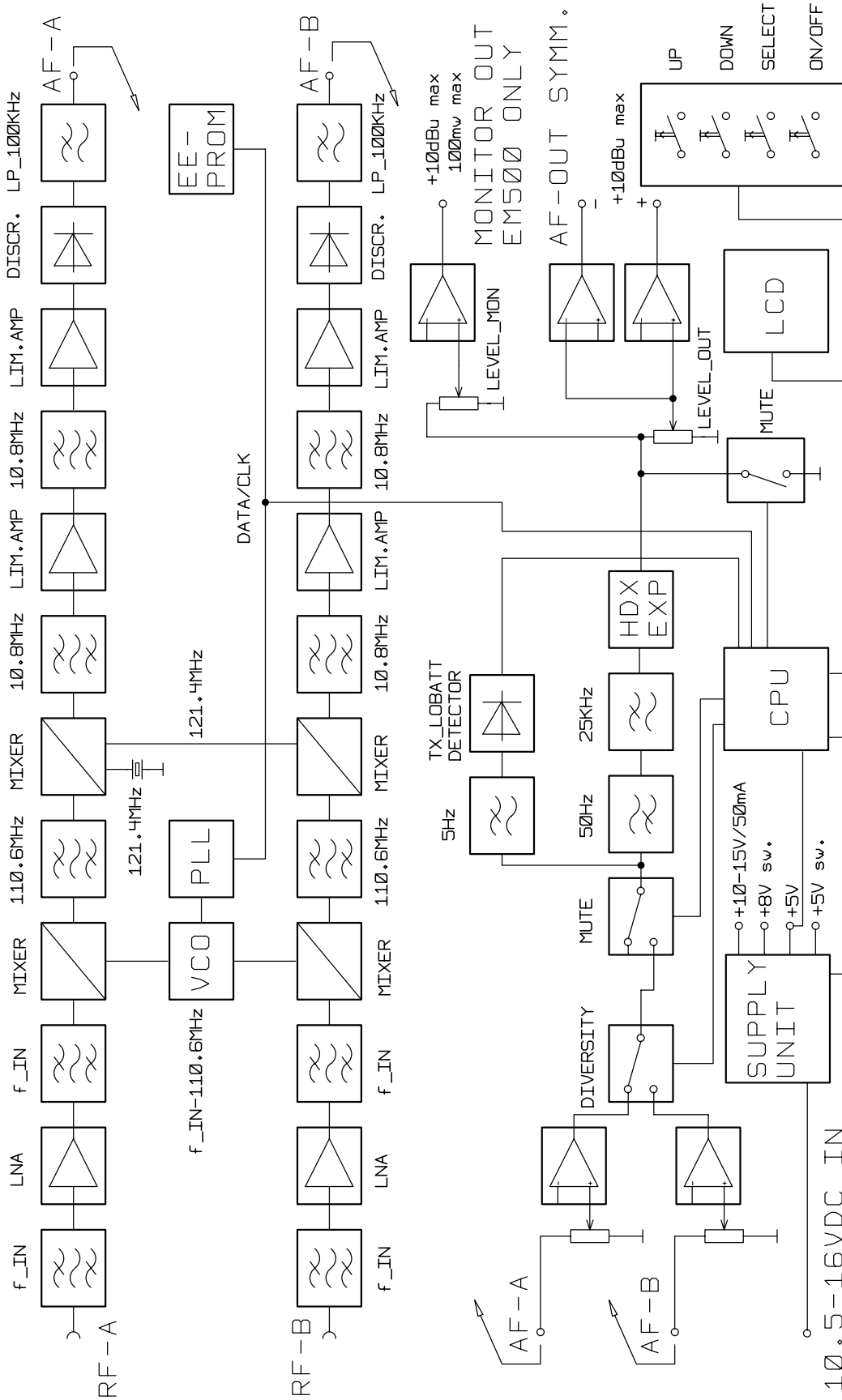


DRAWING 77898



060300Kra1130

# EM 100, EM 300, EM 500 SIGNALFLUSSZUWEISUNG INTERCONNECTOR ASSIGNMENT

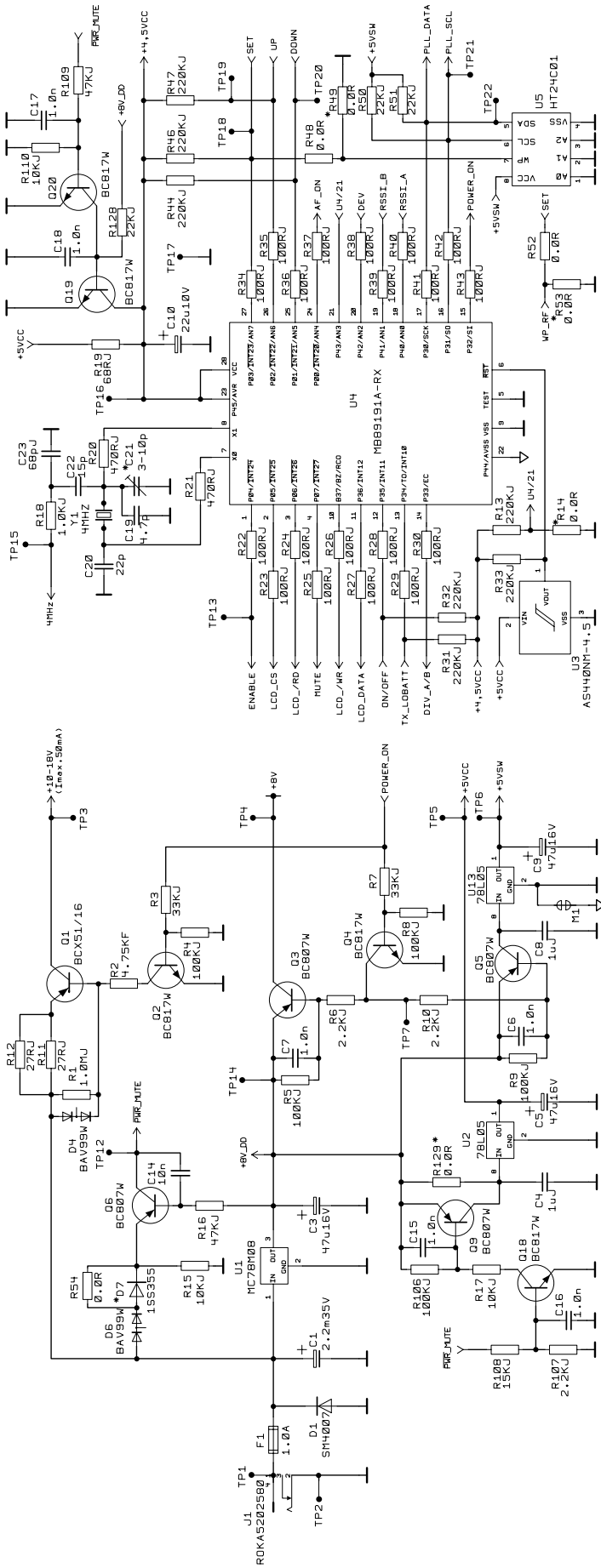


Zeichnungsnummer : 78856

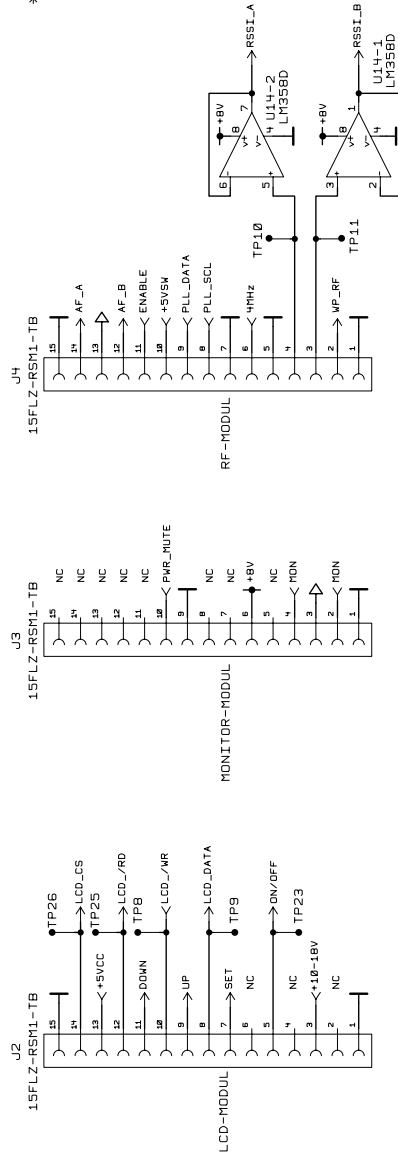
061299Fhg\_1420

Schaltbild ZNr.: 78856

**EM 100, EM 300, EM 500  
GRUNDPLATINE, BLOCKSCHALTBIKD  
MAINBOARD, BLOCKDIAGRAM**



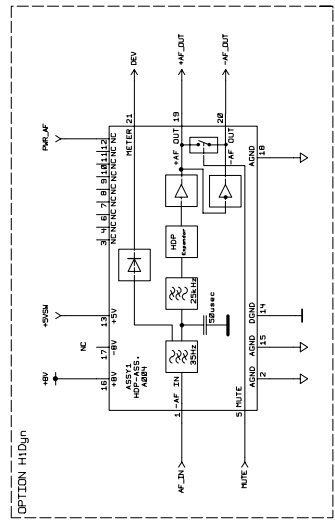
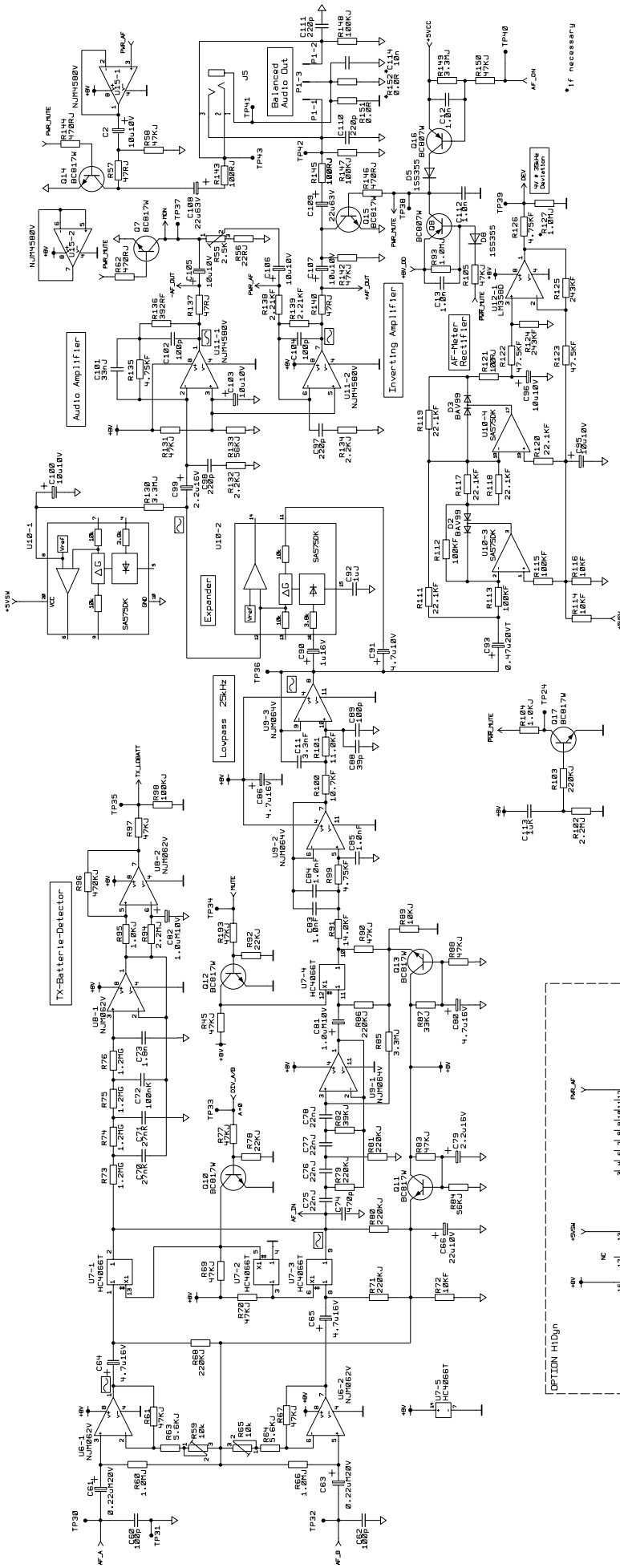
\*Following Parts are not mounted:  
D7, R14, R49, R53, R129, C21



081299FMY1415

**EM 100, EM 300, EM 500  
GRUNDPLATINE, CPU BLOCK, STROMLAUFPLAN  
MAINBOARD, CPU PART, CIRCUIT DIAGRAM**

Scheitbild ZNr.: 78878



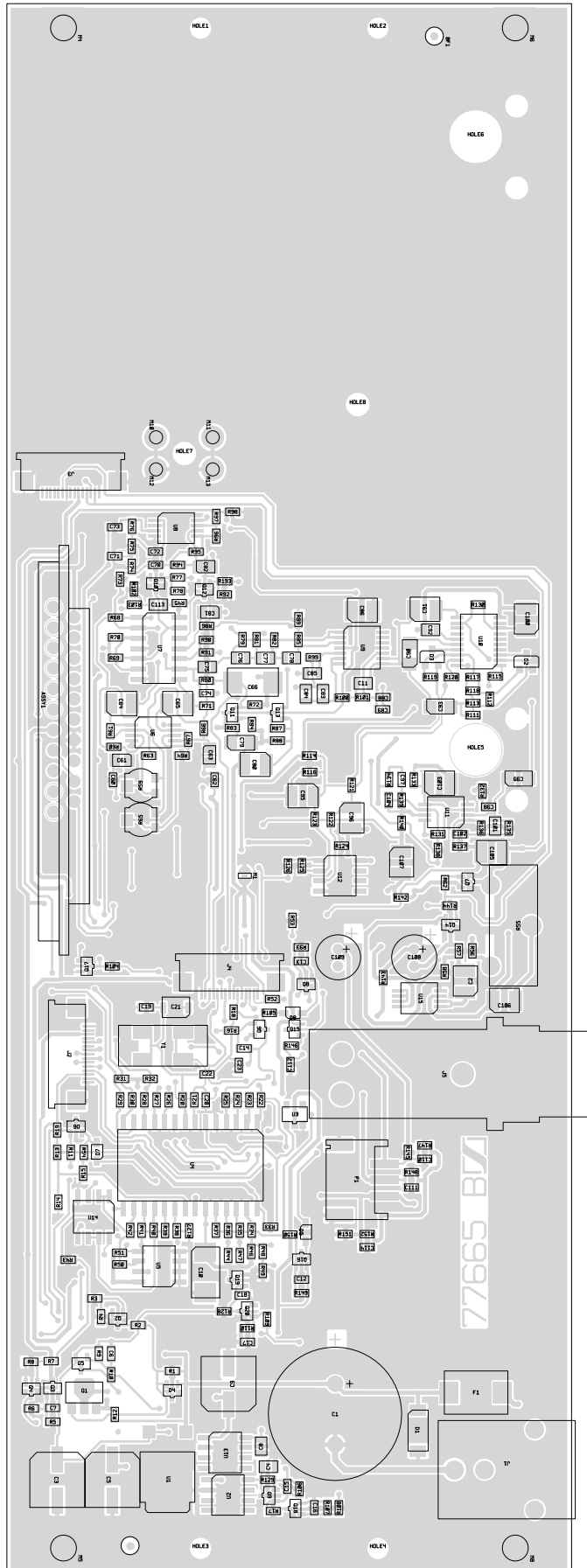
\*Following Parts are not mounted:  
R152, C114,

\*if necessary

081295FH1350

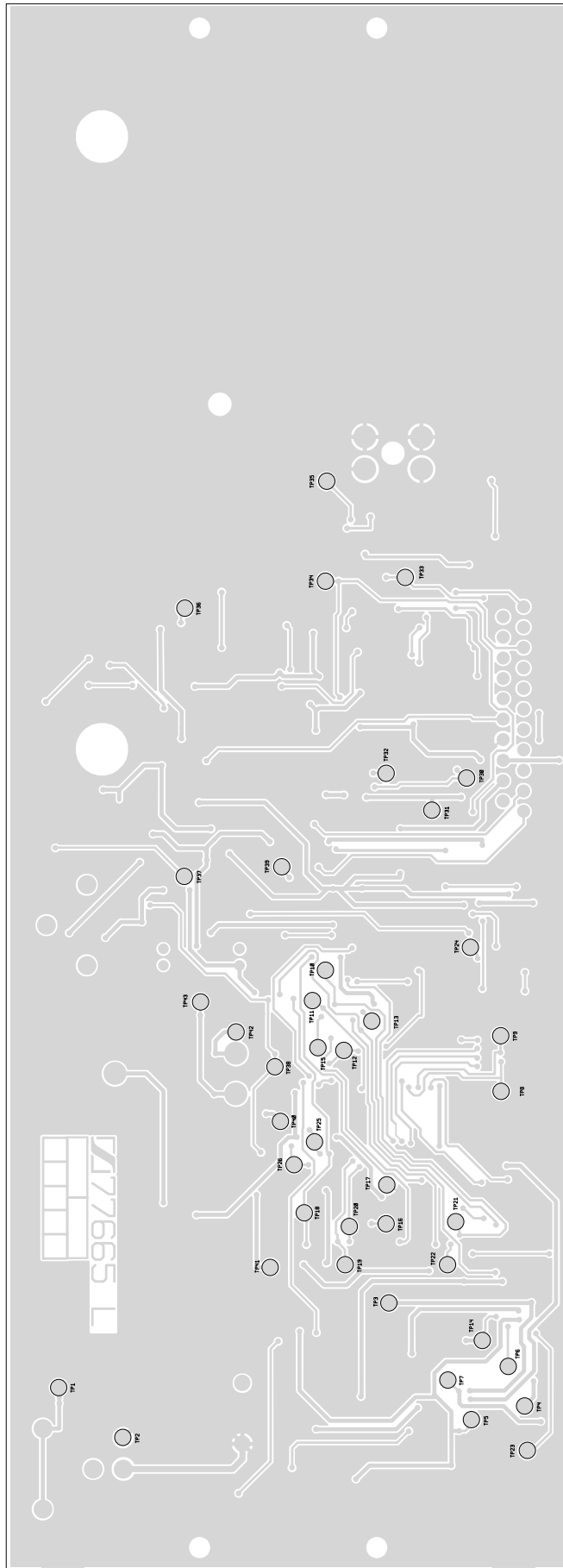
Schaltbild 2M-1 19879

# EM 100, EM 300, EM 500 GRUNDPLATINE, MODUL HDX, STROMLAUFPLAN MAINBOARD, MODULE HDX, CIRCUIT DIAGRAM



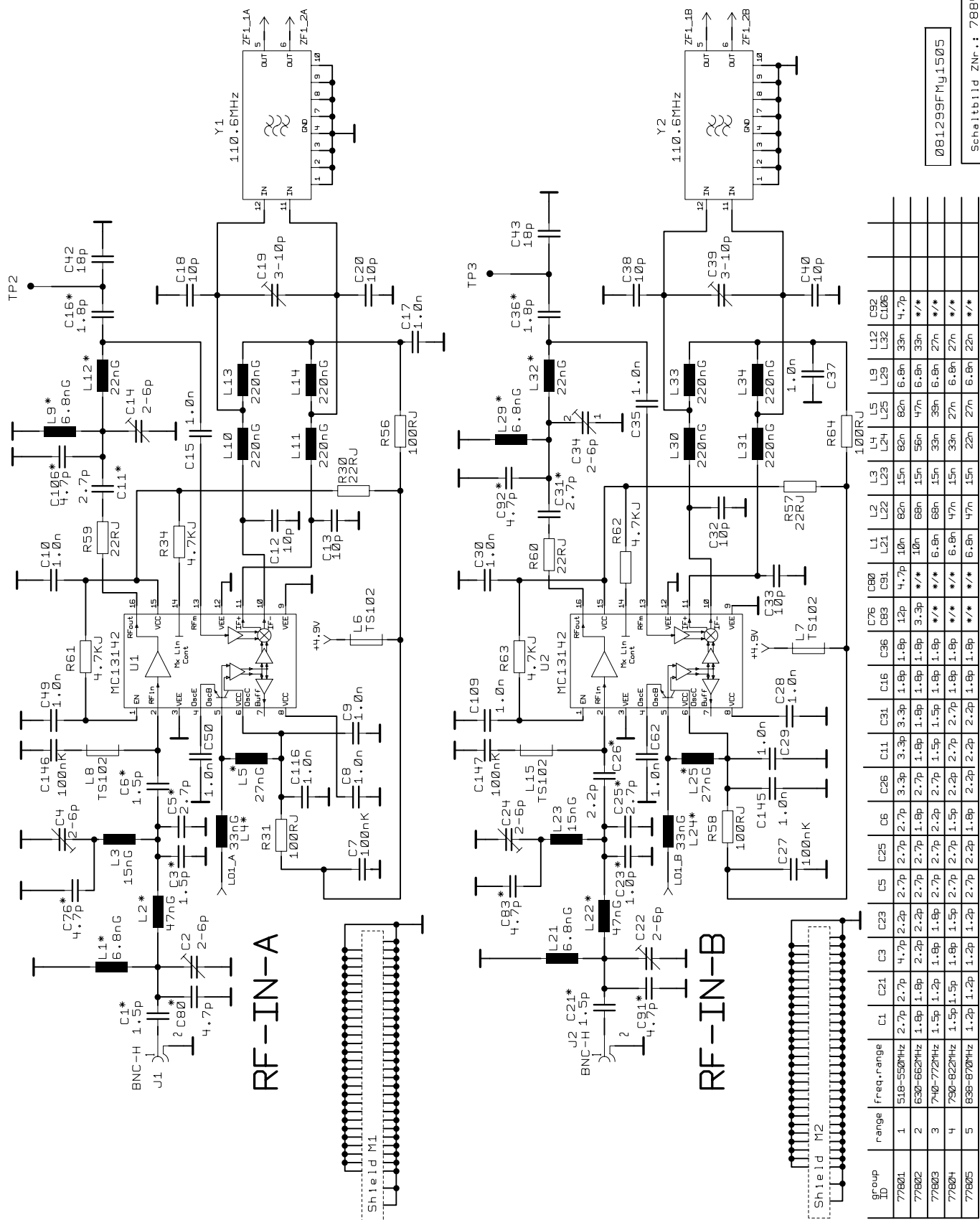
**EM 100, EM 300, EM 500  
 GRUNDPLATINE, GEDRUCKTE SCHALTUNG, BESTÜCKUNGSSEITE  
 MAINBOARD, PRINTED CIRCUIT BOARD, COMPONENT SIDE**





**EM 100, EM 300, EM 500  
GRUNDPLATINE, GEDRUCKTE SCHALTUNG, LÖTSEITE  
MAINBOARD, PRINTED CIRCUIT BOARD, SOLDER SIDE**

# EM 100, EM 300, EM 500 HF-MODUL TEIL 1, STROMLAUFPLAN RF MODULE PART 1, CIRCUIT DIAGRAM

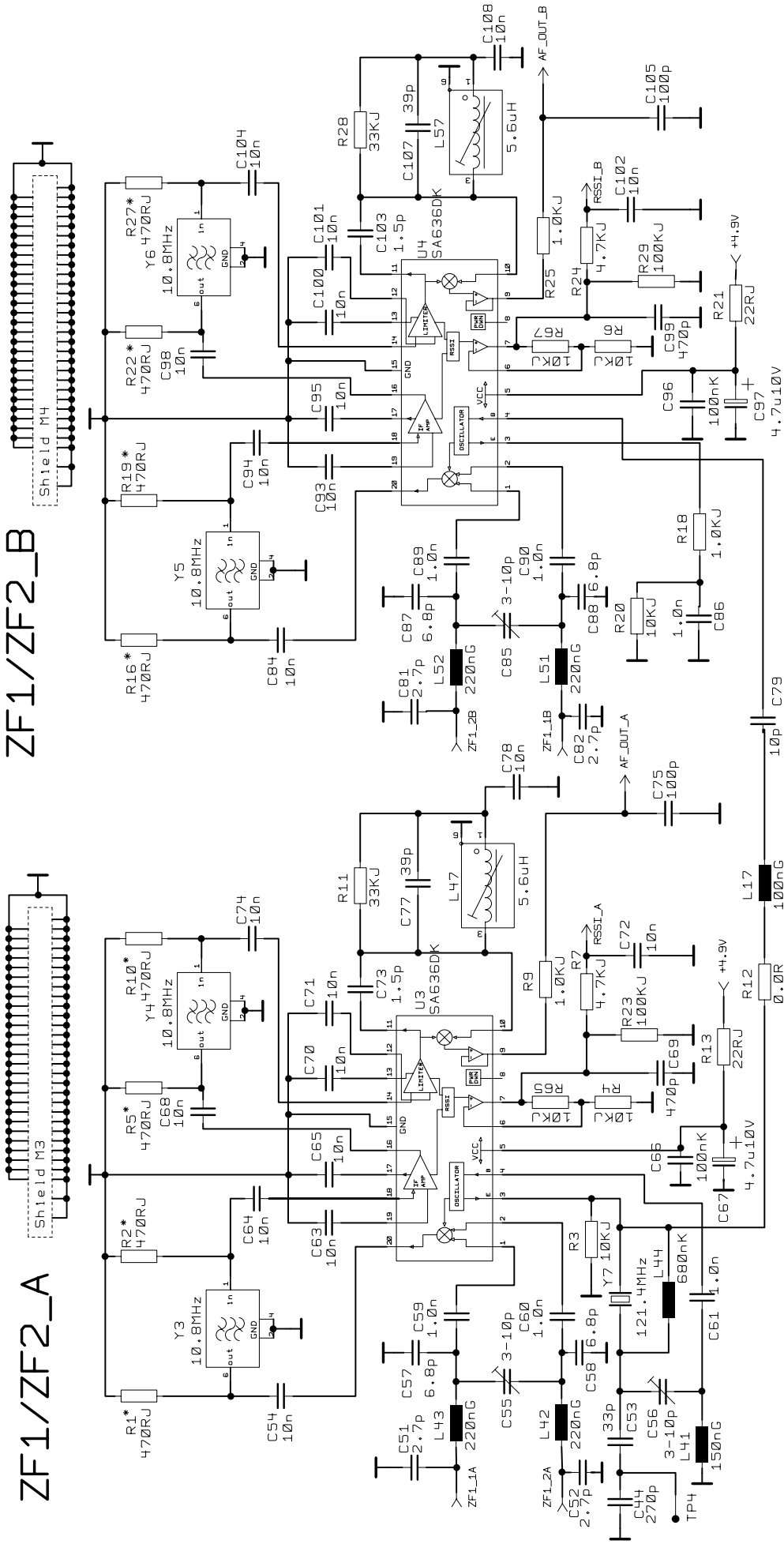


081299FMJ1505

Schaltbild ZNr.: 78846

# ZF1/ZF2\_A

# ZF1/ZF2\_B



\*\*variable part -/-=not mounted

group	R1	R2	R5	R10	R16	R19	R22	R27
77830	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-

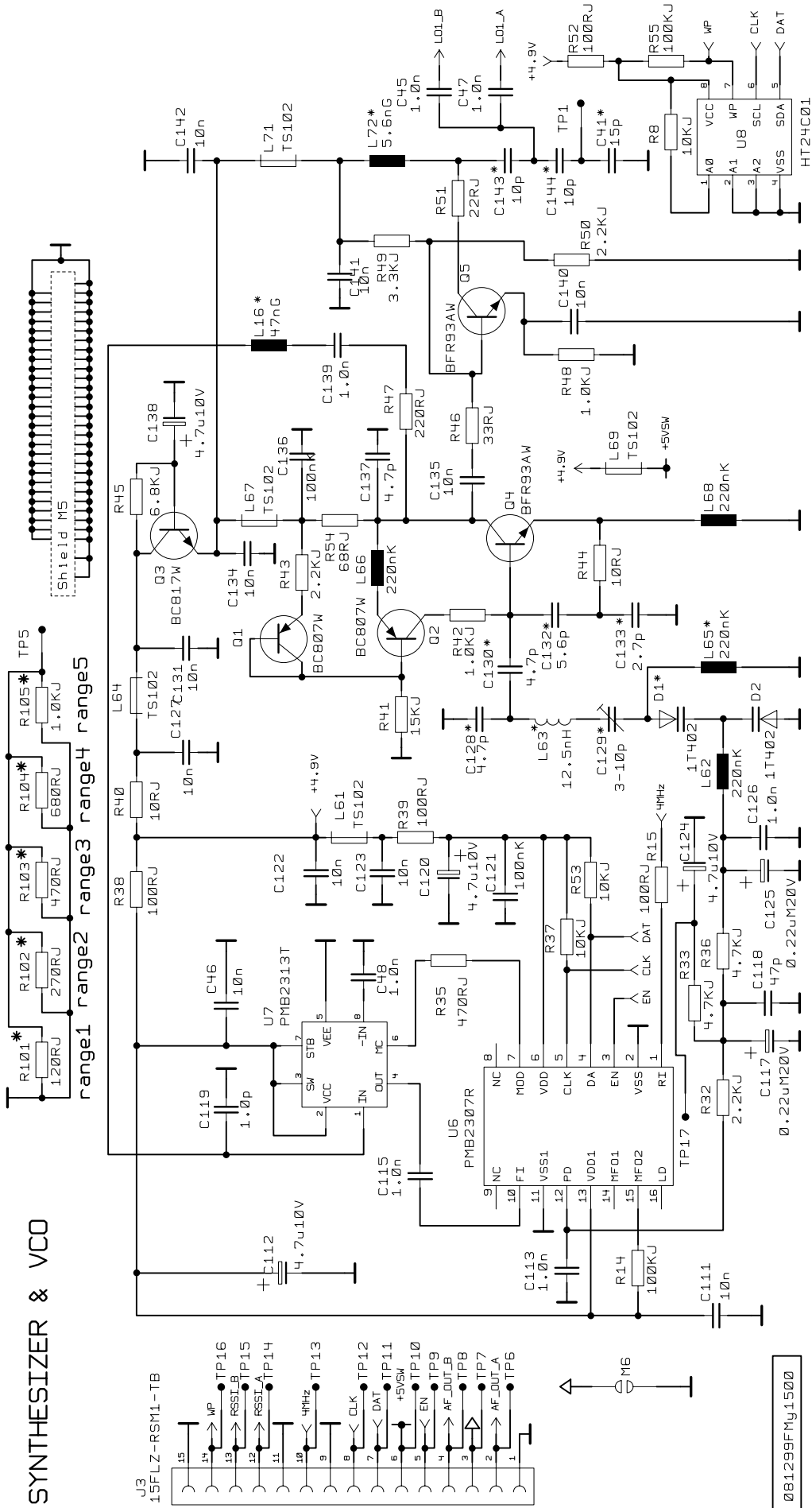
081299F My1510

Schaltbild ZNr.: 78847

## EM 100, EM 300, EM 500 HF-MODUL TEIL 2, STROMLAUFPLAN RF MODULE PART 2, CIRCUIT DIAGRAM

# SYNTHESIZER & VCO

rangecode



Ø81299FMy1.500

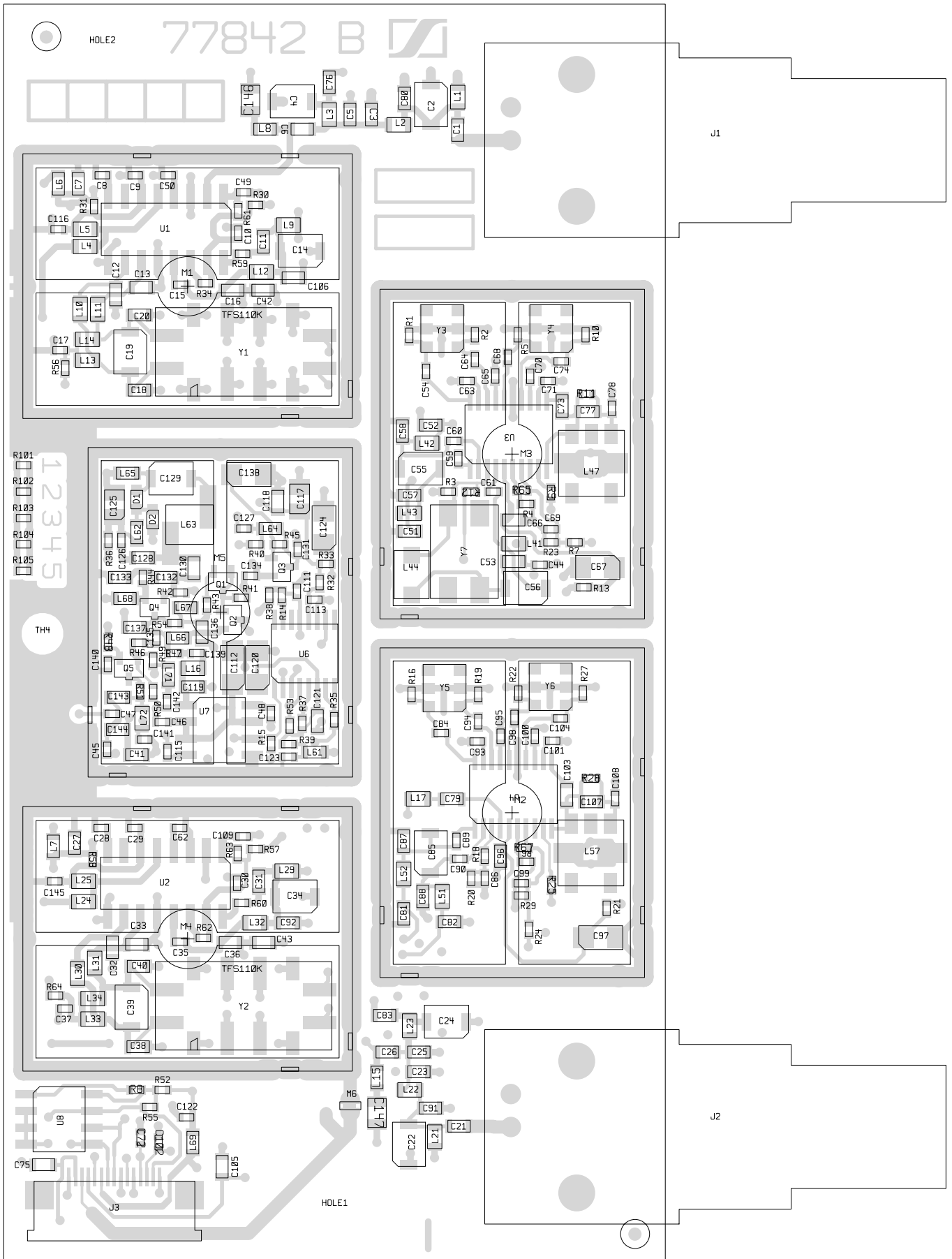
variable parts

group	range	Freq-range	C128	C129	C130	C132	C133	C143	C144	C41	D1	L16	L63	L65	L72	R101	R102	R103	R104	R105
77801	1	510-550kHz	12p	4-20p	12p	12p	5.6p	10p	15p	47p	1nF	82n	10n	*/*	15n	120R	*/*	*/*	*/*	*/*
77802	2	630-662kHz	8.2p	3-10p	4.7p	12p	12p	12p	12p	27p	1T402	60n	10n	*/*	15n	270R	*/*	*/*	*/*	*/*
77803	3	740-772kHz	4.7p	3-10p	4.7p	12p	15p	15p	15p	15p	1T402	60n	10n	*/*	5.6n	*/*	*/*	*/*	*/*	*/*
77804	4	790-822kHz	4.7p	3-10p	4.7p	5.6p	2.7p	10p	10p	15p	1T402	47n	12n	220n	5.6n	*/*	*/*	*/*	600R	*/*
77805	5	830-870kHz	3.9p	2-6p	3.9p	3.9p	2.2p	10p	22p	22p	1T402	47n	12n	220n	3.9n	*/*	*/*	*/*	*/*	1.0K

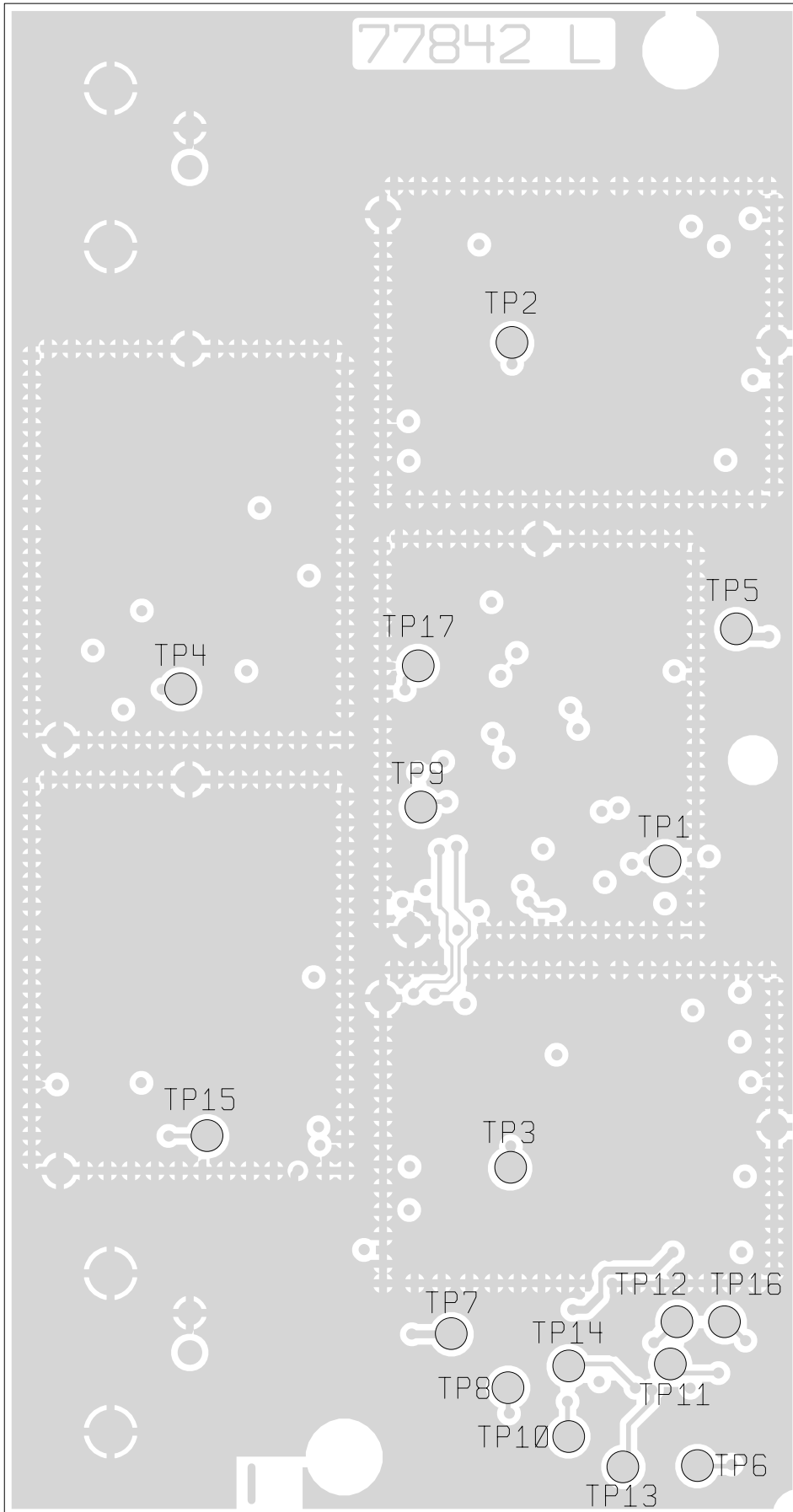
\*=variable part

Schaltbild ZNr.: 78848

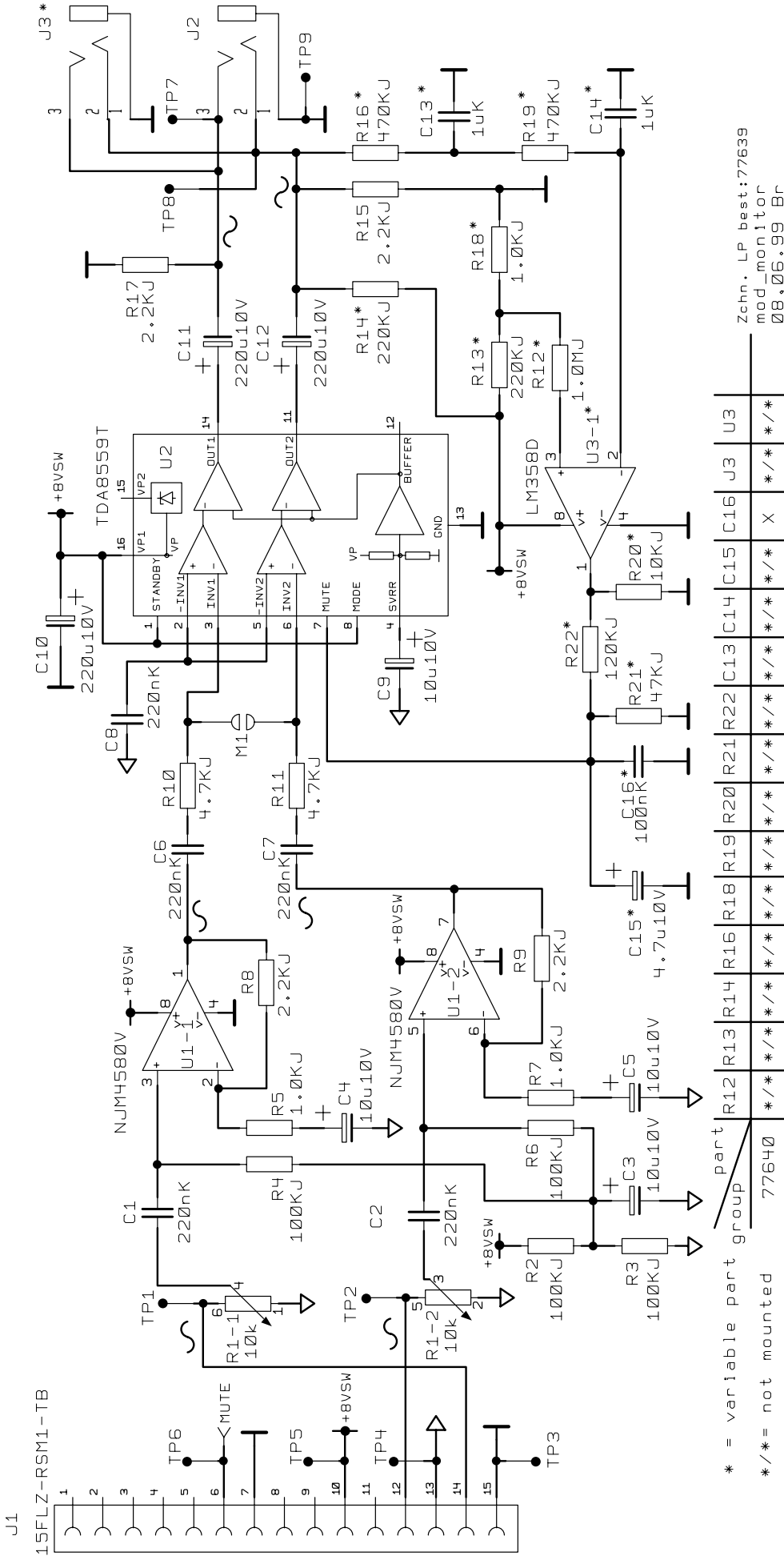
## EM 100, EM 300, EM 500 HF-MODUL TEIL 3, STROMLAUFPLAN RF MODULE PART 3, CIRCUIT DIAGRAM



**EM 100, EM 300, EM 500  
HF-MODUL, GEDRUCKTE SCHALTUNG, BESTÜCKUNGSSEITE  
RF MODULE, PRINTED CIRCUIT BOARD, COMPONENT SIDE**



**EM 100, EM 300, EM 500  
 HF-MODUL, GEDRUCKTE SCHALTUNG, LÖTSEITE  
 RF MODULE, PRINTED CIRCUIT BOARD, SOLDER SIDE**

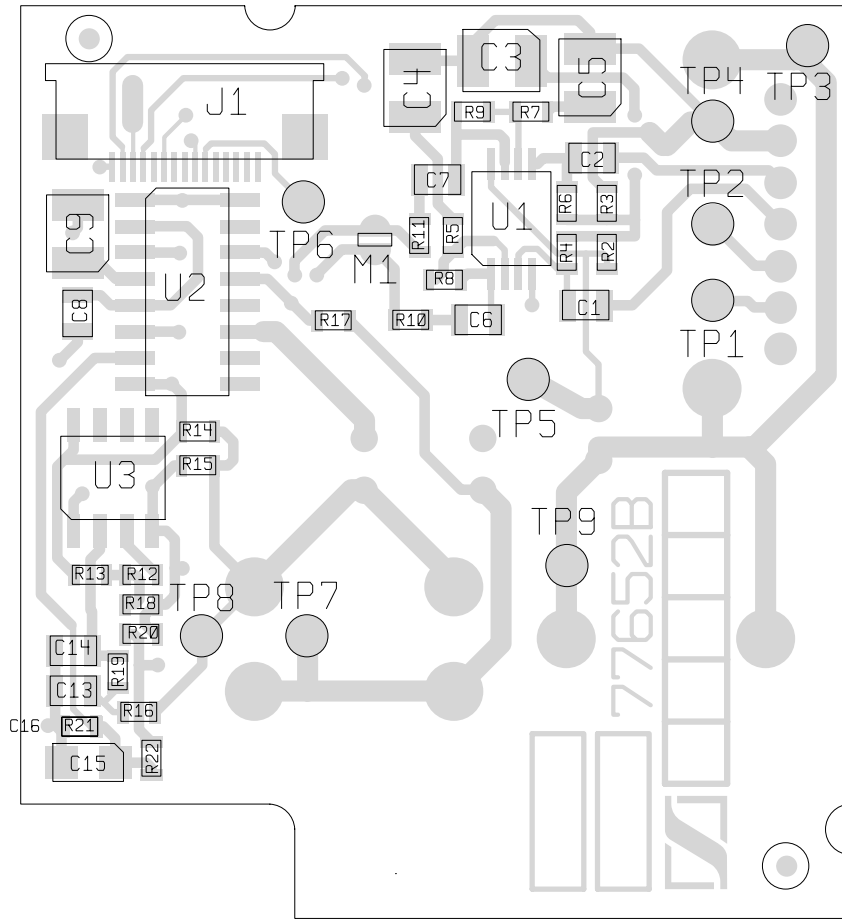


Zchnn. LP best: 77639  
 mod\_monitor  
 08.06.99 Br

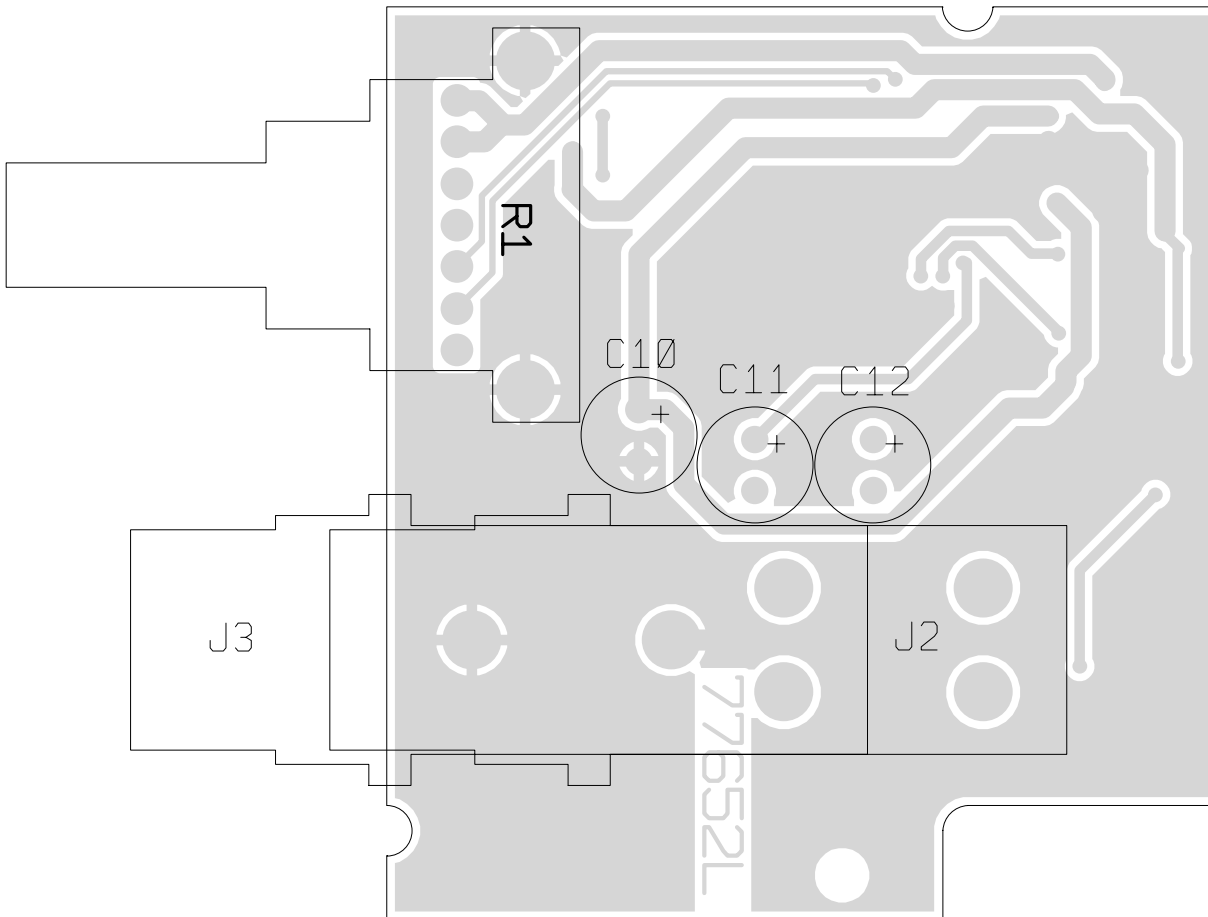
Part	R12	R13	R14	R16	R18	R19	R20	R21	R22	C13	C14	C15	C16	J3	U3
77640	**	**	**	**	**	**	**	**	**	**	**	**	**	X	**
	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**

\* = variable part group  
 \*\* = not mounted

**EM 500  
 MONITOR-MODUL , STROMLAUFPLAN  
 MONITOR MODULE, CIRCUIT DIAGRAM**



**EM 500**  
**MONITOR-MODUL, GEDR. SCHALTUNG, BEST.-SEITE**  
**MONITOR MODULE, PCB, COMPONENT SIDE**



**EM 500**  
**MONITOR-MODUL, GEDRUCKTE SCHALTUNG, LÖTSEITE**  
**MONITOR MODULE, PRINTED CIRCUIT BOARD, SOLDER SIDE**