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1 INTRODUCTION

The individual descriptions and application notes contained in this brochure are intended to acquaint designers and project engineers with the Studer Audio System Components. They allow to realize custom-tailored signal distribution, signal switching and amplifying systems to satisfy almost any individual requirement.

Euro-Cards (1.915....) The backbone of the system is the so-called Euro-card, a circuit board measuring 100 × 160 mm, which comes in a great variety of different circuit configurations.

Modular Sub-Cards (1.914....) Furthermore, there are the Modular Sub-Cards, small plug-in cards. Four of them can be accommodated on one Euro-size motherboard, allowing to make up a system which provides the ultimate in flexibility.

Racks, Frames (1.918....) Matching 19" mounting frames and 19" sub-racks for Euro-cards with or without power supply are available as well as installation hardware.

For prices please consult your local Studer distributor or contact:

Studer Professional Audio GmbH
Althardstrasse 30
CH-8105 Regensdorf
Switzerland

Phone: +41 44 870 75 11
Fax: +41 44 870 71 34
e-mail: sales@studer.ch

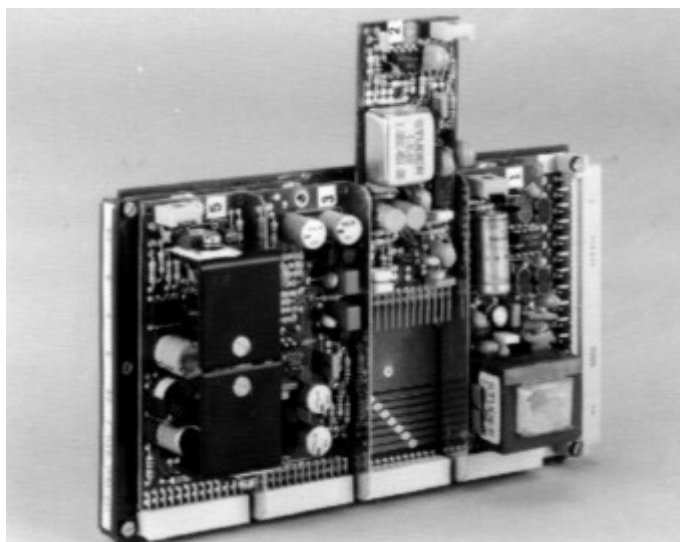
We reserve the right to change the design and the performance specifications of the products listed here as technical progress may warrant.

2 MSC SYSTEM

To provide highest possible flexibility for the designer of professional sound systems, Studer engineers have pursued a completely new concept.

The Euro-card is a convenient circuit board as far as its size and its plug-in features are concerned. However, it often offers excess space for a particular circuit. This has triggered the idea to utilize the Euro-card simply as a carrier (“motherboard”, order no. 1.915.770) for four smaller plug-in circuit boards, the “Modular Sub-Cards” (MSC).

The 32 connections of the Euro-card are divided into 6 supply lines common to the modular sub-cards, and 4×6 individual lines joining the plug-in sockets for each sub-card. The remaining 2 connections are used as separate bus lines, one of them leading to sub-cards 1 and 2, the other one to sub-cards 3 and 4, resulting in a total of 13 connections to each MSC. A small motherboard for only one MSC is available as well (order no. 1.914.500).



A great variety of different circuits is available in form of MSCs, such as

- Balancing amplifiers
- Microphone pre-amplifiers
- Speaker amplifiers
- $0-\Omega$ input amplifiers
- Limiters
- Voltage controlled amplifiers (VCAs)
- Relay sub-cards
- High level input amplifiers
- Line output amplifiers
- 1900 Hz signal generator/decoder
- 90° filter, stereo/mono
- Flip-flop
- Breadboarding card (0.1"/2.54 mm grid)

To meet the requirements of a system concept, a designer will be able to build individual circuits similar to working with a construction set: He either selects from the available circuits on Euro-cards or makes up his own Euro-card by simply arranging the most suitable combination of Modular Sub-Cards on the motherboard.

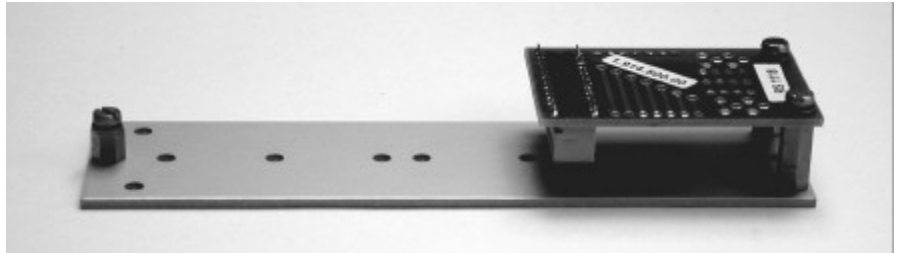
2.1 Modular Sub-Cards (MSCs)

2.1.1 Motherboard for 1 MS-Card

1.914.500

If only one MS-card is used, this motherboard is helpful for both mechanical and electrical interfacing. It consists of an aluminium mounting base (135 × 36 mm) and a small PCB with a connector for the MS-card; for wiring, this PCB contains solder terminals.

Note: For installation of up to four MS-cards, there is a second, Euro-card format motherboard available (1.915.770) that can be installed into an Euro-card rack. Please refer to chapter 2.2.1.

**Ordering Information**

Motherboard for 1 MS-card

1.914.500.xx

2.1.2 Breadboarding Card

1.914.529

This experimental board is an empty plug-in PCB compatible with the MSC system. It offers a punched 0.1" grid (2.54 × 2.54 mm) for individual component placement.

**Ordering Information:**

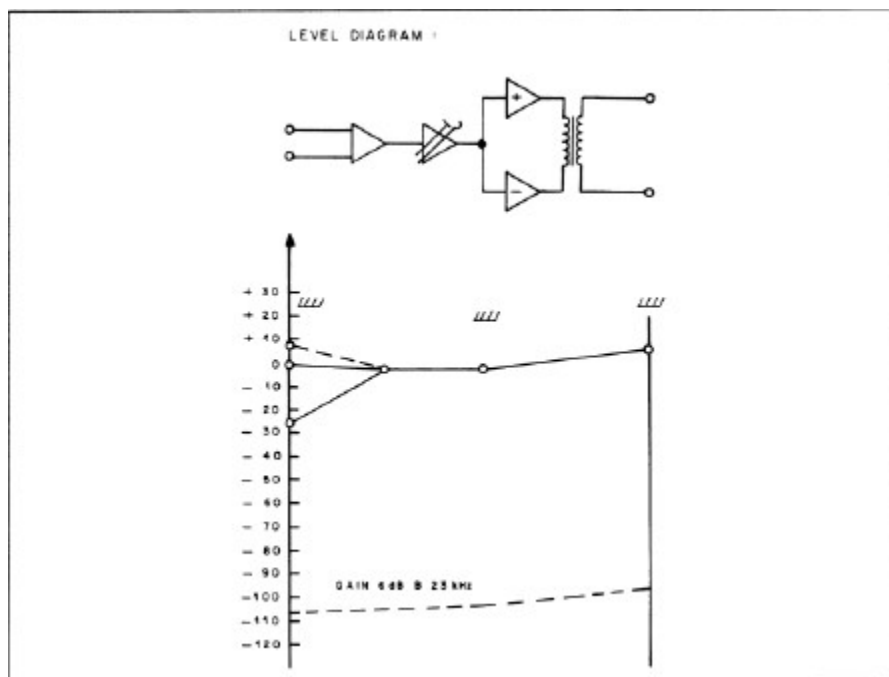
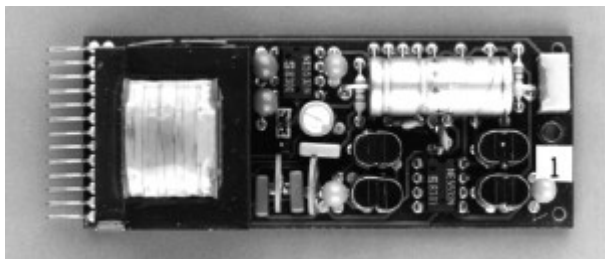
Breadboarding card

1.914.529.xx

2.1.3 Line Output Amplifier

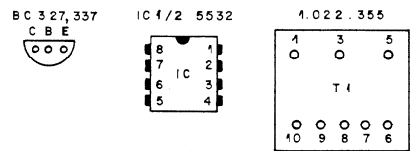
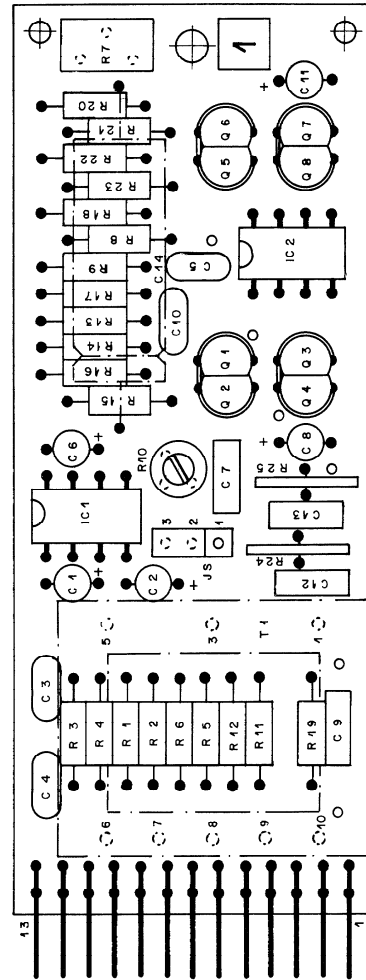
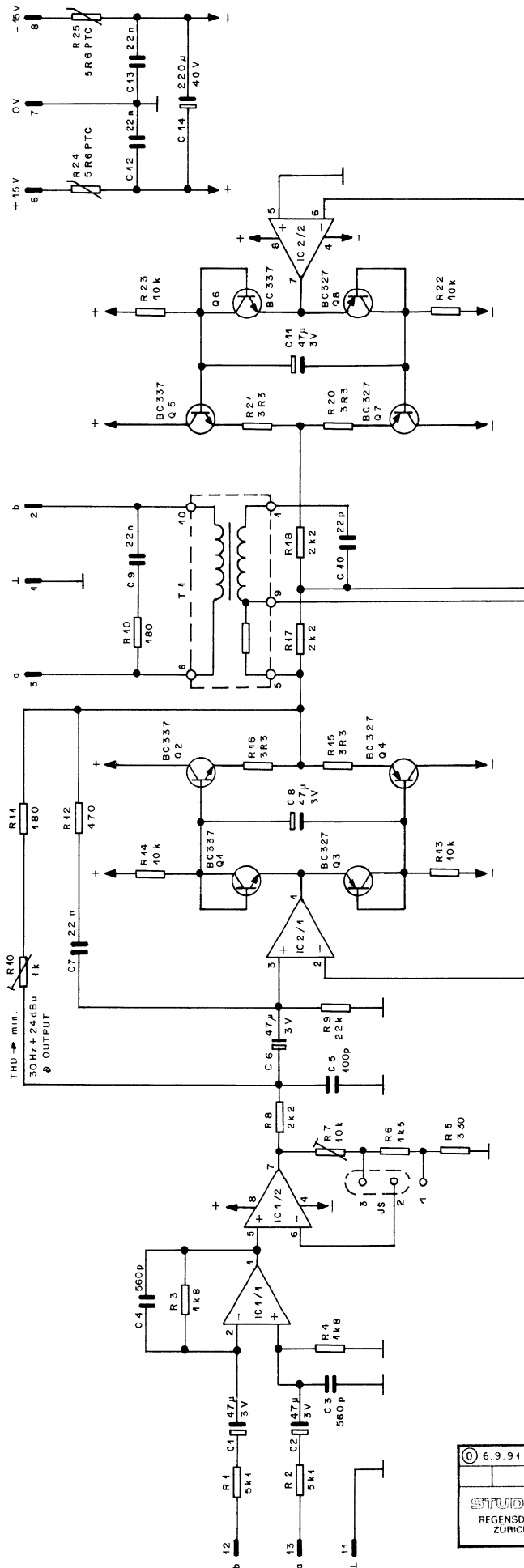
1.914.501

Designed for operation at a nominal line level of +6 dBu (1.55 V_{rms}), this amplifier can handle levels of up to +24 dBu (12.3 V_{rms}), providing an excellent overload margin without the risk of clipping. A unique circuit around the primary of the amplifier's output transformer ensures excellent frequency response performance throughout the audible range. Fine and coarse gain adjustment is provided which allows to accommodate input levels in the range from -22...+8 dBu for a nominal +6 dBu output.



Technical Specifications

Input:	Impedance	> 10 kW , electronically balanced (transformerless)
	Overload point	+24 dBu
Output:	Impedance	< 50 W , balanced and floating
	Minimum load	200 W
	Maximum level	+24 dBu
	Gain	-2 dB...+28 dB ; adjustment: coarse 0 or 15 dB/fine -2 dB...+13 dB
	Frequency response	±0.2 dB , 30 Hz...16 kHz
	THD	< 0.01% , 30 Hz...16 kHz
	Equivalent input noise	< -106 dB , linear, at 6 dB gain
Supply:		±15 V (25 mA idling; max. 170 mA at +24 dBu into 200 Ω)
Dimensions:		MS-card , 34 × 85 mm
Ordering Information:	Line output amplifier	1.914.501.xx



BOTTOM VIEW

PIN	(A)	(B)	(C)	(D)
INP a	13	1	7	24
INP b	12	2	8	22
⊥	11	3	9	23
OUT a	3	4	10	24
OUT b	2	5	11	25
⊥	4	6	13	26
+ 15V	6	16		
0V	7	15		
-15V	8	14		

 REGENSDORF ZÜRICH	LINE AMPLIFIER (NR 1)	SC 1.914.501.00
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MSC LINE AMPLIFIER

Ad	POS	REF.No.	DESCRIPTION			MANUFACTURER
①	C....1	59.30.1470	47µ	3V	TA	
①	C....2	59.30.1470	47µ	3V	TA	
	C....3	59.34.5561	560pF	5%	CER	
	C....4	59.34.5561	560pF	5%	CER	
	C....5	59.34.4101	100pF		CER	
	C....6	59.30.1470	47µF	3V	TA	
	C....7	59.06.0222	2200pF		PE	
	C....8	59.30.1470	47µF	3V	TA	
	C....9	59.06.0223	0,022µF		PE	
	C....10	59.34.2220	22pF		CER	
	C....11	59.30.1470	47µF	3V	TA	
	C....12	59.06.0223	0,022µF		PE	
	C....13	59.06.0223	0,022µF		PE	
	C....14	59.25.5221	220µF	40V	EL	
	IC....1	50.09.0105	NE5532	XR5532 DUAL OP LOW NOISE		SIG/EX
	IC....2	50.09.0105	NE5532	XR5532 DUAL OP LOW NOISE		SIG/EX
	JSJ	54.01.0021	JUMPER JACK			
	JSP	54.01.0020	JUMPER PLUG 3PIN			
	Q....1	50.03.0516	BC337	NPN IC 0,8A] MATCHED	ST
	Q....2	50.03.0516	BC337	NPN IC 0,8A		ST
	Q....3	50.03.0625	BC327	PNP IC 0,8A] MATCHED	ST
	Q....4	50.03.0625	BC327	PNP IC 0,8A		ST
	Q....5	50.03.0516	BC337	NPN IC 0,8A] MATCHED	ST
	Q....6	50.03.0516	BC337	NPN IC 0,8A		ST
	Q....7	50.03.0625	BC327	PNP IC 0,8A] MATCHED	ST
	Q....8	50.03.0625	BC327	PNP IC 0,8A		ST
	R....1	57.11.3512	5k1	1%		
	R....2	57.11.3512	5k1	1%		
	R....3	57.11.3182	1k8	1%		
	R....4	57.11.3182	1k8	1%		
	R....5	57.11.4331	330			
	R....6	57.11.4152	1k5			
	R....7	58.11.9103	10k	TRIM LIN		
	R....8	57.11.4222	2k2			
	R....9	57.11.4223	22k			
	R....10	58.11.6102	1k	TRIM LIN		
	R....11	57.11.4681	680			
	R....12	57.11.4471	470			
	R....13	57.11.4103	10k			
	R....14	57.11.4103	10k			
	R....15	57.11.4339	3,3			
	R....16	57.11.4339	3,3			
	R....17	57.11.4222	2k2			
	R....18	57.11.4222	2k2			
	R....19	57.11.4181	180			
	R....20	57.11.4339	3,3			
	R....21	57.11.4339	3,3			
	R....22	57.11.4103	10k			
	R....23	57.11.4103	10k			
	R....24	57.11.0209	5,6	PTC		PH
	R....25	57.11.0209	5,6	PTC		PH
		50.20.2001		CLIP		
	T....1	1.022.355.00		LINE OUTPUT TRAFO		ST

CER=Ceramic, EL=Electrolytic, PE=Polyester, TA=Tantalum

MANUFACTURER: ST=Studer, SIG=Signetics, EX=Exar, PH=Philips

1.914.501.00 LINE AMPLIFIER (Nr. 1)

FRI 06/06/83

1.914.501.00 LINE AMPLIFIER (Nr. 1)

① FRI 17/11/83

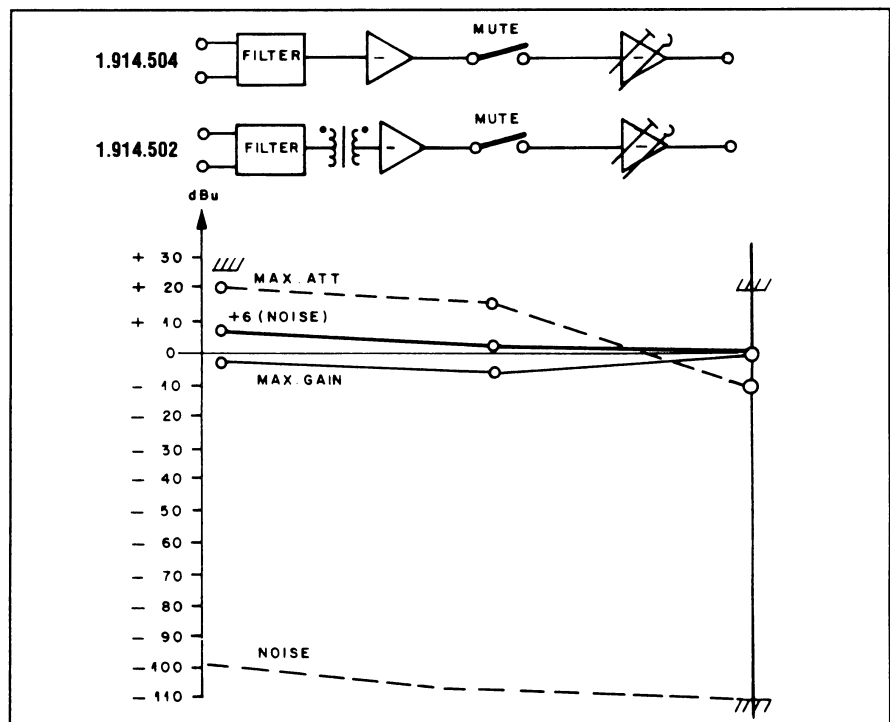
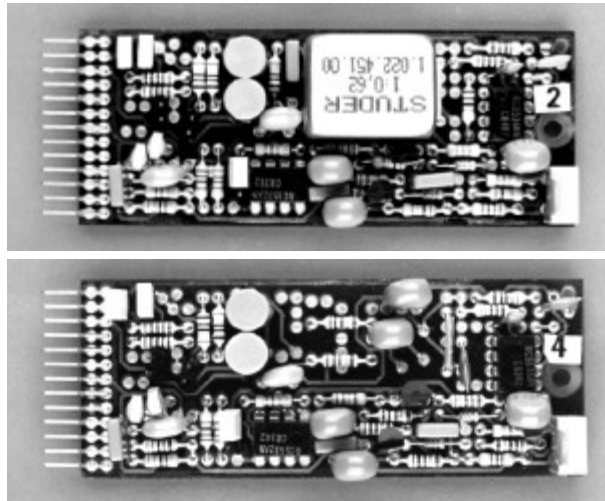
END



2.1.4 High-Level Input Amplifier

1.914.502/504

Basically, this is an amplifier with near 0 dB gain for high-level applications, yet with additional features, such as remote muting facility, RF input filter, and choice of two input and output impedances. The input configuration is balanced, whereas the output is unbalanced. Jumpers in the primary of the input circuit permit selection of either high-impedance operation with RF filter or a 0-Ω input without filter, for summing-bus applications. The combining (mixing) resistors have to be added externally. By switching pin3 of the amplifier's 13-pin plug to ground (via a corresponding connection on the motherboard) the amplifier may be muted from a remote point. If only 20 dB level reduction is desirable instead of muting, this can be programmed by connecting a resistor across two solder points.



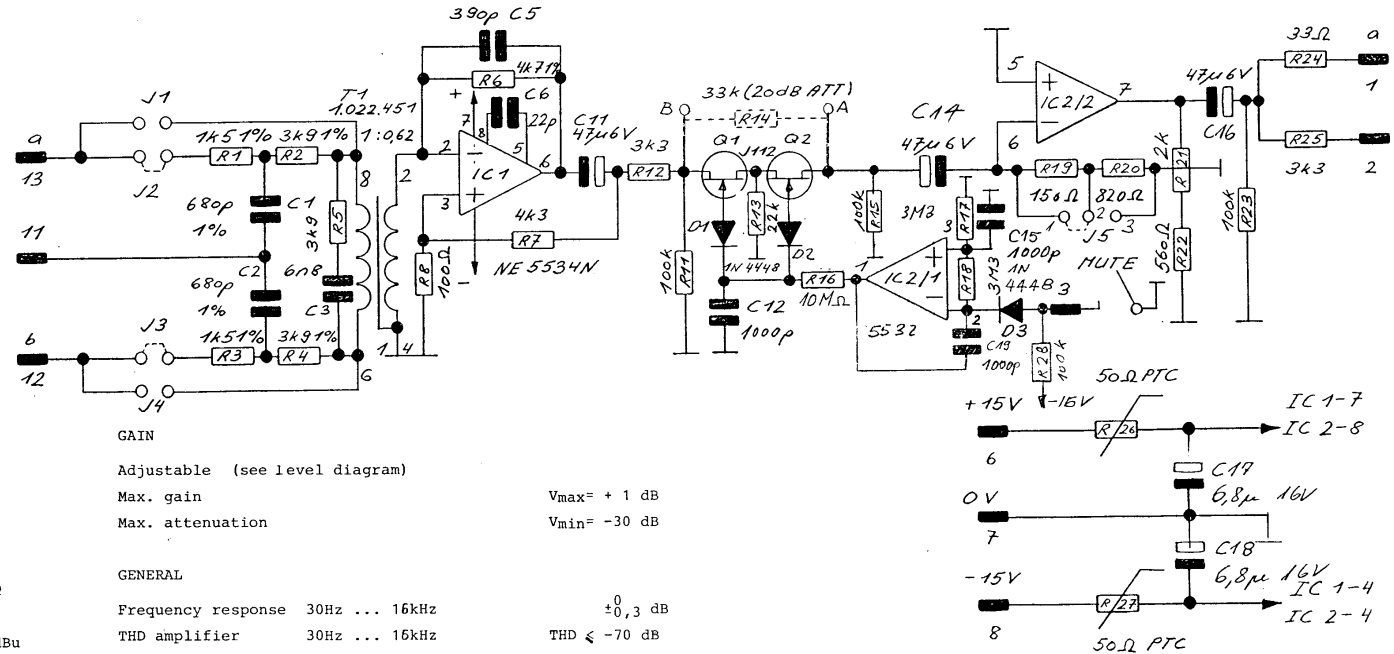
The amplifier may be used, for example, to work into a 600 Ω load, or into the input of a 0- Ω input amplifier of another summing circuit.

If transformerless yet balanced input configuration is desired, an MSC amplifier with basically the same performance characteristics is available as well. Refer to the ordering information below.

Technical Specifications

Input:	Impedance	> 10 kW (transformer- or electronically balanced versions available; input with RF filter; 0- Ω input selectable with jumpers)	
	Common mode rejection	> 50 dB	
	Overload point	+24 dBu (12.3 V _{rms})	
Output:	Impedance	33 W (pin1), unbalanced	
	Minimum load	600 W	
	Maximum level	+20 dBu (7.75 V _{rms})	
	Impedance	3.3 kW (pin2), unbalanced, for 0- Ω operation	
	Maximum gain	1 dB	
	Maximum attenuation	30 dB	
	Frequency response	± 0.3 dB , 30 Hz...16 kHz	
	THD	< 0.03% , 30 Hz...16 kHz	
	Equivalent input noise	-100 dBu , unweighted, at 6 dB attenuation	
	Programmable attenuation	20 dB (resistor 33 k Ω across muting circuit)	
Supply:		± 15 V (11 mA idling)	
Dimensions:		MS-card , 34 \times 85 mm	
Ordering Information:		High level input amp with transformer-balanced input	1.914.502.xx
		High level input amp with electronically balanced input	1.914.504.xx

CIS		EURO 32 P			
PIN		(a)	(b)	(c)	(d)
IN a	13	1	7	21	27
IN b	12	2	8	22	28
IN L	11	3	9	23	29
	10				
-15V	8	14			
0 V	7	15			
+15V	6	16			
	5				
MUTE I	3	4	10	24	30
OUT (3K3)	2	5	11	25	31
OUT	1	6	13	26	32



GAIN

Adjustable (see level diagram)
 Max. gain
 Max. attenuation

$V_{max} = +1 \text{ dB}$
 $V_{min} = -30 \text{ dB}$

GENERAL

Frequency response 30Hz ... 16kHz
 THD amplifier 30Hz ... 16kHz
 Noise (B 23kHz), gain -6 dB

$\pm 0,3 \text{ dB}$
 THD $\leq -70 \text{ dB}$
 $U_{NOISE} = -106 \text{ dBu}$

ATTENUATOR

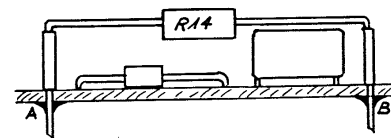
Mute switch, with resistor programmable to an attenuator of 20 dB

SUPPLY

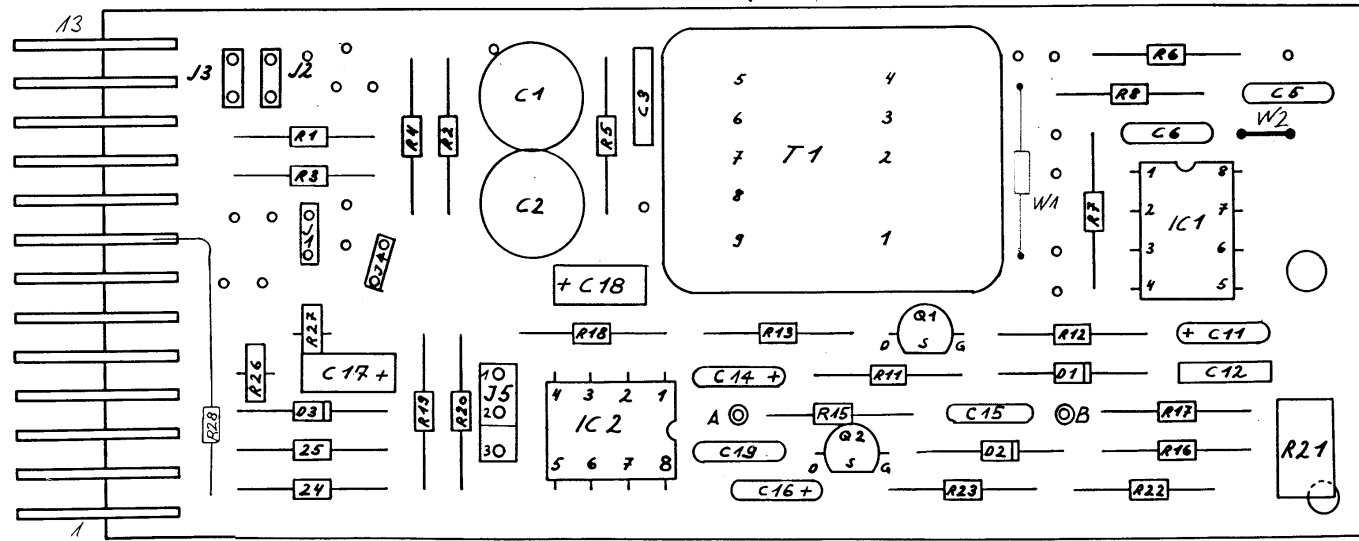
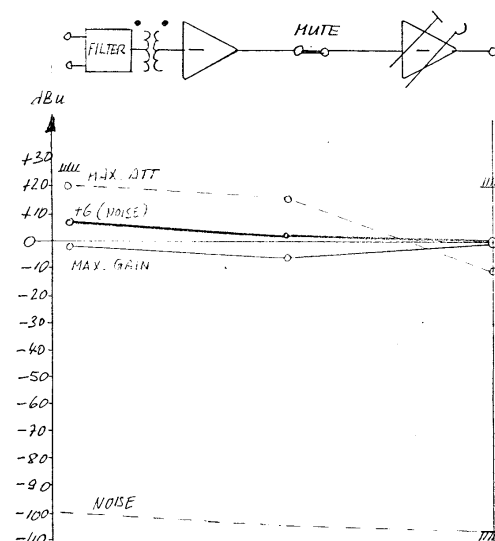
Supply voltage
 Idle current

$U = \pm 15 \text{ V}$
 $I = 11 \text{ mA}$

OPTION
 33k (20 dB Attenuation)



- INPUT
- Balanced, floating, RF-filter
 - Input impedance $R_i > 10 \text{ k}\Omega$
 - 0 Ω input with jumper
 - Max. input level $U_{in} = +24 \text{ dBu}$
 - Common mode rejection ratio $> 50 \text{ dB}$
 - Source impedance $R_s \leq 200 \Omega$
- OUTPUT
- Max. output level $U_{out} = +20 \text{ dBu}$
 - Output impedance pin 1 $R_{out} = 33 \Omega$
 - Load $R_L \geq 600 \Omega$
 - Output impedance pin 2 (to a 0 Ω amp.) $R_{out} = 3 \text{ k}\Omega$



HL Input Amp, transformer-balanced 1.914.502.81 (1)

Idx. Pos.	Part No.	Qty.	Type/Val.	Description	Idx. Pos.	Part No.	Qty.	Type/Val.	Description
0	C 1	59.05.1681	680p	PP, 1%, 630V					
0	C 2	59.05.1681	680p	PP, 1%, 630V					
0	C 3	59.06.5682	6n8	PETP, 63V, 5%, RM5					
0	C 5	59.34.5391	390p	CER 63V, 5%, N1500					
0	C 6	59.34.2220	22p	CER 63V, 5%, N150					
0	C 11	59.26.0470	47u	SAL 6.3V 20%					
0	C 12	59.32.4102	1n0	CER 20%, 50V					
0	C 13	not used	1n0	PETP, 63V, 10%, RM5					
0	C 14	59.26.0470	47u	SAL 6.3V 20%					
0	C 15	59.06.0102	1n0	PETP, 63V, 10%, RM5					
0	C 16	59.26.0470	47u	SAL 6.3V 20%					
0	C 17	59.26.2689	6u8	SAL 16V 20%					
0	C 18	59.26.2689	6u8	SAL 16V 20%					
0	C 19	59.06.0102	1n0	PETP, 63V, 10%, RM5					
0	D 1	50.04.0125	1N4448	75V, 150mA, 4ns, DO-35					
0	D 2	50.04.0125	1N4448	75V, 150mA, 4ns, DO-35					
0	D 3	50.04.0125	1N4448	75V, 150mA, 4ns, DO-35					
0	IC 1	50.05.0244	5534A	Single Op-amp, low noise					
0	IC 2	50.09.0106	5532A	Dual Op-Amp, low noise					
0	J 1	54.01.0021	Jumper	0.63*0.63mm, Au					
0	J 2	54.01.0021	Jumper	0.63*0.63mm, Au					
0	J 3	54.01.0021	Jumper	0.63*0.63mm, Au					
0	P 1	54.01.0273	13p	Stecker CIS parallelsteck					
0	P 2	54.01.0020	11 pcs 1p	Pin, 1reihig, gerade					
0	Q 1	50.03.0350	J112	JFET N-Channel					
0	Q 2	50.03.0350	J112	JFET N-Channel					
0	R 1	57.11.3152	1k5	MF, 1%, 0207					
0	R 2	57.11.3392	3k9	MF, 1%, 0207					
0	R 3	57.11.3152	1k5	MF, 1%, 0207					
0	R 4	57.11.3392	3k9	MF, 1%, 0207					
0	R 5	57.11.3392	3k9	MF, 1%, 0207					
0	R 6	57.11.3472	4k7	MF, 1%, 0207					
0	R 7	57.11.3432	4k3	MF, 1%, 0207					
0	R 8	57.11.3101	100R	MF, 1%, 0207					
0	R 11	57.11.3104	100k	MF, 1%, 0207					
0	R 12	57.11.3332	3k3	MF, 1%, 0207					
0	R 13	57.11.3223	22k	MF, 1%, 0207					
0	R 14	not used	33k	MF, 1%, 0207					
				<i>optional (20 dB attenuation)</i>					
0	R 15	57.11.3104	100k	MF, 1%, 0207					
0	R 16	57.11.5106	10M	MF, 5%, 0207					
0	R 17	57.11.5335	3M3	MF, 5%, 0207					
0	R 18	57.11.5335	3M3	MF, 5%, 0207					
0	R 19	57.11.3151	150R	MF, 1%, 0207					
0	R 20	57.11.3821	820R	MF, 1%, 0207					
0	R 21	58.01.9202	2k0	Cermet, 10%, 0.5W, vertical					
0	R 22	57.11.3561	560R	MF, 1%, 0207					
0	R 23	57.11.3104	100k	MF, 1%, 0207					
0	R 24	57.11.3330	33R	MF, 1%, 0207					
0	R 25	57.11.3332	3k3	MF, 1%, 0207					
0	R 26	57.99.0206	50R	PTC, 25V, 0.5W					
0	R 27	57.99.0206	50R	PTC, 25V, 0.5W					
0	R 28	57.11.3104	100k	MF, 1%, 0207					
0	T 1	1.022.451.00	1:0.62	EINGANGSTRAFO 1 : 0,62					
1	W 1	57.11.3000	0R0	MF, 0207					
1	W 2	64.01.0106	0,6mm	Schaltdraht Cu					

End of List

Comments:

(01) W1, W2 added

STUDER

HL INPUT AMP. BALANCED (NR4)

300

1.914.504.81

PAGE 1 OF 1

①	19.4.8545
②	8.2.9398
③	14.10.8545

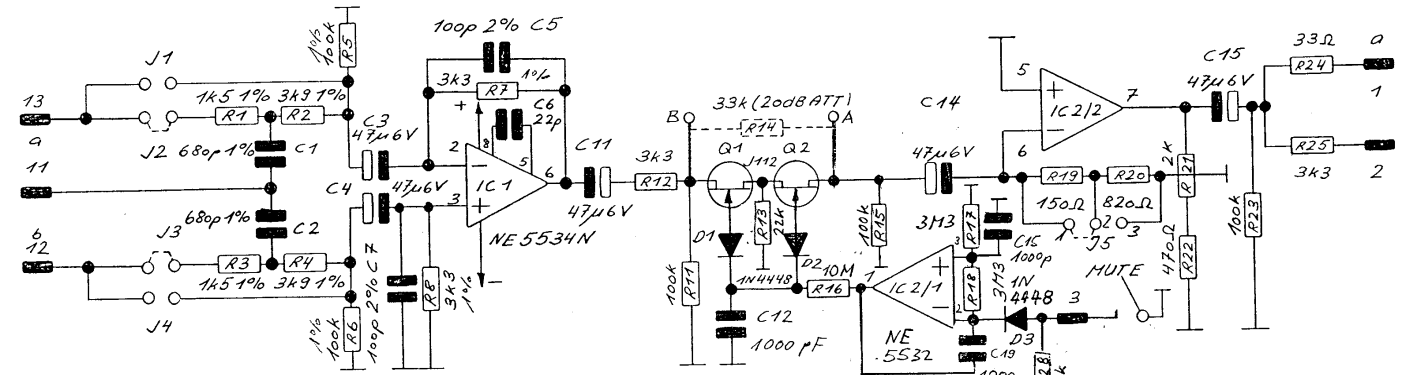
CIS		EURO 32 P			
PIN		(a)	(b)	(c)	(d)
INa	13	1	7	21	27
INb	12	2	8	22	28
IN L	11	3	9	23	29
	10				
-15V	8	14			
0 V	7	15			
+15V	6	16			
	5				
MUTE	3	4	10	24	30
OUT(3k3)	2	5	11	25	31
OUT	1	6	13	26	32

INPUT

Balanced, RF-filter
 Input impedance $R_i > 10 \text{ k}\Omega$
 0 Ω input with jumper
 Max. input level $U_{in} = +24 \text{ dBu}$
 Source impedance $R_s \leq 200 \Omega$

OUTPUT

Max. output level $U_{out} = +20 \text{ dBu}$
 Output impedance pin 1 $R_{out} = 33 \Omega$
 Load $R_L \geq 600 \Omega$
 Output impedance pin 2 (to a 0 Ω amp.) $R_{out} = 3k3$



GAIN

Adjustable (see level diagram)

Max. gain

Max. attenuation

$V_{max} = +1 \text{ dB}$

$V_{min} = -30 \text{ dB}$

GENERAL

Frequency response 30Hz ... 16kHz

$\pm 0,3 \text{ dB}$

THD amplifier 30Hz ... 16kHz

THD $\leq 80 \text{ dB}$

Noise (B 23kHz), gain -6 dB

$U_{NOISE} = -107 \text{ dBu}$

ATTENUATOR

Mute switch, with resistor programmable to an attenuator of 20 dB

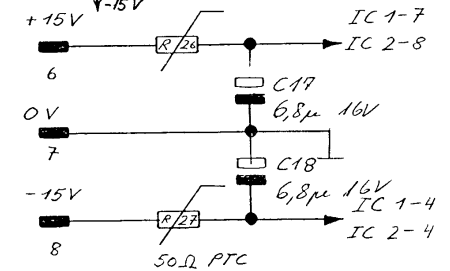
SUPPLY

Supply voltage

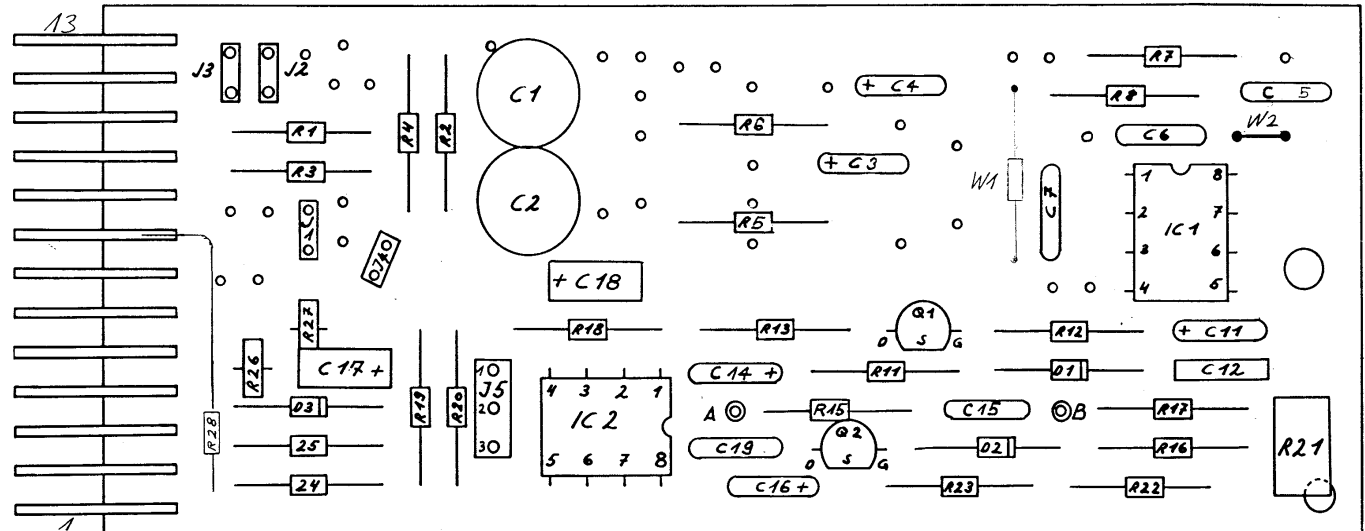
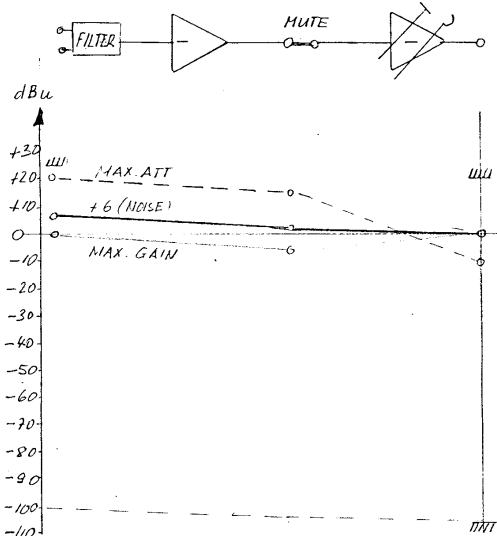
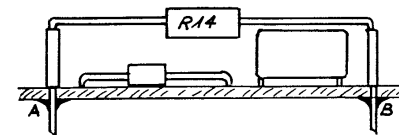
$U = \pm 15 \text{ V}$

Idle current

$I = 11 \text{ mA}$



OPTION 33k (20 dB Attenuation)



HL Input Amp, electronically balanced 1.914.504.81 (1)

Idx. Pos.	Part No.	Qty.	Type/Val.	Description	Idx. Pos.	Part No.	Qty.	Type/Val.	Description
0	C 1	59.05.1681	680p	PP, 1%, 630V					
0	C 2	59.05.1681	680p	PP, 1%, 630V					
0	C 3	59.26.0470	47u	SAL 6.3V 20%					
0	C 4	59.26.0470	47u	SAL 6.3V 20%					
0	C 5	59.34.2101	100p	CER 63V, 5%, N150					
0	C 6	59.34.2220	22p	CER 63V, 5%, N150					
0	C 7	59.34.2101	100p	CER 63V, 5%, N150					
0	C 11	59.26.0470	47u	SAL 6.3V 20%					
0	C 12	59.32.4102	1n0	CER 20%, 50V					
0	C 14	59.26.0470	47u	SAL 6.3V 20%					
0	C 15	59.06.0102	1n0	PETP, 63V, 10%, RM5					
0	C 16	59.26.0470	47u	SAL 6.3V 20%					
0	C 17	59.26.2689	6u8	SAL 16V 20%					
0	C 18	59.26.2689	6u8	SAL 16V 20%					
0	C 19	59.06.0102	1n0	PETP, 63V, 10%, RM5					
0	D 1	50.04.0125	1N4448	75V, 150mA, 4ns, DO-35					
0	D 2	50.04.0125	1N4448	75V, 150mA, 4ns, DO-35					
0	D 3	50.04.0125	1N4448	75V, 150mA, 4ns, DO-35					
0	IC 1	50.05.0244	5534A	Single Op-amp, low noise					
0	IC 2	50.09.0106	5532A	Dual Op-Amp, low noise					
0	J 1	54.01.0021	Jumper	0.63*0.63mm, Au					
0	J 2	54.01.0021	Jumper	0.63*0.63mm, Au					
0	J 3	54.01.0021	Jumper	0.63*0.63mm, Au					
0	P 1	54.01.0273	13p	Stecker CJS parallelsteck					
0	P 2	54.01.0020	9 pcs	1p					
0	Q 1	50.03.0350	J112	JFET N-Channel					
0	Q 2	50.03.0350	J112	JFET N-Channel					
0	R 1	57.11.3152	1k5	MF, 1%, 0207					
0	R 2	57.11.3392	3k9	MF, 1%, 0207					
0	R 3	57.11.3152	1k5	MF, 1%, 0207					
0	R 4	57.11.3392	3k9	MF, 1%, 0207					
0	R 5	57.11.3104	100k	MF, 1%, 0207					
0	R 6	57.11.3104	100k	MF, 1%, 0207					
0	R 7	57.11.3332	3k3	MF, 1%, 0207					
0	R 8	57.11.3332	3k3	MF, 1%, 0207					
0	R 11	57.11.3104	100k	MF, 1%, 0207					
0	R 12	57.11.3332	3k3	MF, 1%, 0207					
0	R 13	57.11.3223	22k	MF, 1%, 0207					
0	R 14	not used	33k	MF, 1%, 0207					
				<i>optional (20 dB attenuation)</i>					
0	R 15	57.11.3104	100k	MF, 1%, 0207					
0	R 16	57.11.5106	10M	MF, 5%, 0207					
0	R 17	57.11.5335	3M3	MF, 5%, 0207					
0	R 18	57.11.5335	3M3	MF, 5%, 0207					
0	R 19	57.11.3151	150R	MF, 1%, 0207					
0	R 20	57.11.3821	820R	MF, 1%, 0207					
0	R 21	58.01.9202	2k0	Cermet, 10%, 0.5W, vertical					
0	R 22	57.11.3471	470R	MF, 1%, 0207					
0	R 23	57.11.3104	100k	MF, 1%, 0207					
0	R 24	57.11.3330	33R	MF, 1%, 0207					
0	R 25	57.11.3332	3k3	MF, 1%, 0207					
0	R 26	57.99.0206	50R	PTC, 25V, 0.5W					
0	R 27	57.99.0206	50R	PTC, 25V, 0.5W					
1	R 28	57.11.3104	100k	MF, 1%, 0207					
1	W 1	57.11.3000	0R0	MF, 0207					
1	W 2	64.01.0106	0.6mm	Schaltdraht Cu					

End of List

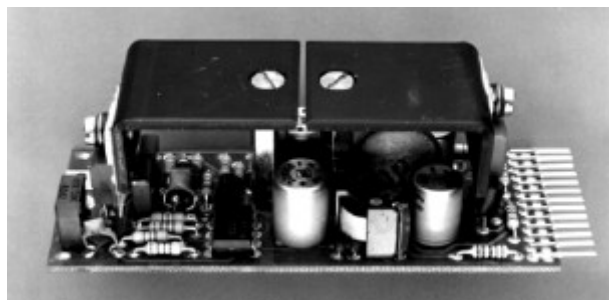
Comments:

(01) R28, W1, W2 added

2.1.5 Loudspeaker Amplifier

1.914.505

This low-power amplifier on a modular sub-card is designed to drive a 10...15 Ω speaker. Power output is about 2...3 W. As can be concluded from this specification, the amplifier is not intended for high-quality monitoring. It will be ideally suited, however, for pre-fader listening and similar applications. The amplifier's input is balanced and floating, with adjustable gain.

**Technical Specifications**

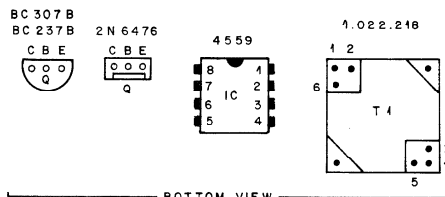
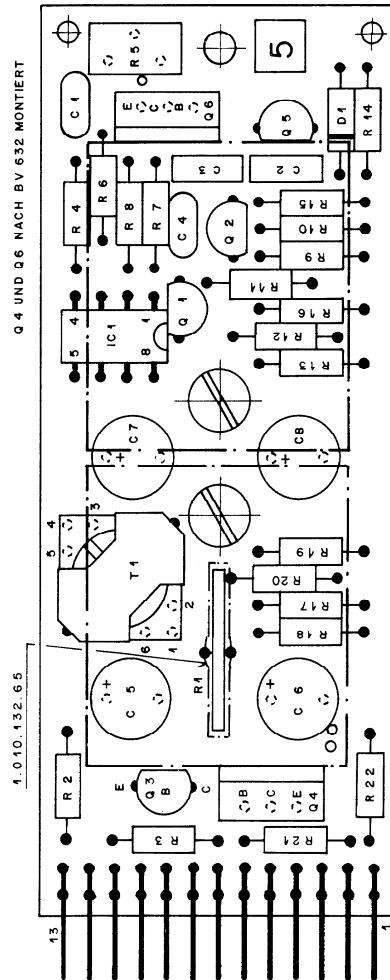
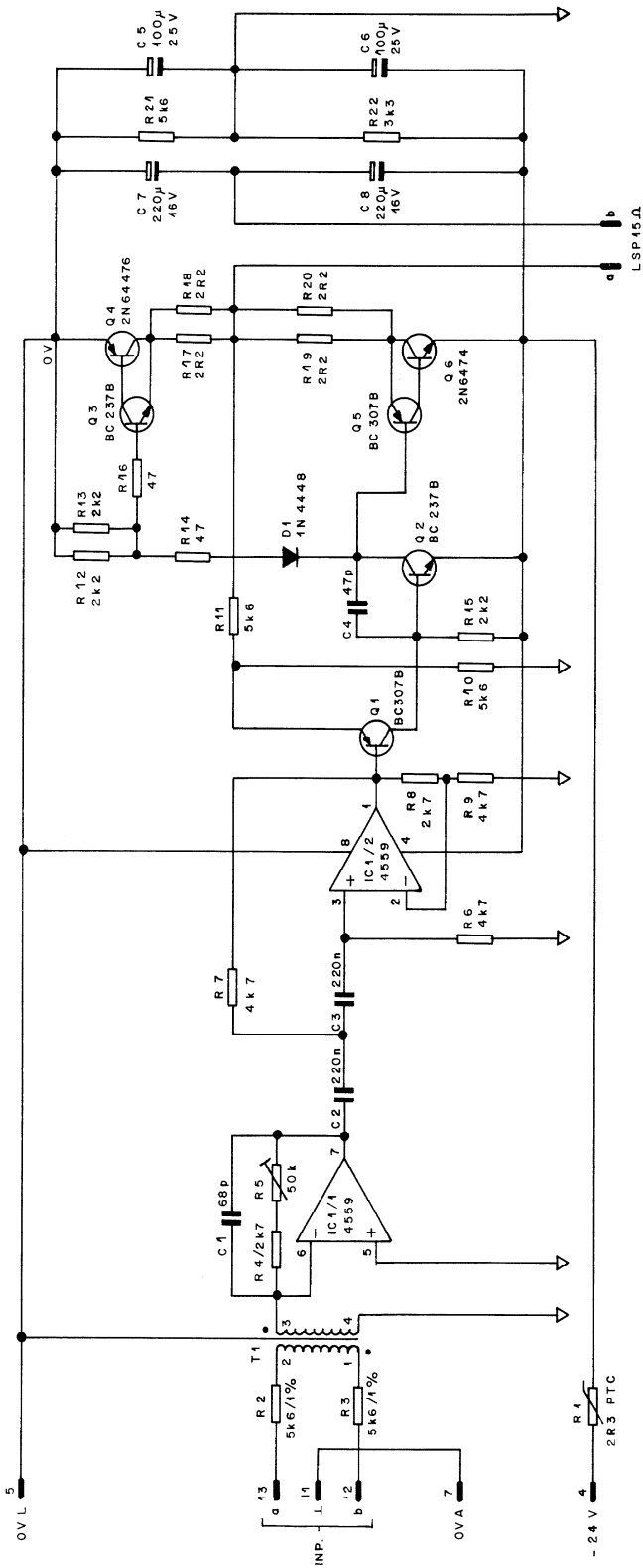
Input impedance	> 10 kW , balanced and floating (with transformer)
Nominal power output	2 W into 15 Ω
Power output	25 mW...2.5 W into 15 Ω , with 0 dBu input
Distortion	< 0.5% at 2 W < 0.15% at 500 mW
S/N	99 dB , ref. to 2 W at max. gain
Frequency response	-0.5 dB at 15 kHz
High pass filter	150 Hz , 12 dB/oct.

Supply: -24 V (40 mA idling, max. 220 mA fully driven)

Dimensions: **MS-card**, 34 × 85 mm

Ordering Information: Loudspeaker amplifier 1.914.505.xx

MSC SPEAKER AMPLIFIER



CIS	PIN	EURO 32 PIN			
		(a)	(b)	(c)	(d)
INP a	13	1	7	21	27
INP b	12	2	8	22	28
(L)	11	3	9	23	29
40	9				
8	8				
(L)	7				
6	6				
0V	5	19			
-24V	4	20			
OUT a	3	4	10	24	30
OUT b	2	5	11	25	31
1	1				

13. 9.91			
STUDER REGENSDORF ZÜRICH	LSP AMPLIFIER 3 W (NR. 5)	1.914.505.00	

MSC SPEAKER AMPLIFIER

Ad	POS.	REF.No.	DESCRIPTION	MANUFACTURER
	C....1	59.34.4680	68pF	CER
	C....2	59.06.0224	0,22µF	PE
	C....3	59.06.0224	0,22µF	PE
Ⓞ	C....4	59.34.2470	47pF	CER
	C....5	59.22.5101	100µF 25V	EL
	C....6	59.22.5101	100µF 25V	EL
	C....7	59.22.4221	220µF 16V	EL
	C....8	59.22.4221	220µF 16V	EL
	D....1	50.04.0125	1N4448	
	IC....1	50.09.0107	RC4559	
	P....1	54.01.0273	13P	CIS
	Q....1	50.03.0515	BC307B	
	Q....2	50.03.0436	BC237B	
	Q....3	50.03.0436	BC237B	
	Q....4	50.03.0345	2N6476	
	Q....5	50.03.0515	BC307B	
	Q....6	50.03.0344	2N6474	
	R....1	57.99.0210	2,3kΩ	PTC
	R....2	57.11.3562	5,6kΩ	
	R....3	57.11.3562	5,6kΩ	
	R....4	57.11.4272	2,7kΩ	
	R....5	58.01.9503	50kΩ	PMG
	R....6	57.11.4472	4,7kΩ	
	R....7	57.11.4472	4,7kΩ	
	R....8	57.11.4272	2,7kΩ	
	R....9	57.11.4472	4,7kΩ	
	R....10	57.11.3562	5,6kΩ	
	R....11	57.11.3562	5,6kΩ	
	R....12	57.11.4222	2,2kΩ	
	R....13	57.11.4222	2,2kΩ	
	R....14	57.11.4470	47Ω	
	R....15	57.11.4222	2,2kΩ	
	R....16	57.11.4470	47Ω	
	R....17	57.11.4229	2,2Ω	
	R....18	57.11.4229	2,2Ω	
	R....19	57.11.4229	2,2Ω	
	R....20	57.11.4229	2,2Ω	
	R....21	57.11.3562	5,6kΩ	
	R....22	57.11.4332	3,3kΩ	
	T....1	1.022.218.00	1:1	

CER=Ceramic, PE=Polyester, EL=Electrolytic, PTC=Pos. Temp. Coif., PMG=Cermet

1.914.505.00 LSP AMPLIFIER 3W (Nr. 5) P. Casutt 07/09/83

1.914.505.00 LSP AMPLIFIER 3W (Nr. 5) Ⓞ A. Ho 30/11/83

END



2.1.6 Microphone Pre-Amplifiers

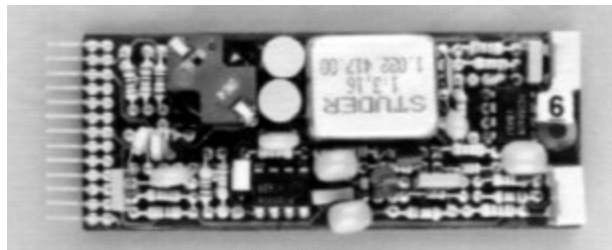
1.914.506/507

Two different microphone pre-amplifiers are available, for dynamic or condenser microphones, and for electret microphones. Both offer high gain and low noise, as is required for microphone pre-amplification.

1.914.506 features a balanced and floating input. It is designed for dynamic or condenser microphones with a source impedance of 200 Ω or less. An RF filter is incorporated at the input transformer's primary. Furthermore, the input is equipped with the resistors required for phantom powering of condenser microphones.

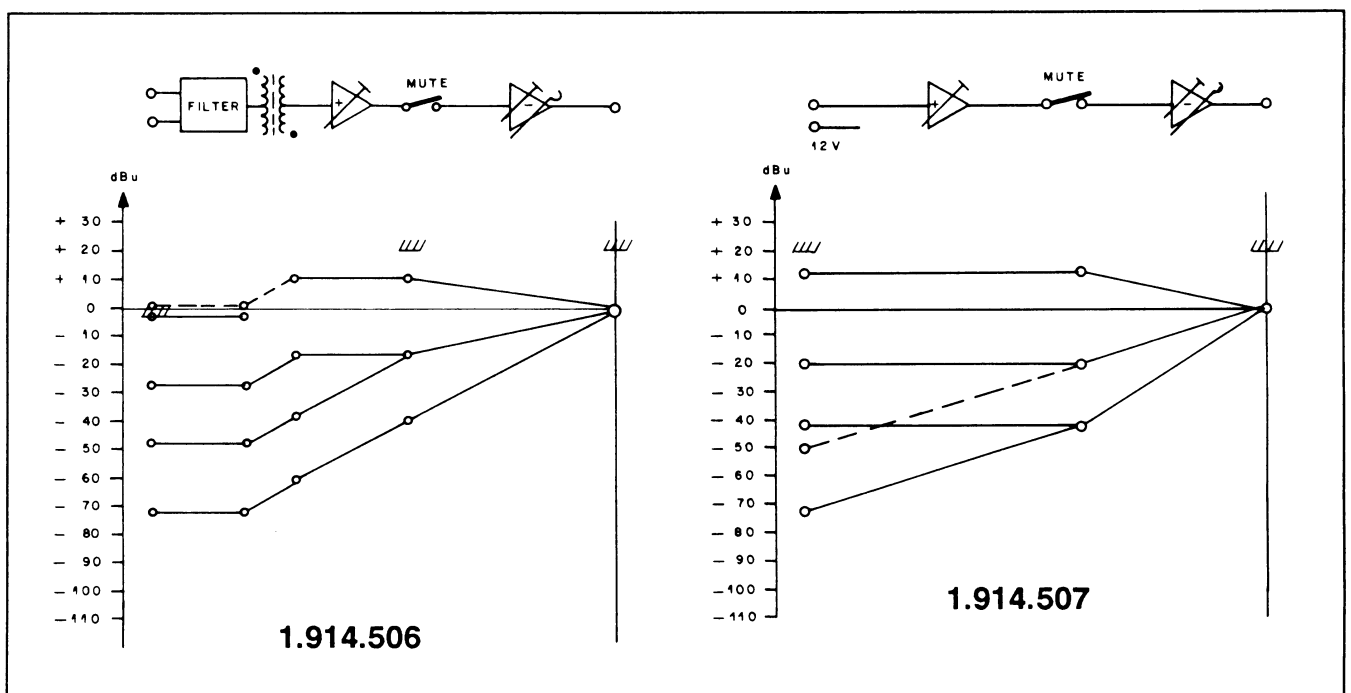
1.914.507 is designed for unbalanced electret microphones requiring a 12 V supply.

A wide range of input levels can be accommodated (see level diagram).



By using the same solid-state switching circuit as can be found in the line and high-level amplifiers, remote muting or activation of a fixed amount of attenuation are possible as well.

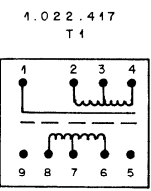
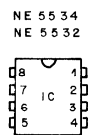
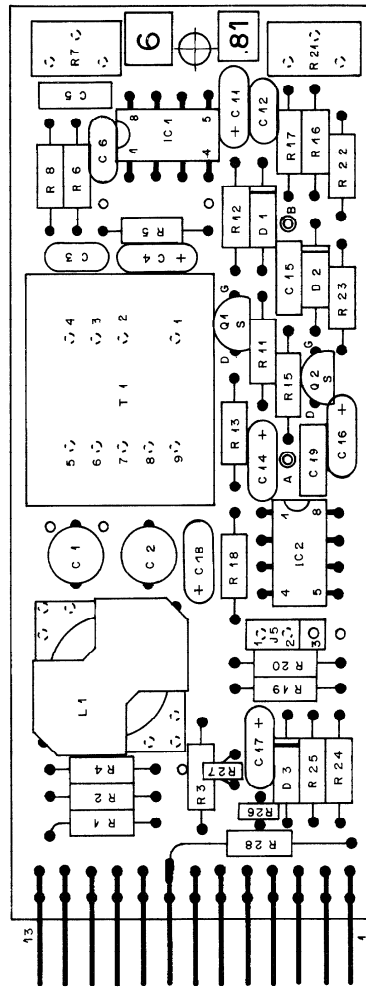
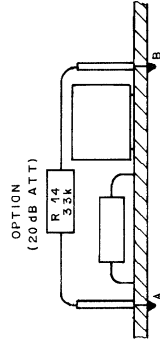
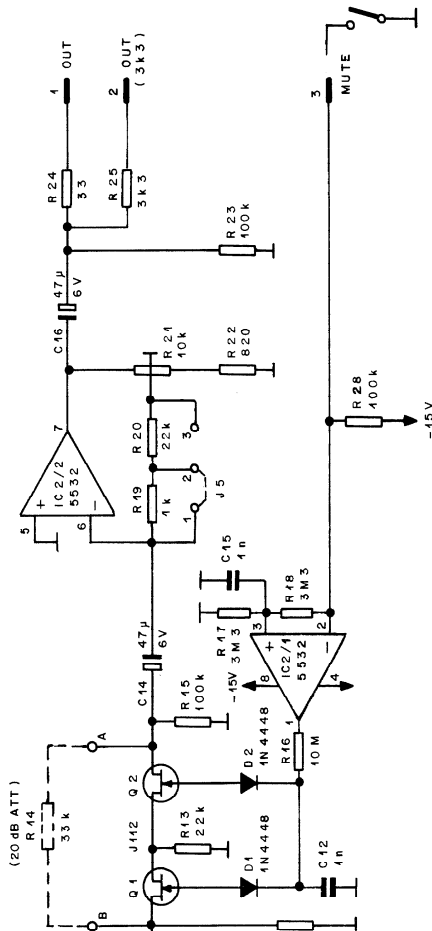
The amplifier's two outputs are unbalanced, with impedances of 3.3 kΩ or 33 Ω, respectively.



Technical Specifications

Input:	Transformer-balanced and floating, with RF filter	(1.914.506)
	Unbalanced, with RF filter and electret supply	(1.914.507)
Impedance	> 1 kW , for microphones with an impedance of 200 Ω or less.	
Max. input level	-2 dBu (615 mV _{rms}); THD at 30 Hz: approx. 1%	
Common mode rejection	> 60 dB , unbalanced, to ground	
Output:		
Max. level	+20 dBu (7.75 V _{rms})	
Nominal level	0 dBu (0.775 V _{rms})	
Impedance	33 W (pin1)	
	3.3 kW (pin2; to a 0- Ω amp.)	
Minimum load	600 W	
Max. gain	71 dB (see level diagram)	
Frequency response	± 0.5 dB , 30 Hz...16 kHz	
THD	< 0.3% , 30 Hz...16 kHz at 20 dB gain	
Noise figure, linear	< 4.5 dB , input terminated with 200 Ω	
Supply:	± 15 V (11 mA idling)	
	+48 V (1.914.506, only if phantom powering required)	
Dimensions:	MS-card , 34 \times 85 mm	
Ordering Information:	<ul style="list-style-type: none"> • Microphone pre-amplifier for dynamic microphones • Microphone pre-amplifier for electret microphones 	1.914.506.xx 1.914.507.xx

MSC MICROPHONE PRE-AMP.

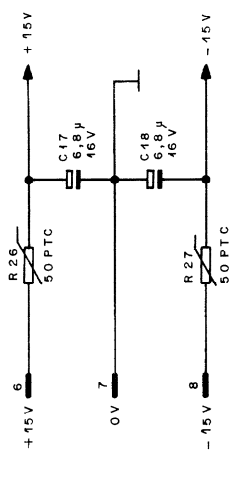
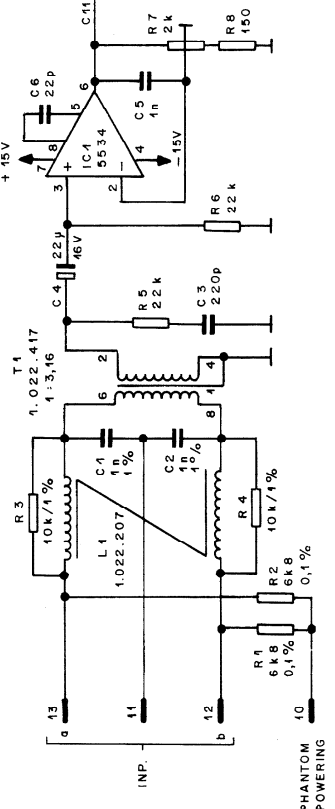


MPF 4392 J 112 D S G

NE 5534 NE 5532

1.022.417 T1

BOTTOM VIEW



CIS	PIN	EURO 32 PIN			
		(A)	(B)	(C)	(D)
IN a	13	4	7	24	27
IN b	12	2	8	22	28
IN L	11	3	9	23	29
PHANTOM	10	47	17	18	18
	9				
-15V	8	14			
0V	7	15			
+15V	6	16			
	5				
	4				
MUTE	3	4	10	24	30
OUT (3k3)	2	5	11	25	31
OUT	1	6	13	26	32

MICROPHONE PRE-AMP. MSC

Ad	POS.	REF.No.	DESCRIPTION	MANUFACTURER
C	...	1	59.05.1102 1000pF 630V 1% PP	
C	...	2	59.05.1102 1000pF 630V 1% PP	
C	...	3	59.34.4221 220pF CER	
C	...	4	59.30.4220 22pF 16V TA	
C	...	5	59.06.0102 1000pF PE	
C	...	6	59.34.2220 22pF CER	
C	...	11	59.26.0470 47pF 6,3V SAL	
C	...	12	59.32.4102 1000pF CER	
C	...	13		
C	...	14	59.26.0470 47pF 6,3V SAL	
C	...	15	59.06.0102 1000pF PE	
C	...	16	59.26.0470 47pF 6,3V SAL	
C	...	17	59.26.2689 6,8pF 16V SAL	
C	...	18	59.26.2689 6,8pF 16V SAL	
C	...	19	59.06.0102 1000pF PE	
D	...	1	50.04.0125 1N4448	
D	...	2	50.04.0125 1N4448	
D	...	3	50.04.0125 1N4448	
IC	...	1	50.05.0244 NES534AN LOW NOISE OP AMP	SIG
IC	...	2	50.09.0106 NES532AN DUAL LOW NOISE OP AMP	SIG
J	...	5	54.01.0021 JUMPER	
L	...	1	1.022.207.00 HF SYM. COIL	ST
P			54.01.0273 13PIN CIS	
P (J5)			54.01.0020 PIN JUMPER PLUG	
Q	...	1	50.03.0350 J112 N N-FET	
Q	...	2	50.03.0350 J112 N N-FET	
R	...	1	57.99.0250 6,8kΩ 0,1%	
R	...	2	57.99.0250 6,8kΩ 0,1%	
R	...	3	57.11.3103 10kΩ 1%	
R	...	4	57.11.3103 10kΩ 1%	
R	...	5	57.11.4123 12kΩ	
R	...	6	57.11.4223 22kΩ	
R	...	7	58.01.9202 2kΩ POT	
R	...	8	57.11.4151 150	
R	...	11	57.11.4104 100kΩ	
R	...	12	57.11.4332 3,3kΩ	
R	...	13	57.11.4223 22kΩ	
R	...	14	57.11.4333 33kΩ OPTIONAL (20dB ATT)	
R	...	15	57.11.4104 100kΩ	
R	...	16	57.11.5106 10MΩ	
R	...	17	57.11.5335 3,3MΩ 5%	
R	...	18	57.11.5335 3,3MΩ 5%	
R	...	19	57.11.4102 1kΩ	
R	...	20	57.11.4223 22kΩ	
R	...	21	58.01.9103 10kΩ POT	
R	...	22	57.11.4821 820Ω	
R	...	23	57.11.4104 100kΩ	
R	...	24	57.11.4330 33Ω	
R	...	25	57.11.4332 3,3kΩ	
R	...	26	57.99.0206 50Ω PTC	PH
R	...	27	57.99.0206 50Ω PTC	PH
R	...	28	57.11.4104 100kΩ	
T	...	1	1.022.417.00 1:3,16 TRAFO	ST

CER=Ceramic, PE=Polystyrene, SAL=Solid Aluminium, PP=Polypropylen, TA=Tantalum

MANUFACTURER: ST=Studer, SIG=Signetics, PH=Philips

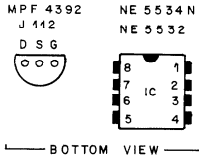
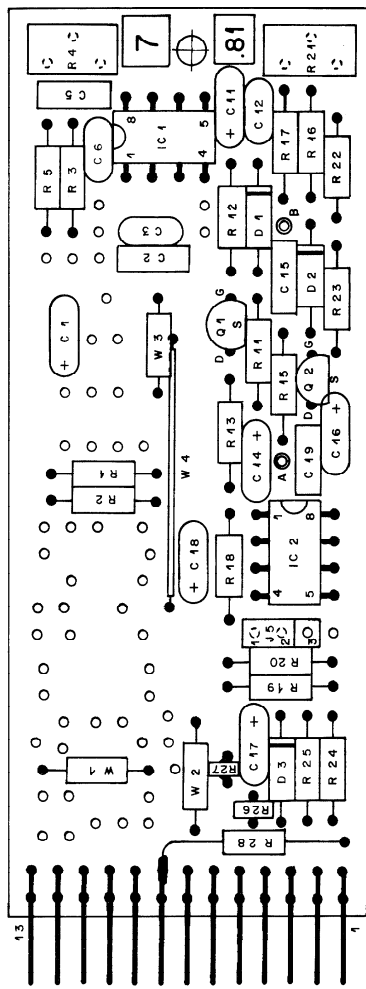
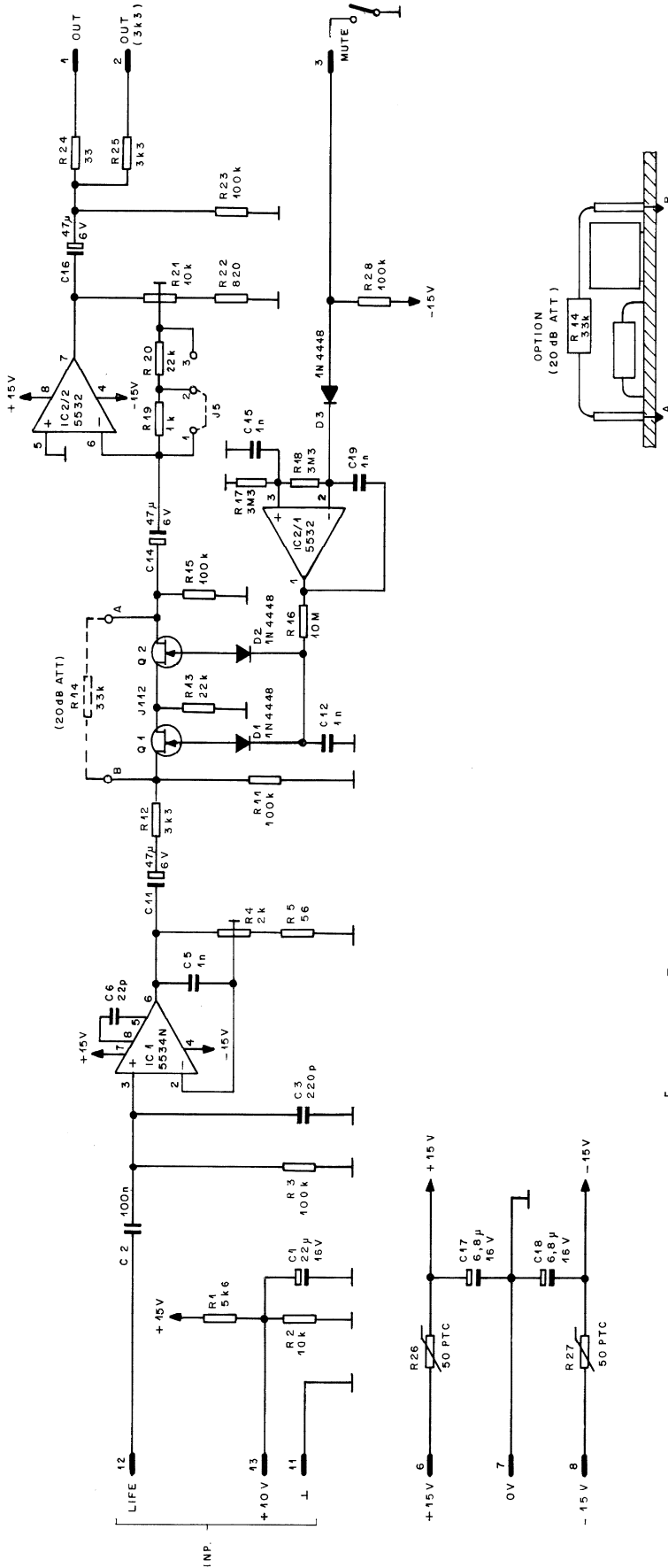
1.914.506.81 MIC. AMPLIFIER, FLOATING (Nr. 6)

FRI 19/04/85

END

→

MICROPHONE PRE-AMP. MSC



C15	PIN	(a)	(b)	(c)	(d)
+ 10 V	13	1	7	21	27
IN	12	2	8	22	28
IN L	11	3	9	23	29
	10				
	9				
- 15 V	8	14			
0 V	7	15			
+ 45 V	6	16			
	5				
	4				
MUTE	3	4	10	24	30
OUT(3k3)	2	5	11	25	31
OUT	1	6	13	26	32

12.9.91			
STUDER REGENSDORF ZÜRICH	ELECTRET MIC. AMP. (NR. 7)	1.914.507.81	

MICROPHONE PRE-AMP. MSC

Ad	POS.	REF.No.	DESCRIPTION	MANUFACTURER
C	...	1	59.30.4220 22 μ F 16V	TA
C	...	2	59.06.5104 0,1 μ F 63V	PE
C	...	3	59.34.4221 220pF	CER
C	...	5	59.06.0102 1000pF	PE
C	...	6	59.34.2220 22pF	CER
C	...	11	59.26.0470 47 μ F 6,3V	SAL
C	...	12	59.32.4102 1000p	CER
C	...	13		
C	...	14	59.26.0470 47 μ F 6,3V	SAL
C	...	15	59.06.0102 1000pF	PE
C	...	16	59.26.0470 47 μ F 6,3V	SAL
C	...	17	59.26.2689 6,8 μ F 16V	SAL
C	...	18	59.26.2689 6,8 μ F 16V	SAL
C	...	19	59.06.0102 1000pF	PE
D	...	1	50.04.0125 1N4448	
D	...	2	50.04.0125 1N4448	
① D	...	3	50.04.0125 1N4448	
IC	...	1	50.05.0244 NE5534AN LOW NOISE OP AMP	SIG
IC	...	2	50.09.0106 NE5532AN DUAL LOW NOISE OP AMP	SIG
J	...	5	54.01.0021 JUMPER	
P			54.01.0273 13PIN CIS	
P (J5)			54.01.0020 PIN JUMPER PLUG	
Q	...	1	50.03.0350 J112 N-FET	
Q	...	2	50.03.0350 J112 N-FET	
R	...	1	57.11.4562 5,6k Ω	
R	...	2	57.11.4103 10k Ω	
R	...	3	57.11.4104 100k Ω	
R	...	4	58.01.9202 2k Ω POT	
R	...	5	57.11.4560 56 Ω	
R	...	11	57.11.4104 100k Ω	
R	...	12	57.11.4332 3,3k Ω	
R	...	13	57.11.4223 22k Ω	
R	...	14	57.11.4333 33k Ω OPTIONAL (20dB ATT)	
R	...	15	57.11.4104 100k Ω	
R	...	16	57.11.5106 10M Ω	
R	...	17	57.11.5335 3,3M Ω 5%	
R	...	18	57.11.5335 3,3M Ω 5%	
R	...	19	57.11.4102 1k Ω	
R	...	20	57.11.4223 22k Ω	
R	...	21	58.01.9103 10k Ω POT	
R	...	22	57.11.4821 820 Ω	
R	...	23	57.11.4104 100k Ω	
R	...	24	57.11.4330 33 Ω	
R	...	25	57.11.4332 3,3k Ω	
R	...	26	57.99.0206 50 Ω PTC	PH
R	...	27	57.99.0206 50 Ω PTC	PH
R	...	28	57.11.4104 100k Ω	
① W	...	1	57.11.4000 0 Ω LINK	
① W	...	2	57.11.4000 0 Ω LINK	
① W	...	3	57.11.4000 0 Ω LINK	
① W	...	4	57.11.4000 WIRE	

CER=Ceramic, PE=Polystyrene, SAL=Solid Aluminium, TA=Tantalum

MANUFACTURER: SIG=Signetics, PH=Philips

1.914.507.81 ELECTRET MIC AMP (Nr. 7)

FRI 19/04/85

1.914.507.81 ELECTRET MIC AMP (Nr. 7)

① FRI 14/10/85

END



2.1.7 VCA with Electronically Balanced Connections

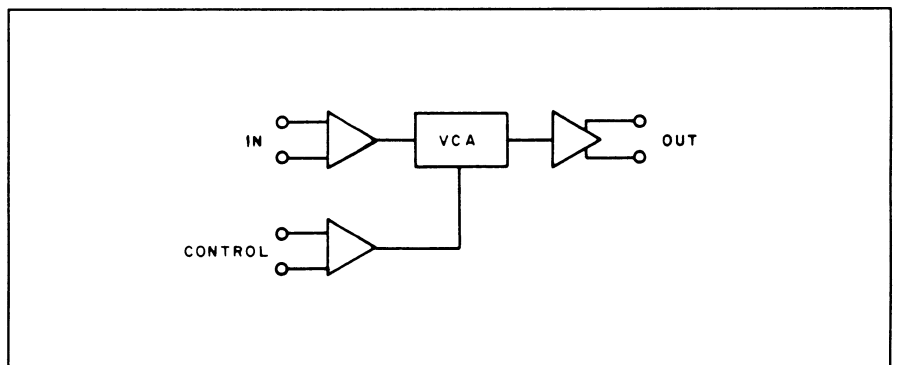
1.914.515

In contrast to the VCA 1.914.518/528 (chapter 2.1.8), this assembly features an electronically balanced input and output.



It is intended for use in balanced audio systems for a variety of applications, especially when gain is to be controlled from a remote point. It will be useful in audio-video post-production work where suitable DC ramps can control cross-fades, voice-overs, etc. Its high overload margin and its exceptionally low noise and distortion performance make it the perfect choice for high-quality audio applications.

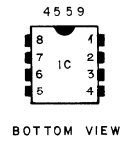
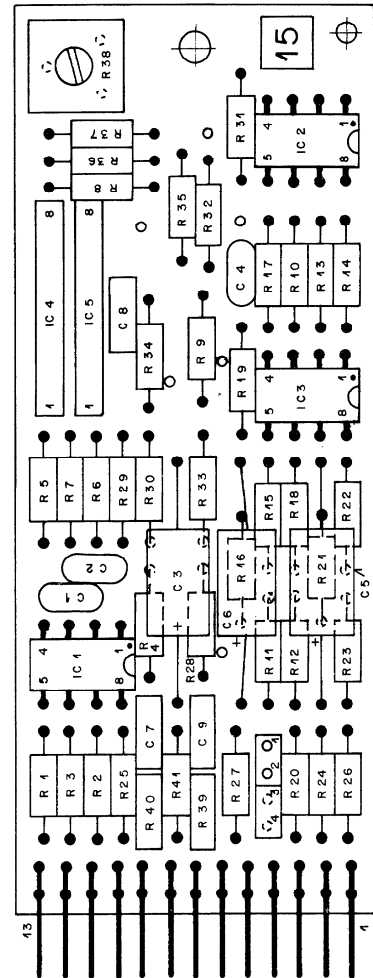
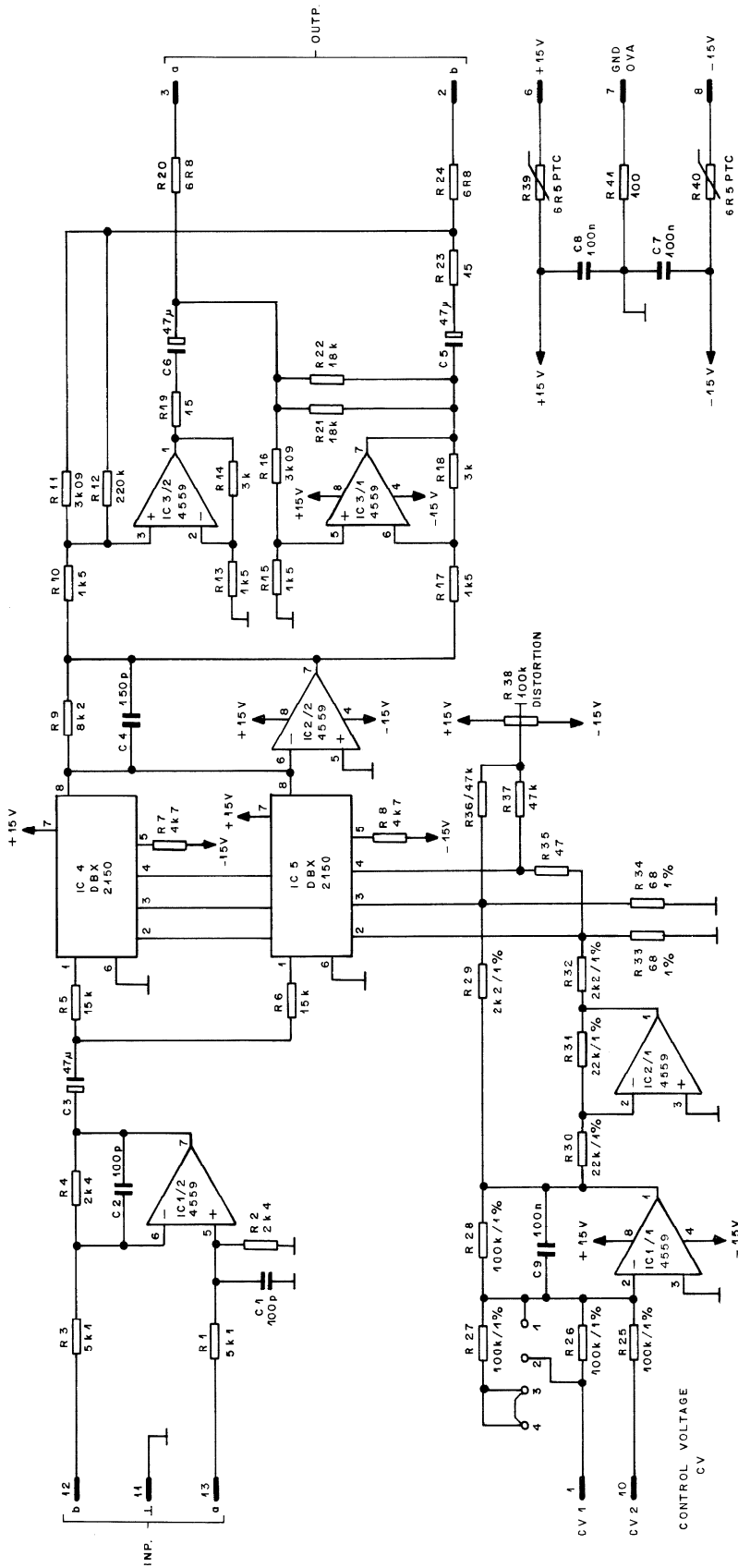
By connecting the gain control terminals of a number of VCAs to a common potentiometer or fader, several audio channels may thus be controlled simultaneously.



Two control inputs provide VCA gain control from two different remote points

Technical Specifications

Input:	Impedance	≈ 10 kW , electronically balanced
	Clipping point	+24 dBu
Output:		Electronically balanced
	Recommended load	≈ 2 kW
	Maximum level	+24 dBu
	Frequency response	-0.5 dB , 30 Hz...15 kHz
	Gain/attenuation range	+40...-100 dB , with ext. control
	Control input: pin1; gain tracking	0 V = unity gain; 1 dB/μA ; jumper 1-2 20 dB/V ; jumper 2-3 10 dB/V ; jumper 3-4
	Control input: pin10; gain tracking	10 dB/V
	THD	< 0.1%
	Equivalent input noise	-93 dBu @ unity gain
Supply:		±15 V (25 mA)
Dimensions:		MS-card , 34 × 85 mm
Ordering Information:	VCA with electronically balanced input and output	1.914.515.xx



CIS	PIN	EURO 32 PIN	PIN
		(a)	(b) (c) (d)
INP a	13	1	7 24 27
INP b	12	2	8 22 28
+	11	3	9 23 29
CV 2	10	17	18 18
-15 V	7	14	
OVA	7	45	
+15 V	6	16	
	5		
	4		
OUT a	3	4	10 24 30
OUT b	2	5	11 25 31
CV 1	1	6	13 26 32

© 17.9.94			
STUDER REGENSDORF ZURICH	BAL. AMP. WITH VCA	1.914.515.00	

MSC VCA

Ad ..POS... ..REF.No... DESCRIPTION.....MANUFACTURER

C.....1	59.34.4101	100 pF		CER	
C.....2	59.34.4101	100 pF		CER	
C.....3	59.25.3470	47 pF		ALU	
C.....4	59.34.4151	150 pF		CER	
C.....5	59.25.3470	47 pF		ALU	
C.....6	59.25.3470	47 pF		ALU	
C.....7	59.06.5104	100 nF		PE	
C.....8	59.06.5104	100 nF		PE	
C.....9	59.06.5104	100 nF		PE	
JS....1	54.01.0020		JUMPER PLUG 4-PIN		
JP....1	54.01.0021		JUMPER JACK		
IC....1	50.09.0107	RC4559	dual op. amp.		Ra,NE
IC....2	50.09.0107	RC4559	dual op. amp.		Ra,NE
IC....3	50.09.0107	RC4559	dual op. amp.		Ra,NE
IC....4	50.11.0140	2150A	VCA		DBX
IC....5	50.11.0140	2150A	VCA		DBX
P.....1	54.01.0273	13 PIN		CIS	
R.....1	57.11.3512	5.1 kOhm	1% 0.25W	MF	
R.....2	57.11.3242	2.4 kOhm	1% 0.25W	MF	
R.....3	57.11.3512	5.1 kOhm	1% 0.25W	MF	
R.....4	57.11.3242	2.4 kOhm	1% 0.25W	MF	
R.....5	57.11.3153	15 kOhm	1% 0.25W	MF	
R.....6	57.11.3153	15 kOhm	1% 0.25W	MF	
R.....7	57.11.4472	4.7 kOhm	5% 0.25W	MF	
R.....8	57.11.4472	4.7 kOhm	5% 0.25W	MF	
R.....9	57.11.3822	8.2 kOhm	1% 0.25W	MF	
R.....10	57.11.3152	1.5 kOhm	1% 0.25W	MF	
R.....11	57.39.3091	3.09kOhm	1% 0.25W	MF	
R.....12	57.11.4224	220 kOhm	2% 0.25W	MF	
R.....13	57.11.3152	1.5 kOhm	1% 0.25W	MF	
R.....14	57.11.3302	3.0 kOhm	1% 0.25W	MF	
R.....15	57.11.3152	1.5 kOhm	1% 0.25W	MF	
R.....16	57.39.3091	3.09kOhm	1% 0.25W	MF	
R.....17	57.11.3152	1.5 kOhm	1% 0.25W	MF	
R.....18	57.11.3302	3.0 kOhm	1% 0.25W	MF	
R.....19	57.11.3150	15 Ohm	1% 0.25W	MF	
R.....20	57.11.3689	6.8 Ohm	1% 0.25W	MF	
R....21	57.11.3183	18 kOhm	1% 0.25W	MF	
R....22	57.11.3183	18 kOhm	1% 0.25W	MF	
R....23	57.11.3150	15 Ohm	1% 0.25W	MF	
R....24	57.11.3689	6.8 Ohm	2% 0.25W	MF	
R....25	57.11.3104	100 kOhm	1% 0.25W	MF	
R....26	57.11.3104	100 kOhm	1% 0.25W	MF	
R....27	57.11.3104	100 kOhm	1% 0.25W	MF	
R....28	57.11.3104	100 kOhm	1% 0.25W	MF	
R....29	57.11.3222	2.2 kOhm	1% 0.25W	MF	
R....30	57.11.3223	22 kOhm	1% 0.25W	MF	
R....31	57.11.3223	22 kOhm	1% 0.25W	MF	
R....32	57.11.3222	2.2 kOhm	1% 0.25W	MF	
R....33	57.11.3680	68 Ohm	1% 0.25W	MF	
R....34	57.11.3680	68 Ohm	1% 0.25W	MF	
R....35	57.11.4470	47 Ohm	2% 0.25W	MF	
R....36	57.11.4473	47 kOhm	2% 0.25W	MF	
R....37	57.11.4473	47 kOhm	2% 0.25W	MF	
R....38	58.01.8104	100 kOhm	10% 0.5 W	PMG trimming resistor	
R....39	57.92.1271	6.5 Ohm	PTC	Philips Nr.2322 662 12711	
01 R....39	57.92.7013	0.75 Ohm	I-Hold 0.5A	R-PTC	
R....40	57.92.1271	6.5 Ohm	PTC	Philips Nr.2322 662 12711	
01 R....40	57.92.7013	0.75 Ohm	I-Hold 0.5A	R-PTC	
R....41	57.11.4101	100 Ohm	2% 0.25W	MF	

(01) 89/11/02 - Improvement of distance PTC - R

CER=Ceramic, PE=Polyester, SAL=Solid Aluminium
MF=Metal Film, PMG=Cermet

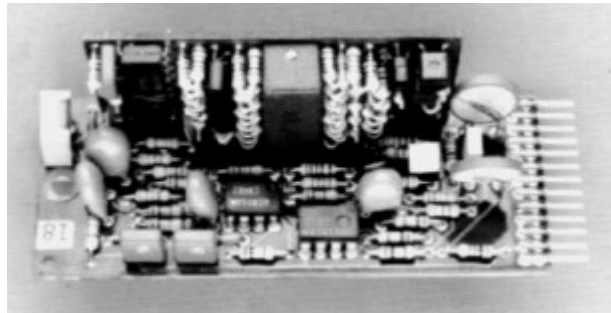
MANUFACTURER: Ex=Exar, NE=NEC, Ph=Philips, Ra=Raytheon,
Sig=Signetics, St=Studer,

1.914.515.00 BAL AMP WITH VCA SE 87/07/0100
1.914.515.00 BAL AMP WITH VCA TA 89/11/0201

2.1.8 VCA with 1 or 3 Control Ports

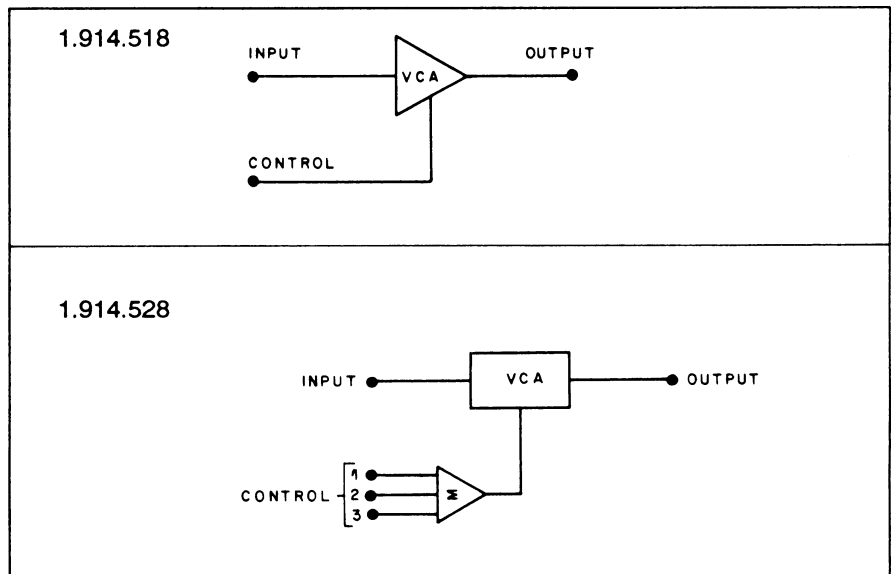
1.914.518/528

Within the range of modular sub-cards, two more VCAs are available. Voltage controlled amplifiers are ideally suited for applications such as remote level control, level limiting (in combination with the voltage processor 1.914.519) or for automatic “voice-over” circuits, when driven by suitable ramp generators. These VCAs offer outstandingly low noise and harmonic distortion.



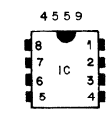
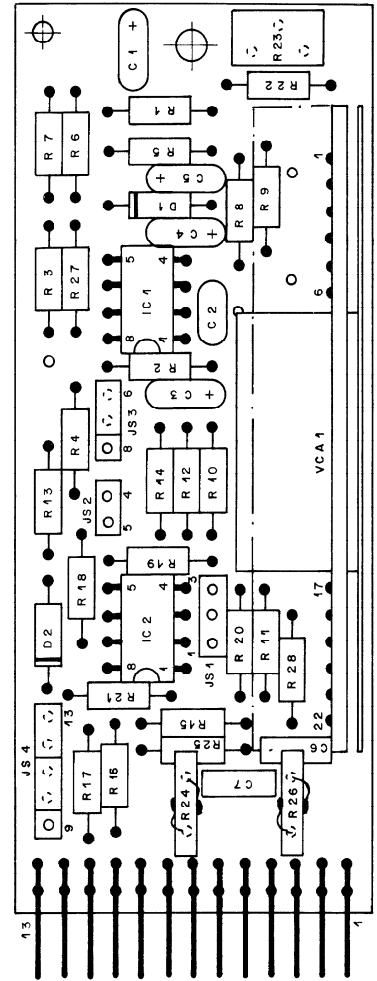
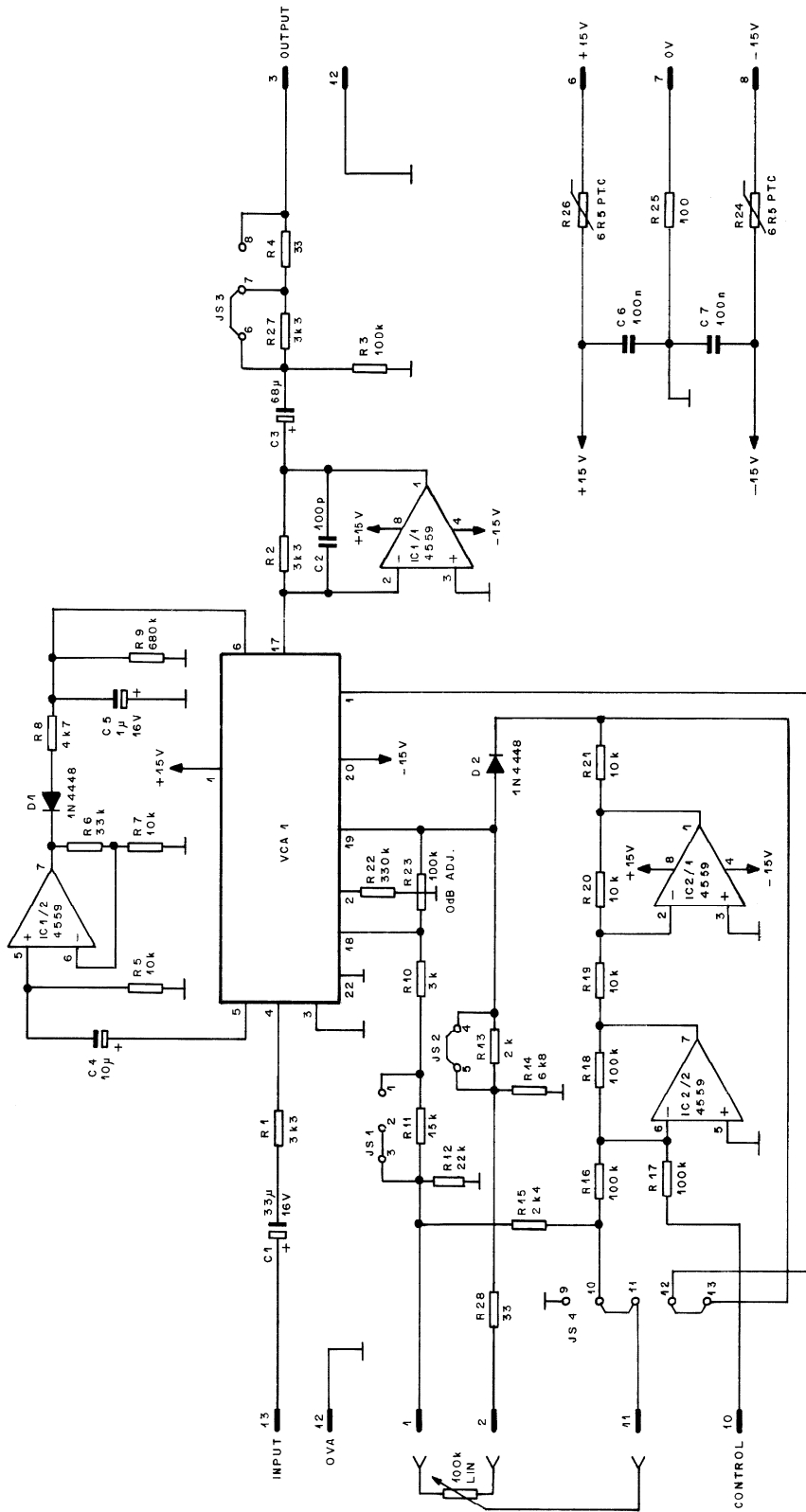
For best performance, they should be operated at a level of 0 dBu. Gain pre-selection is possible on the 1.914.518 version, allowing gain/attenuation ranges either from +10 to -90 dB or from +40 to -70 dB, using an external potentiometer.

The 1.914.528 VCA card differs in that it is equipped with three external control inputs, providing gain control from three different locations.



Technical Specifications

Input:	Impedance	> 3 kW	
	Clipping point	+20 dBu	
Output:	Impedance	33 W or 3.3 kW , selectable	
	Max. level	+20 dBu	
	Recommended load	≈ 2 kW	
	Frequency response	-0.5 dB , 30 Hz...16 kHz	
	External gain control	+40...-90 dB (1.914.518.xx) +40...-100 dB (1.914.528.xx)	
Gain/attenuation range (pot. meter)		+40...-60 dB / +10...-70 dB / +10...-90 dB (1.914.518.xx only, jumper-selectable)	
	Gain tracking	10 dB/V	
	THD	< 0.1%	
	Equivalent input noise	-102 dBu	
Supply:		±15 V (40 mA)	
Dimensions:		MS-card , 34 × 85 mm	
Ordering Information:	Voltage controlled amplifier with 1 control port		1.914.518.xx
	Voltage controlled amplifier with 3 control ports		1.914.528.xx



BOTTOM VIEW

CIS	PIN			
	①	②	③	④
INPUT	13	1	7	21
L(INP./OUTP.)	12	2	8	22
LIN POT TAP	11	3	9	23
LEVEL CONTR.	10	17	17	48
	9			
-15V	8	14		
0V	7	15		
+15V	6	16		
	5			
	4			
OUTPUT	3	4	10	24
LIN POT 100k	2	5	11	25
LIN POT 100k	1	6	13	26

① 17.9.91			
STUDER REGENSDORF ZÜRICH	VCA UNIT		1.914.518.81

MSC VCA

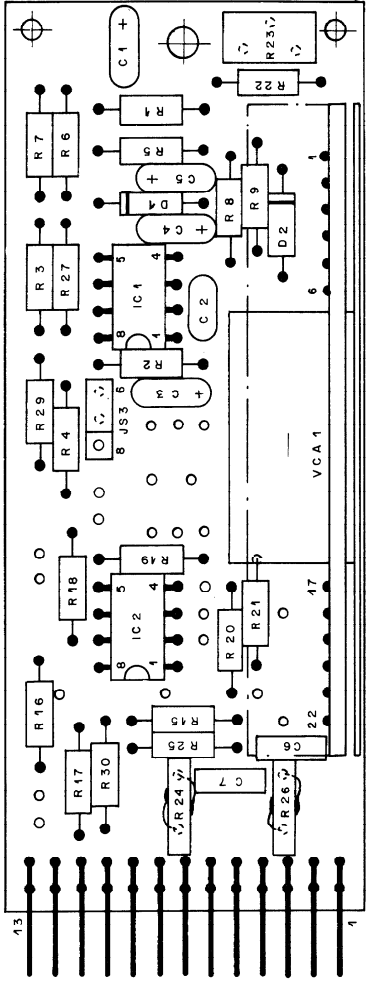
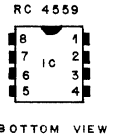
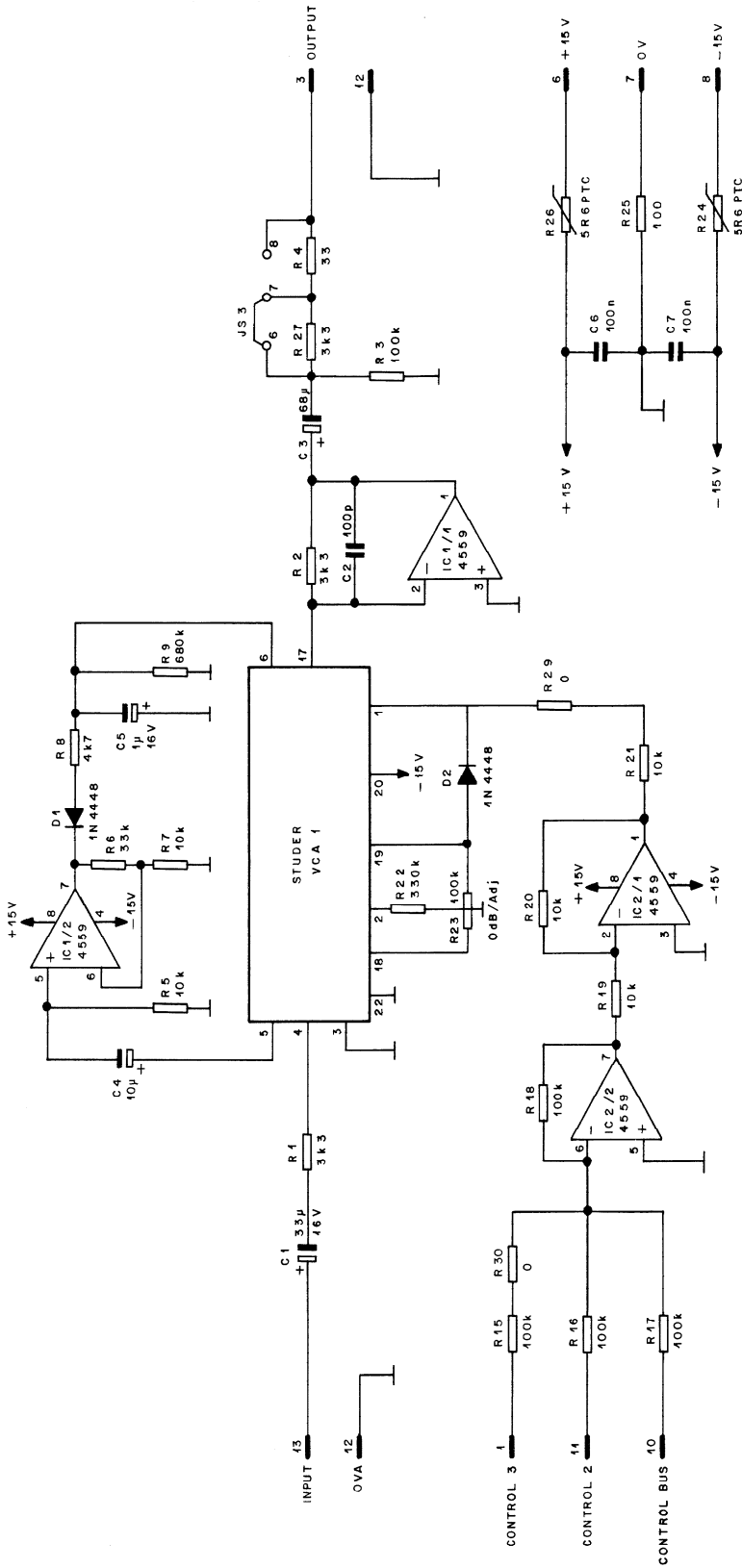
Ad	POS	REF.No	DESCRIPTION	MANUFACTURER
	A....1	1.010.110.50	Studer VCA	St
01	A....1	1.911.290.00	VCA-BOARD	St
02	A....1	1.911.290.81	VCA BOARD	St
	C....1	59.26.1330	33 uF	SAL
	C....2	59.34.4101	100 pF	CER
	C....3	59.26.0680	68 uF	SAL
	C....4	59.26.2100	10 uF	SAL
	C....5	59.26.9109	1 uF	SAL
	C....6	59.06.5104	100 nF	PE
	C....7	59.06.5104	100 nF	PE
	D....1	50.04.0125	1N4448	any
	D....2	50.04.0125	1N4448	any
	JS....1	54.01.0020	JUMPER PLUG 3-PIN	
	JS....2	54.01.0020	JUMPER PLUG 2-PIN	
	JS....3	54.01.0020	JUMPER PLUG 3-PIN	
	JS....4	54.01.0020	JUMPER PLUG 5-PIN	
	JP....1	54.01.0021	JUMPER JACK	
	JP....2	54.01.0021	JUMPER JACK	
	JP....3	54.01.0021	JUMPER JACK	
	JP....4	54.01.0021	JUMPER JACK	
	IC....1	50.09.0107	RC4559	dual op. amp.
	IC....2	50.09.0107	RC4559	dual op. amp.
	P....1	54.01.0273	13 PIN	CIS
	R....1	57.11.4332	3.3 kOhm	5% 0.25W MF
	R....2	57.11.4332	3.3 kOhm	5% 0.25W MF
	R....3	57.11.4104	100 kOhm	5% 0.25W MF
	R....4	57.11.4330	33 Ohm	5% 0.25W MF
	R....5	57.11.4103	10 kOhm	5% 0.25W MF
	R....6	57.11.4333	33 kOhm	5% 0.25W MF
	R....7	57.11.4103	10 kOhm	5% 0.25W MF
	R....8	57.11.4472	4.7 kOhm	5% 0.25W MF
	R....9	57.11.4684	680 kOhm	5% 0.25W MF
	R....10	57.11.3302	3.0 kOhm	2% 0.25W MF
	R....11	57.11.4153	15 kOhm	2% 0.25W MF
	R....12	57.11.3242	2.4 kOhm	2% 0.25W MF
	R....13	57.11.3202	2 kOhm	2% 0.25W MF
	R....14	57.11.4682	6.8 kOhm	5% 0.25W MF
	R....15	57.11.4223	22 kOhm	5% 0.25W MF
	R....16	57.11.4104	100 kOhm	2% 0.25W MF
	R....17	57.11.4104	100 kOhm	2% 0.25W MF
	R....18	57.11.4104	100 kOhm	2% 0.25W MF
	R....19	57.11.4103	10 kOhm	2% 0.25W MF
	R....20	57.11.4103	10 kOhm	2% 0.25W MF
	R....21	57.11.4103	10 kOhm	5% 0.25W MF
	R....22	57.11.4334	330 kOhm	5% 0.25W MF
	R....23	58.01.9104	100 kOhm	10% 0.5 W PMG trimming resistor
	R....24	57.92.1271	6.5 Ohm	PTC Philips Nr.2322 662 12711
	R....25	57.11.4101	100 Ohm	5% 0.25W MF
	R....26	57.92.1271	6.5 Ohm	PTC Philips Nr.2322 662 12711
	R....27	57.11.4332	3.3 kOhm	5% 0.25W MF
	R....28	57.11.4330	33 Ohm	5% 0.25W MF

- (1) 89/01/13 A1 VCA 1.010.110.50 replaced by 1.911.290.00
- (2) 90/01/17 A1 VCA 1.911.290.00 replaced by 1.911.290.81

CER=Ceramic, PE=Polyester, SAL=Solid Aluminium Lacquard
 MF=Metal Film, PMG=Cermet

MANUFACTURER: Ex=Exar, NE=NEC, Ph=Philips, Ra=Raytheon,
 Sig=Signetics, St=Studer,

1.914.518.81	VCA UNIT	SE 86/11/0500
1.914.518.81	VCA UNIT	SE 89/01/1301
1.914.518.81	VCA UNIT	WY 90/01/1702



CIS	PIN	EURO 32 PIN			
		(a)	(b)	(c)	(d)
INPUT	13	1	7	21	27
IN / OUT	12	2	8	22	28
CONTROL 2	11	3	9	23	29
CONTROL BUS	40	17	17	18	18
-15V	9				
0V	8	14			
+15V	7	15			
	6	16			
	5				
	4				
OUTPUT	3	4	10	24	30
	2	5	11	25	31
CONTROL 3	1	6	13	26	32

<p>STUDER REGENSDORF ZÜRICH</p>	VCA UNIT / 3 CONTROL	1.914.528.00
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VCA MSC

Ad	POS.	REF.No.	DESCRIPTION	MANUFACTURER
A....1	1.010.110.50		Studer VCA	St
01 A....1	1.911.290.00		VCA-BOARD	St
02 A....1	1.911.290.81		VCA-BOARD	St
C....1	59.26.1330	33 uF	SAL	
C....2	59.34.4101	100 pF	CER	
C....3	59.26.0680	68 uF	SAL	
C....4	59.26.2100	10 uF	SAL	
C....5	59.26.9109	1 uF	SAL	
C....6	59.06.5104	100 nF	PE	
C....7	59.06.5104	100 nF	PE	
D....1	50.04.0125	1N4448		any
D....2	50.04.0125	1N4448		any
JS...3	54.01.0020		JUMPER PLUG 3-PIN	
JP...1	54.01.0021		JUMPER JACK	
IC...1	50.09.0107	RC4559	dual op. amp.	Ra,NE
IC...2	50.09.0107	RC4559	dual op. amp.	Ra,NE
P....1	54.01.0273	13 PIN	CIS	
R....1	57.11.4332	3.3 kOhm	5% 0.25W MF	
R....2	57.11.4332	3.3 kOhm	5% 0.25W MF	
R....3	57.11.4104	100 kOhm	5% 0.25W MF	
R....4	57.11.4330	33 Ohm	5% 0.25W MF	
R....5	57.11.4103	10 kOhm	5% 0.25W MF	
R....6	57.11.4333	33 kOhm	5% 0.25W MF	
R....7	57.11.4103	10 kOhm	5% 0.25W MF	
R....8	57.11.4472	4.7 kOhm	5% 0.25W MF	
R....9	57.11.4684	680 kOhm	5% 0.25W MF	
R...15	57.11.4104	100 kOhm	2% 0.25W MF	
R...16	57.11.4104	100 kOhm	2% 0.25W MF	
R...17	57.11.4104	100 kOhm	2% 0.25W MF	
R...18	57.11.4104	100 kOhm	2% 0.25W MF	
R...19	57.11.4103	10 kOhm	2% 0.25W MF	
R...20	57.11.4103	10 kOhm	2% 0.25W MF	
R...21	57.11.4103	10 kOhm	5% 0.25W MF	
R...22	57.11.4334	330 kOhm	5% 0.25W MF	
R...23	58.01.9104	100 kOhm	10% 0.5 W PMG trimming resistor	
R...24	57.92.1271	6.5 Ohm	PTC Philips Nr.2322 662 12711	
R...25	57.11.4101	100 Ohm	5% 0.25W MF	
R...26	57.92.1271	6.5 Ohm	PTC Philips Nr.2322 662 12711	
R...27	57.11.4332	3.3 kOhm	5% 0.25W MF	
R...29	57.11.4000	0 Ohm		
R...30	57.11.4000	0 Ohm		

- (1) 89/01/13 A1 VCA 1.010.110.50 replaced by 1.911.290.00
- (2) 90/01/17 A1 VCA 1.911.290.00 replaced by 1.911.290.81

CER=Ceramic, PE=Polyester, SAL=Solid Aluminium
MF=Metal Film, PMG=Cermet

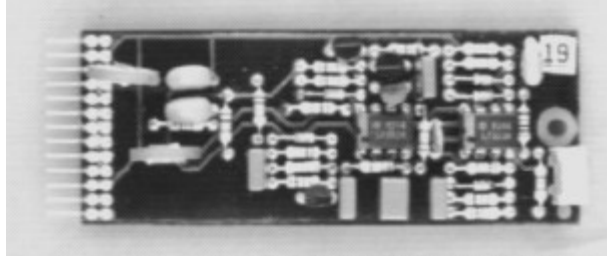
MANUFACTURER: Ex=Exar, NE=NEC, Ph=Philips, Ra=Raytheon,
Sig=Signetics, St=Studer.

1.914.528.00	VCA UNIT / 3 CONTROL	SE 86/10/2800
1.914.528.00	VCA UNIT / 3 CONTROL	SE 89/01/1301
1.914.528.00	VCA UNIT / 3 CONTROL	WY 90/01/1702

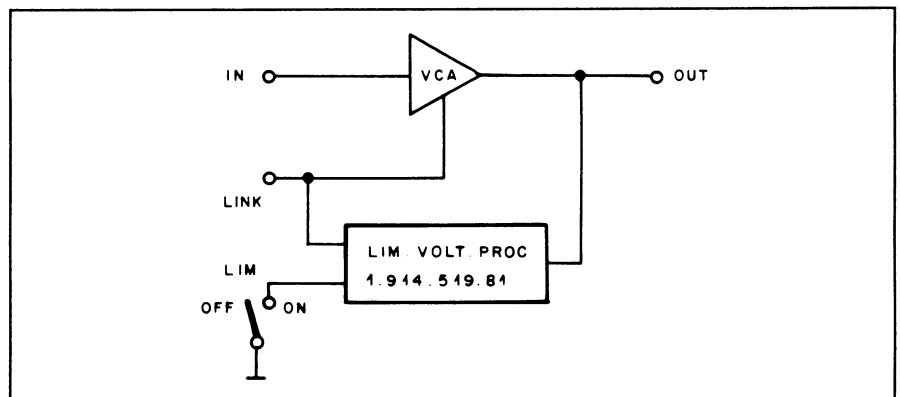
2.1.9 Limiter Voltage Processor

1.914.519

Together with this voltage processor, the VCAs 1.914.518/528 can perform as signal level limiters.



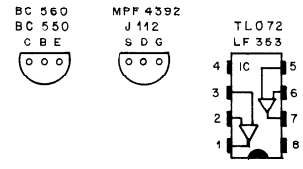
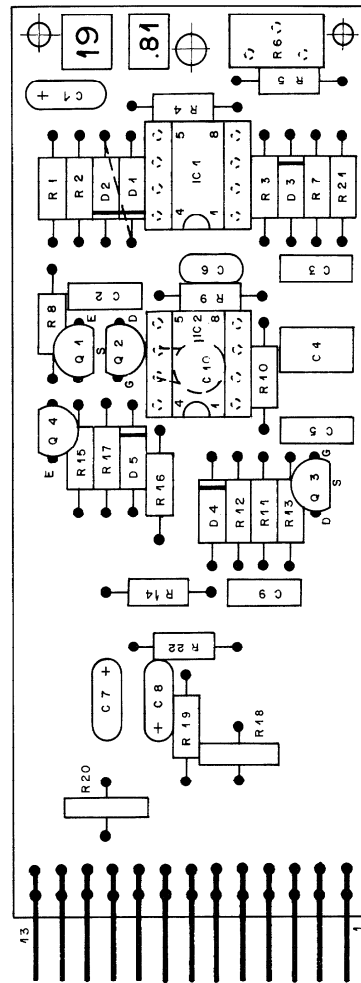
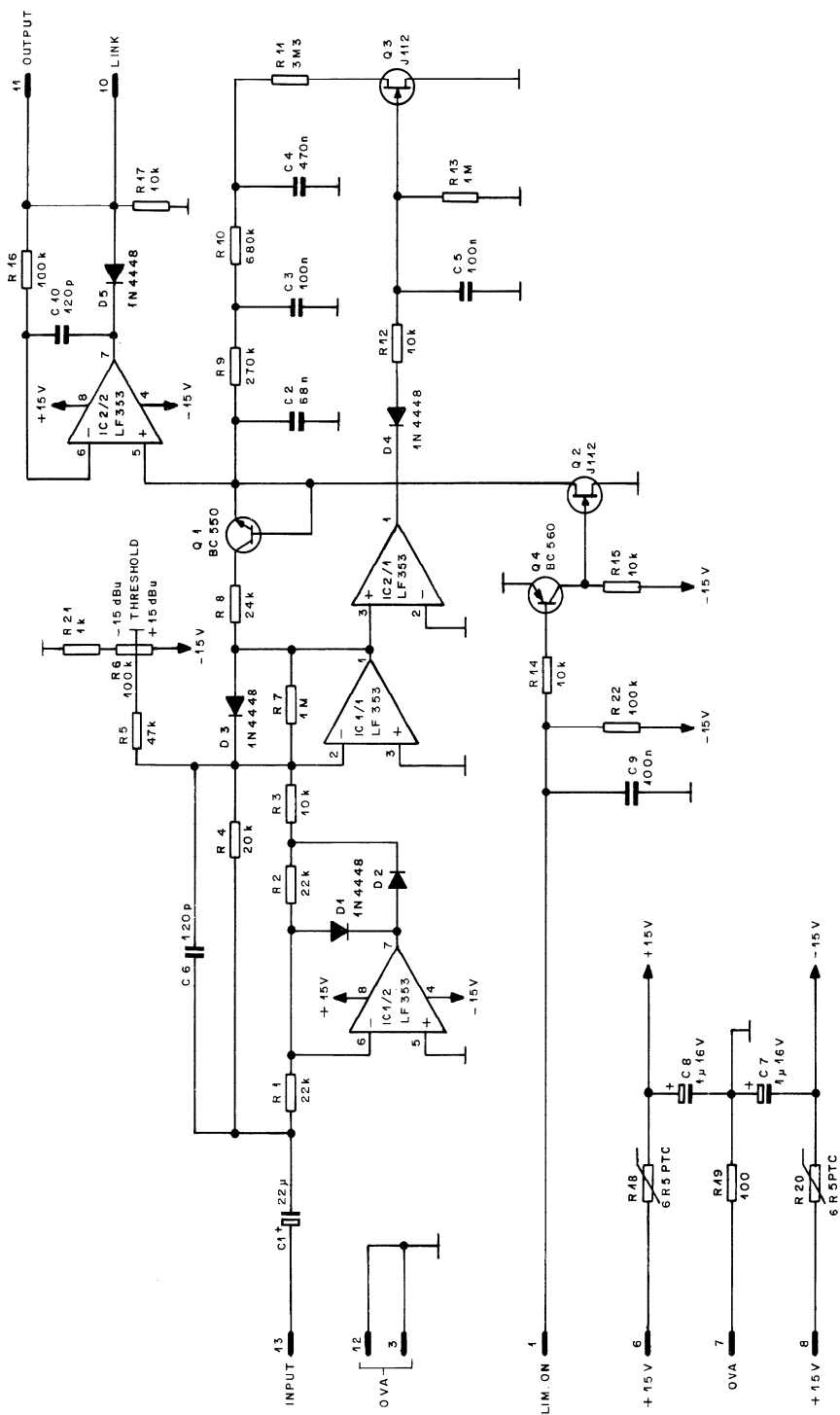
The processor's threshold can be set within a wide range of levels, so that limiting action becomes effective at a desired level within a range of -15 to $+15$ dBu. Limiting action attacks within 1 ms, whereas release can vary from 50 ms to 5 s, depending on the program's energy content. This means that no audible "pumping" action – which is often associated with such a device – will occur. After the cessation of loud passages, amplification will recover only slowly. For stereo applications, a two-channel set-up (VCAs and voltage processor) can be linked, so that identical amounts of gain reduction will take place simultaneously in both channels.



The input of the voltage processor has to be wired to the output of the VCA. The processor's output, when connected to the VCA's control terminal, will effect the necessary gain reduction so that a limiting characteristic is obtained. The limiting threshold is adjustable in a wide range. Remote on/off switching of the limiter function is possible.

Technical Specifications

Limiter:	Input impedance	≥ 10 kW	
	Max. input level	+20 dBu	
	Frequency range	30 Hz...16 kHz	
	Output voltage	0...-13 V_{DC}	
	Threshold level	-15 dBu...+15 dBu	
	Attack time	1 ms	
	Release time	50 ms...5 s , program-dependent	
	Compression ratio	20:1 , in conjunction with a VCA	
Supply:		±15 V (10 mA)	
Dimensions:		MS-card , 34 × 85 mm	
Ordering Information:		Limiter voltage processor	1.914.519.xx



BOTTOM VIEW

CIS	PIN	EURO 32 PIN			
		(A)	(B)	(C)	(D)
INPUT	13	1	7	21	27
I (INP./OUTP.)	12	2	8	22	28
OUTPUT	11	3	9	23	29
LINK	10	17	17	18	18
	9				
-15 V	8				
0V	7				
+15 V	6				
	5				
	4				
L (LIM ON)	3	4	10	24	30
	2	5	11	25	31
LIM ON	1	6	13	26	32

16.9.94	 LIMITER VOLTAGE PROCESSOR	1.914.519.81
REGENDS DORF ZÜRICH		

MSC LIMITER

Ad	..POS..	..REF.No..	DESCRIPTION.....	MANUFACTURER
C.....1	59.26.1220	22 uF	SAL	
C.....2	59.06.0683	68 nF	PE	
C.....3	59.06.5104	100 nF	PE	
C.....4	59.06.5474	470 nF	PE	
C.....5	59.06.5104	100 nF	PE	
C.....6	59.34.4121	120 pF	CER	
C.....7	59.26.9109	1 uF	SAL	
C.....8	59.26.9109	1 uF	SAL	
C.....9	59.06.5104	100 nF	PE	
C.....10	59.34.4121	120 pF	CER	
D.....1	50.04.0125	1N4448		any
D.....2	50.04.0125	1N4448		any
D.....3	50.04.0125	1N4448		any
D.....4	50.04.0125	1N4448		any
D.....5	50.04.0125	1N4448		any
IC.....1	50.09.0101	TL 072	dual op. amp. low noise	NS, TI
IC.....2	50.09.0101	TL 072	dual op. amp. low noise	NS, TI
P.....1	54.01.0273	13 PIN	CIS	
Q.....1	50.03.0497	BC 550	NPN IC>100mA, B>100	any
Q.....2	50.03.0350	J 112	N-JFET	NS, Mot, Six
Q.....3	50.03.0350	J 112	N-JFET	NS, Mot, Six
Q.....4	50.03.0496	BC 560	PNP IC>100mA, B>100	any
R.....1	57.11.4223	22 kOhm	2% 0.25W MF	
R.....2	57.11.4223	22 kOhm	2% 0.25W MF	
R.....3	57.11.4103	10 kOhm	2% 0.25W MF	
R.....4	57.11.3203	20 kOhm	2% 0.25W MF	
R.....5	57.11.4473	47 kOhm	5% 0.25W MF	
R.....6	58.01.9104	100 kOhm	10% 0.50W PMG trimming resistor	
R.....7	57.11.4106	1 MOhm	5% 0.25W MF	
R.....8	57.11.3243	24 kOhm	5% 0.25W MF	
R.....9	57.11.4274	270 kOhm	5% 0.25W MF	
R.....10	57.11.4684	680 kOhm	5% 0.25W MF	
R.....11	57.11.4335	3.3 MOhm	5% 0.25W MF	
R.....12	57.11.4103	10 kOhm	5% 0.25W MF	
R.....13	57.11.4105	1 MOhm	5% 0.25W MF	
R.....14	57.11.4103	10 kOhm	5% 0.25W MF	
R.....15	57.11.4103	10 kOhm	5% 0.25W MF	
R.....16	57.11.4104	100 kOhm	5% 0.25W MF	
R.....17	57.11.4103	10 kOhm	5% 0.25W MF	
R.....18	57.92.1271	6.5 Ohm	PTC Philips Nr.2322 662 12711	
R.....19	57.11.4101	100 Ohm	5% 0.25W MF	
R.....20	57.92.1271	6.5 Ohm	PTC Philips Nr.2322 662 12711	
R.....21	57.11.4102	1 kOhm	5% 0.25W MF	
R.....22	57.11.4104	100 kOhm	5% 0.25W MF	

CER=Ceramic, PE=Polyester, SAL=Solid Aluminium
 MF=Metal Film, PMG=Cermet

MANUFACTURER: Mot=Motorola, NS=National Semiconductors
 Six=Siliconix, TI=Texas Instruments

1.914.519.81 LIM VOLTAGE PROCESSOR WM 86.21.1100

2.1.10 1900 Hz Signal Generator

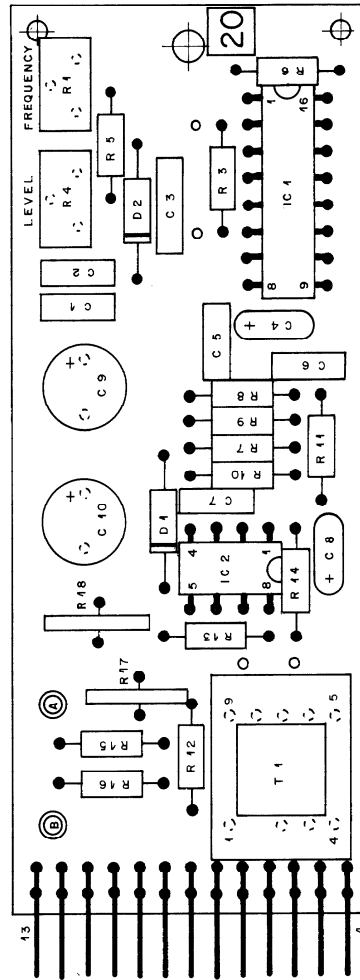
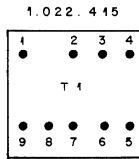
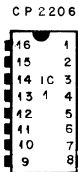
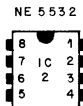
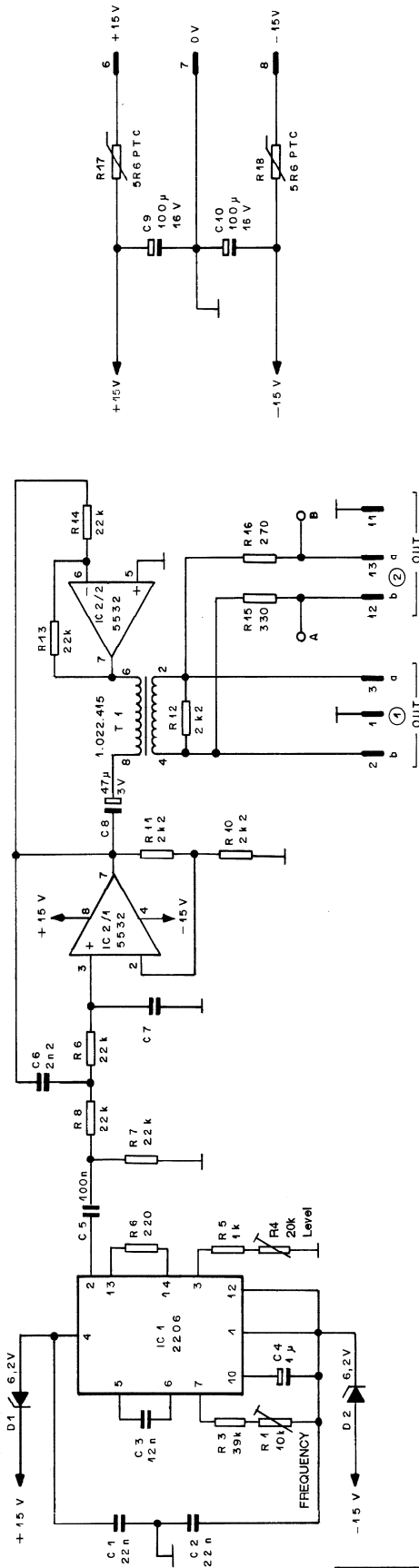
1.914.520

This signal generator produces a stable frequency of 1900 Hz to establish communication on outside broadcast lines, as specified in the EBU/CCIR recommendations.

**Technical Specifications**

Frequency	1900 Hz (adjustable)	
Distortion	< 1%	
Output level	-15...+6 dBu (adjustable)	
Output	balanced and floating	
Output Impedance, out 1	< 15 W	
out 2	600 W	
Minimum load	200 W	
Supply:	±15 V (20 mA)	
Dimensions:	MS-card , 34 × 85 mm	
Ordering Information:	1900 Hz signal generator	1.914.520.xx

MSC 1900 HZ GENERATOR



CIS	PIN	EURO 32 PIN			
		(a)	(b)	(c)	(d)
OUT a	13	1	7	24	27
OUT b	12	2	8	22	28
L	11	3	9	23	29
	10				
	9				
-15 V	8	14			
0 V	7	15			
+15 V	6	16			
	5				
	4				
OUT a	3	4	10	24	30
OUT b	2	5	11	25	31
L	1	6	13	26	32

18.9.91			
STUDER REGENSDORF ZÜRICH	SIGNAL GENERATOR (NR. 20)	1.914.520.00	

Ad	POS.	REF.No.	DESCRIPTION	MANUFACTURER
C	...	1	59.06.0223	0,022µF PE
C	...	2	59.06.0223	0,022µF PE
C	...	3	59.99.0220	0,012µF PE
C	...	4	59.26.9109	1µF 40V
C	...	5	59.06.0104	0,1µF
C	...	6	59.06.5222	2200pF PE
C	...	7	59.06.5222	2200pF PE
C	...	8	59.26.0470	47µF 6,3V SAL
C	...	9	59.22.4101	100µF 16V EL
C	...	10	59.22.4101	100µF 16V EL
D	...	1	50.04.1511	6,2V 1,3W Zener
D	...	2	50.04.1511	6,2V 1,3W Zener
IC	...	1	50.11.0108	2206CP DIL 16
IC	...	2	50.09.0105	NE5532 DIP 8
P	...		54.01.0273	13P CIS AMP
R	...	1	58.01.9103	10kΩ TRIM
R	...	3	57.11.4393	39kΩ
R	...	4	58.01.9203	20kΩ TRIM
R	...	5	57.11.4102	1kΩ
Ⓢ R	...	6	57.11.4221	220kΩ
R	...	7	57.11.4223	22kΩ
R	...	8	57.11.4223	22kΩ
R	...	9	57.11.4223	22kΩ
R	...	10	57.11.4222	2,2kΩ
R	...	11	57.11.4222	2,2kΩ
R	...	12	57.11.4222	2,2kΩ
R	...	13	57.11.4223	22kΩ
R	...	14	57.11.4223	22kΩ
Ⓢ R	...	15	57.11.4331	330kΩ
Ⓢ R	...	16	57.11.4271	270kΩ
R	...	17	57.99.0209	5,6kΩ 2322 662 91005 PH
R	...	18	57.99.0209	5,6kΩ 2322 662 91005 PH
T	...	1	1.022.415.00	1:2 ST

PE=Polyester, SAL=Solid Aluminium, EL=Electrolytic

MANUFACTURER: EX=Exar, SIG=Signetics, ST=Studer, PH=Philips

1.914.520.00 SIGNAL GENERATOR (Nr. 20)

P. Casutt 14/07/83

1.914.520.00 SIGNAL GENERATOR (Nr. 20)

Ⓢ FRI 01/09/83

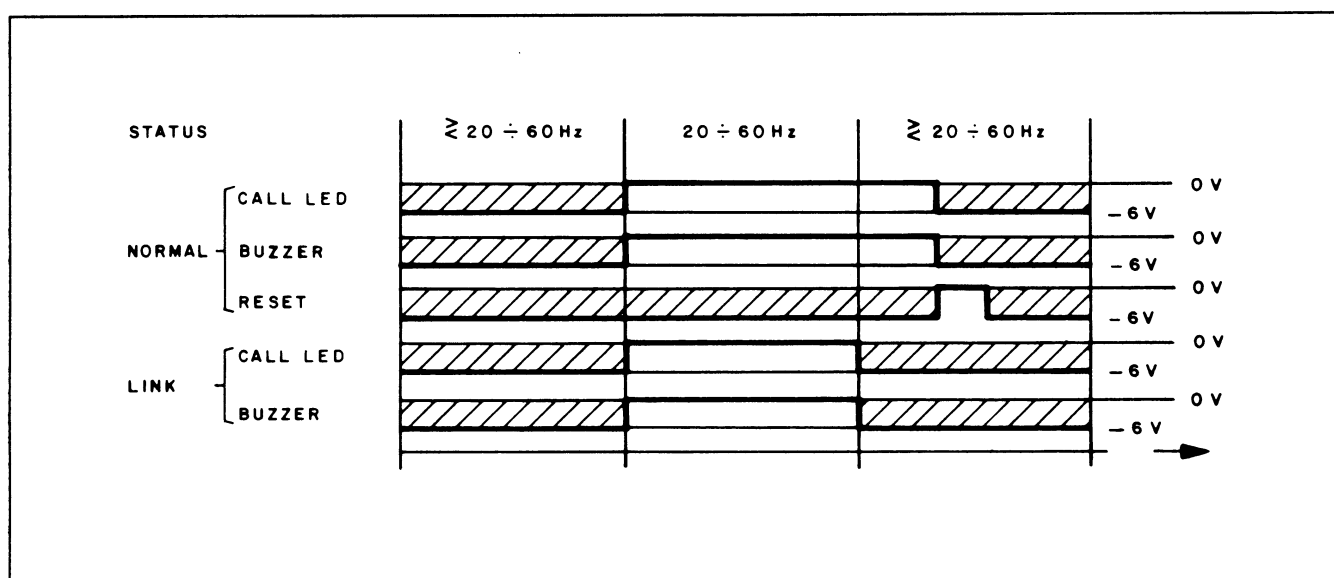
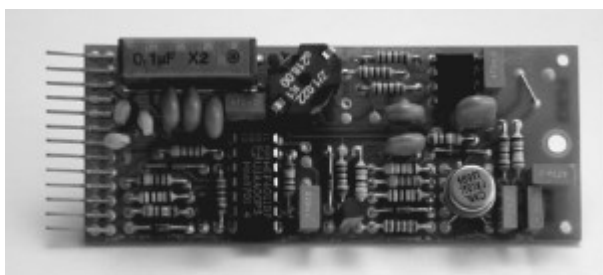
END

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2.1.11 Call Decoder 20...60 Hz

1.914.521

This assembly features a call receiver for the ringing frequency on telephone lines (20...60 Hz). The receiver can activate an optical and/or an acoustical signal generated by an external buzzer (not supplied). In normal mode the buzzer will be on until reset. In linked mode the signal lasts only as long as a call is detected.

**Technical Specifications**

Input: **balanced, floating; no DC**

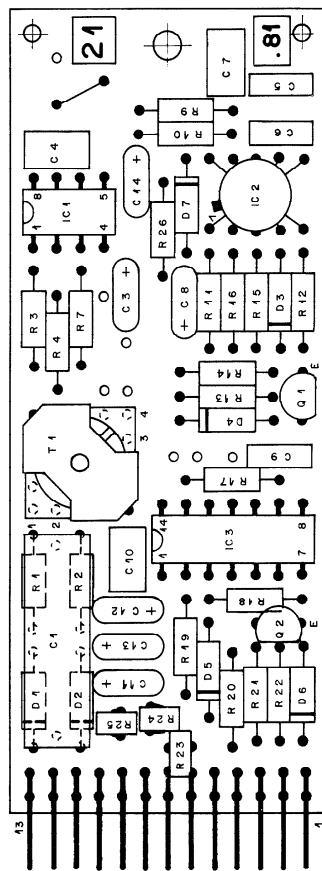
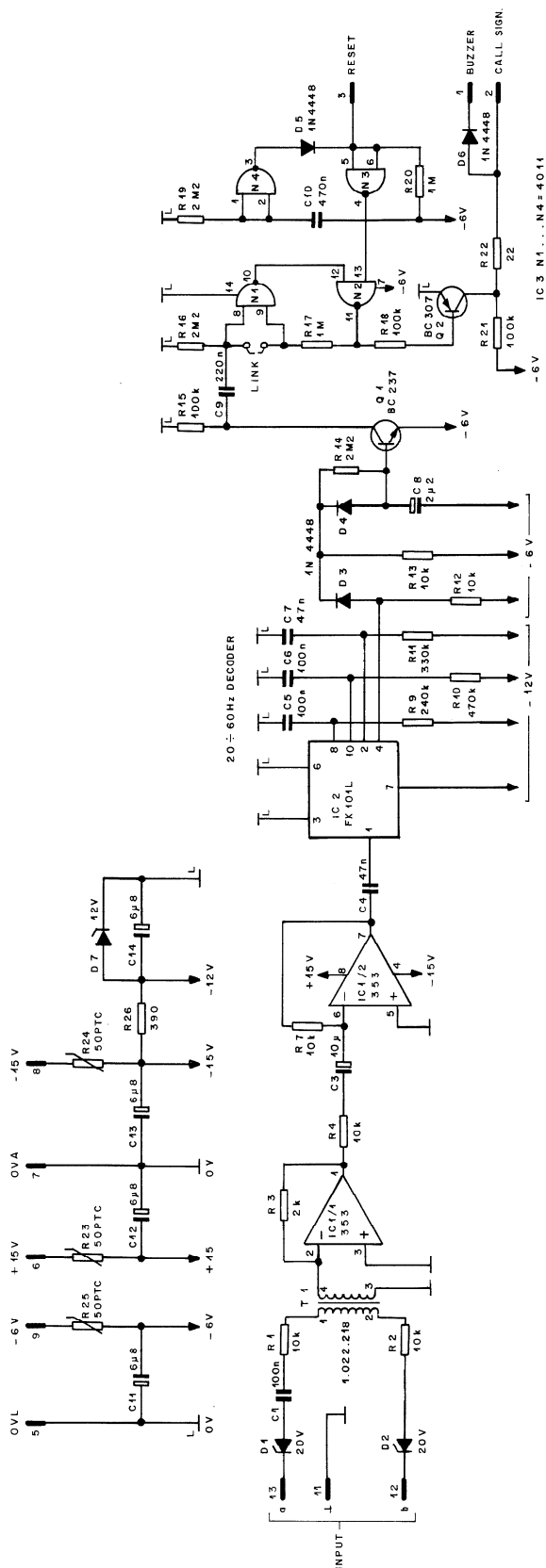
Impedance **> 20 kW**
 Frequency **20...60 Hz**
 Min. level **17 V_{rms}**
 Nominal level **70 V_{rms}**

Supply: **+15 V (5 mA); -15 V (10 mA); -6 V (2 mA)**

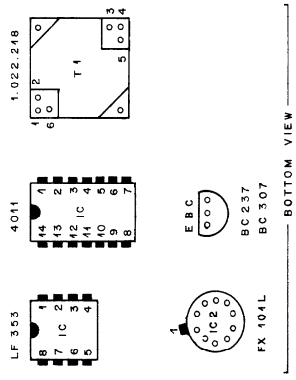
Dimensions: **MS-card, 34 × 85 mm**

Ordering Information: **Call decoder 20...60 Hz**

1.914.521.xx



CIS	PIN	EURO 32-PIN
INPUT a	13	1
INPUT b	12	2
L	11	3
-6V	10	4
-16V	9	5
0V	8	6
+15V	7	7
0V	6	8
RESET	5	9
CALL SIGN	4	10
BUZZER	3	11
	2	12
	1	13
		14
		15
		16
		17
		18
		19
		20
		21
		22
		23
		24
		25
		26
		27
		28
		29
		30
		31
		32



21.9.91		
STUDER REGENSDORF ZURICH	20 ÷ 60 Hz DECODER (NR. 21)	1.914.521.00

MSC CALL DECODER

Ad	POS.	REF.No.	DESCRIPTION			MANUFACTURER
C	...	1	59.99.0453	0,1µF	250V Rifa	MP
C	...	3	59.26.2100	10µF	16V	SAL
C	...	4	59.06.5474	0,47µF		PE
C	...	5	59.06.5104	0,1µF		PE
C	...	6	59.06.5104	0,1µF		PE
C	...	7	59.06.5474	0,47µF		PE
C	...	8	59.26.5229	2,2µF	25V	SAL
C	...	9	59.06.0224	0,22µF		PE
C	...	10	59.06.5474	0,47µF		PE
C	...	11	59.26.2689	6,8µF	16V	SAL
C	...	12	59.26.2689	6,8µF	16V	SAL
C	...	13	59.26.2689	6,8µF	16V	SAL
C	...	14	59.26.2689	6,8µF	16V	SAL
D	...	1	50.04.1109	20V	400mW Zener	
D	...	2	50.04.1109	20V	400mW Zener	
D	...	3	50.04.0125	1N4448		
D	...	4	50.04.0125	1N4448		
D	...	5	50.04.0125	1N4448		
D	...	6	50.04.0125	1N4448		
D	...	7	50.04.1117	12V	400mW Zener	
IC	...	1	50.09.0101	LF353N	DIP 8	
IC	...	2	50.07.0032	FX101L		CML
① IC	...	3	50.07.1011	4011BPC	DIL 14	
P			54.01.0273	13P	CIS	
Q	...	1	50.03.0436	BC237B	NPN	
Q	...	2	50.03.0515	BC307B	PNP	
R	...	1	57.11.4103	10kΩ		
R	...	2	57.11.4103	10kΩ		
① R	...	3	57.11.3202	2kΩ		
R	...	4	57.11.4103	10kΩ		
R	...	7	57.11.4103	10kΩ		
② R	...	9	57.11.3244	240kΩ		
R	...	10	57.11.4474	470kΩ		
R	...	11	57.11.4334	330kΩ		
R	...	12	57.11.4103	10kΩ		
R	...	13	57.11.4103	10kΩ		
① R	...	14	57.11.5225	2,2MΩ		
R	...	15	57.11.4104	100kΩ		
① R	...	16	57.11.5225	2,2MΩ		
R	...	17	57.11.4105	1MΩ		
R	...	18	57.11.4104	100kΩ		
① R	...	19	57.11.5225	2,2MΩ		
R	...	20	57.11.4105	1MΩ		
R	...	21	57.11.4104	100kΩ		
R	...	22	57.11.4220	22Ω		
R	...	23	57.99.0206	50Ω	PTC	2322 660 91008 Philips Typ YS 822 ITT PTH 608D 470M 050 Murata
R	...	24	57.99.0206	50Ω	PTC	
R	...	25	57.99.0206	50Ω	PTC	
R	...	26	57.11.4391	390kΩ		
T	...	1	1.022.218.00	1:1		ST

PE=Polyester, SAL=Solid Aluminium

MANUFACTURER: CML=Consumer Microcircuit LTD, ST=Studer

1.914.521.00 20=60HZ DECODER (Nr. 21) FRI 23/08/83

1.914.521.00 20=60HZ DECODER (Nr. 21) ① FRI 01/09/83

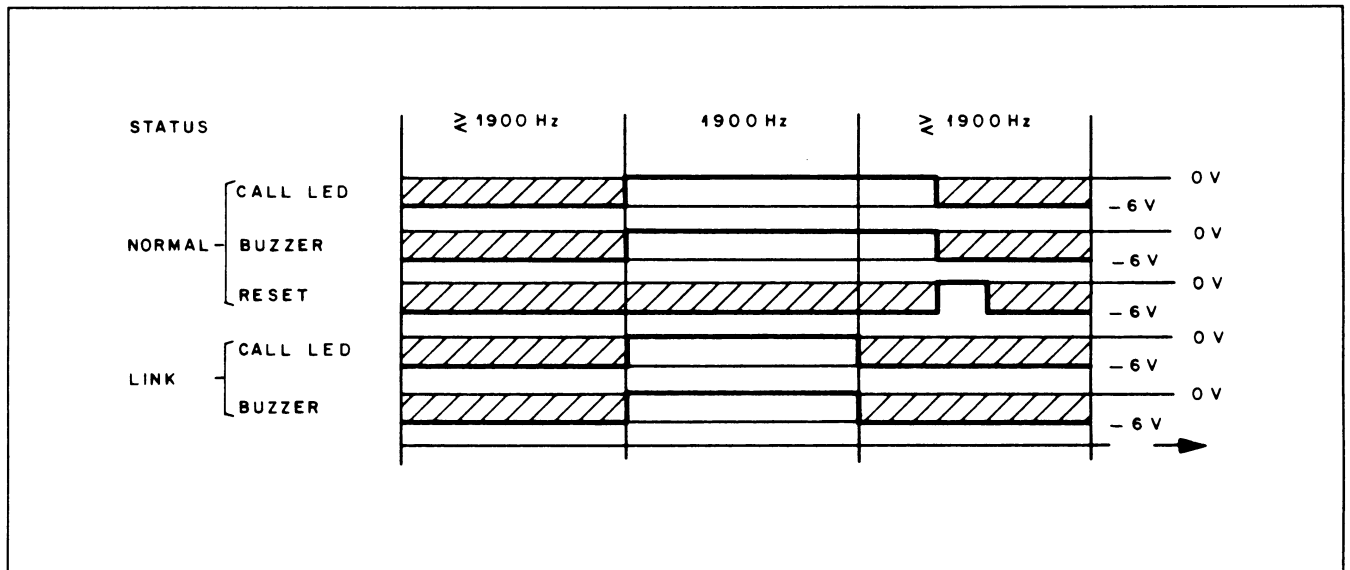
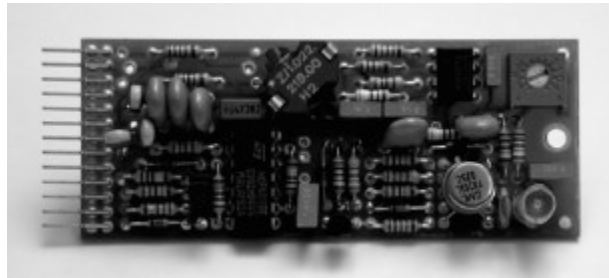
1.914.521.00 20=60HZ DECODER (Nr. 21) ② FRI 18/06/84

END
→

2.1.12 Call Decoder 1900 Hz

1.914.522

This card contains a call receiver for the standardized 1900 Hz call frequency on OB lines. It is tuned to respond to 1900 Hz $\pm 1\%$. The receiver can be switched either to activate an optical or an acoustical signal for the duration of the 1900 Hz call (linked mode), or the acoustical signal can be selected to remain activated until reset (normal mode). The acoustical signal can be generated by an external buzzer (not supplied).



Technical Specifications

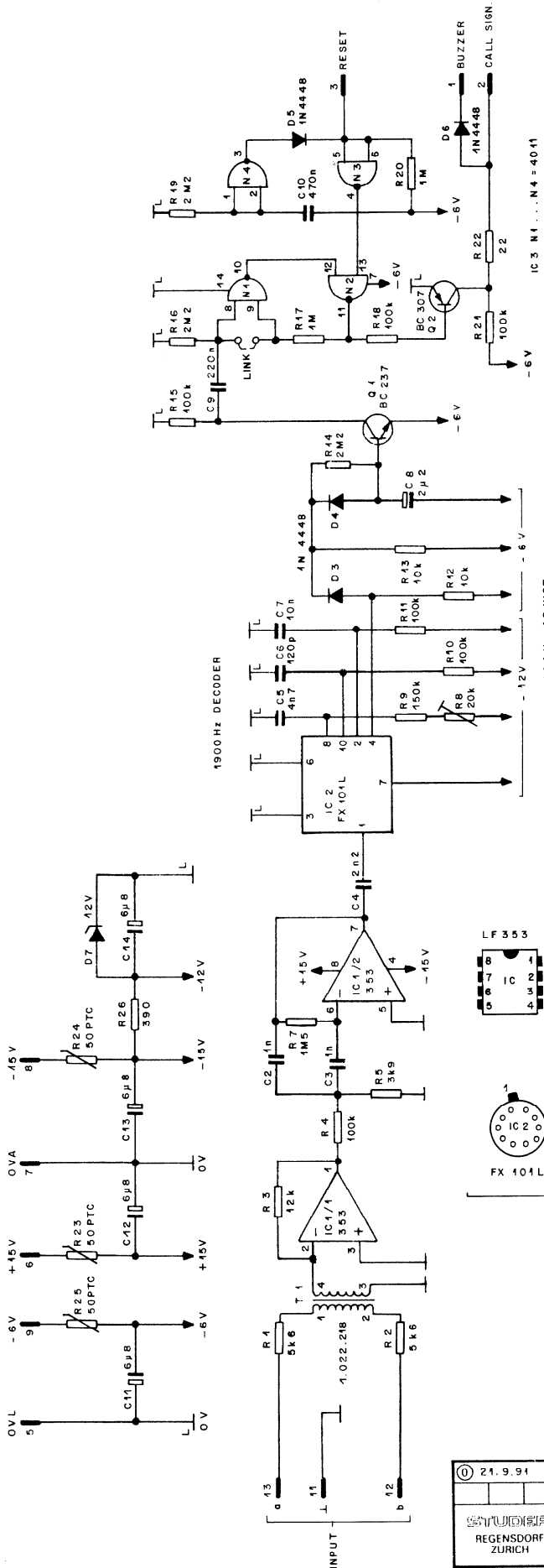
Input: **balanced, floating; no DC**
 Frequency **1900 Hz, $\pm 1\%$**
 Impedance **> 10 kW**
 Min. level **-30 dBu**
 Nominal level **+24 dBu**

Supply: **+15 V (5 mA); -15 V (10 mA); -6 V (2 mA)**
 Insulation rating **500 V_{DC}**

Dimensions: **MS-card, 34 × 85 mm**

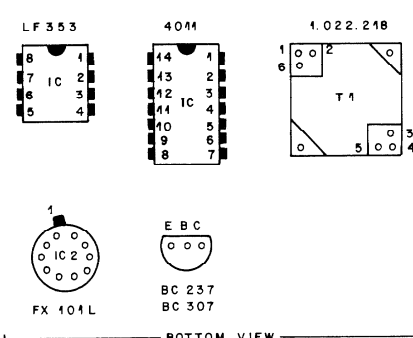
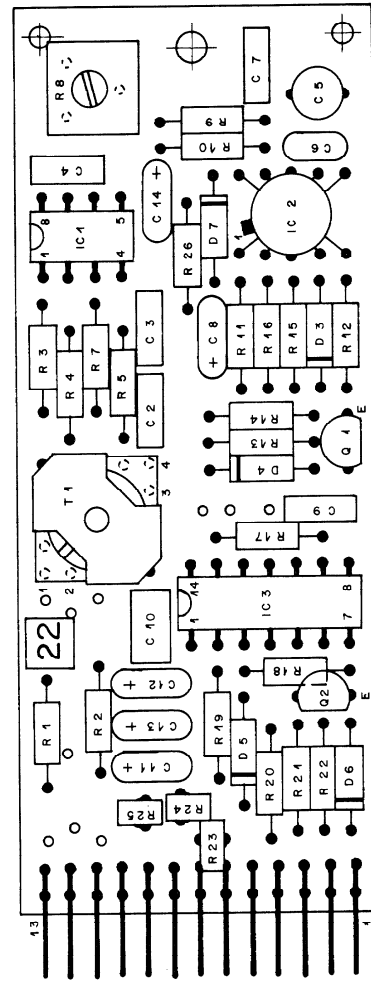
Ordering Information: Call decoder 1900 Hz 1.914.522.xx

1900Hz CALL-DECODER MSC



IC 3 N1 ... N4 = 4011

1900 Hz ADJUST



CIS	PIN	EURO 32 PIN			
		(a)	(b)	(c)	(d)
INPUT a	13	1	7	21	27
INPUT b	12	2	8	22	28
L	11	3	9	23	29
	10				
-6V	9	12			
-15V	8	14			
OVA	7	15			
+15V	6	16			
OVL	5	19			
	4				
RESET	3	4	10	24	30
CALL SIGN	2	5	11	25	31
BUZZER	1	6	13	26	32

21.9.91	STUDER REGENSDORF ZURICH	1900 Hz DECODER (NR.22)	1.914.522.00
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Call Decoder 1900 Hz 1.914.522.00 (1)

Idx. Pos.	Part No.	Qty.	Type/Val.	Description
0	C 2	59.06.0102	1n0	PETP, 63V, 10%, RM5
0	C 3	59.06.0102	1n0	PETP, 63V, 10%, RM5
0	C 4	59.06.0222	2n2	PETP, 63V, 10%, RM5
0	C 5	59.05.2472	4n7	PP, 2.5%, 63V
0	C 6	59.34.4121	120p	CER 63V, 5%, N750
0	C 7	59.06.0103	10n	PETP, 63V, 10%, RM5
0	C 8	59.26.5229	2u2	SAL, 20%, 25V
0	C 9	59.06.0224	220n	PETP, 63V, 10%, RM5
0	C 10	59.06.5474	470n	PETP, 63V, 5%, RM5
0	C 11	59.26.2689	6u8	SAL 16V 20%
0	C 12	59.26.2689	6u8	SAL 16V 20%
0	C 13	59.26.2689	6u8	SAL 16V 20%
0	C 14	59.26.2689	6u8	SAL 16V 20%
0	D 3	50.04.0125	1N4448	75V, 150mA, 4ns, DO-35
0	D 4	50.04.0125	1N4448	75V, 150mA, 4ns, DO-35
0	D 5	50.04.0125	1N4448	75V, 150mA, 4ns, DO-35
0	D 6	50.04.0125	1N4448	75V, 150mA, 4ns, DO-35
0	D 7	50.04.1117	12V	Zener, 5%, 0.5W, DO-35
0	IC 1	50.09.0101	TL072	Dual op-amp biFET
0	IC 2	50.07.0032	FX101	IC FX-101 L, ,A
1	IC 3	50.07.1011	4011	Quad 2-inp NAND
0	P 1	54.01.0273	13p	Stecker CIS parallelsteck
0	Q 1	50.03.0515	BC307B	PNP 100mA 45V
0	Q 2	50.03.0436	BC237B	NPN 100mA 45V
0	R 1	57.11.3562	5k6	MF, 1%, 0207
0	R 2	57.11.3562	5k6	MF, 1%, 0207
0	R 3	57.11.3123	12k	MF, 1%, 0207
0	R 4	57.11.3104	100k	MF, 1%, 0207
0	R 5	57.11.3392	3k9	MF, 1%, 0207
0	R 7	57.11.5155	1M5	MF, 5%, 0207
0	R 8	58.01.8203	20k	Cermet, 10%, 0.5W, horizontal
0	R 9	57.11.3154	150k	MF, 1%, 0207
0	R 10	57.11.3104	100k	MF, 1%, 0207
0	R 11	57.11.3104	100k	MF, 1%, 0207
0	R 12	57.11.3103	10k	MF, 1%, 0207
0	R 13	57.11.3103	10k	MF, 1%, 0207
0	R 14	57.11.5225	2M2	MF, 5%, 0207
0	R 15	57.11.3104	100k	MF, 1%, 0207
1	R 16	57.11.5225	2M2	MF, 5%, 0207
0	R 17	57.11.3105	1M0	MF, 1%, 0207
0	R 18	57.11.3104	100k	MF, 1%, 0207
1	R 19	57.11.5225	2M2	MF, 5%, 0207
0	R 20	57.11.3105	1M0	MF, 1%, 0207
0	R 21	57.11.3104	100k	MF, 1%, 0207
0	R 22	57.11.3220	22R	MF, 1%, 0207
0	R 23	57.99.0206	50R	PTC, 25V, 0.5W
0	R 24	57.99.0206	50R	PTC, 25V, 0.5W
0	R 25	57.99.0206	50R	PTC, 25V, 0.5W
0	R 26	57.11.3391	390R	MF, 1%, 0207
0	T 1	1.022.218.00	1 : 1	EINGANGSTRAFO 1 : 1

Idx. Pos.	Part No.	Qty.	Type/Val.	Description
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End of List

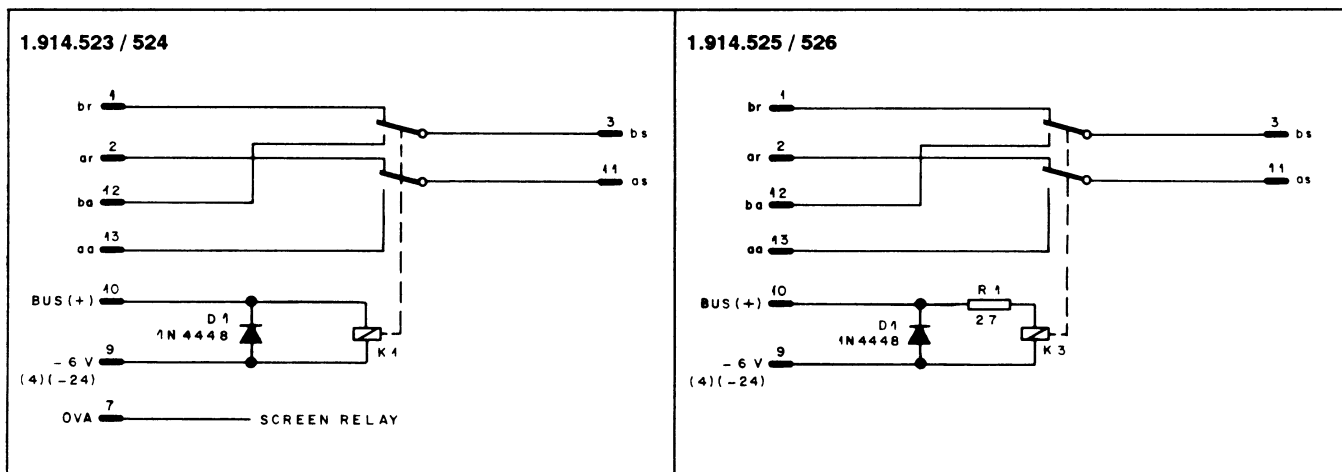
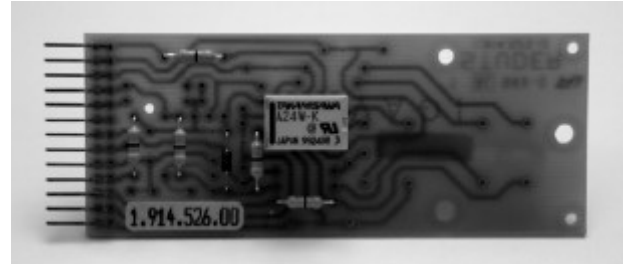
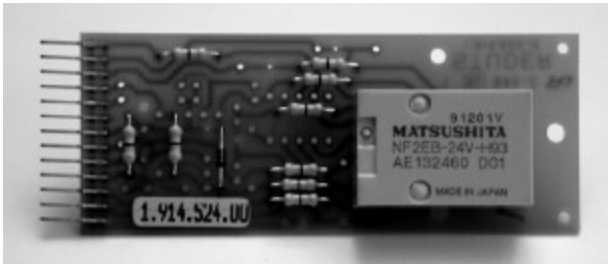
Comments:

(01) IC3, R16, R19 changed

2.1.13 Relay Sub-Cards

1.914.523/524/525/526

Audio signal routing or enabling/disabling of certain circuit sections is often effected best using relays. The Modular Sub-Card System, therefore, offers a selection of four relays on individual circuit boards. Because only one relay can be accommodated on one MS-Card, several cards (or a card from the Euro-card range) will be required if more complex switching has to be realized.



The relays offer double pole/double throw switching with non-shorting contacts, and coils rated for either 6 V_{DC} or 24 V_{DC} operation. A diode is wired across the relay coil in all versions to suppress interfering back-EMF when de-energizing the relay.

For studio applications where the mechanical click produced by the relay's armature is objectionable, a low-noise type is available.

No.	Coil	Contact Rating	
1.914.523	6 V _{DC} / 137 Ω	220 V / 2 A / 60 W	
1.914.524	24 V _{DC} / 2.0 kΩ	220 V / 2 A / 60 W	
* 1.914.525	5 V _{DC} / 135 Ω	100 V / 0.5 A / 30 W	(R1 = 27 Ω for 6 V operation)
* 1.914.526	24 V _{DC} / 2.6 kΩ	100 V / 0.5 A / 30 W	(R1 = 0 Ω)
* Low-noise relays			

Dimensions:

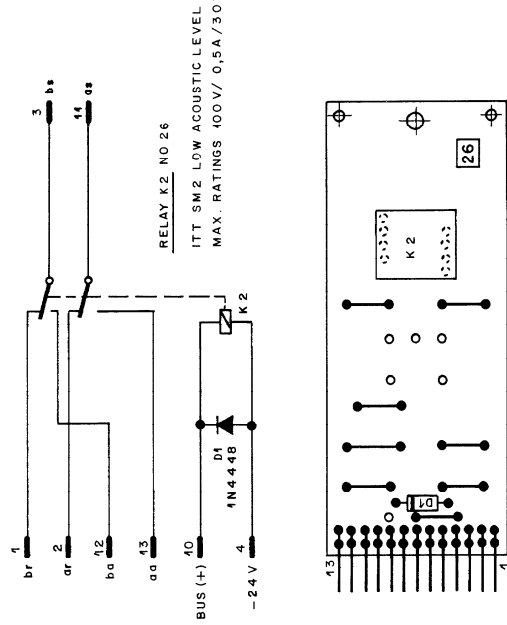
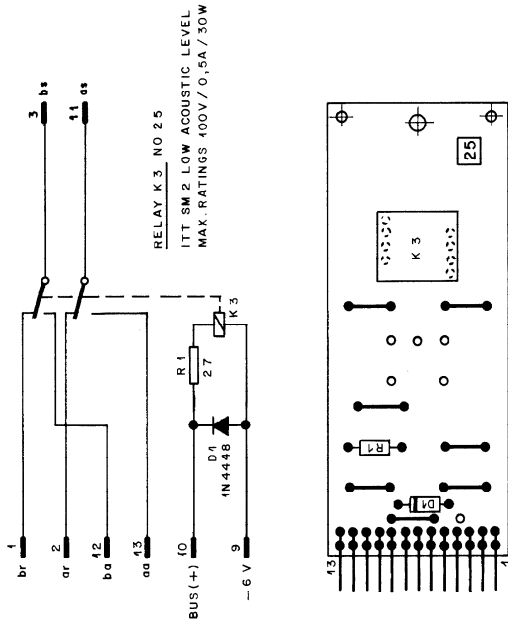
MS-card, 34 × 85 mm

Ordering Information:

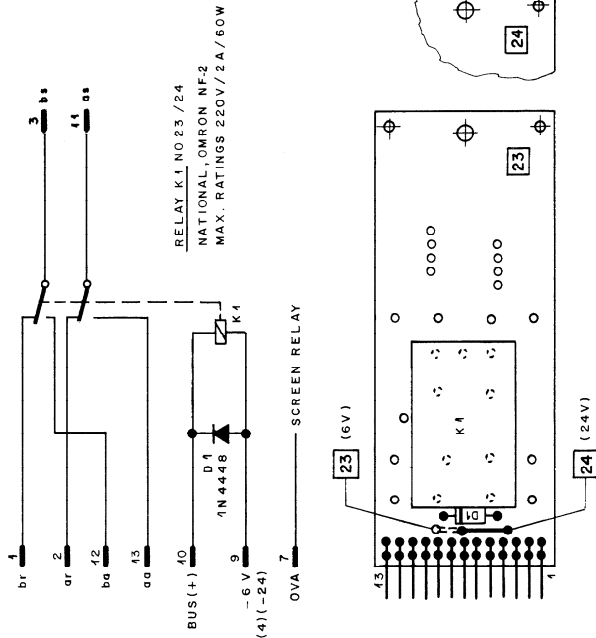
MSC relay 6 V _{DC}	1.914.523.xx
MSC relay 24 V _{DC}	1.914.524.xx
MSC relay 6 V _{DC} ; low-noise	1.914.525.xx
MSC relay 24 V _{DC} ; low-noise	1.914.526.xx

MSC RELAYS

RELAY 6V LN



RELAY 24V LN



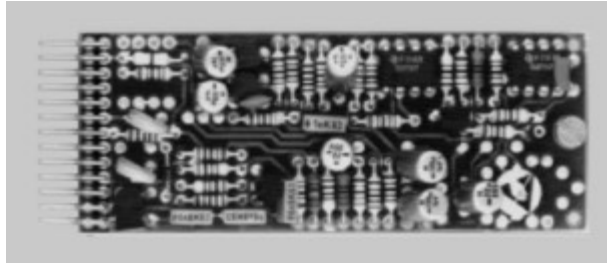
CIS	PIN	EURO 32 P			
		(a)	(b)	(c)	(d)
aa	43	1	7	21	27
ba	42	2	8	22	28
ca	41	3	9	23	29
BUS	40	17	47	18	18
-6V	9	42			
	8	7			
	6	6			
	5	5	20		
-24V	4	4	10	24	30
bs	3	3	4	11	25
ar	2	5	6	13	26
br	1	1	13	26	32

2.10.94							
STUDER REGENSDORF ZURICH		RELAY BOARD 2 U		24V LN		1.914.526.00	
				6V LN		1.914.525.00	
				24V		1.914.524.00	
				6V		1.914.523.00	

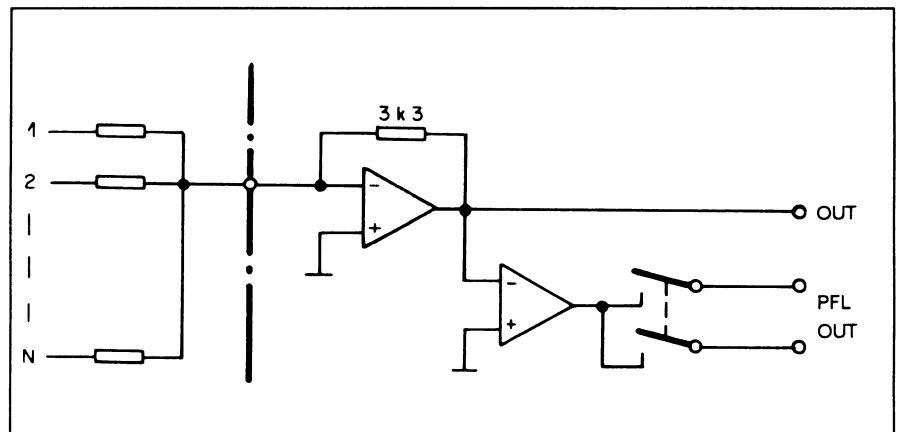
2.1.14 0-Ω Input Amplifier with PFL Facility

1.914.530

This amplifier with its characteristic input impedance of less than $1\ \Omega$ finds its application as a summing amplifier. A multitude of unbalanced sources can thus be mixed with a high degree of effective isolation between the individual inputs.



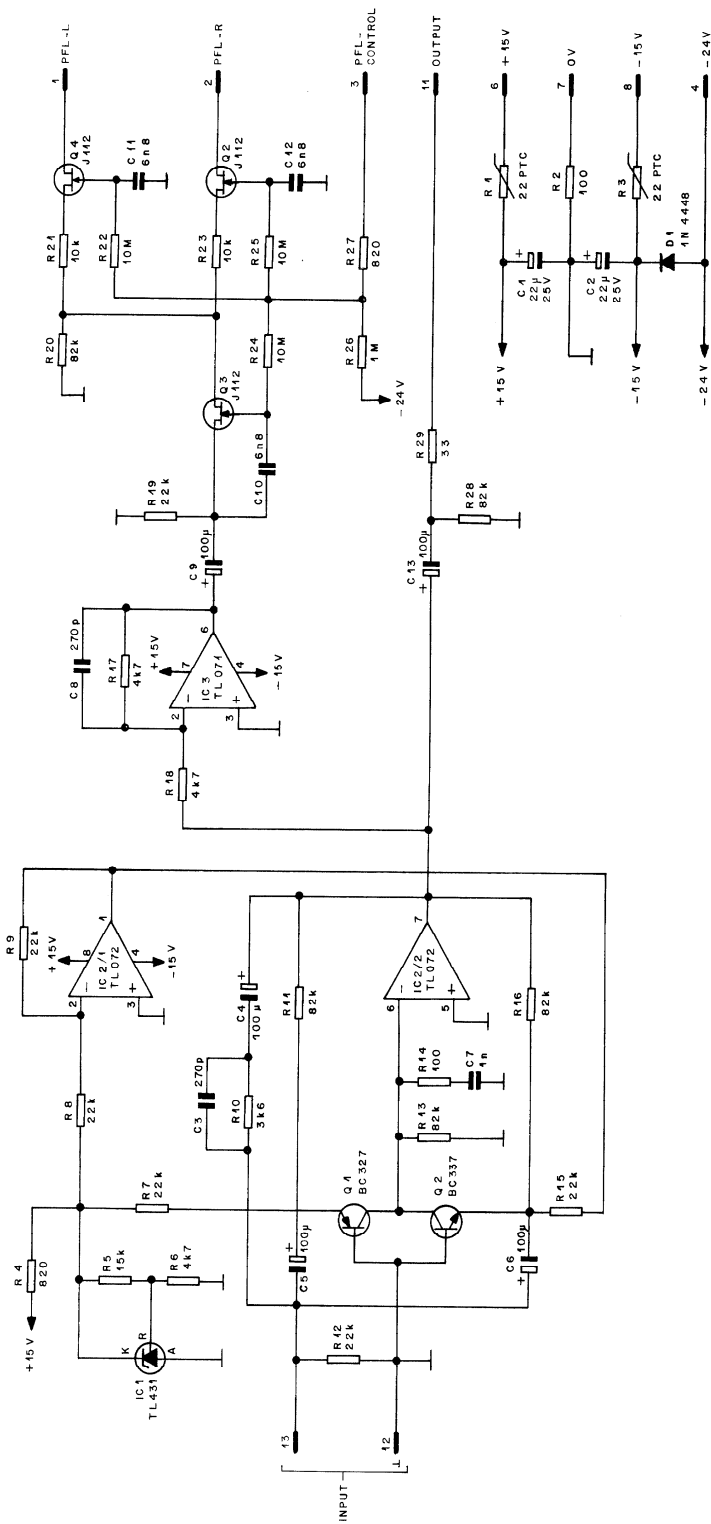
When using $3.3\ \text{k}\Omega$ resistors as combining (mixing) resistors in series with each source feeding the summing bus, gain will be unity (0 dB), i.e., the amplifier's output level will be equal to the level of the signal source ahead of the combining resistor. The amplifier's output is unbalanced, with low impedance. Additional outputs for monitoring (or pre-listening) can be activated via solid-state switches by remote control.

**Technical Specifications**

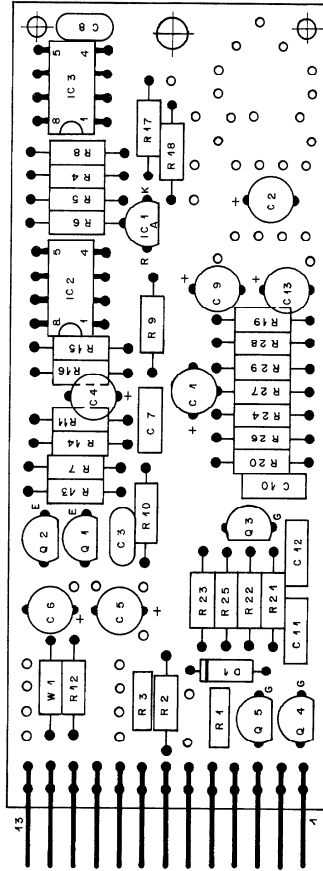
Input:	Max. current	2.5 mA_{rms} for max. output swing
	Current for 0 dBu	234.2 μA ; 0 dBu output ($\approx 3.3\ \text{k}\Omega$ at the input for unity gain)
Output:	Impedance	33 W
	Max. output swing	+20 dBu
	Load	≈ 600 W @ max. output swing
	Frequency response	±0.3 dBu , 30 Hz...16 kHz
	THD	< -75 dB , 30 Hz...16 kHz
	Noise voltage at the output	-110 dBu , input terminated with $3.3\ \text{k}\Omega$, bandwidth 23 kHz
	Noise figure, 12 inputs	F < 2 dB $\approx R_S = 275\ \Omega$
Supply:		+15 V (11 mA idling); -15 V (7 mA idling)
Dimensions:		MS-card , 34 × 85 mm

Ordering Information: Zero-Ω input amplifier (PFL facility)

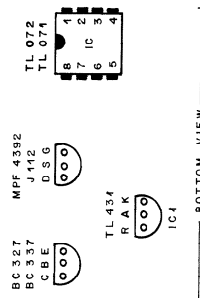
1.914.530.xx



SCHILDER 43.01.0108 / 1.914.530-04 AUFGEKLEBT NACH FABRIKATIONSMUSTER.



CIS	PIN	EURO 32 PIN
1	43	(D) 1
2	42	(D) 2
3	41	(D) 3
4	40	(D) 4
5	39	(D) 5
6	38	(D) 6
7	37	(D) 7
8	36	(D) 8
9	35	(D) 9
10	34	(D) 10
11	33	(D) 11
12	32	(D) 12
13	31	(D) 13
14	30	(D) 14
15	29	(D) 15
16	28	(D) 16
17	27	(D) 17
18	26	(D) 18
19	25	(D) 19
20	24	(D) 20
21	23	(D) 21
22	22	(D) 22
23	21	(D) 23
24	20	(D) 24
25	19	(D) 25
26	18	(D) 26
27	17	(D) 27
28	16	(D) 28
29	15	(D) 29
30	14	(D) 30
31	13	(D) 31
32	12	(D) 32



© 24.9.91	STUDER REGENSDORF ZÜRICH	0-Ω-INPUT WITH PFL	ESE	1.914.530.00
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MSC 0Ω-INPUT

Ad	..POS..	...REF.No...	DESCRIPTION.....	MANUFACTURER
C.....1		59.22.5220	22 uF 25V EL	
C.....2		59.22.5220	22 uF 25V EL	
C.....3		59.34.4271	270 pF CER	
C.....4		59.22.3101	100 uF 10V EL	
C.....5		59.22.3101	100 uF 10V EL	
C.....6		59.22.3101	100 uF 10V EL	
C.....7		59.06.0102	1 nF PE	
C.....8		59.34.4271	270 pF CER	
C.....9		59.22.3101	100 uF 10V EL	
C.....10		59.06.0682	6.8 nF PE	
C.....11		59.06.0682	6.8 nF PE	
C.....12		59.06.0682	6.8 nF PE	
C.....13		59.22.3101	100 uF 10V EL	
D.....1		50.04.0125	1N4448	any
IC....1		50.10.0106	TL431CLP voltage regulator	TI, Mot
IC....2		50.09.0101	TL072 dual op.amp.	TI
IC....3		50.09.0103	TL071 dual op.amp.	TI
P.....1		54.01.0273	CIS, 13 pin	
Q.....1		50.03.0625	BC327 PNP, low noise	
Q.....2		50.03.0516	BC337 NPN, low noise	
Q.....3		50.03.0350	J112 N-J-FET	NS, Mot, Six
Q.....4		50.03.0350	J112 N-J-FET	NS, Mot, Six
Q.....5		50.03.0350	J112 N-J-FET	NS, Mot, Six
R.....1		57.92.1121	22 Ohm PTC	
R.....2		57.11.4101	100 Ohm	
R.....3		57.92.1121	22 Ohm PTC	
R.....4		57.11.4821	820 Ohm	
R.....5		57.11.4153	15 kOhm	
R.....6		57.11.4472	4.7 kOhm	
R.....7		57.11.4223	22 kOhm	
R.....8		57.11.4223	22 kOhm	
R.....9		57.11.4223	22 kOhm	
R.....10		57.11.3362	3.6 kOhm	
R.....11		57.11.4823	82 kOhm	
R.....12		57.11.4223	22 kOhm	
R.....13		57.11.4823	82 kOhm	
R.....14		57.11.4101	100 Ohm	
R.....15		57.11.4223	22 kOhm	
R.....16		57.11.4823	82 kOhm	
R.....17		57.11.4472	4.7 kOhm	
R.....18		57.11.4472	4.7 kOhm	
R.....19		57.11.4223	22 kOhm	
R.....20		57.11.4823	82 kOhm	
R.....21		57.11.4103	10 kOhm	
R.....22		57.11.5106	10 MOhm	
R.....23		57.11.4103	10 kOhm	
R.....24		57.11.5106	10 MOhm	
R.....25		57.11.5106	10 MOhm	
R.....26		57.11.4105	1 MOhm	
R.....27		57.11.4821	820 Ohm	
R.....28		57.11.4823	82 kOhm	
R.....29		57.11.4330	33 Ohm	
W.....1		57.11.4000	0 Ohm	

CER = ceramic, EL = electrolytic, PE = polyester

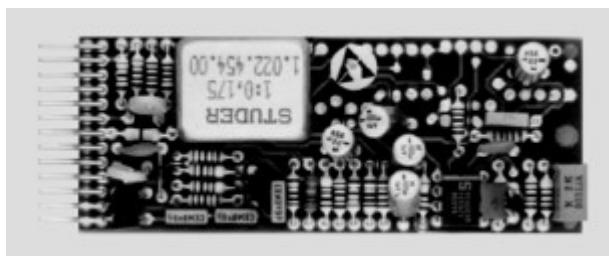
MANUFACTURER Mot=Motorola, NS=National Semiconductor, Six=Siliconics, TI=Texas Instruments

1.914.530.00 0-OHM INPUT WITH PFL WY 87/06/1800

2.1.15 High-Level Input with PFL Facility

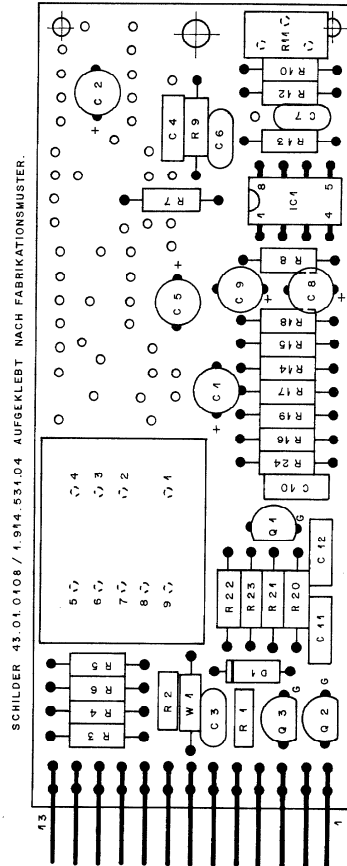
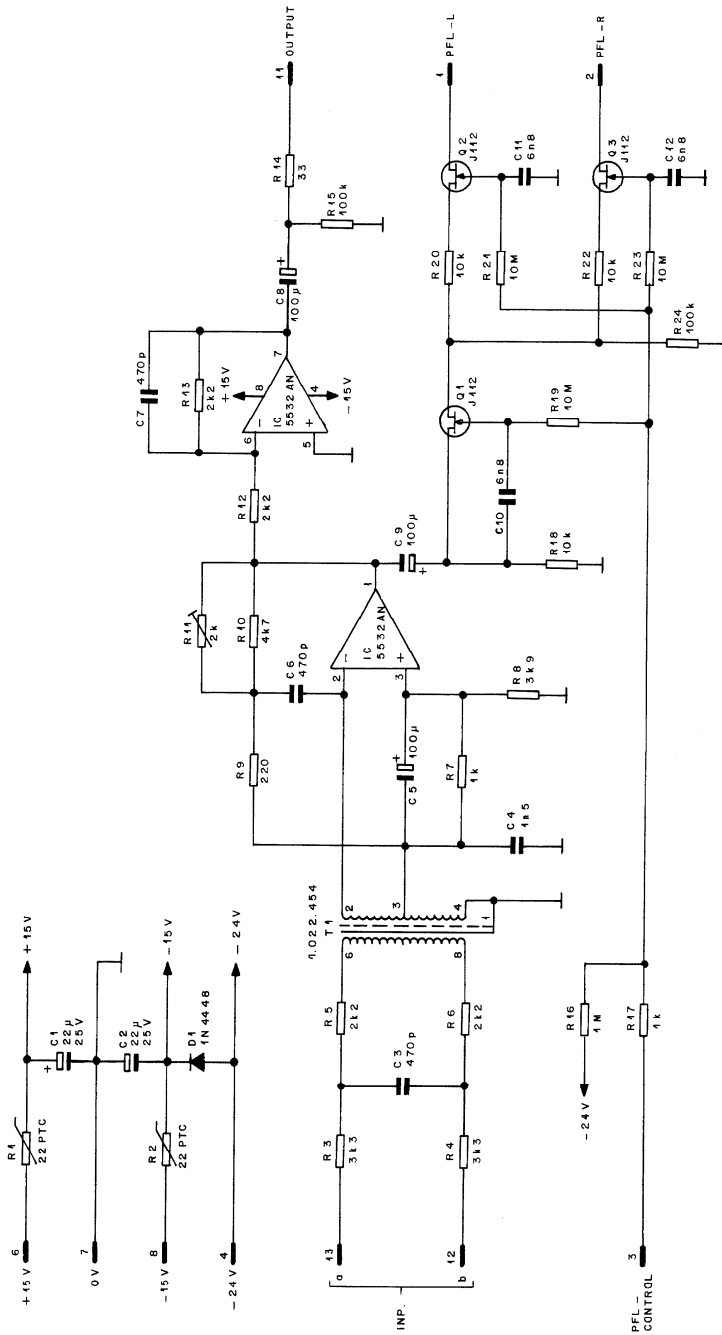
1.914.531

This compact high-level input amplifier features a balanced and floating input stage. The output is unbalanced, with low impedance and low distortion up to +24 dBu. An additional PFL monitoring facility is electronically switchable (FET).

**Technical Specifications**

Input:	Balanced and floating
Impedance	> 10 kW
Max. level	+26 dBu
CMRR	> 110 dB @ 50 Hz > 110 dB @ 16 kHz
Output:	Unbalanced
Impedance	33 W
Load	≈ 600 W @ max. output swing
Max. output swing	+20 dBu
Gain	-1.4...-17.8 dB
Frequency response	±0.3 dB, 30 Hz...16 kHz
THD	< -85 dB, 30 Hz...16 kHz
Noise voltage	< -107 dBu, gain -6 dB, bandwidth 23 kHz
Supply:	±15 V (10 mA idling)
Dimensions:	MS-card, 34 × 85 mm
Ordering Information:	HL input with PFL

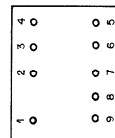
1.914.531.xx



SCHILDER 43.01.0108 / 1.914.531.04 AUFGEKLEBT NACH FABRIKATIONSMUSTER.

CIS	PIN	EURO 32 PIN
INPUT a	13	1
INPUT b	12	2
OUTPUT	11	3
	10	4
-45V	9	44
0V	8	45
+15V	7	46
	6	47
-24V	5	48
PFL SIGN. BUS	4	20
PFL RIGHT BUS	3	40
PFL LEFT BUS	2	5
	1	6
		13
		14
		15
		16
		17
		18
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		31
		32

1.022.454
T1



AN 5532



MPF 4392
030



BOTTOM VIEW

25.9.94	STUDER REGENSDORF ZURICH	HL INPUT WITH PFL	ESE	1.914.531.00
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MSC HL INPUT WITH PFL

Ad	POS.	REF.No.	DESCRIPTION	MANUFACTURER
C....1	59.22.5220	22 uF	25V EL	
C....2	59.22.5220	22 uF	25V EL	
C....3	59.34.5471	470 pF	CER	
C....4	59.06.5152	1.5 nF	PE	
C....5	59.22.3101	100 uF	10V EL	
C....6	59.34.5471	470 pF	CER	
C....7	59.34.5471	470 pF	CER	
C....8	59.22.3101	100 uF	10V EL	
C....9	59.22.3101	100 uF	10V EL	
C....10	59.06.0682	6.8 nF	PE	
C....11	59.06.0682	6.8 nF	PE	
C....12	59.06.0682	6.8 nF	PE	
D....1	50.04.0125	1N4448		any
IC....1	50.09.0106	NE5532AN	dual op.amp. low noise	Sig
P....1	54.01.0273		CIS, 13 pin	
Q....1	50.03.0350	J112	N-J-FET	NS, Mot, Six
Q....2	50.03.0350	J112	N-J-FET	NS, Mot, Six
Q....3	50.03.0350	J112	N-J-FET	NS, Mot, Six
R....1	57.92.1121	22 Ohm	PTC	
R....2	57.92.1121	22 Ohm	PTC	
R....3	57.11.3332	3.3 kOhm	1%	
R....4	57.11.3332	3.3 kOhm	1%	
R....5	57.11.3222	2.2 kOhm	1%	
R....6	57.11.3222	2.2 kOhm	1%	
R....7	57.11.4102	1 kOhm		
R....8	57.11.4392	3.9 kOhm		
R....9	57.11.4221	220 Ohm		
R....10	57.11.4472	4.7 kOhm		
R....11	58.01.9202	2 kOhm	trim potm.	
R....12	57.11.3222	2.2 kOhm		
R....13	57.11.3222	2.2 kOhm		
R....14	57.11.4330	33 Ohm		
R....15	57.11.4104	100 kOhm		
R....16	57.11.4105	1 MOhm		
R....17	57.11.4102	1 kOhm		
R....18	57.11.4103	10 kOhm		
R....19	57.11.5106	10 MOhm		
R....20	57.11.4103	10 kOhm		
R....21	57.11.5106	10 MOhm		
R....22	57.11.4103	10 kOhm		
R....23	57.11.5106	10 MOhm		
R....24	57.11.4104	10 kOhm		
T....1	1.022.454.00		input trafo	
W....1	57.11.4000	0 Ohm		

CER = ceramic, EL = electrolytic, PE = polyester

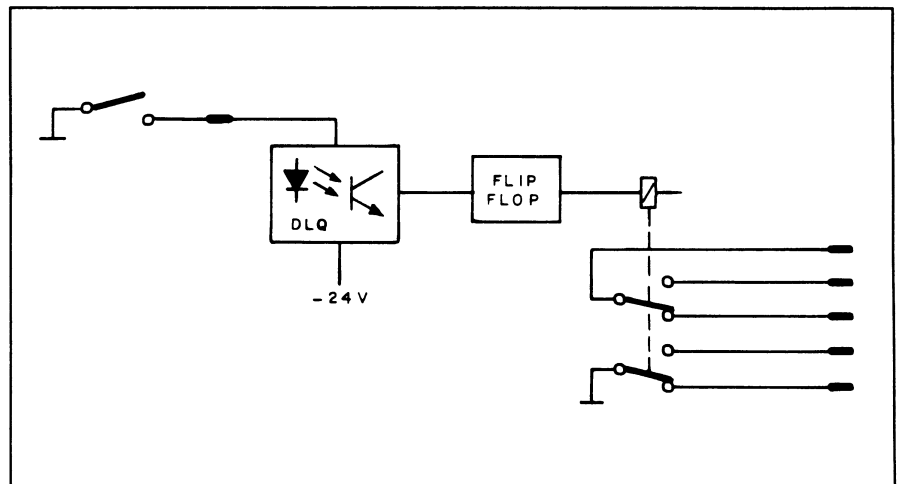
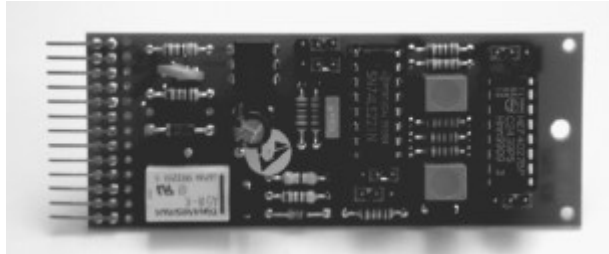
MANUFACTURER Mot=Motorola, NS=National Semiconductor, Six=Siliconics, TI=Texas Instruments, Sig=Signetics

1.914.531.00 HL-INPUT WITH PFL WY 87/06/1800

2.1.16 Flip-flop Unit

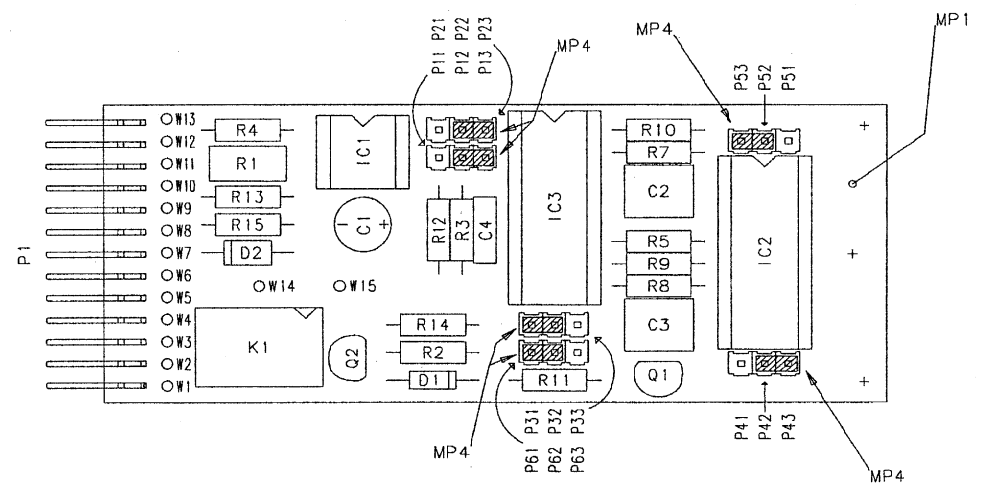
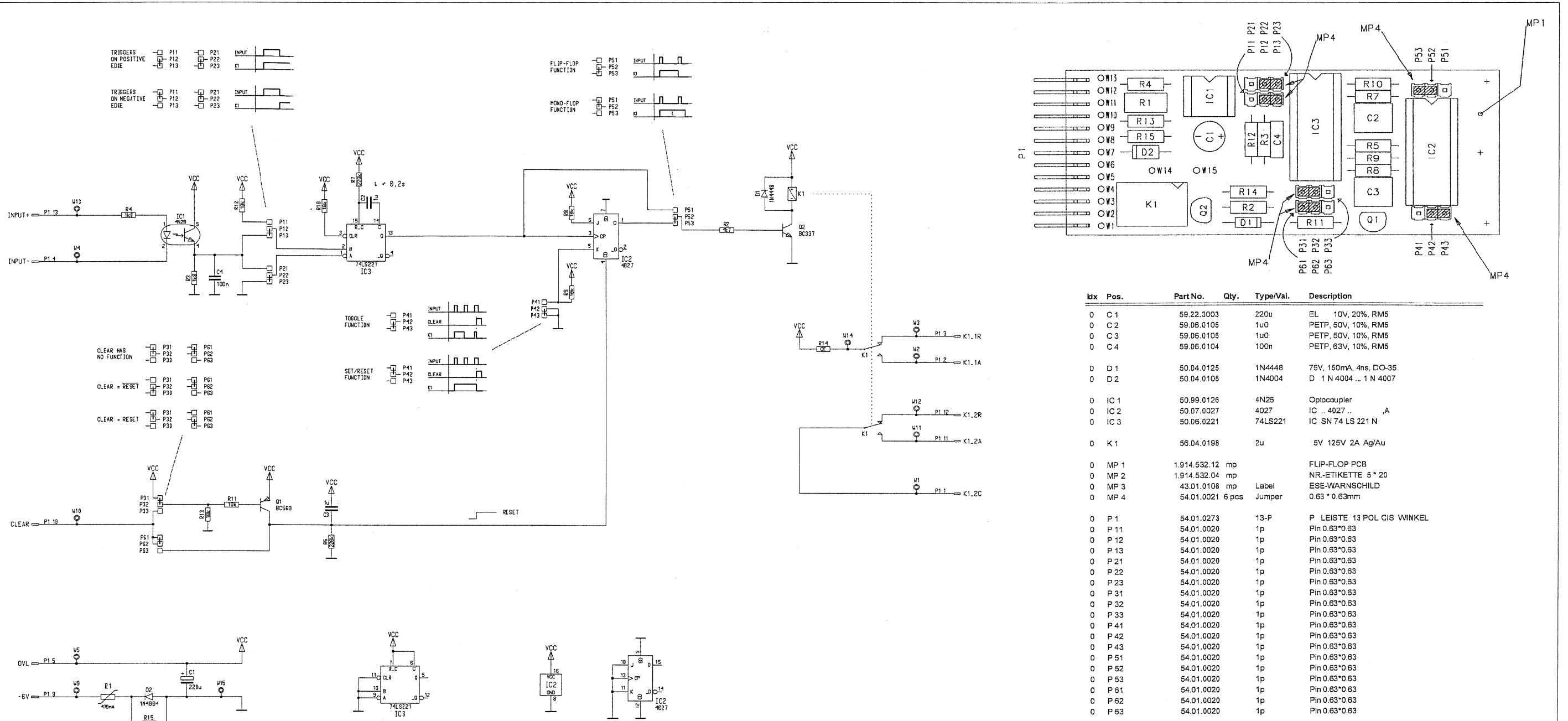
1.914.532

The Flip-flop Unit consists of a relay with two DPDT contacts and a flip-flop circuit with a control input (opto-coupler). A ground pulse from a non-latching switch applied to the input activates the relay. A next ground pulse will deactivate it again.

**Technical Specifications**

Input:		floating , with opto-coupler	
Relay contacts:	Max. rating	100 V/0.5 A/30 W	
Supply:		-6 V for logic -24 V for opto-coupler	
Dimensions:		MS-card , 34 × 85 mm	
Ordering Information:		Flip-flop unit	1.914.532.xx

MSC FLIP FLOP



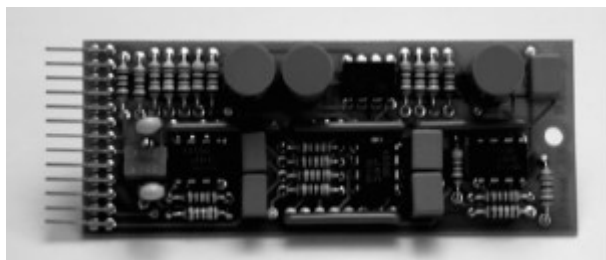
Idx	Pos.	Part No.	Qty.	Type/Val.	Description
0	C 1	59.22.3003		220u	EL 10V, 20%, RM5
0	C 2	59.06.0105		1u0	PETP, 50V, 10%, RM5
0	C 3	59.06.0105		1u0	PETP, 50V, 10%, RM5
0	C 4	59.06.0104		100n	PETP, 63V, 10%, RM5
0	D 1	50.04.0125		1N4448	75V, 150mA, 4ns, DO-35
0	D 2	50.04.0105		1N4004	D 1 N 4004 ... 1 N 4007
0	IC 1	50.99.0126		4N26	Optocoupler
0	IC 2	50.07.0027		4027	IC .. 4027 .. A
0	IC 3	50.06.0221		74LS221	IC SN 74 LS 221 N
0	K 1	56.04.0198		2u	5V 125V 2A Ag/Au
0	MP 1	1.914.532.12	mp		FLIP-FLOP PCB
0	MP 2	1.914.532.04	mp		NR.-ETIKETTE 5 * 20
0	MP 3	43.01.0108	mp	Label	ESE-WARNSCHILD
0	MP 4	54.01.0021	6 pcs	Jumper	0.63 * 0.63mm
0	P 1	54.01.0023		13-P	P LEISTE 13 POL CIS WINKEL
0	P 11	54.01.0020		1p	Pin 0.63*0.63
0	P 12	54.01.0020		1p	Pin 0.63*0.63
0	P 13	54.01.0020		1p	Pin 0.63*0.63
0	P 21	54.01.0020		1p	Pin 0.63*0.63
0	P 22	54.01.0020		1p	Pin 0.63*0.63
0	P 23	54.01.0020		1p	Pin 0.63*0.63
0	P 31	54.01.0020		1p	Pin 0.63*0.63
0	P 32	54.01.0020		1p	Pin 0.63*0.63
0	P 33	54.01.0020		1p	Pin 0.63*0.63
0	P 41	54.01.0020		1p	Pin 0.63*0.63
0	P 42	54.01.0020		1p	Pin 0.63*0.63
0	P 43	54.01.0020		1p	Pin 0.63*0.63
0	P 51	54.01.0020		1p	Pin 0.63*0.63
0	P 52	54.01.0020		1p	Pin 0.63*0.63
0	P 53	54.01.0020		1p	Pin 0.63*0.63
0	P 61	54.01.0020		1p	Pin 0.63*0.63
0	P 62	54.01.0020		1p	Pin 0.63*0.63
0	P 63	54.01.0020		1p	Pin 0.63*0.63
0	Q 1	50.03.0601		BC560C	BC 560 C
0	Q 2	50.03.0340		BC337-25	800mA, 45V, NPN
0	R 1	57.92.1391		470mA	PTC, 30V, 2.5 Ohm
0	R 2	57.11.3472		4k7	MF, 1%, 0207
0	R 3	57.11.3182		1k8	MF, 1%, 0207
0	R 4	57.11.3182		1k8	MF, 1%, 0207
0	R 5	57.11.3224		220k	MF, 1%, 0207
0	R 7	57.11.3224		220k	MF, 1%, 0207
0	R 8	57.11.3103		10k	MF, 1%, 0207
0	R 9	57.11.3103		10k	MF, 1%, 0207
0	R 10	57.11.3103		10k	MF, 1%, 0207
0	R 11	57.11.3103		10k	MF, 1%, 0207
0	R 12	57.11.3103		10k	MF, 1%, 0207
0	R 13	57.11.3103		10k	MF, 1%, 0207
0	R 14	57.11.3000		0R0	MF, 0207
0	R 15	not used		0R0	MF, 0207
0	XIC 2	53.03.0168		16p	DIL 0.3", lot, gerade
0	XIC 3	53.03.0168		16p	DIL 0.3", lot, gerade

End of List

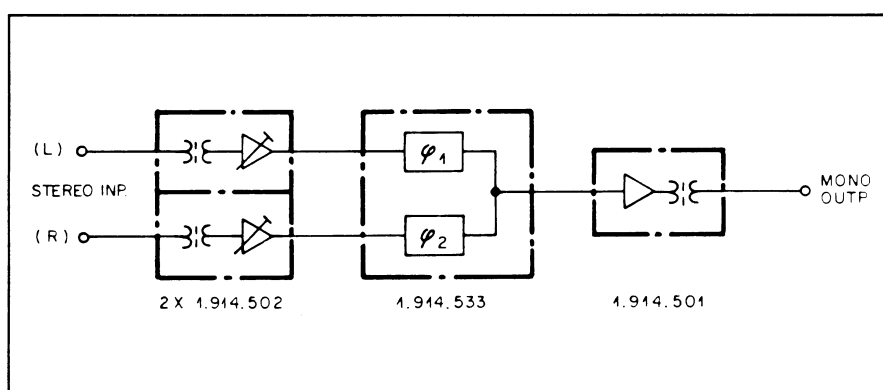
2.1.17 90° Filter

1.914.533

This active 90° filter is used to form a monophonic signal from the left and right channel of stereo signals. Simple mixing of the left and right channel will not produce a mono signal of satisfactory quality, but results in an emphasis of the center information. By summing the stereo signals in a 90° phase-shifted manner, this undesirable effect can be avoided.



The 90° filter consists of two all-pass filter chains, producing a uniform 90° phase difference across the whole audio range. The left and the right stereo signals are each passed through one of these filters and added at the filter's output. Doubling of equally-phased signal components as well as canceling of opposite-phased components is thus avoided.



The filter circuits are of unbalanced configuration. For this reason a summing circuit usually consists of two high-level amplifiers with balanced inputs (1.914.502), one 90° filter, and one high-level output amplifier (1.914.501), all accommodated on one MSC motherboard, as shown in the diagram above.

The gain of this combination can be adjusted. A correlated stereo input of equal level in both channels will provide a mono signal of identical level. With only one input channel (left or right), the mono output level will be lower by 3 dB.

Since the 90° filter with its input and output cards can be realized on a single, Euro-card size MSC motherboard, it can possibly be combined with other Audio Components, such as limiters and isolation amplifiers. Such stereo-to-mono combinations are in use at various radio stations to feed the stereo programs to the monophonic AM-transmitter in a correctly summed manner.

Technical Specifications

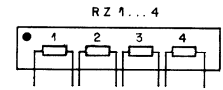
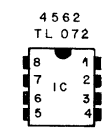
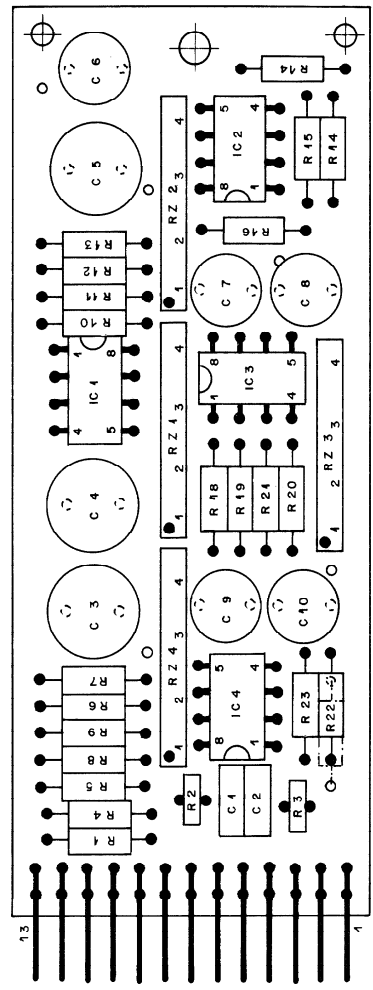
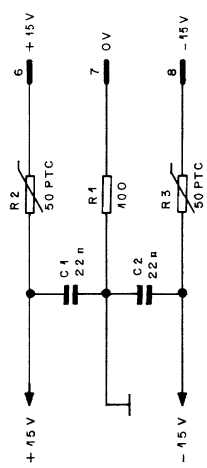
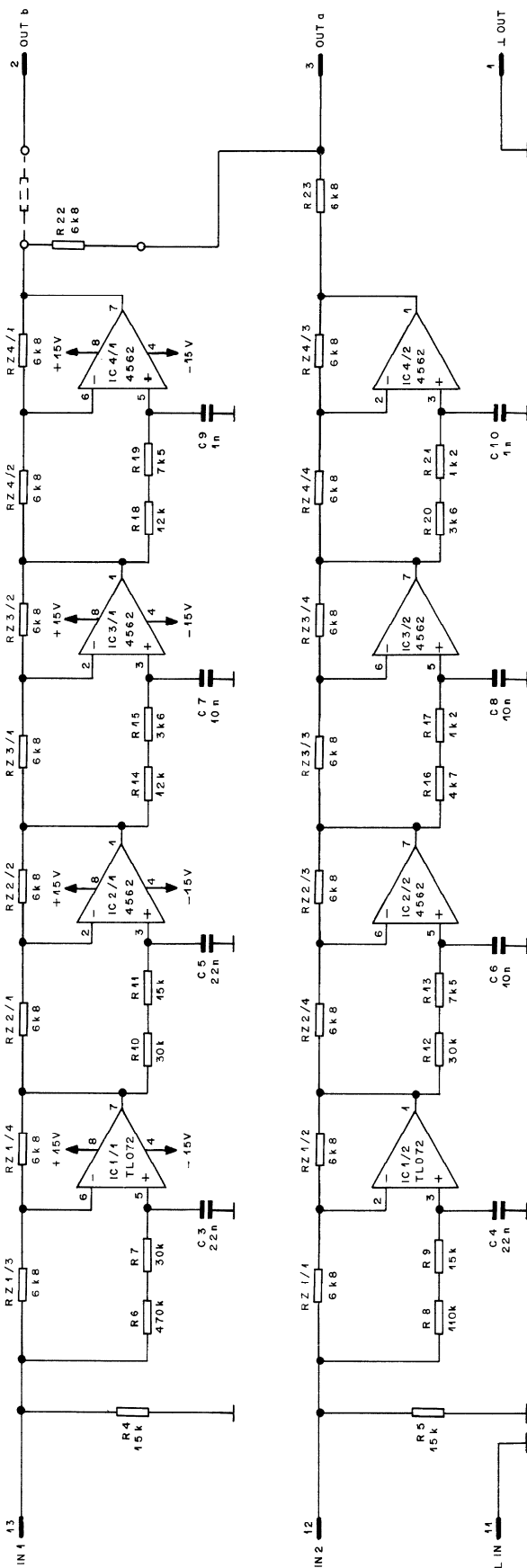
Input:	Max. level	+20 dBu
	Impedance	4 kW
Output:	Max. level	+20 dBu
	Impedance	6.8 kW
	Frequency response	30 Hz...16 kHz, ±0.3 dB
	Phase	90° ±3°; 30 Hz...16 kHz
	THD	£ -80 dB
	Noise	< -95 dBu

Supply: ±15 V (18 mA idling)

Dimensions: MS-card, 34 × 85 mm

Ordering Information: 90° filter stereo/mono

1.914.533.xx



BOTTOM VIEW

CIS	PIN	EURO 32 PIN			
		(A)	(B)	(C)	(D)
IN 1	13	1	7	21	27
IN 2	12	2	8	22	28
⊥	11	3	9	23	29
	10				
	9				
-15 V	8	14			
0 V	7	15			
+15 V	6	16			
	5				
	4				
OUT a	3	4	10	24	30
OUT b	2	5	11	25	31
⊥	1	6	13	26	32

 REGENS DORF ZÜRICH	90 DEGREE FILTER	1.914.533.00
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MSC 90° FILTER

Ad ..POS... ..REF.No... DESCRIPTION.....MANUFACTURER

C....1	59.06.0223	22 nF		PE	
C....2	59.06.0223	22 nF		PE	
C....3	59.05.1223	22 nF 1%		PP	
C....4	59.05.1223	22 nF 1%		PP	
C....5	59.05.1223	22 nF 1%		PP	
C....6	59.05.1103	10 nF 1%		PP	
C....7	59.05.1103	10 nF 1%		PP	
C....8	59.05.1103	10 nF 1%		PP	
C....9	59.05.1102	1 nF 1%		PP	
C....10	59.05.1102	1 nF 1%		PP	
IC....1	50.09.0101	TL072	dua1 op.amp.		TI
01 IC....2	50.09.0107	RC4559	dua1 op.amp.		Ra
01 IC....3	50.09.0107	RC4559	dua1 op.amp.		Ra
01 IC....4	50.09.0107	RC4559	dua1 op.amp.		Ra
P....1	54.01.0273		CIS, 13 pin		
R....1	57.11.3101	100 Ohm			
R....2	57.99.0206	50 Ohm	PTC		
R....3	57.99.0206	50 Ohm	PTC		
R....4	57.11.3153	15 kOhm			
R....5	57.11.3153	15 kOhm			
R....6	57.11.3474	470 kOhm	1%		
R....7	57.11.3303	30 kOhm	1%		
R....8	57.11.3114	110 kOhm	1%		
R....9	57.11.3153	15 kOhm	1%		
R....10	57.11.3303	30 kOhm	1%		
R....11	57.11.3153	15 kOhm	1%		
R....12	57.11.3303	30 kOhm	1%		
R....13	57.11.3752	7.5 kOhm	1%		
R....14	57.11.3123	12 kOhm	1%		
R....15	57.11.3362	3.6 kOhm	1%		
R....16	57.11.3472	4.7 kOhm	1%		
R....17	57.11.3122	1.2 kOhm	1%		
R....18	57.11.3123	12 kOhm	1%		
R....19	57.11.3752	7.5 kOhm	1%		
R....20	57.11.3362	3.6 kOhm	1%		
R....21	57.11.3122	1.2 kOhm	1%		
R....22	57.11.3682	6.8 kOhm	1%		
R....23	57.11.3682	6.8 kOhm	1%		
RZ....1	57.88.2682	6.8 kOhm		Resistor-Network	
RZ....2	57.88.2682	6.8 kOhm		Resistor-Network	
RZ....3	57.88.2682	6.8 kOhm		Resistor-Network	
RZ....4	57.88.2682	6.8 kOhm		Resistor-Network	

PE = polyester, PP = polypropylen

(01) 90/06/21 IC 2...4 RC 4562 replaced by RC 4559

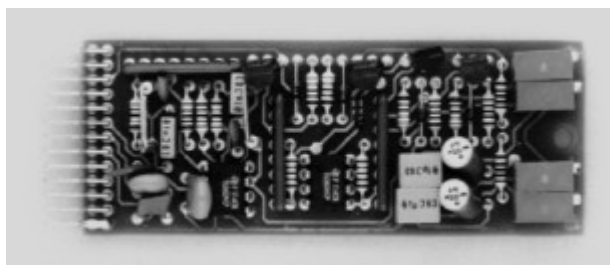
MANUFACTURER TI=Texas Instruments, Ra=Raytheon

1.914.533.00 90 DEGREE FILTER HAM88/02/2400
 1.914.533.00 90 DEGREE FILTER FRI90/06/2101

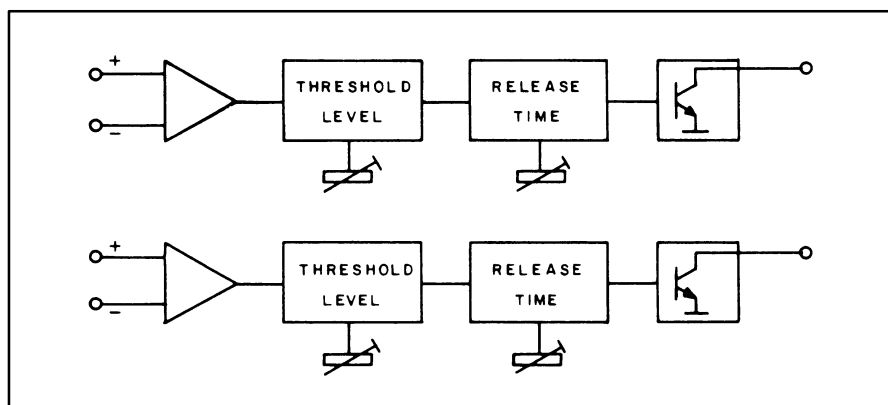
2.1.18 Dual Vox Detector

1.914.534

The Dual Vox Detector card contains two adjustable threshold level detector circuits. Threshold level (-22 dBu... $+16$ dBu) and release time (0.2 s... 10 s) are separately adjustable for two audio channels. These adjustments are effected very precisely with multi-turn trimmer potentiometers.



The high-impedance audio input is balanced. The open-collector output is prepared to activate a relay or an alarm device. A possible application of this card would be to detect incoming modulation.

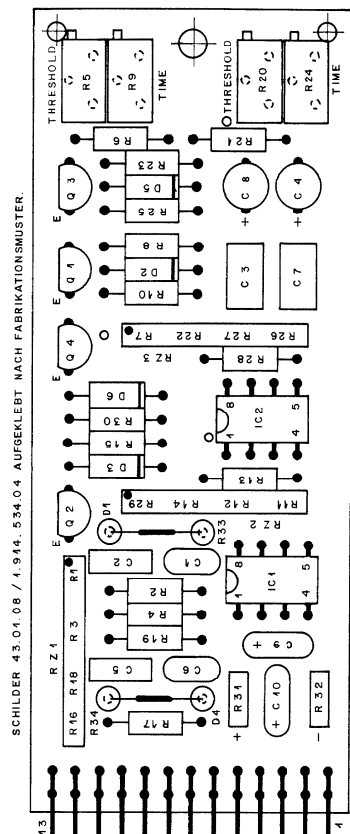
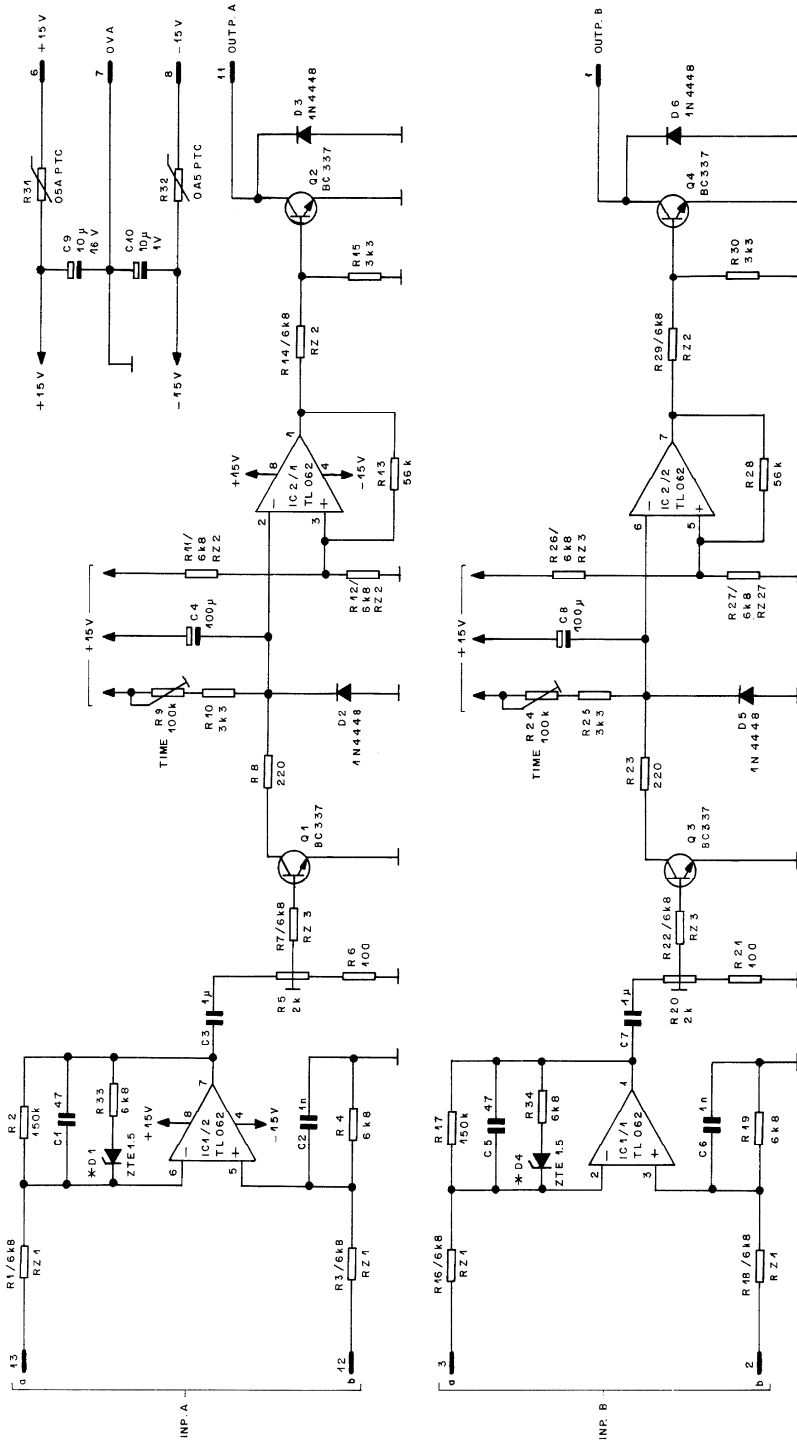
**Technical Specifications****Inputs:**

	Electronically balanced
Impedance	≈ 10 kW
Max. level	+24 dBu ($0 \text{ dBu} \hat{=} 0,775 \text{ V}_{\text{rms}}$)
Frequency response	75 Hz...12 kHz, -3 dB
Threshold level	-22 dBu...+16 dBu
Attack time	100 ms
Release time	200 ms...10 s
Hysteresis	± 1 dB

Outputs:**Open-collector;** $U_{\text{CE}} \leq +45 \text{ V}$; $I_{\text{max}} \leq 100 \text{ mA}$ **Supply:****±15 V** ($\leq 15 \text{ mA}$ / 4 mA idling)**Dimensions:****MS-card**, $34 \times 85 \text{ mm}$ **Ordering Information:**

Dual vox detector

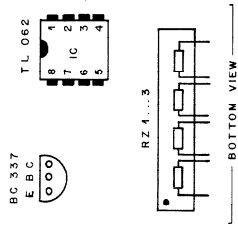
1.914.534.xx



SCHILDER 43.01.08 / 1.914.534.04 AUFGEKLEBT NACH FABRIKATIONSMUSTER.

* CATHODE RING CONNECTED TO THE POSITIVE VOLTAGE OF THE VOLTAGE.

CIS	PIN	EURO 32 PIN
INPUT A a	13	1
INPUT B b	12	2
OUTPUT	11	3
	10	4
-15V	8	14
OVA	7	15
+15V	6	16
	5	17
INPUT A q	4	10
INPUT B b	3	11
OUTPUT A	2	12
	1	13
		14
		15
		16
		17
		18
		19
		20
		21
		22
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		31
		32



27.9.94			
STUDER REGENSDORF ZÜRICH	THRESHOLD LEVEL DETECTOR	ESE	1.914.534.00

MSC DUAL VOX DETECTOR

Ad	POS	REF.No	DESCRIPTION	MANUFACTURER	
01	C....1	59.34.2470	47 pF 63V	CER 5%	
01	C....2	59.34.5102	1000 pF 63V	PE 5%	
	C....3	59.06.5105	1 uF	PE 5%	
	C....4	59.22.3101	100 uF 10V	EL	
01	C....5	59.34.2470	47 pF 63V	CER 5%	
01	C....6	59.06.5102	1000 pF 63V	PE 5%	
	C....7	59.06.5105	1 uF	PE 5%	
	C....8	59.22.3101	100 uF 10V	EL	
	C....9	59.26.2100	10 uF 16V	EL	
	C....10	59.26.2100	10 uF 16V	EL	
01	D....1	50.99.0183	ZTE1.5	1.5V ZENER	ITT
	D....2	50.04.0125	1N4448		any
	D....3	50.04.0125	1N4448		any
01	D....4	50.99.0183	ZTE1.5	1.5V ZENER	ITT
	D....5	50.04.0125	1N4448		any
	D....6	50.04.0125	1N4448		any
	IC....2	50.09.0119	TL062	dual op.amp.	TI
	IC....3	50.09.0119	TL062	dual op.amp.	TI
	P....1	54.01.0273		CIS, 13 pin	
	Q....1	50.03.0516	BC337	NPN	any
	Q....2	50.03.0516	BC337	NPN	any
	Q....3	50.03.0516	BC337	NPN	any
	Q....4	50.03.0516	BC337	NPN	any
	R....1	.	6.8 kOhm	RZ 1	
01	R....2	57.11.3154	150 kOhm		
	R....3	.	6.8 kOhm	RZ 1	
01	R....4	57.11.3682	6.8 kOhm		
	R....5	58.05.0202	2 kOhm	Trim 10%	
	R....6	57.11.3101	100 Ohm		
	R....7	.	6.8 kOhm	RZ 3	
	R....8	57.11.3221	220 Ohm		
	R....9	58.05.0104	100 kOhm	Trim 10%	
	R....10	57.11.3332	3.3 kOhm		
	R....11	.	6.8 kOhm	RZ 2	
	R....12	.	6.8 kOhm	RZ 2	
	R....13	57.11.3563	56 kOhm		
	R....14	.	6.8 kOhm	RZ 2	
	R....15	57.11.3332	3.3 kOhm		
	R....16	.	6.8 kOhm	RZ 1	
01	R....17	57.11.3154	150 kOhm	1%	
	R....18	.	6.8 kOhm	RZ 1	
01	R....19	57.11.3682	6.8 kOhm		
	R....20	58.05.0202	2 kOhm	Trim 10%	
	R....21	57.11.3101	100 Ohm		
	R....22	.	6.8 kOhm	RZ 3	
	R....23	57.11.3221	220 Ohm		
	R....24	58.05.0104	100 kOhm	Trim 10%	
	R....25	57.11.3332	3.3 kOhm		
	R....26	.	6.8 kOhm	RZ 3	
	R....27	.	6.8 kOhm	RZ 3	
	R....28	57.11.3563	56 kOhm		
	R....29	.	6.8 kOhm	RZ 2	
	R....30	57.11.3332	3.3 kOhm		
	R....31	57.92.7001	0.3 Ohm	PTC .5A	
	R....32	57.92.7001	0.3 Ohm	PTC .5A	
01	R....33	57.11.3682	6.8 kOhm		
01	R....34	57.11.3682	6.8 kOhm		
	RZ....1	57.88.2682	6.8 kOhm	R. Network 4*6.8k	
	RZ....2	57.88.2682	6.8 kOhm	R. Network 4*6.8k	
	RZ....3	57.88.2682	6.8 kOhm	R. Network 4*6.8k	

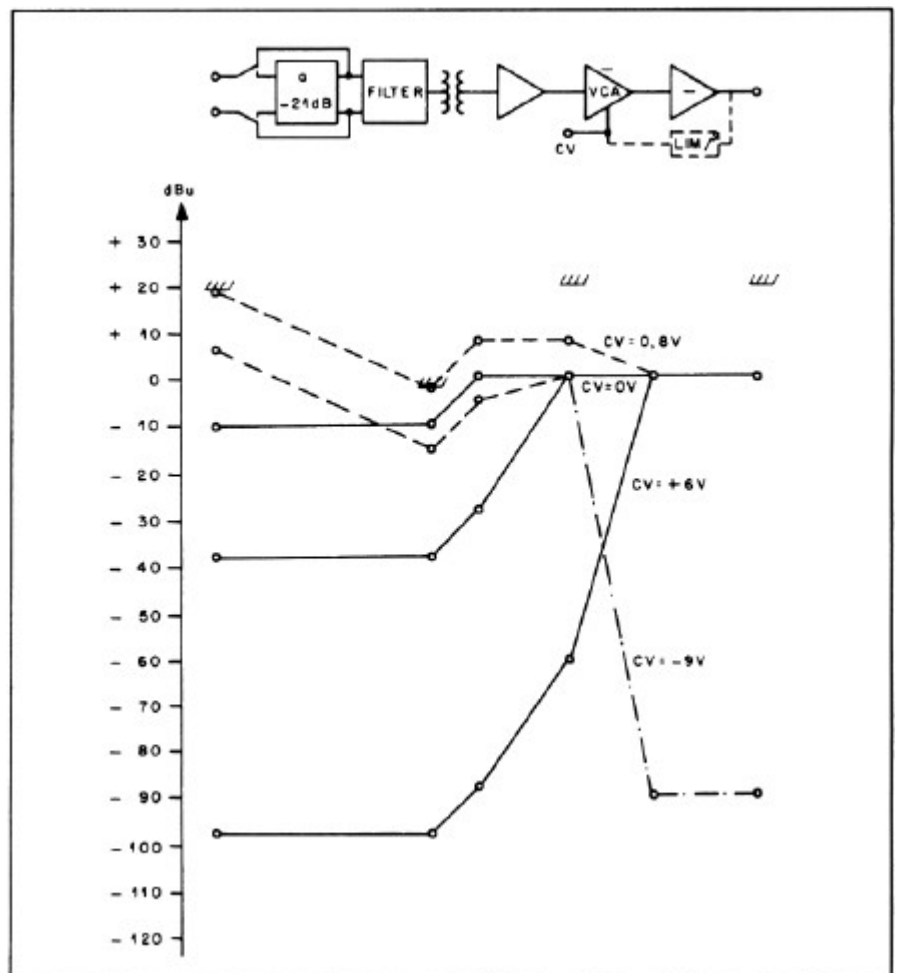
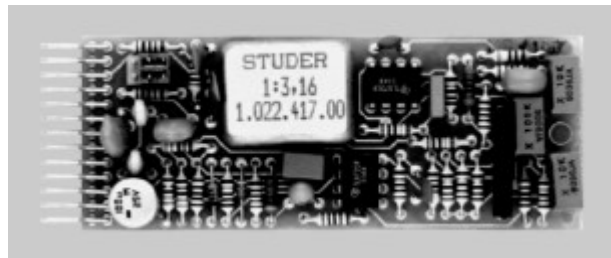
(01) update
 (02) old name: THRESHOLD DETECTOR
 CER = ceramic, EL = electrolytic, PE = polyester

MANUFACTURER	Part No.	Description	Reference
Mot	Motorola		
NS	National Semiconductor		
Six	Siliconics		
TI	Texas Instruments		
	1.914.534.00	THRESHOLD LEVEL DETECTOR	FRI88/06/1800
	1.914.534.00	THRESHOLD LEVEL DETECTOR	FRI88/09/0701
	1.914.534.00	DUAL VOX DETECTOR (POS)	FRI88/10/2702

2.1.19 Microphone Amplifier with Limiter

1.914.539

This assembly combines a microphone amplifier and a VCA limiter circuit with adjustable threshold level and program-depending release time. The input is balanced and floating, the output is unbalanced and with low impedance. Gain control is effected internally with a trimmer potentiometer, or externally with a gain-control DC voltage. A jumper-selectable pad reduces the input level by 21 dB.

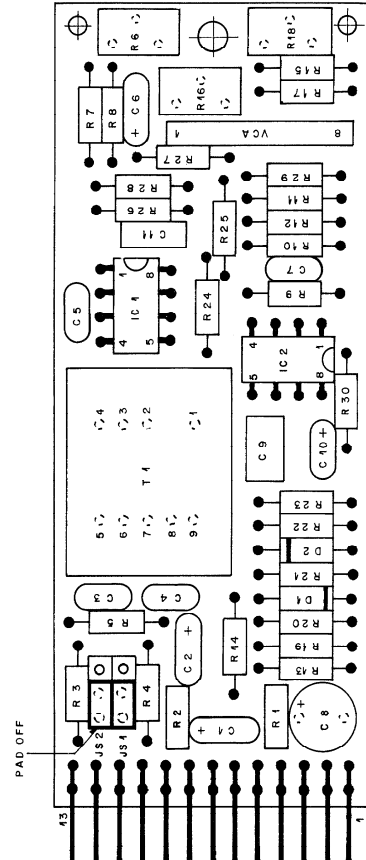
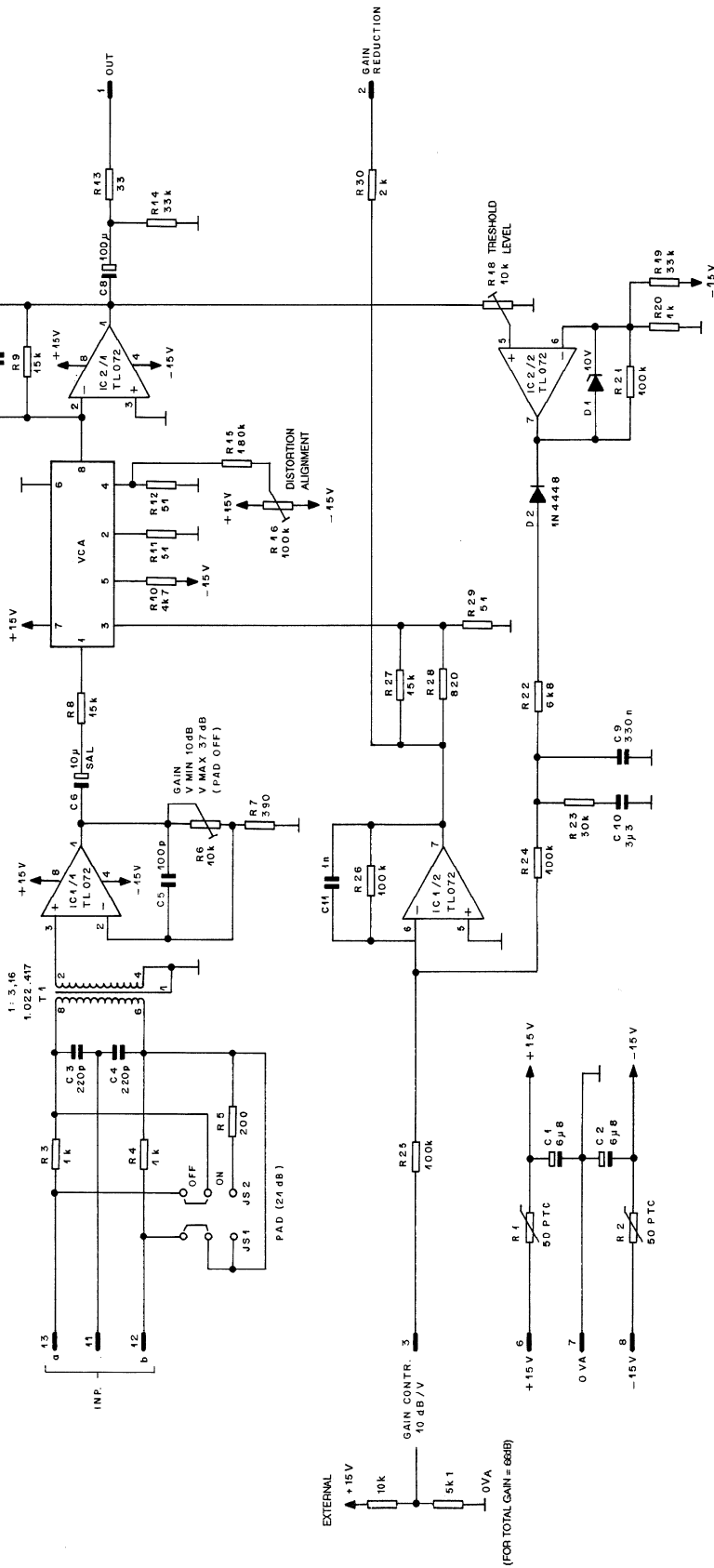


The operation of the limiter circuit can be monitored at the gain reduction output, if an appropriate instrument (GRM) is connected.

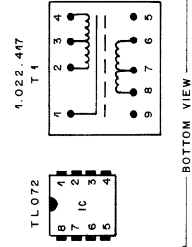
This card is ideally suited for talkback applications.

Technical Specifications

Input:	Impedance	> 1 kW , balanced, floating	
	Max. level	-2 dBu (THD at 30 Hz ≤ 1%) +19 dBu , pad on	
	Pad (attenuation)	-21 dB , jumper-selectable	
	CMRR	> 60 dB @ 16 kHz	
	Source impedance	£ 200 W	
Output:	Max. level	+20 dBu	
	Impedance	33 W	
	Load	≈ 2 kW	
	Gain adjust (v_1)	min. +10 dB , VCA = 0 dB; pad off	
		max. +37 dB , VCA = 0 dB; pad off	
		min. -11 dB , VCA = 0 dB; pad on	
		max. +16 dB , VCA = 0 dB; pad on	
	Gain control characteristics (v_2)	10 dB/V	
		DC range	-10...+6 V , pin3: gain control input
		Total gain	$v_{tot} = v_1 + v_2$
Max. attenuation		> 90 dB	
General:	Frequency response	±0.5 dB , 30 Hz...16 kHz	
	THD	£ -50 dB , 20 dB gain; 30 Hz...16 kHz	
	Noise voltage	-95 dBu , pad on; 0 dB gain	
	Noise figure	F ~ 10 dB , bandwidth = 23 kHz; 60 dB gain; $R_s = 200 \Omega$; pad off	
Limiters:	Threshold level	-7...+20 dBu	
	Attack time	0.5 ms	
	Release time	50 ms...1 s , program-dependent	
	Compression ratio	10:1 @ 1 kHz	
Supply:		±15 V (25 mA)	
Ordering Information:	Microphone amplifier with limiter	1.914.539.xx	



PIN		EURO 32 PIN	
IN a	13	1	7
IN b	42	2	8
IN L	41	3	9
	40	4	10
-15V	9	11	12
0VA	7	13	14
+15V	6	15	16
	5	17	18
GC	4	19	20
GRM	3	21	22
OUT	2	23	24
	1	25	26
		27	28
		29	30
		31	32



4.10.91	STUDER REGENSDORF ZÜRICH	MIC. AMPLIFIER WITH LIMITER	1.914.539.00
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MSC MIC AMP / LIMITER

Ad ..POS.. ..REF.No... DESCRIPTION.....MANUFACTURER

C....1	59.26.2689	6.8 uF	16V	SAL		
C....2	59.26.2689	6.8 uF	16V	SAL		
C....3	59.34.4221	220 pF	63V	CER	5%	
C....4	59.34.4221	220 pF	63V	CER	5%	
C....5	59.34.4101	100 pF	63V	CER	5%	
C....6	59.26.5100	10 uF	25V	SAL		
C....7	59.34.4101	100 pF	63V	CER	5%	
C....8	59.22.4101	100 uF	16V	EL		
C....9	59.06.0334	330 nF	63V	PETP	10%	
C....10	59.30.6339	3.3 uF	35V	TA	20%	
C....11	59.06.0102	1 nF	63V	PETP	10%	
D....1	50.04.1114	BZX55-C10	Z 10V	0.4W		any
D....2	50.04.0125	1N4448	diode			any
IC....1	50.09.0101	TL072 CP	dual op.amp.	bifET		TI
IC....2	50.09.0101	TL072 CP	dual op.amp.	bifET		TI
IC....3	50.11.0140	dbx2150 A	VCA			dBx
JS....1	54.01.0021	Jumper	Au			
JS....2	54.01.0021	Jumper	Au			
MP....1	43.01.0108	ESE	ESE warning			
P....1	54.01.0273	13 PIN	CIS			
P....2	54.11.0136	2*3 PIN	Stiftleiste			
PCB...1	1.914.539.11		empty PCB			St
R....1	57.99.0206	50 Ohm	PTC			
R....2	57.99.0206	50 Ohm	PTC			
R....3	57.11.3102	1 kOhm				
R....4	57.11.3102	1 kOhm				
R....5	57.11.3201	200 Ohm				
R....6	58.01.9103	10 kOhm	variable resistor	10%	PGM	
R....7	57.11.3391	390 Ohm				
R....8	57.11.3153	15 kOhm				
R....9	57.11.3153	15 kOhm				
R....10	57.11.3472	4.7 kOhm				
R....11	57.11.3510	51 Ohm				
R....12	57.11.3510	51 Ohm				
R....13	57.11.3330	33 Ohm				
R....14	57.11.3333	33 kOhm				
R....15	57.11.3184	180 kOhm				
R....16	58.01.9104	100 kOhm	variable resistor	10%	PGM	
R....17	57.11.3102	1 kOhm				
R....18	58.01.9103	10 kOhm	variable resistor	10%	PGM	
R....19	57.11.3333	33 kOhm				
R....20	57.11.3102	1 kOhm				
R....21	57.11.3104	100 kOhm				
R....22	57.11.3682	6.8 kOhm				
R....23	57.11.3303	30 kOhm				
R....24	57.11.3104	100 kOhm				
R....25	57.11.3104	100 kOhm				
R....26	57.11.3104	100 kOhm				
R....27	57.11.3153	15 kOhm				
R....28	57.11.3821	820 Ohm				
R....29	57.11.3510	51 Ohm				
R....30	57.11.3202	2 kOhm				
T....1	1.022.417.00	1:3.16	input-transformer			St

CER = ceramic, EL = electrolytic, PETP = polyester
SAL = solid aluminium, TA = tantal

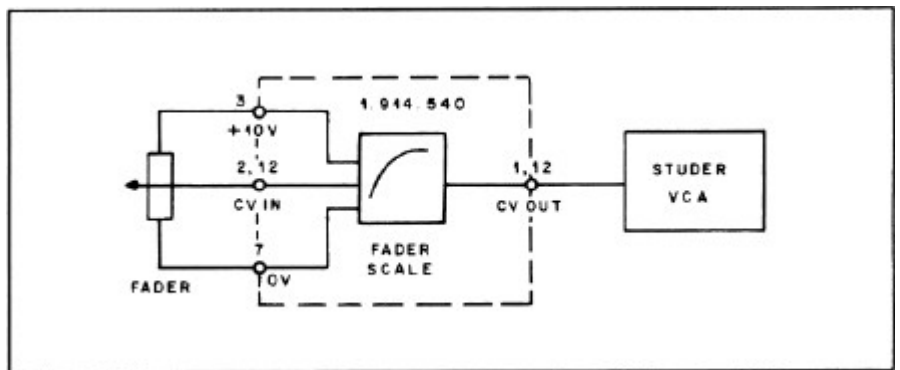
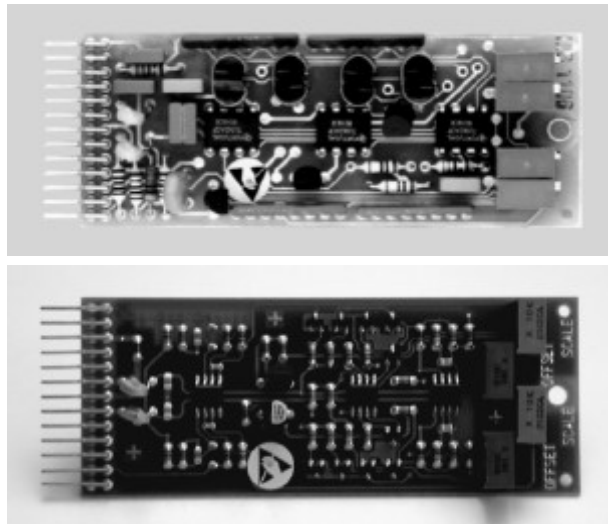
MANUFACTURER dBx= dBx-Incorp., St= Studer, TI= Texas Instruments

1.914.539.00 MIC.AMPLIFIER WITH LIMITER HOR20/11/9000

2.1.20 Dual Fader/VCA Control Voltage Interface

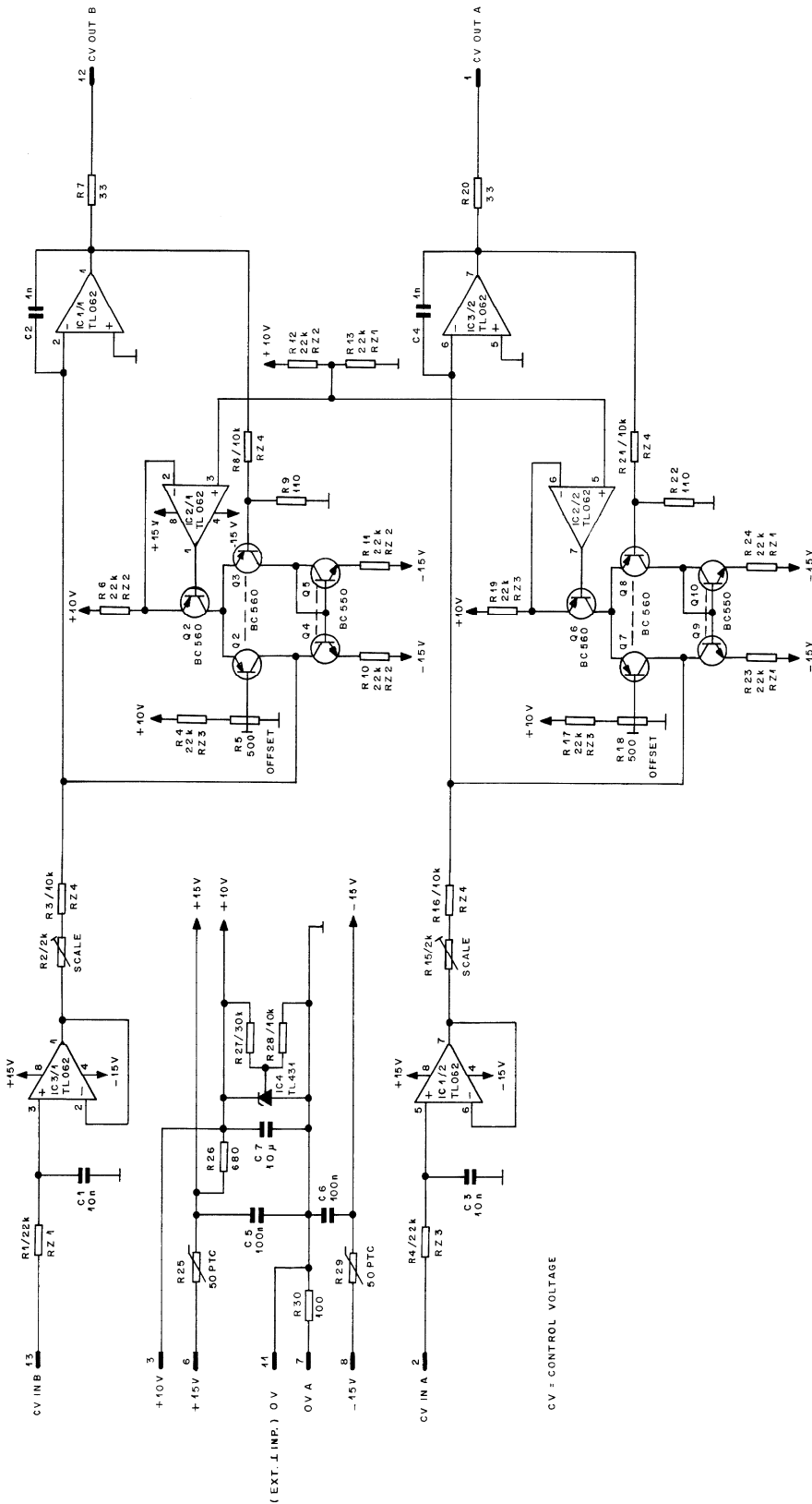
1.914.540 /541

These interfaces are used to convert the voltage of a linear fader to the non-linear dB scale of a Studer VCA. One card processes two channels. It is available in two versions: 540.xx (0...+10 V_{DC} control voltage), and 541.xx (+5...0 V_{DC} control voltage). A regulated +10 V_{DC} reference voltage is generated on-board. The DC from the fader's wiper is connected to the input. Offset and scale alignment is performed with on-board trimmer potentiometers for matching the VCA gain to the dB scale of the fader.

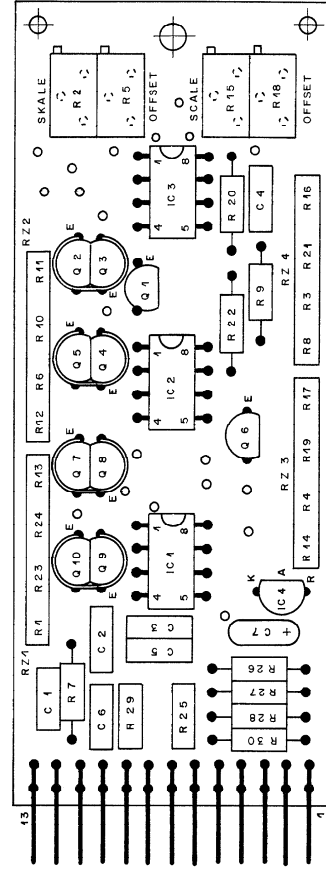


Technical Specifications

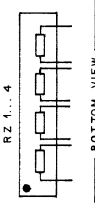
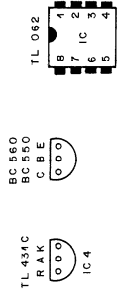
		1.914.540.xx	1.914.541.xx
Input:	Impedance	> 1 MW, unbalanced	100 kW, unbalanced
	Level range	0...+10 V	+5...0 V
Output:	Impedance	33 W, unbalanced	33 W, unbalanced
	Control range	+1 V...-10 V	+1 V...-10 V
Supply:		±15 V (15 mA)	
Dimensions:		MS-card, 34 × 85 mm	
Ordering Information:	Fader/VCA control interface		1.914.540.xx
	Fader/VCA control interface		1.914.541.xx



CV = CONTROL VOLTAGE



CIS	PIN	EURO	32 PIN
	13	1	27
CV IN B	42	2	28
CV OUT B	41	3	23
OV (CV)	10	9	29
		14	
-15.5V	8	15	
OVA	7	16	
+15.5V	6		
	5		
	4		
+10V (FADER)	3	4	30
CV IN A	2	5	25
CV OUT A	1	1	13
			26
			32



<p>REGENSDORF ZÜRICH</p>	<p>FADER / VCA CV INTERFACE BOARD</p>	<p>1.914.540.00</p>
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MSC FADER / VCA INTERFACE

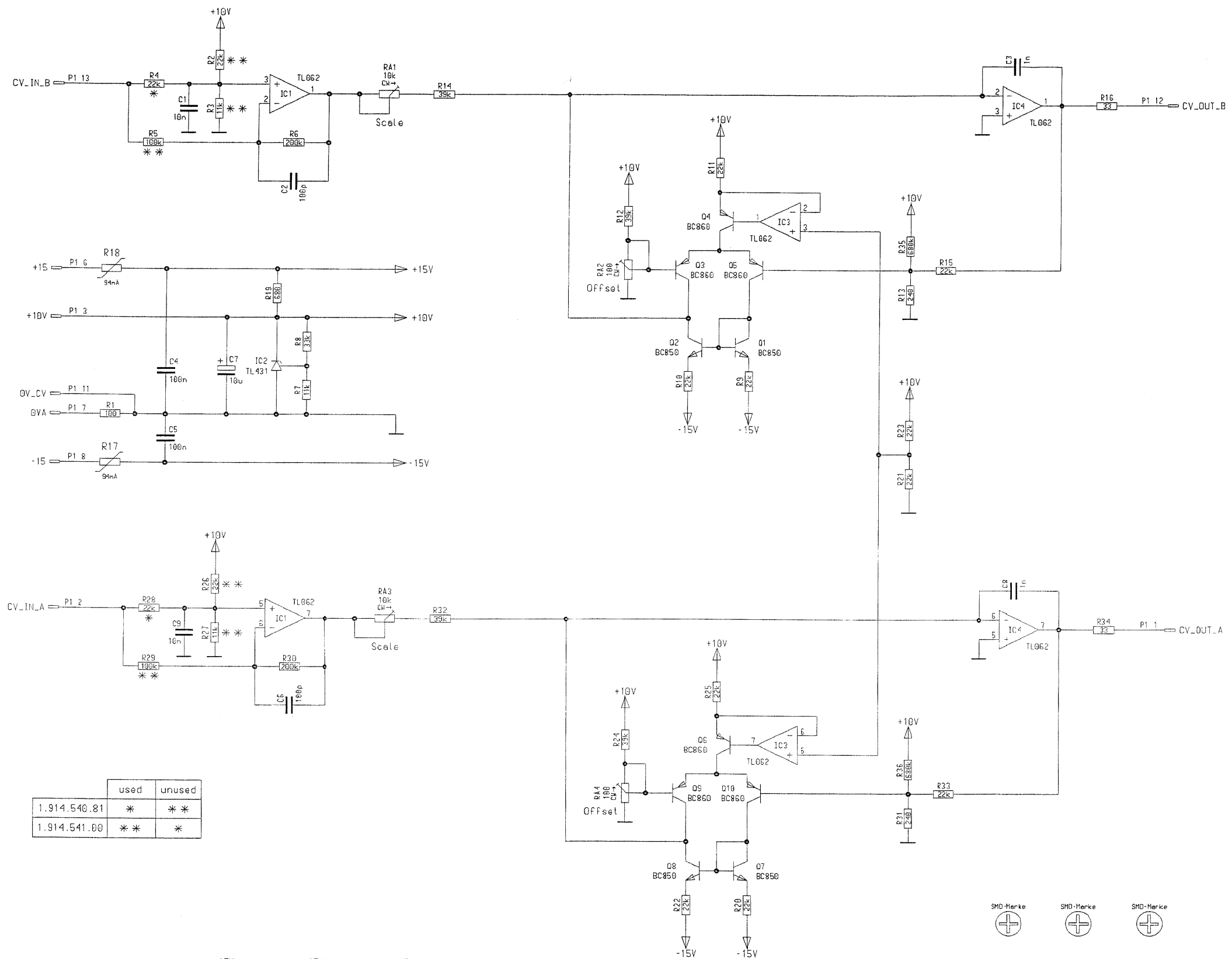
Ad	..POS..	...REF.No...	DESCRIPTION.....	MANUFACTURER
C....1		59.06.0103	10 nF 63V PE 10%	
C....2		59.06.0102	1 nF 63V PE 10%	
C....3		59.06.0103	10 nF 63V PE 10%	
C....4		59.06.0102	1 nF 63V PE 10%	
C....5		59.06.0104	0.1 uF 63V PE 10%	
C....6		59.06.0104	0.1 uF 63V PE 10%	
C....7		59.26.2100	10 uF 16V SAL	
IC....1		50.09.0119	TL062 ACP dual op.amp.	TI
IC....2		50.09.0119	TL062 ACP dual op.amp.	TI
IC....3		50.09.0119	TL062 ACP dual op.amp.	TI
IC....4		50.10.0106	TL431 CLP shunt regulator	TI
MP....1		50.20.2001	CLIP 2 * TO 92	
MP....2		50.20.2001	CLIP 2 * TO 92	
MP....3		50.20.2001	CLIP 2 * TO 92	
MP....4		50.20.2001	CLIP 2 * TO 92	
MP....5		43.01.0108	ESE ESE warning	
P....1		54.01.0273	13 PIN CIS	
PCB...1		1.914.540.11	empty PCB	St
Q....1		50.03.0496	BC560 PNP	Sie
Q....2		50.03.0600	BC560 PNP E6310 see note 1	Sie
Q....3		50.03.0600	BC560 PNP E6310 see note 1	Sie
Q....4		50.03.0524	BC550 NPN E6310 see note 1	Sie
Q....5		50.03.0524	BC550 NPN E6310 see note 1	Sie
Q....6		50.03.0496	BC560 PNP	Sie
Q....7		50.03.0600	BC560 PNP E6310 see note 1	Sie
Q....8		50.03.0600	BC560 PNP E6310 see note 1	Sie
Q....9		50.03.0524	BC550 NPN E6310 see note 1	Sie
Q....10		50.03.0524	BC550 NPN E6310 see note 1	Sie
R....1		58.05.0104	100 kOhm multi-turn 10%	
R....2		58.05.0501	500 Ohm multi-turn 10%	
R....3		57.11.3330	33 Ohm	
R....4		57.11.3241	240 Ohm	
R....5		58.05.0104	100 kOhm multi-turn 10%	
R....6		58.05.0501	500 Ohm multi-turn 10%	
R....7		57.11.3330	33 Ohm	
R....8		57.11.3241	240 Ohm	
R....9		57.92.1820	42 Ohm PTC	
R....10		57.11.3681	680 Ohm	
R....11		57.11.3303	30 kOhm	
R....12		57.11.3103	10 kOhm	
R....13		57.92.1820	42 Ohm PTC	
R....14		57.11.3101	100 Ohm	
RZ....1		57.88.2223	22 kOhm network 4 * 22k	
RZ....2		57.88.2223	22 kOhm network 4 * 22k	
RZ....3		57.88.2223	22 kOhm network 4 * 22k	
RZ....4		57.88.2223	22 kOhm network 4 * 22k	

SAL = electrolytic, PE = polyester

MANUFACTURER TI=Texas Instruments, Sie=Siemens, St=Studer

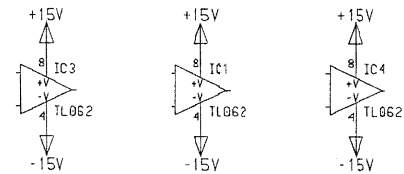
Note 1: Q2,Q3,Q4,Q5,Q7,Q8,Q9,Q10 must fulfill BV 678 I

1.914.540.00 FADER/VCA CV INTERFACE BOARD HOR16/11/9000

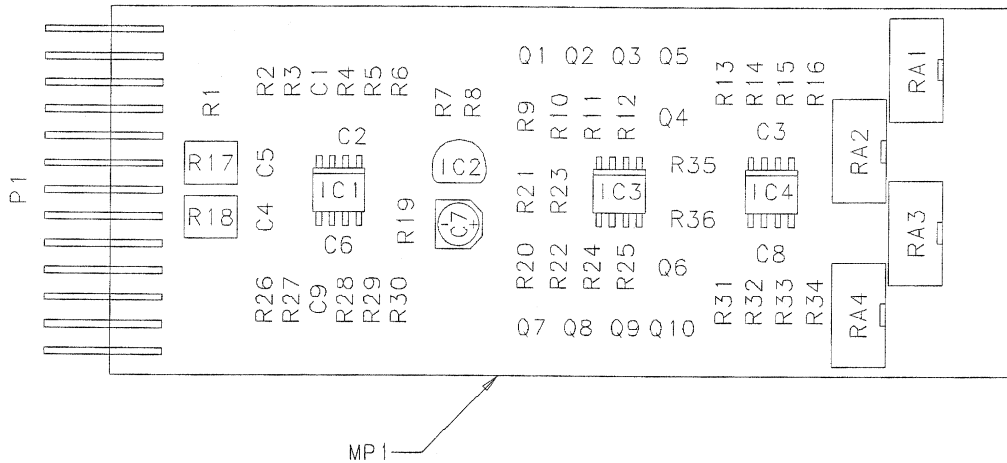


	used	unused
1.914.540.81	*	**
1.914.541.00	**	*

NC P1 4
 NC P1 5
 NC P1 9
 NC P1 10



SMD-Merke (+) SMD-Merke (+) SMD-Merke (+)



Accompanying documents: Zugehörige Unterlagen: PL		General tolerance: Freimasstoleranz:		Scale: Masstab: 1.5:1		Edition Ausgabe	17.04.2000	ZT	ML	RL	(0)
Substitute for: Ersatz fuer:						Date Datum	Viso Gez.	Checked Gepr.	Seen Ges.	Index	
STUDER REGENSDORF		Description: Benennung:		FADER/VCA INTERFACE TYPE2 FADER/VCA CV INTERFACE		Page: Seite:	1 / 1				
						Number: Nummer:	1.914.541.00				1.914.540.81

Dual Fader/VCA Control Voltage IF 1.914.541.00 (0)

Idx. Pos.	Part No.	Qty.	Type/Val.	Description	Idx. Pos.	Part No.	Qty.	Type/Val.	Description
0	C 1	59.60.3325	1 pce	10n	CER 50V, 10%, X7R, 0805				
0	C 2	59.60.2249	1 pce	100p	CER 50V, 5%, C0G, 0603				
0	C 3	59.60.2373	1 pce	1n0	CER 50V, 5%, C0G, 0805				
0	C 4	59.60.3337	1 pce	100n	CER 50V, 10%, X7R, 0805				
0	C 5	59.60.3337	1 pce	100n	CER 50V, 10%, X7R, 0805				
0	C 6	59.60.2249	1 pce	100p	CER 50V, 5%, C0G, 0603				
0	C 7	59.68.0065	1 pce	10u	EL 16V, 4.0*5.7				
0	C 8	59.60.2373	1 pce	1n0	CER 50V, 5%, C0G, 0805				
0	C 9	59.60.3325	1 pce	10n	CER 50V, 10%, X7R, 0805				
0	IC 1	50.61.0201	1 pce	TL062	Dual FET Op-Amp				
0	IC 2	50.10.0106	1 pce	TL431	Shunt regulator				
0	IC 3	50.61.0201	1 pce	TL062	Dual FET Op-Amp				
0	IC 4	50.61.0201	1 pce	TL062	Dual FET Op-Amp				
0	MP 1	1.914.541.11	1 pce		FADER/VCA INTERFACE2 PCB				
0	MP 2	1.914.541.04	1 pce		NR.-ETIKETTE 5 * 20				
0	MP 3	43.01.0108	1 pce	Label	ESE-Warnschild				
0	P 1	54.01.0273	1 pce	13p	Stecker CIS parallelsteck				
0	Q 1	50.60.0002	1 pce	BC850C	NPN 45V 100mA SOT 23				
0	Q 2	50.60.0002	1 pce	BC850C	NPN 45V 100mA SOT 23				
0	Q 3	50.60.1002	1 pce	BC860C	PNP 45V 100mA SOT 23				
0	Q 4	50.60.1002	1 pce	BC860C	PNP 45V 100mA SOT 23				
0	Q 5	50.60.1002	1 pce	BC860C	PNP 45V 100mA SOT 23				
0	Q 6	50.60.1002	1 pce	BC860C	PNP 45V 100mA SOT 23				
0	Q 7	50.60.0002	1 pce	BC850C	NPN 45V 100mA SOT 23				
0	Q 8	50.60.0002	1 pce	BC850C	NPN 45V 100mA SOT 23				
0	Q 9	50.60.1002	1 pce	BC860C	PNP 45V 100mA SOT 23				
0	Q 10	50.60.1002	1 pce	BC860C	PNP 45V 100mA SOT 23				
0	R 1	57.60.1101	1 pce	100R	MF, 1%, 0204, E24				
0	R 2	57.60.1223	1 pce	22k	MF, 1%, 0204, E24				
0	R 3	57.60.1113	1 pce	11k	MF, 1%, 0204, E24				
0	R 4	not used	1 pce	22k	MF, 1%, 0204, E24				
0	R 5	57.60.1104	1 pce	100k	MF, 1%, 0204, E24				
0	R 6	57.60.1204	1 pce	200k	MF, 1%, 0204, E24				
0	R 7	57.60.1113	1 pce	11k	MF, 1%, 0204, E24				
0	R 8	57.60.1333	1 pce	33k	MF, 1%, 0204, E24				
0	R 9	57.60.1223	1 pce	22k	MF, 1%, 0204, E24				
0	R 10	57.60.1223	1 pce	22k	MF, 1%, 0204, E24				
0	R 11	57.60.1223	1 pce	22k	MF, 1%, 0204, E24				
0	R 12	57.60.1393	1 pce	39k	MF, 1%, 0204, E24				
0	R 13	57.60.1241	1 pce	240R	MF, 1%, 0204, E24				
0	R 14	57.60.1393	1 pce	39k	MF, 1%, 0204, E24				
0	R 15	57.60.1223	1 pce	22k	MF, 1%, 0204, E24				
0	R 16	57.60.1330	1 pce	33R	MF, 1%, 0204, E24				
0	R 17	57.92.1820	1 pce	94mA	PTC 60V				
0	R 18	57.92.1820	1 pce	94mA	PTC 60V				
0	R 19	57.60.1681	1 pce	680R	MF, 1%, 0204, E24				
0	R 20	57.60.1223	1 pce	22k	MF, 1%, 0204, E24				
0	R 21	57.60.1223	1 pce	22k	MF, 1%, 0204, E24				
0	R 22	57.60.1223	1 pce	22k	MF, 1%, 0204, E24				
0	R 23	57.60.1223	1 pce	22k	MF, 1%, 0204, E24				
0	R 24	57.60.1393	1 pce	39k	MF, 1%, 0204, E24				
0	R 25	57.60.1223	1 pce	22k	MF, 1%, 0204, E24				
0	R 26	57.60.1223	1 pce	22k	MF, 1%, 0204, E24				
0	R 27	57.60.1113	1 pce	11k	MF, 1%, 0204, E24				
0	R 28	not used	1 pce	22k	MF, 1%, 0204, E24				
0	R 29	57.60.1104	1 pce	100k	MF, 1%, 0204, E24				
0	R 30	57.60.1204	1 pce	200k	MF, 1%, 0204, E24				
0	R 31	57.60.1241	1 pce	240R	MF, 1%, 0204, E24				
0	R 32	57.60.1393	1 pce	39k	MF, 1%, 0204, E24				
0	R 33	57.60.1223	1 pce	22k	MF, 1%, 0204, E24				
0	R 34	57.60.1330	1 pce	33R	MF, 1%, 0204, E24				
0	R 35	57.60.1684	1 pce	680k	MF, 1%, 0204, E24				
0	R 36	57.60.1684	1 pce	680k	MF, 1%, 0204, E24				
0	RA 1	58.01.9103	1 pce	10k	Cermet, 10%, 0.5W, vertical				
0	RA 2	58.01.9101	1 pce	100R	Cermet, 10%, 0.5W, vertical				
0	RA 3	58.01.9103	1 pce	10k	Cermet, 10%, 0.5W, vertical				
0	RA 4	58.01.9101	1 pce	100R	Cermet, 10%, 0.5W, vertical				

End of List

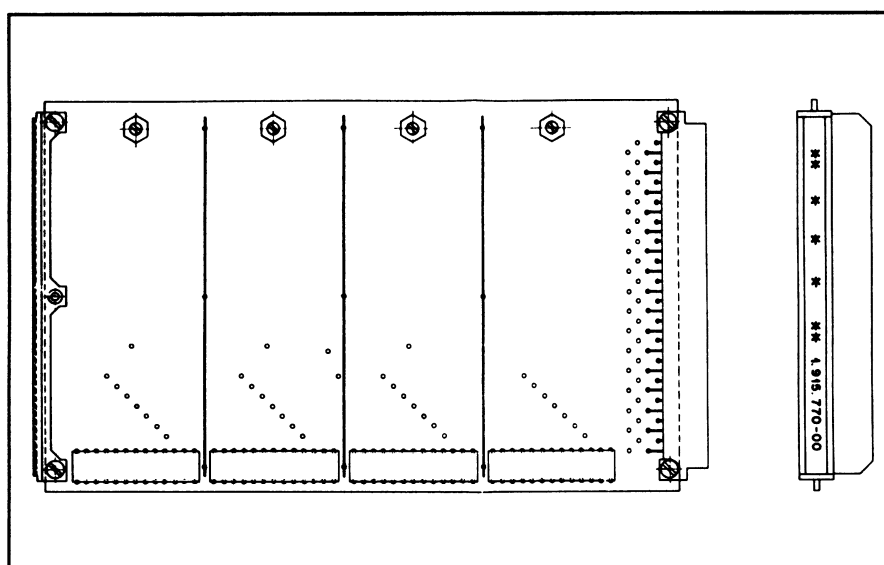
Comments:

2.2 Euro-Cards

2.2.1 Motherboard for 4 MS-Cards

1.915.770

The Modular Sub-Cards require a mounting base for mechanical and electrical installation. This motherboard for four MS-cards in standard Euro-card size easily integrates into the Studer audio components system; it carries 32 printed tracks from its edge connector to four small plug-in sockets. Each socket has 13 contacts; six of them are common supply lines, while another six are individual to each socket. Then there is a separate bus line for circuits 1 and 2, and another bus line for circuits 3 and 4. A motherboard for only one MS-card is available as well, refer to chapter 2.1.1.



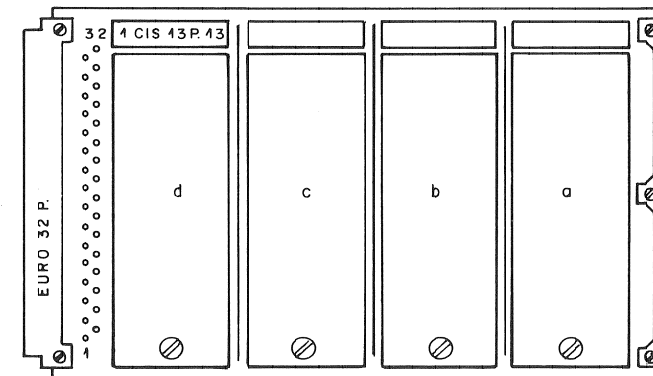
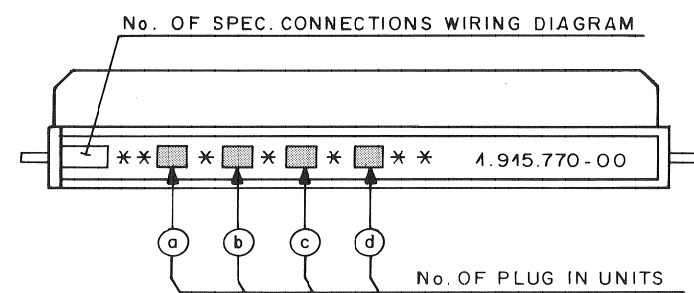
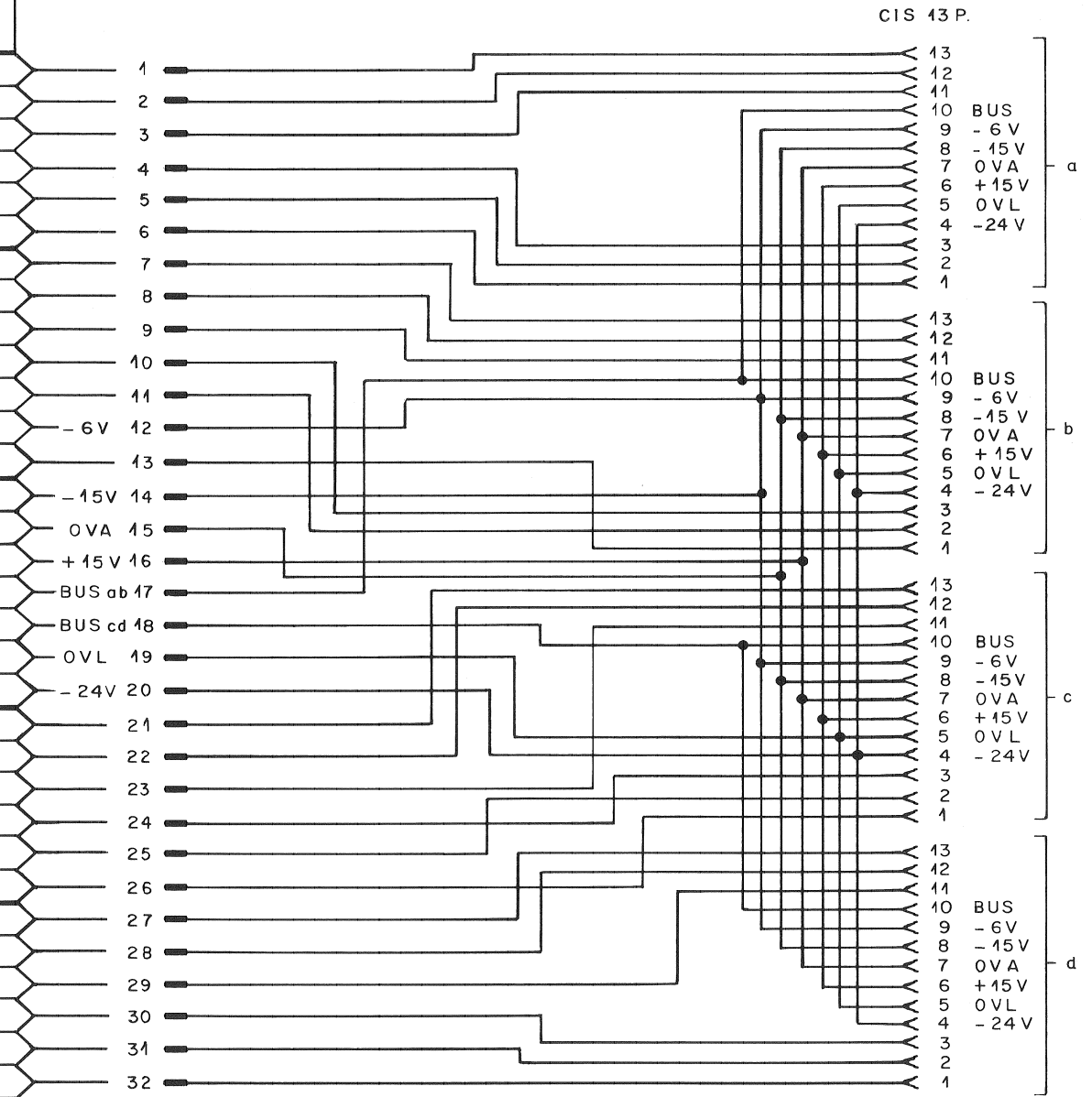
Dimensions: Euro-card **100 × 160 mm**

Connectors: 1 × Euro connector **32-pin, DIN 41612**
 4 × CIS connector **13-pin, plug-in socket for MSC**

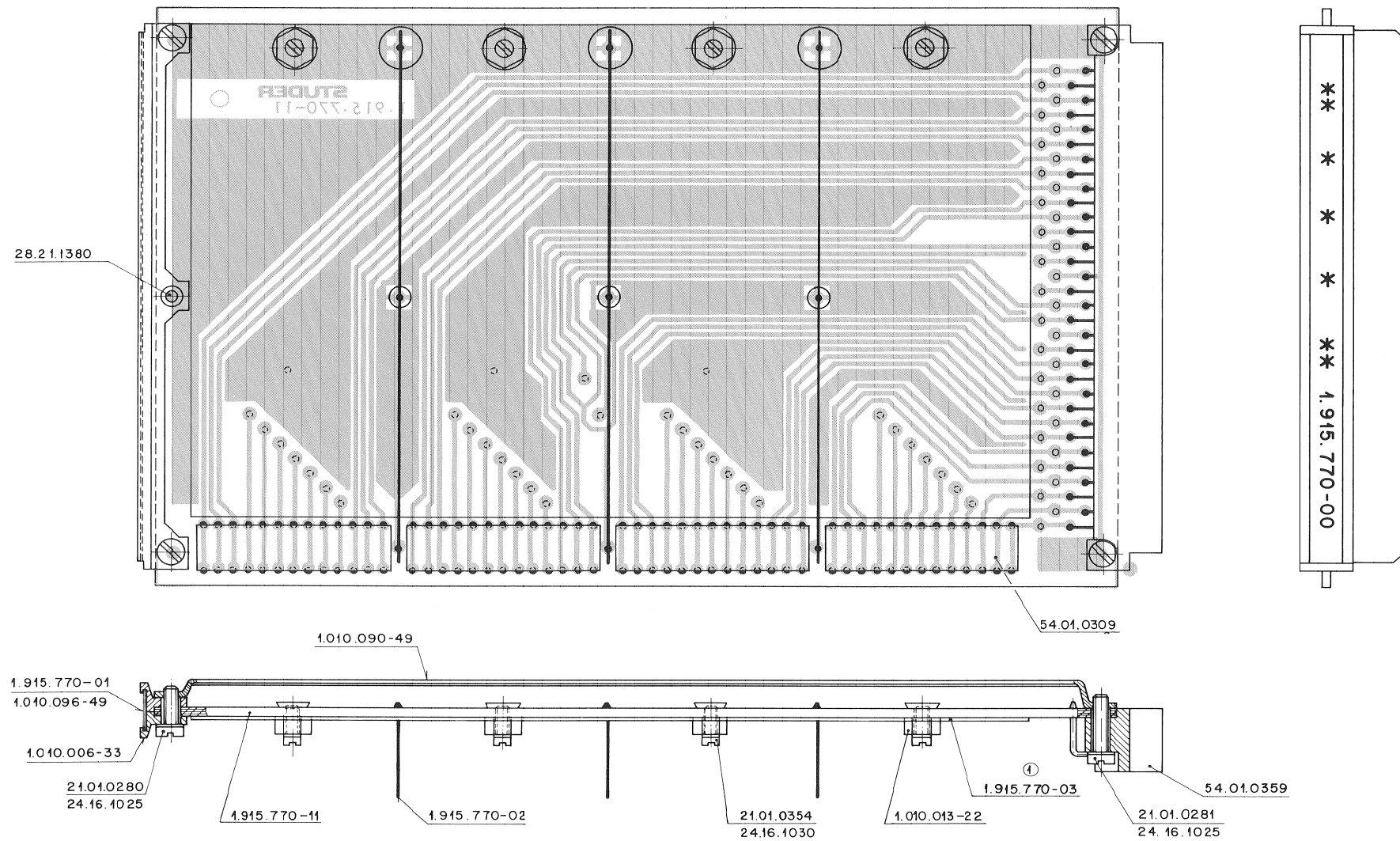
Ordering Information: MSC motherboard

1.915.770.xx

PIN No.		SIGNAL	SECTION	CONNECTION REMARKS
EURO	CIS			
1	a 13		1.914.5 . .	
2	a 12			
3	a 11		(a) NAME	
4	a 3		-----	
5	a 2			
6	a 1			
7	b 13		1.914.5 . .	
8	b 12			
9	b 11		(b) NAME	
10	b 3		-----	
11	b 2			
12		- 6 V		
13	b 1			
14		- 15 V		
15		OVA		
16		+ 15 V		
17	a, b 10			
18	c, d 10			
19		OVL		
20		- 24 V		
21	c 13		1.914.5 . .	
22	c 12			
23	c 11		(c) NAME	
24	c 3		-----	
25	c 2			
26	c 1			
27	d 13		1.914.5 . .	
28	d 12			
29	d 11		(d) NAME	
30	d 3		-----	
34	d 2			
32	d 1			



MSC MOTHER BOARD



*
*
*
*

1.915.770-00

STUDER REGENSDORF ZÜRICH Bezeichnung: BASIS BOARD	Nummer: 1.915.770-00				
	Änderung: ③ ② ① ④				
	Ausgabe: 04.04.84 STJ Datum: Gez Gepr Ges Index				
	Kopie für:				

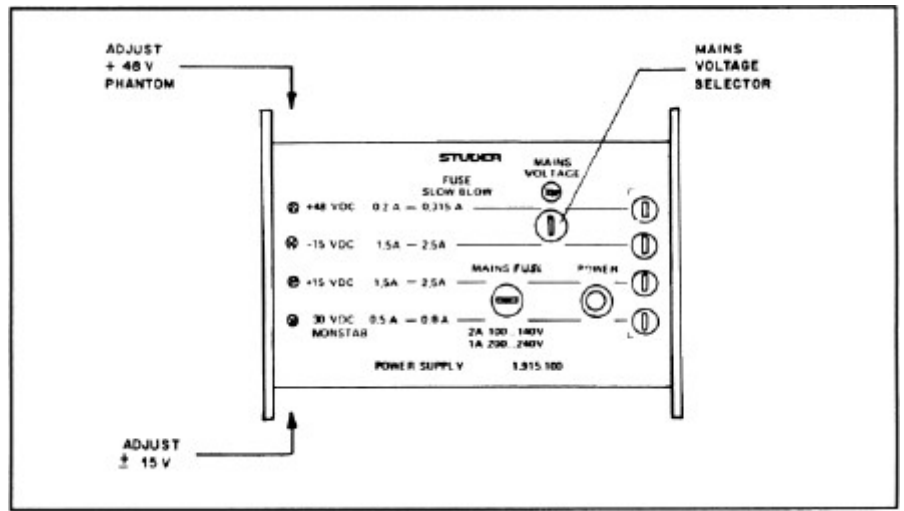
2.2.2 Power Supply

1.915.100

This power supply provides a regulated output of $\pm 15\text{ V}_{\text{DC}}$ at a maximum load of 1.5 A for audio circuits, plus a regulated 48 V_{DC} output for the phantom powering of microphones. In addition, 30 V of unregulated DC are available as well.

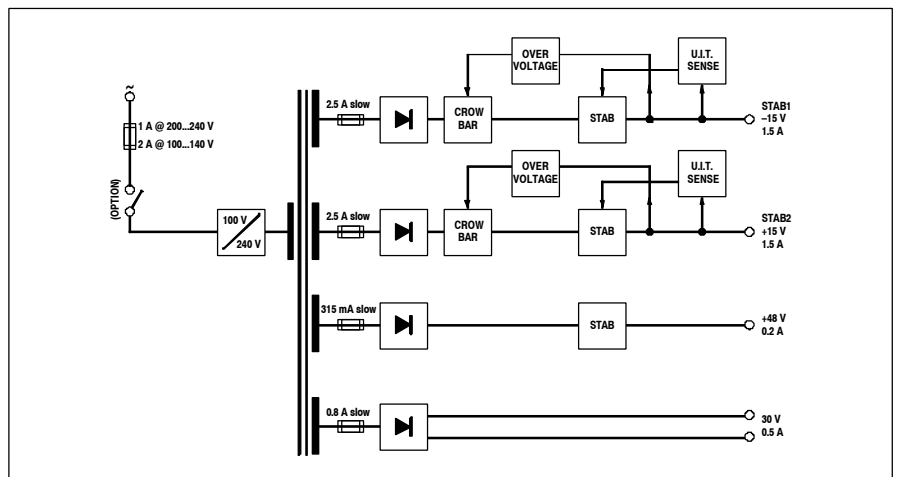
If a regulated 24 V_{DC} supply is required, the stabilizer card 1.915.105.xx can be connected to the 30 V_{DC} output.

Each of the output voltages is derived from a separate secondary winding of the mains transformer and can be fine-adjusted.



The $\pm 15\text{ V}_{\text{DC}}$ supply is fully short-circuit proof and is protected against overvoltage and excess temperature. Short-circuit-protection is also effective in the 48 V_{DC} section.

The power supply has no on/off switch in the primary circuit. Such a switch, if needed, will have to be fitted separately.

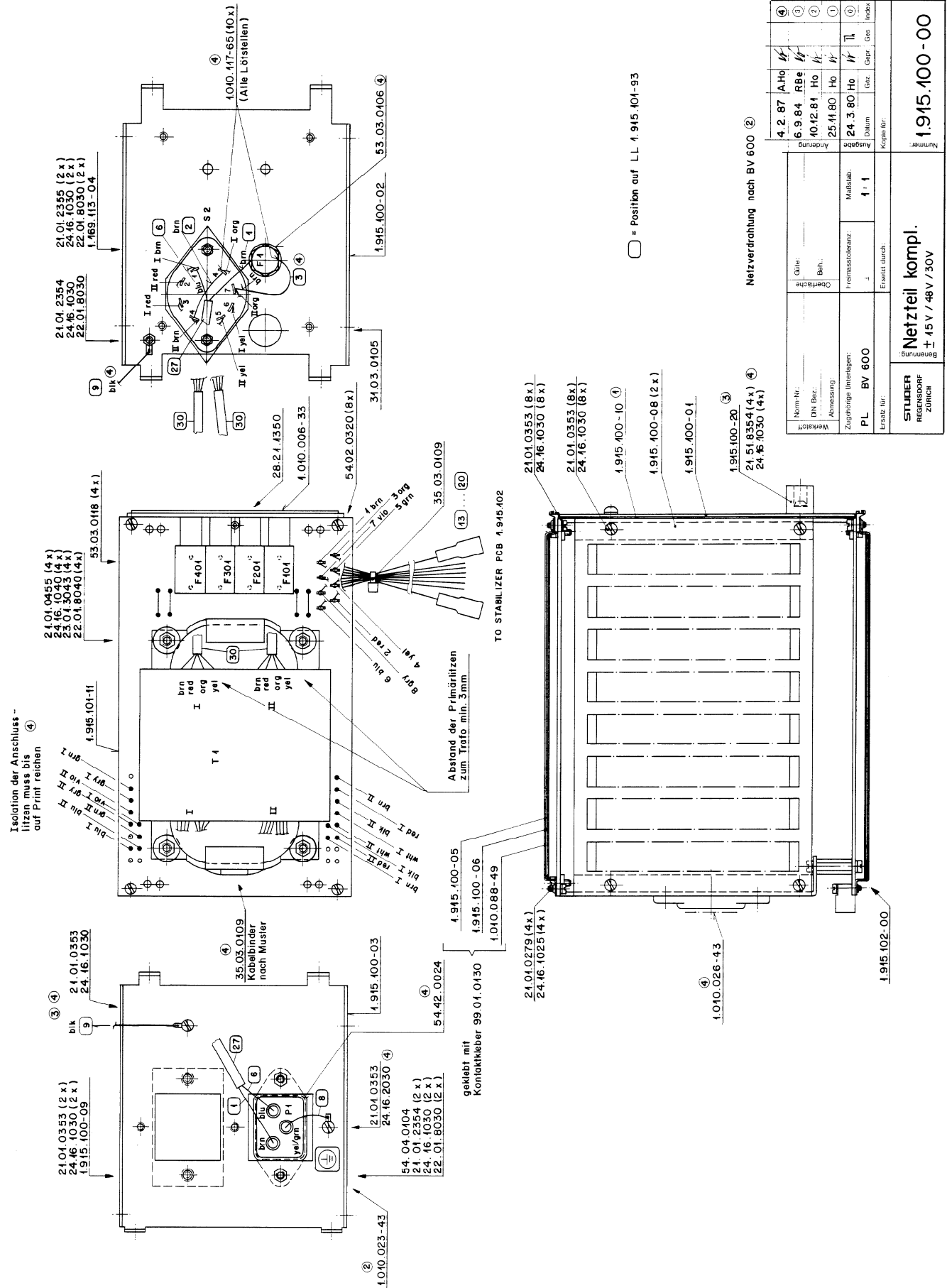


Mains transformer and regulator electronics are housed in one rectangular unit fitting into the 19" Euro-card frame (1.918.318/319), occupying the space of 28M widths. For this purpose, a mounting kit 1.918.316 is recommended (see chapter 2.3.4).

Technical Specifications

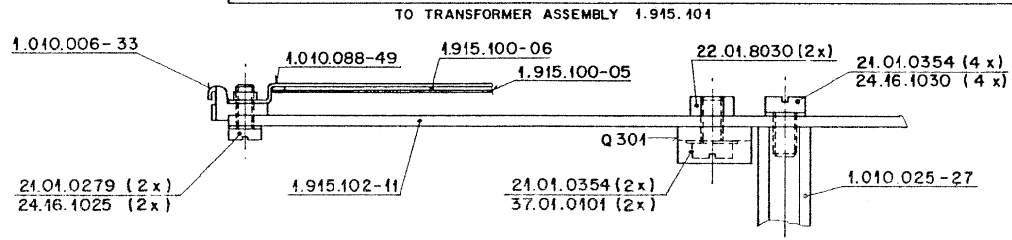
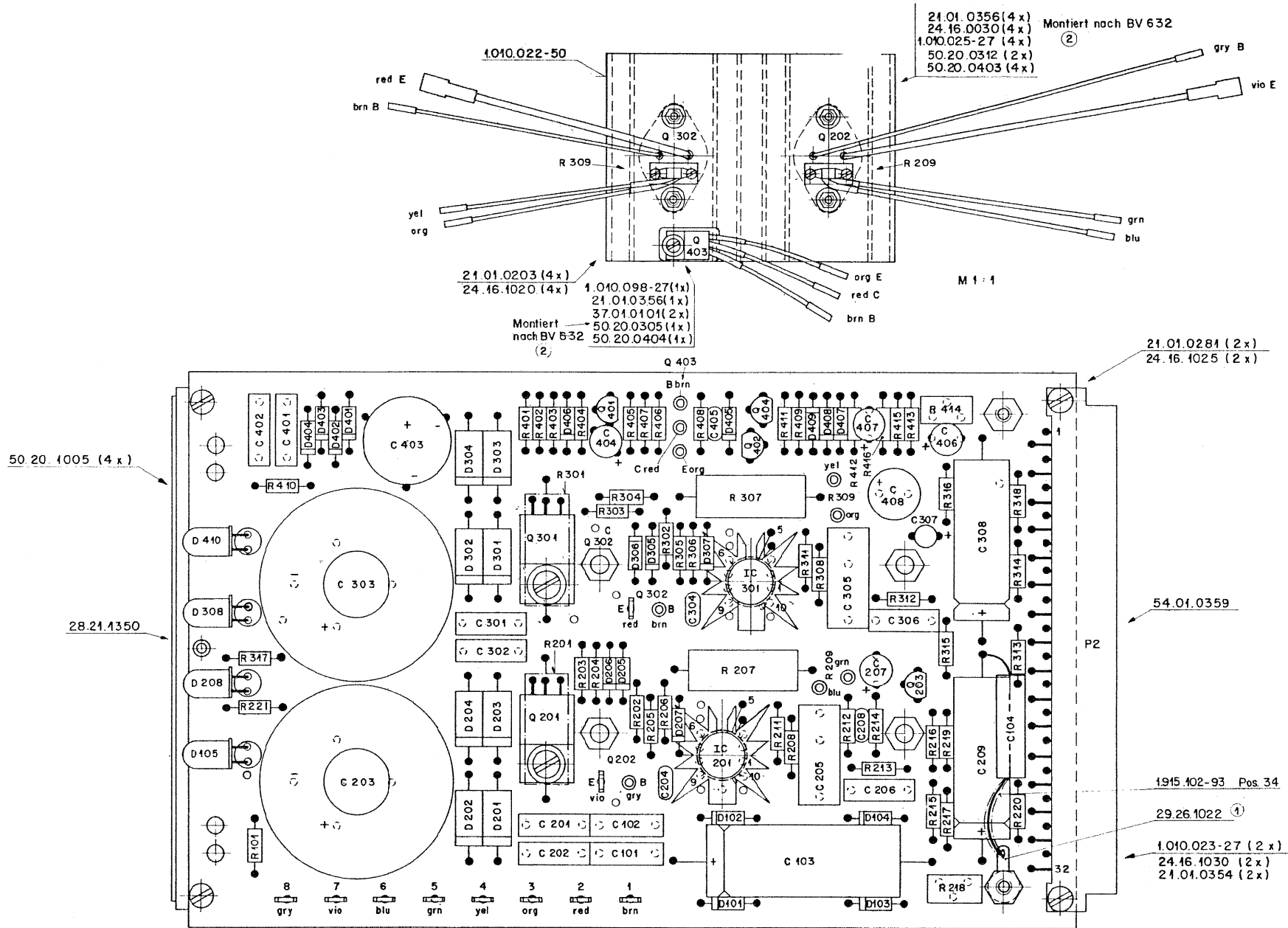
Primary:	Voltage selector	100/120/140/200/220/240 V_{AC} ±10%	
	Fuse	T 2 A (slow), 100...140 V	
		T 1 A (slow), 200...240 V	
	Power consumption	< 120 W (190 VA)	
Secondary:	Audio supply:	±15 V/1.5 A max., regulated voltage	
	Ripple	100 µV	
	Fuses	2 × T 2.5 A (slow)	
	Phantom supply:	48 V/200 mA max., regulated voltage, according to DIN 45596	
	Ripple	100 µV	
	Fuse	T 315 mA (slow)	
Unregulated DC:	30 V/0.5 A max.		
	Fuse	T 0.8 A (slow)	
Dimensions:	W × H × D	140 × 100 × 160 mm, Euro-card/28M units	
	Weight	2.75 kg	
Ordering Information:	Power supply		1.915.100.xx
	Mounting kit for installation in ELMA frame (1.918.318)		1.918.316.xx

POWER SUPPLY



Netzverdrahtung nach BV 600 ②

Norm-Nr.:	4.2.87	A:Ho	④
DIN Bez.:	6.9.84	RB:	③
Abmessung:	10.12.81	Ho	②
Zugehörige Unterlagen:	25.11.80	Ho	①
Formastorenanz:	24.3.80	Ho	①
Erstellt durch:	1	Datum	Grz
Geprüft durch:		Grz	Grz
Bezeichnung:	1.915.100-00		
Nummer:	1.915.100-00		



TO TRANSFORMER ASSEMBLY 1.915.101

Oberfläch:		Güte:		Änderung:		③	
Beh.:		A.Hb.		17.1.86		②	
		RBe.		6.9.84		①	
Zugehörige Unterlagen: BV 632		Freimasstoleranz:		Maßstab:		Ausgabe:	
PL 1.915.100		+		2:1 (1:1)		19.11.79 Ho	
AL 1.915.100-95						Datum Gez. Gepr. Ges. Index	
Ersatz für:		Ersetzt durch:		Kopie für:			
STUDER REGENSDORF ZÜRICH		Stabilisator-Print		1.915.102-00		①	

POWER SUPPLY

Ad	POS.	REF.No.	DESCRIPTION	MANUFACTURER	Ad	POS.	REF.No.	DESCRIPTION	MANUFACTURER
C..	.101	59.31.2103	0,01µ 250V	PE	R..	.201	57.56.5278	0,27	4W
C..	.102	59.31.2103	0,01µ 250V	PE	R..	.202	57.11.4151	150	
C..	.103	59.25.6471	470µ 63V	EL	R..	.203	57.11.4220	22	
⊗ C..	.104	59.99.0453	0,1µ 250V	MP	R..	.204	57.11.4102	1k	
C..	.201	59.31.2103	0,01µ 250V	PE	R..	.205	57.11.4270	27	
C..	.202	59.31.2103	0,01µ 250V	PE	R..	.206	57.11.4270	27	
C..	.203	59.35.4472	4700µ 40V	EL	R..	.207	57.56.5188	0,18	2W
C..	.204	59.34.1100	10p	CER	R..	.208	57.11.4221	220	
C..	.205	59.34.6105	1µ 100V	PE	R..	.209	57.99.0208	16,7k	NTC R@ 100°C
C..	.206	59.31.6104	0,1µ	PE	R..	.210			PH
C..	.207	59.36.5100	10µ 35V	TA	R..	.211	57.11.4109	1	
C..	.208	59.34.4151	150p	CER	R..	.212	57.11.4332	3,3k	
C..	.209	59.25.3102	1000µ 16V	EL	R..	.213	57.11.4820	82	
C..	.301	59.31.2103	0,01µ 250V	PE	R..	.214	57.11.4470	47	
C..	.302	59.31.2103	0,01µ 250V	PE	R..	.215	57.39.1002	10k	1% MF
C..	.303	59.35.4472	4700µ 40V	EL	R..	.216	57.39.5111	5,11k	1% MF
C..	.304	59.34.2220	22p	CER	R..	.217	57.11.4682	6,8k	
C..	.305	59.31.6105	1µ 100V	PE	R..	.218	58.01.7202	2k	TRIM PMG
C..	.306	59.31.6104	0,1µ	PE	R..	.219	57.11.4562	5,6k	
C..	.307	59.36.4109	1µ 25V	TA	R..	.220	57.11.4100	10	
C..	.308	59.25.3102	1000µ 16V	EL	R..	.221	57.11.4222	2,2k	
C..	.401	59.31.2103	0,01µ 250V	PE	R..	.301	57.56.5278	0,27	4W
C..	.402	59.31.2103	0,01µ 250V	PE	R..	.302	57.11.4151	150	
C..	.403	59.22.9221	220µ 100V	EL	R..	.303	57.11.4220	22	
C..	.404	59.36.5100	10µ 35V	TA	R..	.304	57.11.4102	1k	
C..	.405	59.34.1100	10p	CER	R..	.305	57.11.4270	27	
C..	.406	59.36.5100	10µ 35V	TA	R..	.306	57.11.4270	27	
C..	.407	59.36.5100	10µ 35V	TA	R..	.307	57.56.5188	0,18	2W
C..	.408	59.22.8220	22µ 63V	EL	R..	.308	57.11.4221	220	
D..	.101	50.04.0105	IN4004 1A 200V	ANY	R..	.309	57.99.0208	16,7k	NTC R@ 100°C
D..	.102	50.04.0105	IN4004 1A 200V	ANY	R..	.310			PH
D..	.103	50.04.0105	IN4004 1A 200V	ANY	R..	.311	57.11.4109	1	
D..	.104	50.04.0105	IN4004 1A 200V	ANY	R..	.312	57.11.4820	82	
D..	.105	50.04.2109	MV5054-1 LED	ANY	R..	.313	57.39.1002	10k	1% MF
D..	.201	50.04.0507	MR502 3A 200V	MOT	R..	.314	57.39.5111	5,11k	1% MF
D..	.202	50.04.0507	MR502 3A 200V	MOT	R..	.315	57.39.1002	10k	1% MF
D..	.203	50.04.0507	MR502 3A 200V	MOT	R..	.316	57.39.5111	5,11k	1% MF
D..	.204	50.04.0507	MR502 3A 200V	MOT	R..	.317	57.11.4222	2,2k	
D..	.205	50.04.1122	ZPD18 Z-DIODE 18V 400mW		R..	.318	57.11.4100	10	
D..	.206	50.04.0125	IN4448		R..	.401	57.11.4682	6,8k	
D..	.207	50.04.1503	ZPY7,5 Z-DIODE 7,5V 1,3W		R..	.402	57.11.4683	68k	
D..	.208	50.04.2109	MV5054-1 LED		R..	.403	57.11.4229	2,2	
D..	.301	50.04.0507	MR502 3A 200V	MOT	R..	.404	57.11.4102	1k	
D..	.302	50.04.0507	MR502 3A 200V	MOT	R..	.405	57.11.4683	68k	
D..	.303	50.04.0507	MR502 3A 200V	MOT	R..	.406	57.11.4102	1k	
D..	.304	50.04.0507	MR502 3A 200V	MOT	R..	.407	57.11.4563	56k	
D..	.305	50.04.1122	ZPD18 Z-DIODE 18V 400mW		R..	.408	57.11.4332	3,3k	
D..	.306	50.04.0125	IN4448		R..	.409	57.11.4222	2,2k	
D..	.307	50.04.1503	ZPY7,5 Z-DIODE 7,5V 1,3W		R..	.410	57.11.4682	6,8k	
D..	.308	50.04.2109	MV5054-1 LED		R..	.411	57.11.4222	2,2k	
D..	.401	50.04.0105	IN4004 1A 200V		R..	.412	57.11.4229	2,2	
D..	.402	50.04.0105	IN4004 1A 200V		R..	.413	57.11.4562	5,6k	
D..	.403	50.04.0105	IN4004 1A 200V		R..	.414	58.01.7202	2k	TRIM PMG
D..	.404	50.04.0105	IN4004 1A 200V		R..	.415	57.11.4183	18k	
D..	.405	50.04.1121	ZPD24 Z-DIODE 24V 400mW		R..	.416	57.11.4223	22k	
D..	.406	50.04.0125	IN4448		S....	.2	53.03.0128		VOLTAGE SELECTOR
D..	.407	50.04.1118	ZPD6,2 Z-DIODE 6,2V 400mW				1.169.113.04		INSULATION-VOLT. SEL.
D..	.408	50.04.0125	IN4448		T....	.1	1.915.103.00		MAINS-TRANSFORMER
D..	.409	50.04.0125	IN4448						
D..	.410	50.04.2109	MV5054 LED						
F....	.1	51.01.0120	2A SLOW BLOW @ 100...140 VAC				53.03.0106		FUSE HOLDER MAINS
F....	.101	51.01.0117	1A SLOW BLOW @ 200...240 VAC				53.03.0118		FUSE HOLDER PCB
F....	.201	51.01.0116	800mA SLOW BLOW				1.010.088.49		PCB SCREEN
F....	.301	51.01.0121	2,5A SLOW BLOW				1.915.100.05		INSULATION
F....	.401	51.01.0112	315mA SLOW BLOW				1.915.100.06		PERMALLOY
IC..	.201	50.05.0119	µA723C				1.010.001.50		HEATSINK STAR
IC..	.301	50.05.0119	µA723C				1.915.101.00		TRANSFORMER ASSEMBLY
P....	.1	54.04.0104	3p MAINS-PLUG				1.915.102.00		STABILIZER PCB
P....	.2	54.01.0359	32p EDGE CONNECTOR						
Q..	.201	50.99.0106	T2800D TRIAC	RCA					
Q..	.202	50.03.0481	MJ2955	MOT					
Q..	.203	50.03.0436	BC237B NPN GEN. PURP. BC547B						
Q..	.301	50.99.0106	T2800D TRIAC	RCA			1.915.100 POWER SUPPLY		TH 28/08/79
Q..	.302	50.03.0481	MJ2955	MOT			1.915.100 POWER SUPPLY		⊙ HO 08/02/80
Q..	.401	50.03.0436	BC237B NPN 50V BC547B				1.915.100 POWER SUPPLY		⊗ YO 06/09/84
Q..	.402	50.03.0492	BC256B						
Q..	.403	50.03.0344	2N6474	RCA					
Q..	.404	50.03.0436	BC237B NPN 50V BC547B						
R..	.101	57.11.4682	6,8k						

PE=Polyester, EL=Electrolytic, CER=Ceramic, TA=Tantalum, PMG=Cermet, MF=Metal Film

MANUFACTURER: MOT=Motorola, PH=Philips

1.915.100 POWER SUPPLY TH 28/08/79

1.915.100 POWER SUPPLY ⊙ HO 08/02/80

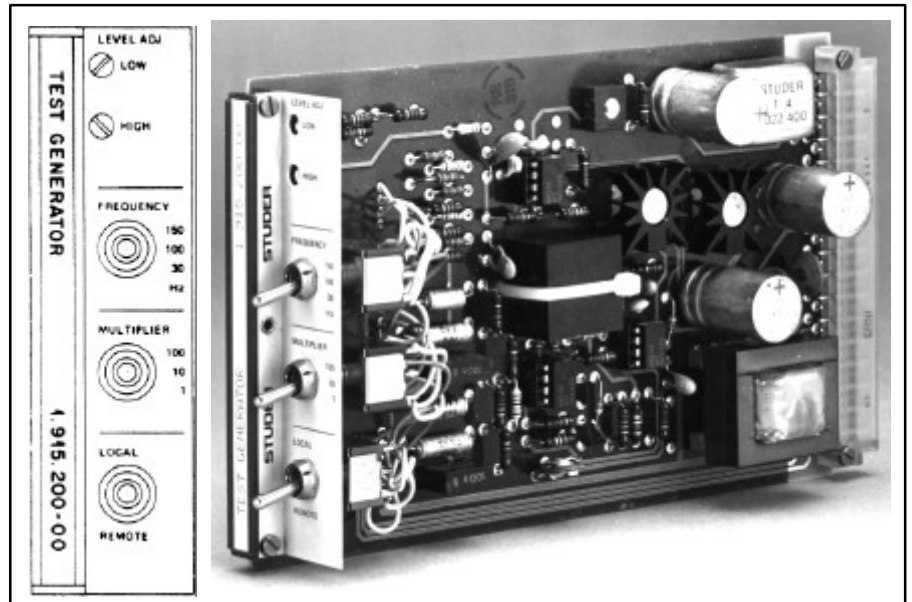
1.915.100 POWER SUPPLY ⊗ YO 06/09/84

END
→

2.2.3 Audio Generator

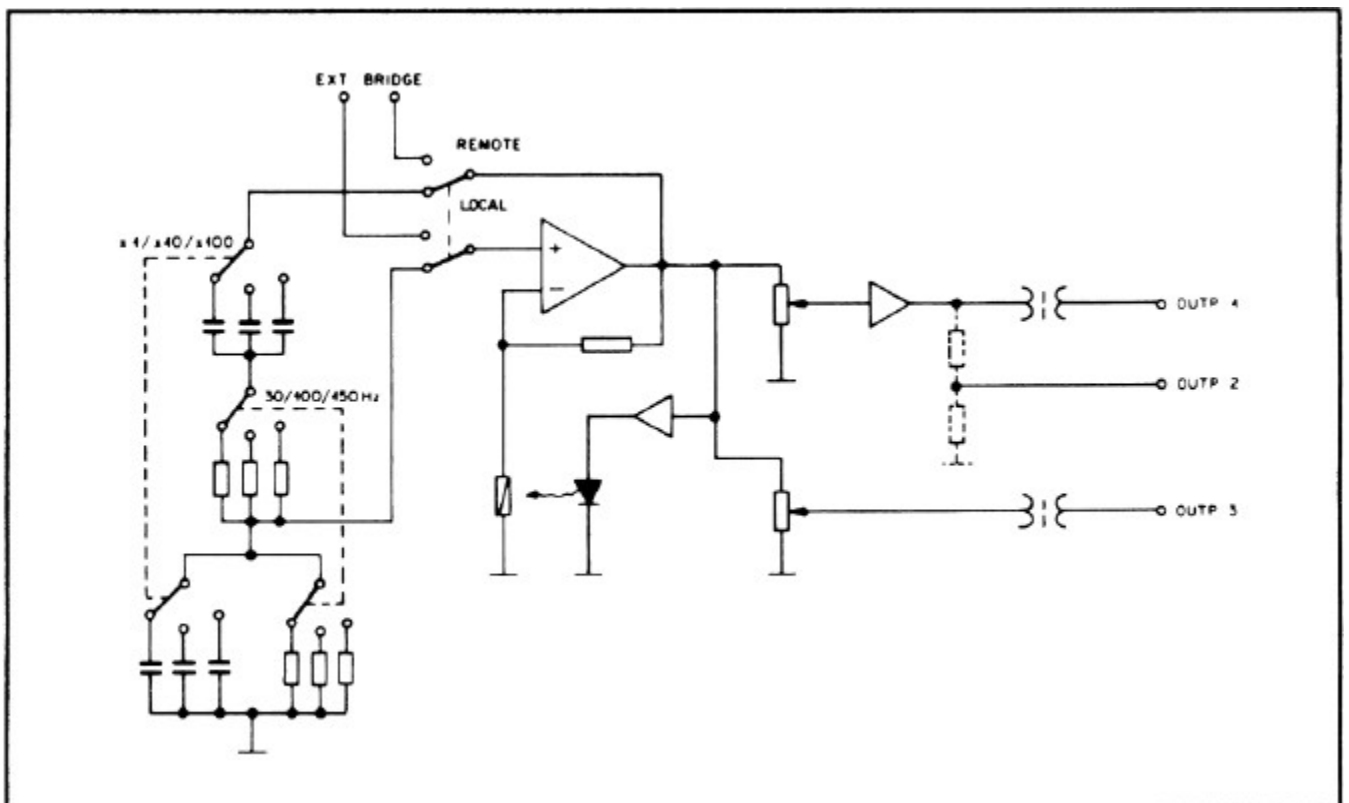
1.915.200

This oscillator circuit provides a convenient source of 9 fixed audio frequencies with stable signal level, accommodated on one Euro-card. It is well suited for quick frequency-response measurements or for other calibration work in an audio system.



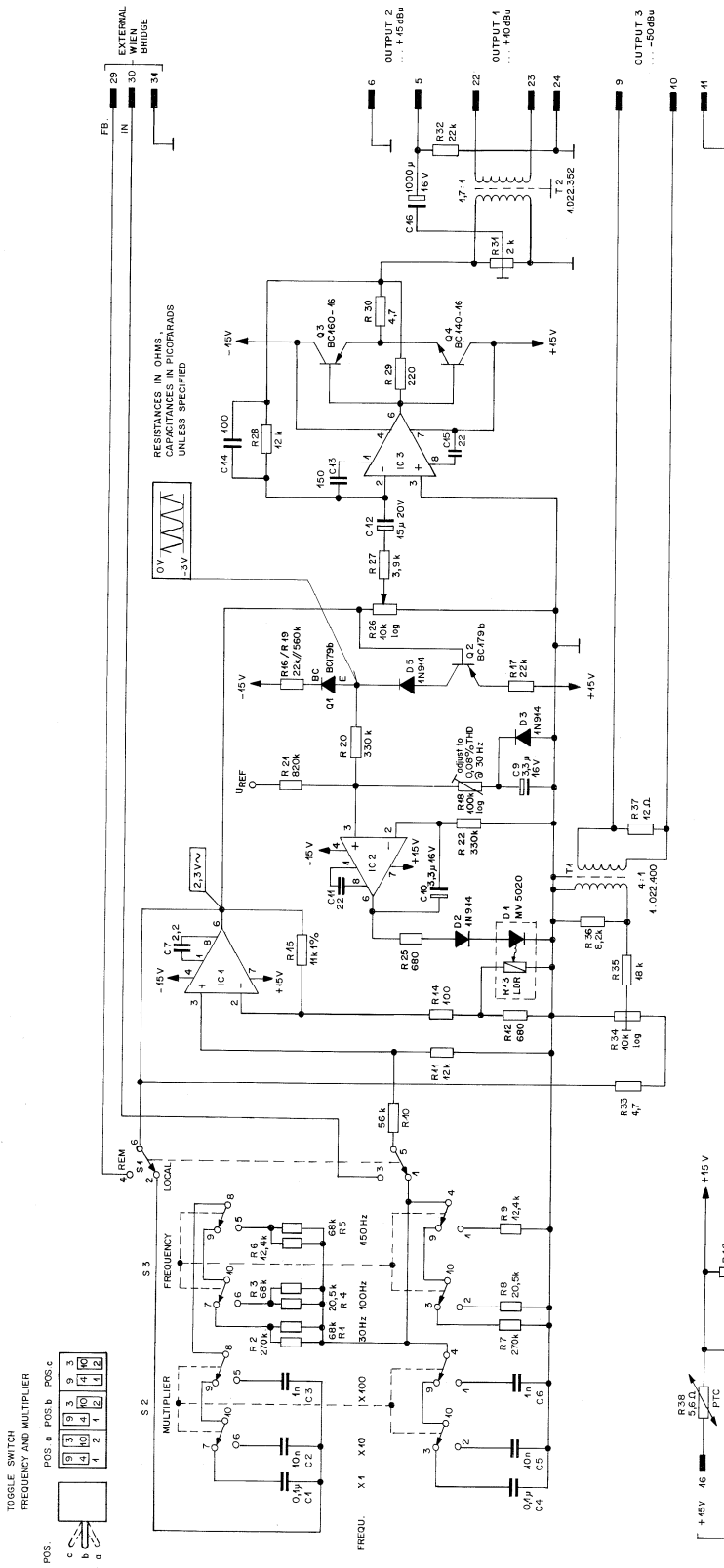
Two three-position rocker switches allow the selection of the 9 frequencies, a third switch permits changeover to an external Wien-bridge, if external frequency control should be desired.

An output amplifier with level control on its input is also implemented, providing three different outputs, as far as levels and balanced/unbalanced configurations are concerned.

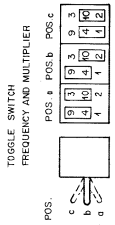
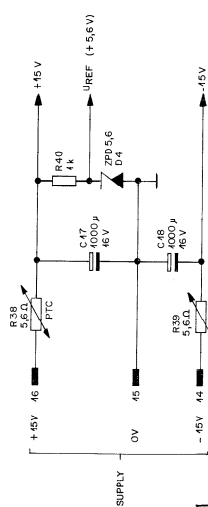


Technical Specifications

General:	Frequencies	30 / 100 / 150 / 300 Hz / 1 / 1.5 / 3 / 10 / 15 kHz , fixed (accuracy $\pm 5\%$)
	Settling time	< 5 s (30 Hz) < 1 s (1 kHz)
	Level accuracy	+0.1/-0.2 dB (0...50° C)
	Operating temperature	-10...+55° C
	Supply	± 15 V , regulated within ± 0.2 V (< 25 mA)
Output 1:	balanced and floating	separately adjustable
	Output level range	-∞...+10 dBu (0...2.45 V _{rms})
	Level uniformity vs. frequency	± 0.1 dB (20° C)
	THD	< 0.25% , 30 Hz...15 kHz < 0.1% , 100 Hz...10 kHz
	Output impedance	< 30 W
	Minimum load	200 W
Output 2:	unbalanced	separately adjustable
	Output level range	-∞...+15 dBu (0...4.4 V _{rms})
	Level uniformity vs. frequency	± 0.2 dB (20° C)
	THD	< 0.15% , 30 Hz...15 kHz < 0.1% , 100 Hz...10 kHz
	Minimum load	200 W
Output 3:	balanced and floating	separately adjustable
	Output level range	-∞...-50 dBu (0...2.5 mV _{rms})
	Level uniformity vs. frequency	± 0.2 dB (20° C)
	THD	< 0.2% , 30 Hz...15 kHz
	Output impedance	12 W
	Minimum load	200 W
Dimensions:	Euro-card	100 × 160 mm, 7M units wide
	Weight	approx. 350 g
Ordering Information:	Audio generator 30 Hz...15 kHz	1.915.200.xx

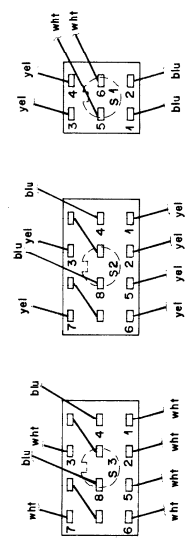
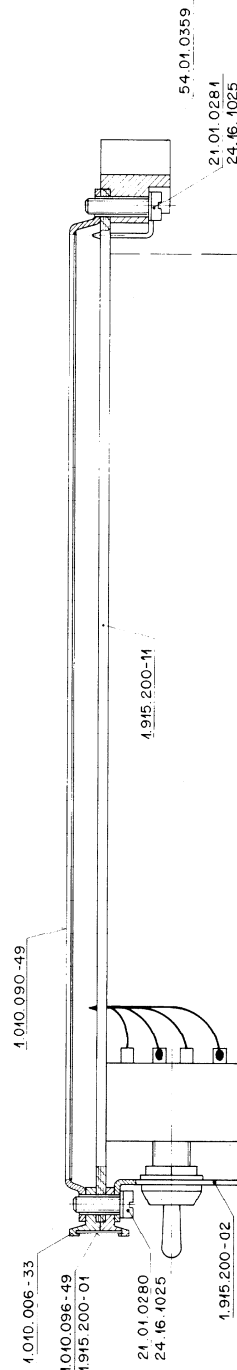
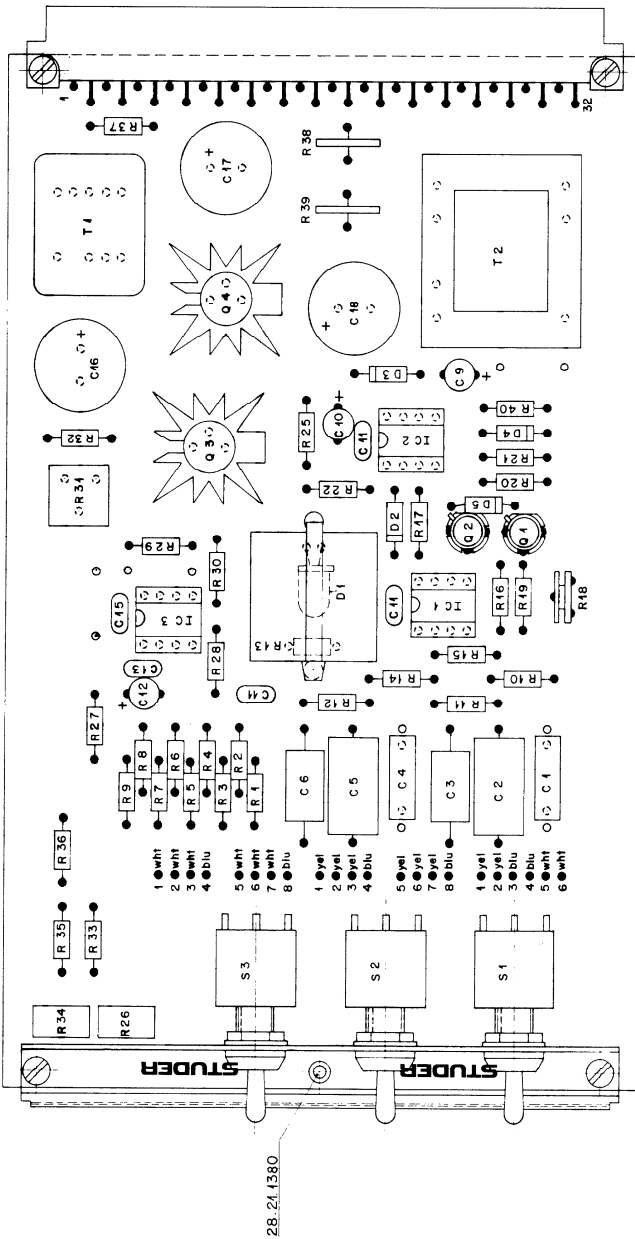
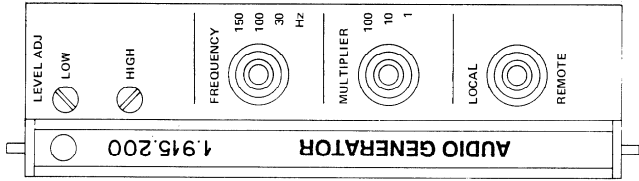


FREQUENCIES: 30Hz, 300Hz, 3kHz, 400Hz, 4kHz, 40kHz, 450Hz, 4.5kHz, 45kHz
 ALL IC'S LM 309



Ersatz für:	Ersetzt durch:	Kopie für:																				
STUDER REGENSDORF ZÜRICH	AUDIO GENERATOR	1.915.200																				
<table border="1"> <tr> <td>Änderung</td> <td>1. 3. 83</td> <td>SI</td> <td>Wc</td> <td>③</td> </tr> <tr> <td></td> <td>29.10.79</td> <td>SI</td> <td>Wc</td> <td>①</td> </tr> <tr> <td>Ausgabe</td> <td>16.10.78</td> <td>SI</td> <td>SK</td> <td>②</td> </tr> </table>		Änderung	1. 3. 83	SI	Wc	③		29.10.79	SI	Wc	①	Ausgabe	16.10.78	SI	SK	②	<table border="1"> <tr> <td>Datum</td> <td>Gez.</td> <td>Gepr.</td> <td>Gez.</td> <td>Index</td> </tr> </table>	Datum	Gez.	Gepr.	Gez.	Index
Änderung	1. 3. 83	SI	Wc	③																		
	29.10.79	SI	Wc	①																		
Ausgabe	16.10.78	SI	SK	②																		
Datum	Gez.	Gepr.	Gez.	Index																		

AUDIO GENERATOR



Hersteller STUDER AG Zürcherstrasse 11 CH-8002 Zürich	PL Zugfeder-entwurf Abmessung	2-1	30.10.79 Ho 100 100 100
STUDER REGENSCHNITT ZÜRICH			1.915.200-00

Ad	POS.	REF.No.	DESCRIPTION	MANUFACTURER
C	...	1	59.99.0254	0,1µ 2% 100V PE
C	...	2	59.12.7103	0,01µ 1% 63V PS
C	...	3	59.12.9102	1000p 1% 500V PS
C	...	4	59.99.0254	0,1µ 2% 100V PE
C	...	5	59.12.7103	0,01µ 1% 63V PS
C	...	6	59.12.9102	1000p 1% 500V PS
C	...	7	59.34.0229	2,2p CER
C	...	8		
C	...	9	59.36.3339	3,3µ 20% 16V TA
C	...	10	59.36.3339	3,3µ 20% 16V TA
C	...	11	59.32.0220	22p 20% 400V CER
C	...	12	59.36.4150	15µ 20% 25V TA
C	...	13	59.32.1151	150p 10% 400V CER
C	...	14	59.32.0101	100p 20% 400V CER
C	...	15	59.32.0220	22p 20% 400V CER
C	...	16	59.22.4102	1000µ -10% 16V EL
C	...	17	59.22.4102	1000µ -10% 16V EL
C	...	18	59.22.4102	1000µ -10% 16V EL
D	...	1	50.04.2104	MV5020 LED
D	...	2	50.04.0125	1N4448 SI IN914
D	...	3	50.04.0125	1N4448 SI IN914
D	...	4	50.04.1104	25.6 5% 0.4W
D	...	5	50.04.0125	1N4448 SI IN914
IC	...	1	50.05.0144	LM301AN OP AMP
IC	...	2	50.05.0144	LM301AN OP AMP
IC	...	3	50.05.0144	LM301AN OP AMP
Q	...	1	50.03.0305	BC179B PNP
Q	...	2	50.03.0305	BC179B PNP
Q	...	3	50.03.0315	BC160-16 PNP
Q	...	4	50.03.0316	BC140-16 NPN
R	...	1	57.41.4683	68k 5% 1/4W CSCH
R	...	2	57.39.2673	267k 1% 1/4W MF
R	...	3	57.41.4683	68k 5% 1/4W CSCH
R	...	4	57.39.2052	20,5k 1% 1/4W MF
R	...	5	57.41.4683	68k 5% 1/4W CSCH
R	...	6	57.39.1242	12,4k 1% 1/4W MF
R	...	7	57.39.2673	267k 1% 1/4W MF
R	...	8	57.39.2052	20,5k 1% 1/4W MF
R	...	9	57.39.1242	12,4k 1% 1/4W MF
R	...	10	57.41.4563	56k 5% 1/4W CSCH
R	...	11	57.41.4123	12k 5% 1/4W CSCH
R	...	12	57.41.4681	680 5% 1/4W CSCH
R	...	13	57.99.0135	1k LDR 100UIX
R	...	14	57.41.4101	100 5% 1/4W CSCH
R	...	15	57.39.1102	11k 1% 1/4W MF
R	...	16	57.41.4223	22k 5% 1/4W CSCH
R	...	17	57.41.4223	22k 5% 1/4W CSCH
R	...	18	58.02.8104	100k LOG 20% 0,1W PSCH
R	...	19	57.41.4564	560k 5% 1/4W CSCH
R	...	20	57.41.4334	330k 5% 1/4W CSCH
R	...	21	57.41.4824	820k 5% 1/4W CSCH
R	...	22	57.41.4334	330k 5% 1/4W CSCH
R	...	23		
R	...	24		
R	...	25	57.41.4681	680 5% 1/4W CSCH
R	...	26	58.01.7103	10k 10% 1/4W PMG
R	...	27	57.39.3921	3,92k 1% 1/4W MF
R	...	28	57.41.4123	12k 5% 1/4W CSCH
R	...	29	57.41.4221	220 5% 1/4W CSCH
R	...	30	57.41.4479	4,7 5% 1/4W CSCH
R	...	31	58.01.8202	2k 10% 1/4W PMG
R	...	32	57.41.4223	22k 5% 1/4W CSCH
R	...	33	57.41.4479	4,7 5% 1/4W CSCH
R	...	34	58.01.7103	10k 10% 1/4W PMG
R	...	35	57.41.4183	18k 5% 1/4W CSCH
R	...	36	57.41.4822	8,2k 5% 1/4W CSCH
R	...	37	57.41.4120	12 5% 1/4W CSCH
R	...	38	57.99.0209	5,6 PTC
R	...	39	57.99.0209	5,6 PTC
R	...	40	57.41.4102	1k 5% 1/4W CSCH
S	...	1	55.01.0112	2xON-ON SWITCH AU KIPP
S	...	2	55.01.0114	4xON-ON-ON SWITCH AU KIPP
S	...	3	55.01.0114	4xON-ON-ON SWITCH AU KIPP
T	...	1	1.022.400.00	4:1 TRAF0 ST
T	...	2	1.022.352.00	ST

CER=Ceramic, PE=Polyester, PS=Polystyrol, PMG=Trimmer, MF=Metal Film, CSCH=Carbon Film
 PSCH=Poti, EL=Electrolytic, TA=Tantalum

MANUFACTURER: ST=Studer

1.915.200 AUDIO GENERATOR

WE 24/03/80

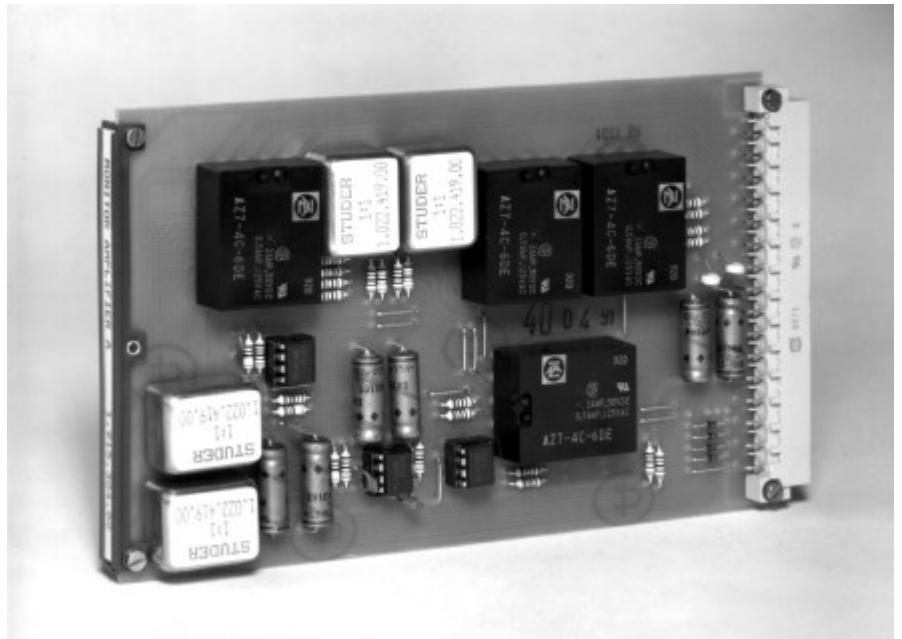
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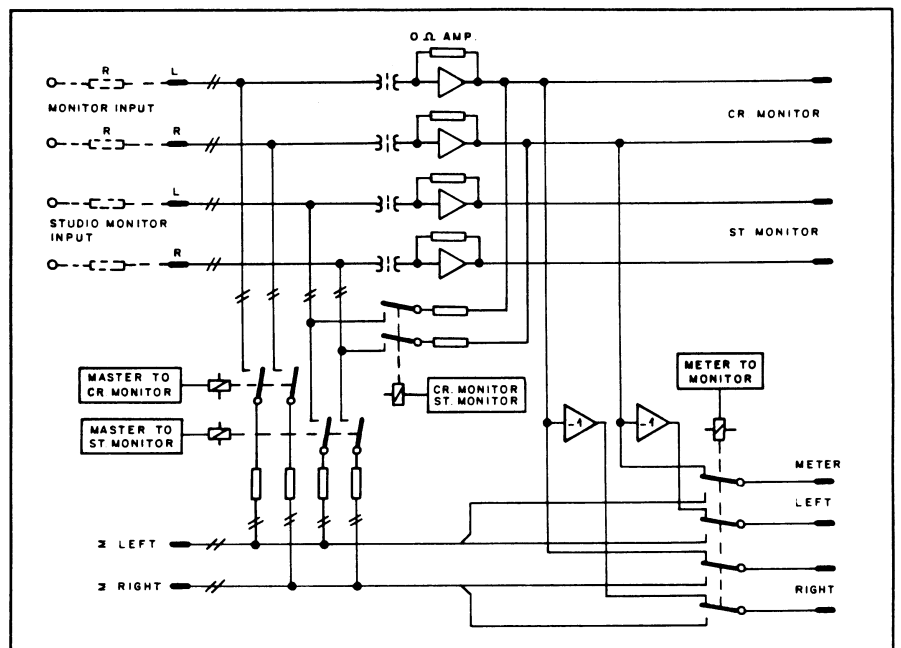
2.2.4 Monitor Amplifier and Switching Relays (Studio/CR)

1.915.304

The circuit on this Euro-card is designed to form part of an audio monitoring system. The card is narrower than most others, i.e., 4 M units only. It contains four amplifiers, each presenting a 0-Ω input impedance, two metering amplifiers, and four relays for audio switching.

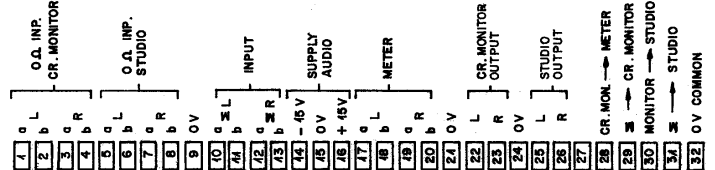
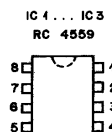
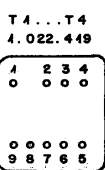
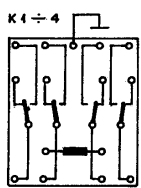
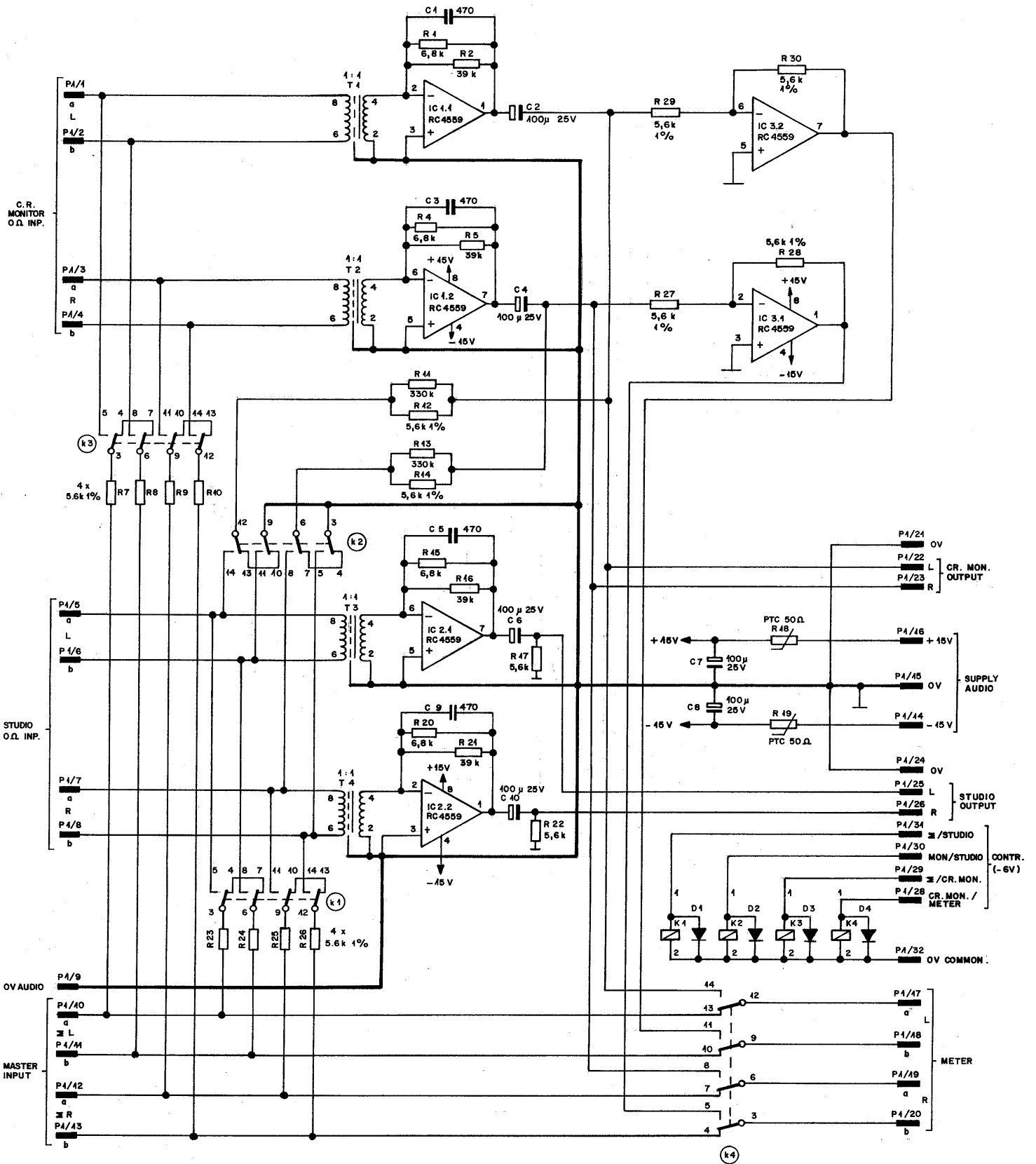


Two stereo signal inputs from a combination of sources (with suitable isolation resistors at the output of each source) can thus be summed for Control Room (CR) and Studio Monitoring, for example. In addition, the signal from the stereo master can be assigned to either monitor line and, if needed, CR monitoring and studio monitoring can be paralleled. A further circuit permits switchover of level meters from the master bus to the CR monitor line. The relays are designed for 6 V_{DC} operation.



Technical Specifications

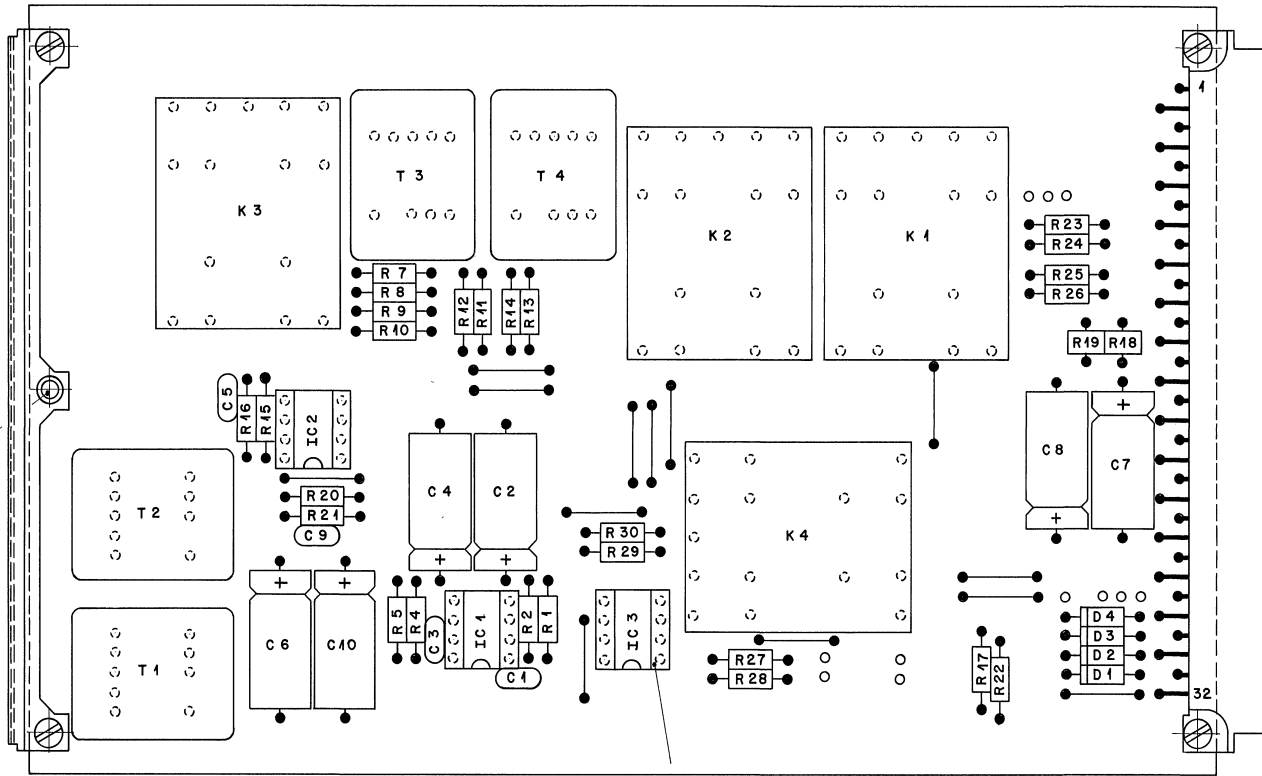
Inputs:		balanced and floating (for CR monitor and studio monitor)
	Impedance	> 10 kW
	Maximum level	+24 dBu
Outputs:		unbalanced (for CR monitor and studio monitor)
	Impedance	< 3 W
	Maximum level	+20 dBu into 1 k Ω
	Maximum load	1 kW
Meter outputs:		push-pull
	Maximum level	+24 dBu
	Frequency response	± 0.5 dB , 30 Hz...16 kHz
	THD	< 0.1% , @ +6 dBu input, 30 Hz...16 kHz
	S/N	105 dB , 20 Hz...23 kHz
Supply:		± 15 V (20 mA)
Dimensions:	Euro-card	100 \times 160 mm , 4M units wide (19 mm)
	Connector system	DIN 41612, type B
	Weight	approx. 270 g
Ordering Information:		Monitor amplifier and switching relay
		1.915.304.xx



BOTTOM VIEW

DATE:	20. 11. 81		
SIGN:	<i>[Signature]</i>		
STUDER REGENSDORF ZÜRICH	MONITOR AMPLIFIER A		SC. 1.915.304

28.24.4380



53.03.0166 (3x)

4.010.006-33

4.010.090-49

4.010.096-49
1.915.304-01

54.01.0359

21.01.0280 (2x)
24.16.4025 (2x)

1.915.304-11

21.01.0281 (2x)
24.16.4025 (2x)

MONITOR AMPLIFIER A
1.915.304-00

					③
					②
Änderung	4.4.84	A.Ho	✓	✓	①
Ausgabe	8.10.81	Ho	✓	✓	①
Datum	Gez.	Gepr.	Ges.	Index	
Kopie für:					
STUDEF REGENSDORF ZÜRICH		Benennung: Monitor Amplifier A		Nummer: 1.915.304-00	

Monitor Amp 1.915.304.00 (0)

Idx. Pos.	Part No.	Qty.	Type/Val.	Description
0 C 1	59.32.4471	1 pce	470p	CER , 20%, 50V
0 C 2	59.25.4101	1 pce	100u	EL 25V 20% axial
0 C 3	59.32.4471	1 pce	470p	CER , 20%, 50V
0 C 4	59.25.4101	1 pce	100u	EL 25V 20% axial
0 C 5	59.32.4471	1 pce	470p	CER , 20%, 50V
0 C 6	59.25.4101	1 pce	100u	EL 25V 20% axial
0 C 7	59.25.4101	1 pce	100u	EL 25V 20% axial
0 C 8	59.25.4101	1 pce	100u	EL 25V 20% axial
0 C 9	59.32.4471	1 pce	470p	CER , 20%, 50V
0 C 10	59.25.4101	1 pce	100u	EL 25V 20% axial
0 D 1	50.04.0125	1 pce	1N4448	75V, 150mA, 4ns, DO-35
0 D 2	50.04.0125	1 pce	1N4448	75V, 150mA, 4ns, DO-35
0 D 3	50.04.0125	1 pce	1N4448	75V, 150mA, 4ns, DO-35
0 D 4	50.04.0125	1 pce	1N4448	75V, 150mA, 4ns, DO-35
0 IC 1	50.09.0107	1 pce	4559	Dual Op-Amp
0 IC 2	50.09.0107	1 pce	4559	Dual Op-Amp
0 IC 3	50.09.0107	1 pce	4559	Dual Op-Amp
0 K 1	56.04.0146	1 pce	4*u	6V, 220V/2A, PCB
0 K 2	56.04.0146	1 pce	4*u	6V, 220V/2A, PCB
0 K 3	56.04.0146	1 pce	4*u	6V, 220V/2A, PCB
0 K 4	56.04.0146	1 pce	4*u	6V, 220V/2A, PCB
0 R 1	57.11.3682	1 pce	6k8	MF, 1%, 0207
0 R 2	57.11.3393	1 pce	39k	MF, 1%, 0207
0 R 4	57.11.3682	1 pce	6k8	MF, 1%, 0207
0 R 5	57.11.3393	1 pce	39k	MF, 1%, 0207
0 R 7	57.11.3562	1 pce	5k6	MF, 1%, 0207
0 R 8	57.11.3562	1 pce	5k6	MF, 1%, 0207
0 R 9	57.11.3562	1 pce	5k6	MF, 1%, 0207
0 R 10	57.11.3562	1 pce	5k6	MF, 1%, 0207
0 R 11	57.11.3334	1 pce	330k	MF, 1%, 0207
0 R 12	57.11.3562	1 pce	5k6	MF, 1%, 0207
0 R 13	57.11.3334	1 pce	330k	MF, 1%, 0207
0 R 14	57.11.3562	1 pce	5k6	MF, 1%, 0207
0 R 15	57.11.3682	1 pce	6k8	MF, 1%, 0207
0 R 16	57.11.3393	1 pce	39k	MF, 1%, 0207
0 R 17	57.11.3562	1 pce	5k6	MF, 1%, 0207
0 R 18	57.99.0206	1 pce	50R	PTC, 25V, 0.5W
0 R 19	57.99.0206	1 pce	50R	PTC, 25V, 0.5W
0 R 20	57.11.3682	1 pce	6k8	MF, 1%, 0207
0 R 21	57.11.3393	1 pce	39k	MF, 1%, 0207
0 R 22	57.11.3562	1 pce	5k6	MF, 1%, 0207
0 R 23	57.11.3562	1 pce	5k6	MF, 1%, 0207
0 R 24	57.11.3562	1 pce	5k6	MF, 1%, 0207
0 R 25	57.11.3562	1 pce	5k6	MF, 1%, 0207
0 R 26	57.11.3562	1 pce	5k6	MF, 1%, 0207
0 R 27	57.11.3562	1 pce	5k6	MF, 1%, 0207
0 R 28	57.11.3562	1 pce	5k6	MF, 1%, 0207
0 R 29	57.11.3562	1 pce	5k6	MF, 1%, 0207
0 R 30	57.11.3562	1 pce	5k6	MF, 1%, 0207
0 T 1	1.022.419.00	1 pce		EINGANGSTRAFO 1:1
0 T 2	1.022.419.00	1 pce		EINGANGSTRAFO 1:1
0 T 3	1.022.419.00	1 pce		EINGANGSTRAFO 1:1
0 T 4	1.022.419.00	1 pce		EINGANGSTRAFO 1:1

Idx. Pos.	Part No.	Qty.	Type/Val.	Description
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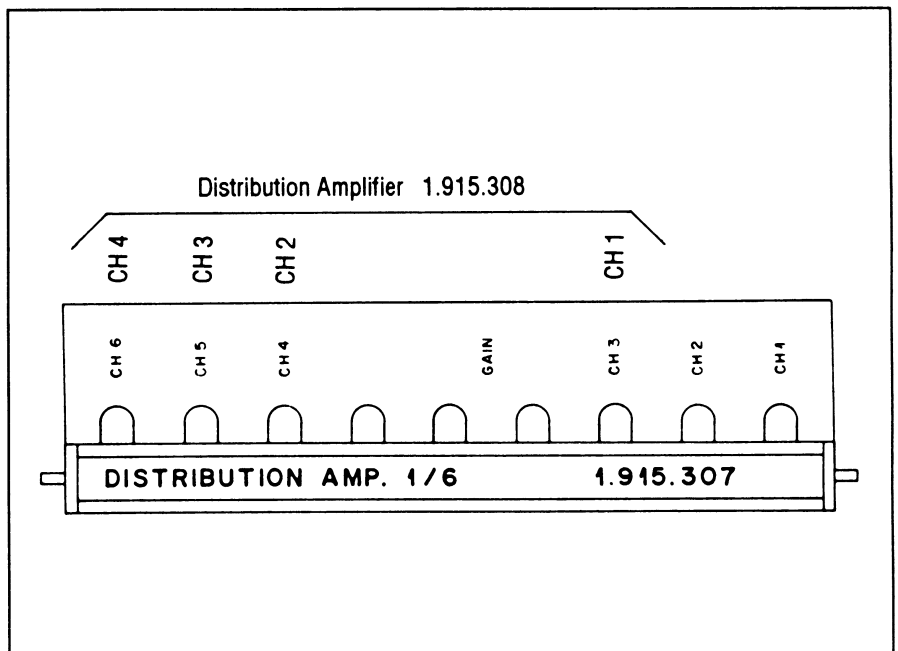
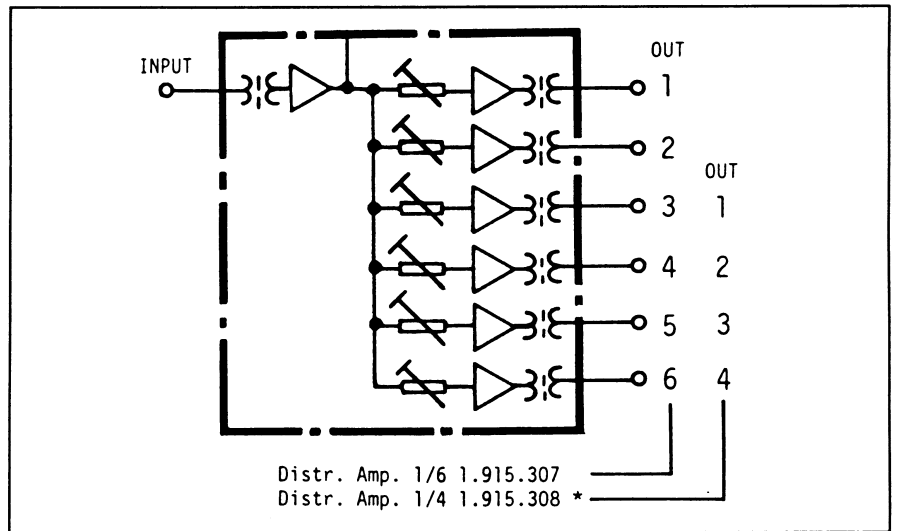
End of List

Comments:

2.2.5 Distribution Amplifier

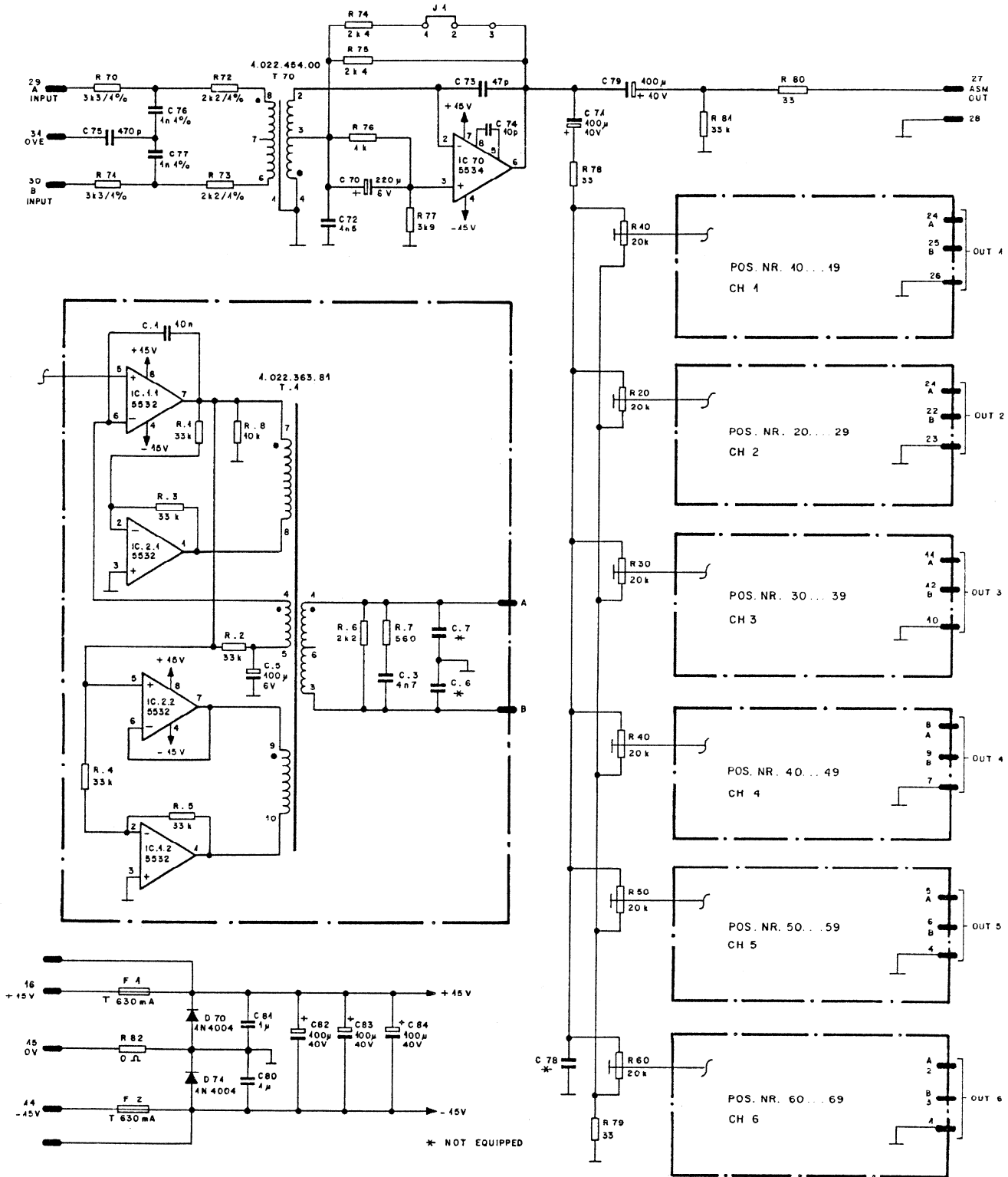
1.915.307/308

The distribution amplifier cards offer splitting of one input to four or six individually adjustable outputs (versions 1.915.308 or 1.915.307, respectively). The input and all outputs are transformer-balanced and floating. These cards satisfy any complex requirement of signal routing and distribution.



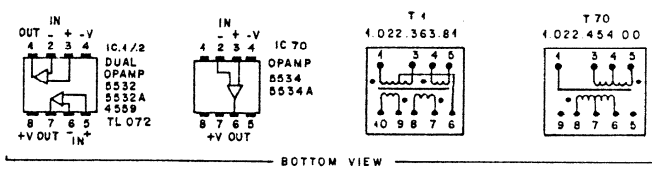
Technical Specifications

General:	Frequency range	31.5 Hz...16 kHz	
	Frequency response	+0.2/-0.5 dB , $R_L = 300 \Omega$	
Input:		balanced and floating	
	Impedance	≥ 10 kW	
	Symmetry	≥ 60 dB	
	Gain, adjustable	-20...+10 dB (Jumper 2-3: +6 dB Gain)	
Outputs:		balanced and floating	
	Impedance	£ 40 W	
	Maximum level	+24 dBu , $R_L = 600 \Omega$ /THD < 1%	
		+21 dBu , $R_L = 200 \Omega$ /THD < 1%	
	THD	£ 0.02% , +6 dBu/300 Ω	
	Output noise voltage	-100 dBu , 0 dB gain	
Supply:		±15 V_{DC} (90 mA, all outputs +6 dBu, without load; 180 mA, all outputs +24 dBu into 300 Ω)	
Dimensions:	Euro-card	100 × 160 mm, 7 M units wide	
	Weight	500 g (1.915.308)	
		600 g (1.915.307)	
Ordering Information:			
Euro-cards:	• Distribution amplifier 1 to 6		1.915.307.xx
	• Distribution amplifier 1 to 4		1.915.308.xx
19"/1U standard products:	• Distribution unit 2 × 1 in/4 out on XLR		75.700.89301
	• Distribution unit 3 × 1 in/4 out on XLR		75.700.89302
	• Distribution unit 2 × 1 in/6 out on XLR		75.700.89303



* NOT EQUIPPED

- 11 OUT 6
- 12 OUT 6
- 13 OUT 6
- 14 OUT 5
- 15 OUT 5
- 16 OUT 5
- 17 OUT 4
- 18 OUT 4
- 19 OUT 4
- 20 OUT 3
- 21 OUT 3
- 22 OUT 3
- 23 OUT 3
- 24 OUT 3
- 25 OUT 3
- 26 OUT 3
- 27 OUT 2
- 28 OUT 2
- 29 OUT 2
- 30 OUT 2
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- 92 OUT 2
- 93 OUT 2
- 94 OUT 2
- 95 OUT 2
- 96 OUT 2
- 97 OUT 2
- 98 OUT 2
- 99 OUT 2
- 100 OUT 2



① 24.11.93	④ 12.4.94	we	○	○	○
STUDER REGENSDORF ZÜRICH		DISTRIBUTION AMP. 1/6			SC 1.915.307-81

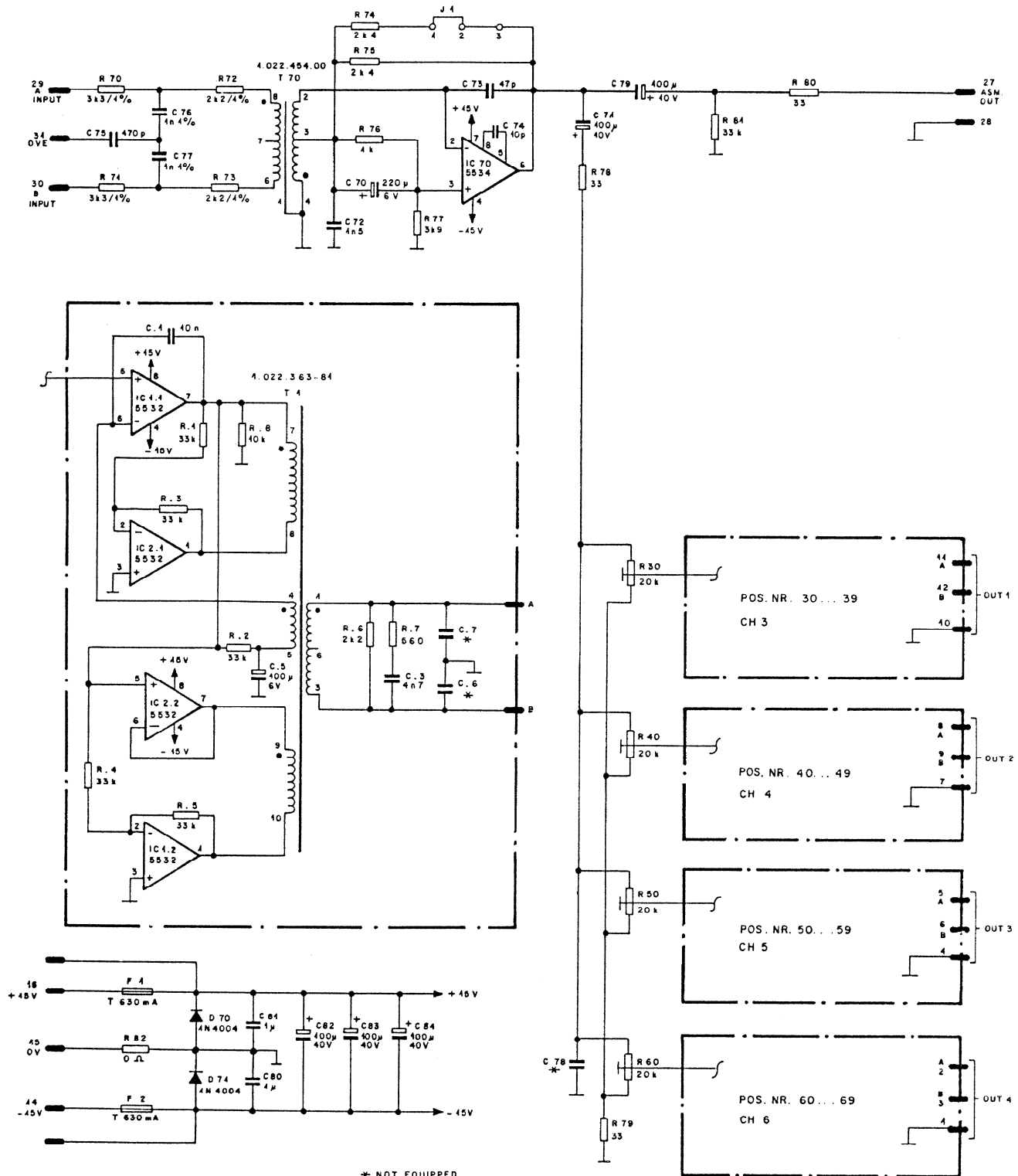
DISTRIBUTION AMPLIFIER

Ad	POS.	REF.No.	DESCRIPTION	MANUFACTURER	Ad	POS.	REF.No.	DESCRIPTION	MANUFACTURER
			not used						
01	C....11	59.06.0222	2.2 nF	PE	R....11	57.11.4333	33 kOhm	5% 0.25W	MF
	C....12	59.34.2470	47 pF	CER	R....12	57.11.4333	33 kOhm	5% 0.25W	MF
	C....13	59.06.0472	4.7 nF	PE	R....13	57.11.4333	33 kOhm	5% 0.25W	MF
	C....14	59.34.2470	47 pF	CER	R....14	57.11.4333	33 kOhm	5% 0.25W	MF
	C....15	59.22.3101	100 uF	ALU 10V	R....15	57.11.4333	33 kOhm	5% 0.25W	MF
	C....16	59.32.1680	68 pF	CER 400V	R....16	57.11.4222	2.2 kOhm	5% 0.25W	MF
	C....17			not used	R....17	57.11.4102	1 kOhm	5% 0.25W	MF
	C....21			not used	R....18	57.11.4103	10 kOhm	5% 0.25W	MF
01	C....21	59.06.0222	2.2 nF	PE	R....20	58.01.9203	20 kOhm	10% 0.5 W	PMG trimming resistor
	C....22	59.34.2470	47 pF	CER	R....21	57.11.4333	33 kOhm	5% 0.25W	MF
	C....23	59.06.0472	4.7 nF	PE	R....22	57.11.4333	33 kOhm	5% 0.25W	MF
	C....24	59.34.2470	47 pF	CER	R....23	57.11.4333	33 kOhm	5% 0.25W	MF
	C....25	59.22.3101	100 uF	ALU 10V	R....24	57.11.4333	33 kOhm	5% 0.25W	MF
	C....26	59.32.1680	68 pF	CER 400V	R....25	57.11.4333	33 kOhm	5% 0.25W	MF
	C....27			not used	R....26	57.11.4222	2.2 kOhm	5% 0.25W	MF
	C....31			not used	R....27	57.11.4102	1 kOhm	5% 0.25W	MF
01	C....31	59.06.0222	2.2 nF	PE	R....28	57.11.4103	10 kOhm	5% 0.25W	MF
	C....32	59.34.2470	47 pF	CER	R....30	58.01.9203	20 kOhm	10% 0.5 W	PMG trimming resistor
	C....33	59.06.0472	4.7 nF	PE	R....31	57.11.4333	33 kOhm	5% 0.25W	MF
	C....34	59.34.2470	47 pF	CER	R....32	57.11.4333	33 kOhm	5% 0.25W	MF
	C....35	59.22.3101	100 uF	ALU 10V	R....33	57.11.4333	33 kOhm	5% 0.25W	MF
	C....36	59.32.1680	68 pF	CER 400V	R....34	57.11.4333	33 kOhm	5% 0.25W	MF
	C....37			not used	R....35	57.11.4333	33 kOhm	5% 0.25W	MF
	C....41			not used	R....36	57.11.4222	2.2 kOhm	5% 0.25W	MF
01	C....41	59.06.0222	2.2 nF	PE	R....37	57.11.4102	1 kOhm	5% 0.25W	MF
	C....42	59.34.2470	47 pF	CER	R....38	57.11.4103	10 kOhm	5% 0.25W	MF
	C....43	59.06.0472	4.7 nF	PE	R....40	58.01.9203	20 kOhm	10% 0.5 W	PMG trimming resistor
	C....44	59.34.2470	47 pF	CER	R....41	57.11.4333	33 kOhm	5% 0.25W	MF
	C....45	59.22.3101	100 uF	ALU 10V	R....42	57.11.4333	33 kOhm	5% 0.25W	MF
	C....46	59.32.1680	68 pF	CER 400V	R....43	57.11.4333	33 kOhm	5% 0.25W	MF
	C....47			not used	R....44	57.11.4333	33 kOhm	5% 0.25W	MF
	C....51			not used	R....45	57.11.4333	33 kOhm	5% 0.25W	MF
01	C....51	59.06.0222	2.2 nF	PE	R....46	57.11.4222	2.2 kOhm	5% 0.25W	MF
	C....52	59.34.2470	47 pF	CER	R....47	57.11.4102	1 kOhm	5% 0.25W	MF
	C....53	59.06.0472	4.7 nF	PE	R....48	57.11.4103	10 kOhm	5% 0.25W	MF
	C....54	59.34.2470	47 pF	CER	R....50	58.01.9203	20 kOhm	10% 0.5 W	PMG trimming resistor
	C....55	59.22.3101	100 uF	ALU 10V	R....51	57.11.4333	33 kOhm	5% 0.25W	MF
	C....56	59.32.1680	68 pF	CER 400V	R....52	57.11.4333	33 kOhm	5% 0.25W	MF
	C....57			not used	R....53	57.11.4333	33 kOhm	5% 0.25W	MF
	C....61			not used	R....54	57.11.4333	33 kOhm	5% 0.25W	MF
01	C....61	59.06.0222	2.2 nF	PE	R....55	57.11.4333	33 kOhm	5% 0.25W	MF
	C....62	59.34.2470	47 pF	CER	R....56	57.11.4222	2.2 kOhm	5% 0.25W	MF
	C....63	59.06.0472	4.7 nF	PE	R....57	57.11.4102	1 kOhm	5% 0.25W	MF
	C....64	59.34.2470	47 pF	CER	R....58	57.11.4103	10 kOhm	5% 0.25W	MF
	C....65	59.22.3101	100 uF	ALU 10V	R....60	58.01.9203	20 kOhm	10% 0.5 W	PMG trimming resistor
	C....66	59.32.1680	68 pF	CER 400V	R....61	57.11.4333	33 kOhm	5% 0.25W	MF
	C....67			not used	R....62	57.11.4333	33 kOhm	5% 0.25W	MF
	C....70	59.22.4221	220 uF	ALU 6V	R....63	57.11.4333	33 kOhm	5% 0.25W	MF
	C....71	59.22.4101	100 uF	ALU 10V	R....64	57.11.4333	33 kOhm	5% 0.25W	MF
	C....72	59.06.0152	1.5 nF	CER	R....65	57.11.4333	33 kOhm	5% 0.25W	MF
	C....73	59.34.2470	47 pF	CER	R....66	57.11.4222	2.2 kOhm	5% 0.25W	MF
	C....74	59.34.4100	10 pF	CER	R....67	57.11.4102	1 kOhm	5% 0.25W	MF
	C....75	59.34.5471	470 pF	CER	R....68	57.11.4103	10 kOhm	5% 0.25W	MF
	C....76	59.05.1102	1 nF	1%	R....70	57.11.3332	3.3 kOhm	1% 0.25W	MF
	C....77	59.05.1102	1 nF	1%	R....71	57.11.3332	3.3 kOhm	1% 0.25W	MF
	C....79	59.22.4101	100 uF	ALU 10V	R....72	57.11.3222	2.2 kOhm	1% 0.25W	MF
	C....80	59.06.5105	1 uF	PE	R....73	57.11.3222	2.2 kOhm	1% 0.25W	MF
	C....81	59.06.5105	1 uF	PE	R....74	57.11.3242	2.4 kOhm	1% 0.25W	MF
	C....82	59.25.5101	100 uF	40V	R....75	57.11.3242	2.4 kOhm	1% 0.25W	MF
	C....83	59.25.5101	100 uF	40V	R....76	57.11.4102	1 kOhm	5% 0.25W	MF
	C....84	59.25.5101	100 uF	40V	R....77	57.11.4392	3.9 kOhm	5% 0.25W	MF
	D....70	50.04.0105	1N4004		R....78	57.11.4330	33 Ohm	5% 0.25W	MF
	D....71	50.04.0105	1N4004		R....79	57.11.4330	33 Ohm	5% 0.25W	MF
	F....1	51.01.0115	T 630mA /250V 5*20		R....80	57.11.4330	33 Ohm	5% 0.25W	MF
	F....2	51.01.0115	T 630mA /250V 5*20		R....81	57.11.4333	33 kOhm	5% 0.25W	MF
	IC...11	50.09.0106	NE5532AN	dual op. amp.	R....82	57.11.4000	0 Ohm	5% 0.25W	MF
	IC...12	50.09.0106	NE5532AN	dual op. amp.	T....10	1.022.363.00			output trafo
	IC...21	50.09.0106	NE5532AN	dual op. amp.	T....20	1.022.363.00			output trafo
	IC...22	50.09.0106	NE5532AN	dual op. amp.	T....30	1.022.363.00			output trafo
	IC...31	50.09.0106	NE5532AN	dual op. amp.	T....40	1.022.363.00			output trafo
	IC...32	50.09.0106	NE5532AN	dual op. amp.	T....50	1.022.363.00			output trafo
	IC...41	50.09.0106	NE5532AN	dual op. amp.	T....60	1.022.363.00			output trafo
	IC...42	50.09.0106	NE5532AN	dual op. amp.	T....70	1.022.454.00			input trafo
	IC...51	50.09.0106	NE5532AN	dual op. amp.					
	IC...52	50.09.0106	NE5532AN	dual op. amp.					
	IC...61	50.09.0106	NE5532AN	dual op. amp.					
	IC...62	50.09.0106	NE5532AN	dual op. amp.					
	IC...70	50.05.0244	NE5534AN	single op. amp.					
	JP....1	54.01.0021		JUMPER JACK					
	JS....1	54.01.0020		JUMPER PLUG 3-PIN					
	MP....1	53.03.0142	4 pcs	Fuse holder					
	MP....2	1.915.307.02	1 pcs	Abdeckwinkel					
	MP....3	1.915.307.05	1 pcs	Kuelblech					
	MP....4	1.022.400.03	1 pcs	Isolation T 70					
	R....10	58.01.9203	20 kOhm	10% 0.5 W					PMG trimming resistor

END

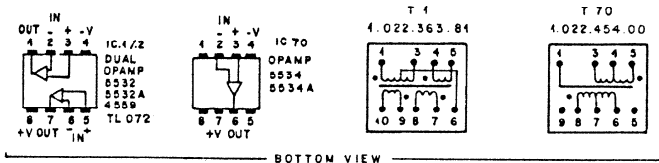
→

CER=Ceramic, PE=Polyester
 MF=Metal Film, PMG=Cermet
 MANUFACTURER: Ex=Exar, NEC=Nippon Electric Corp., Ph=Philips, Ra=Rayth
 Sig=Signetics, St=Studer.
 1.915.307.00 DISTRIBUTION AMP. 1/6 SE 87/09/0400
 1.915.307.00 DISTRIBUTION AMP. 1/6 SE 92/07/0201

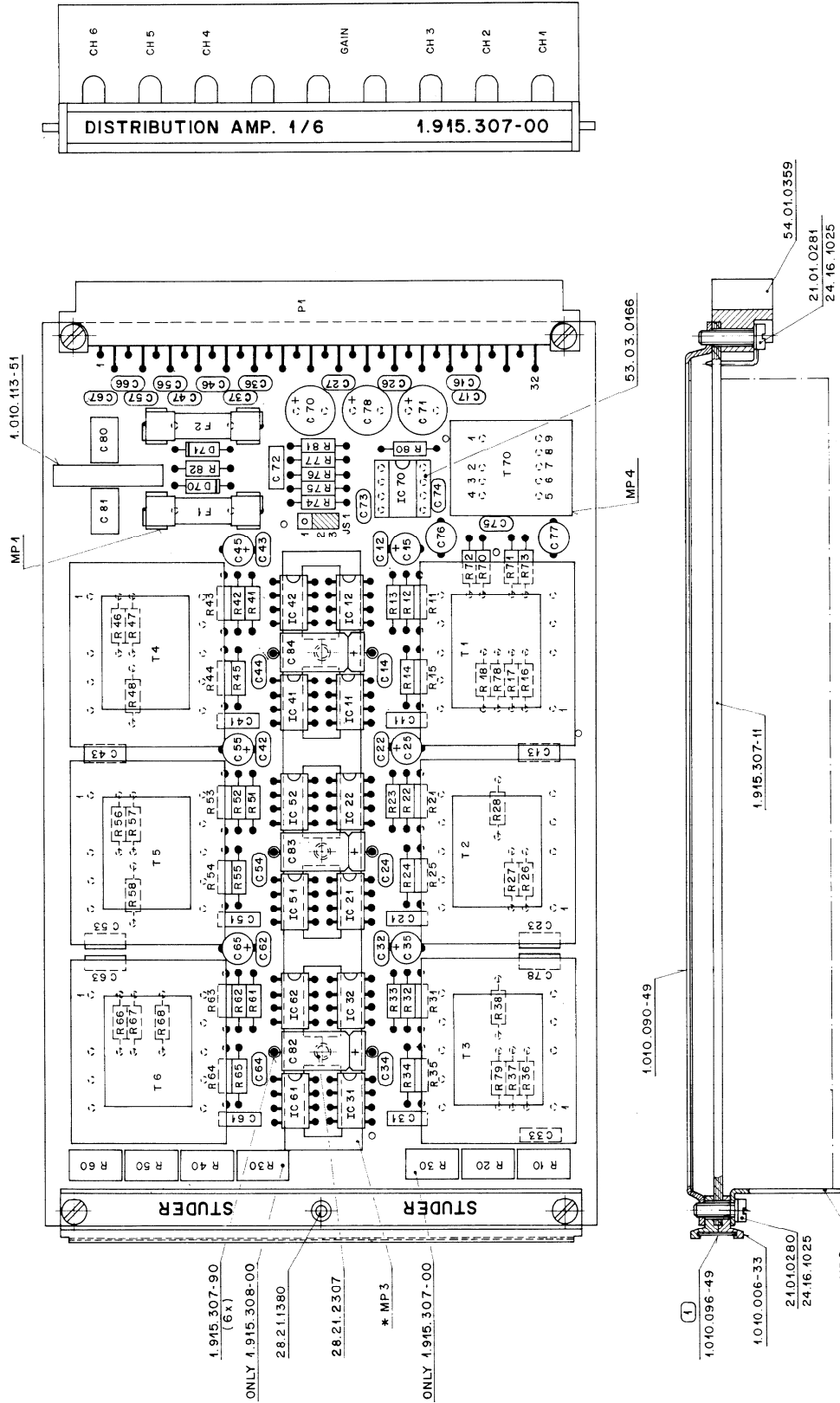


* NOT EQUIPPED

- 1 a
- 2 a
- 3 b
- 4 a
- 5 a
- 6 b
- 7 a
- 8 a
- 9 b
- 10 a
- 11 a
- 12 b
- 13
- 14 -15V
- 15 0V
- 16 +15V
- 17
- 18
- 19
- 20
- 21
- 22
- 23
- 24
- 25
- 26
- 27 ASM. OUT
- 28 a
- 29 a
- 30 b
- 31 0V
- 32



① 24.11.93	① 12.4.94	○	○	○
STUDER REGENSDORF ZÜRICH		DISTRIBUTION AMP 1/4		SC 1.915.308-81



VALID FOR	NR. UNIT + PL	(1)
DISTR. AMP 1/6	1.915.307-00	1.915.307-01
DISTR. AMP 1/4	1.915.308-00	1.915.308-01

* Zwischen IC 11/12 / 21/22/31/32 / 41/42/51/52/61/62 und Kühlblech MP3 Wärmeleitpaste 99.01.0505

Norm-Nr	1.915.307-00	①
DIN-Bez.		②
Abmessung		③
Zugehörige Unterlagen	PL, IL	
Erstellt für		
Überfliche	Geht	
	Beh.	
Freigegeben	19.8.67 A Ho	St
Mallestab	2.1	
Änderung		
Nummer	1.915.307-00	
Benennung	DISTRIBUTION AMP. 1/6	
Erstellt durch		
Datum		
Gez.		
Gez.		
Index		

DISTRIBUTION AMPLIFIER

Ad	POS.	REF.No.	DESCRIPTION	MANUFACTURER	Ad	POS.	REF.No.	DESCRIPTION	MANUFACTURER
	C....31		not used		R....56	57.11.4222	2.2 kOhm	5% 0.25W MF	
01	C....31	59.06.0222	2.2 nF	PE	R....57	57.11.4102	1 kOhm	5% 0.25W MF	
	C....32	59.34.2470	47 pF	CER	R....58	57.11.4103	10 kOhm	5% 0.25W MF	
	C....33	59.06.0472	4.7 nF	PE	R....60	58.01.9203	20 kOhm	10% 0.5 W	PMG trimming resistor
	C....34	59.34.2470	47 pF	CER	R....61	57.11.4333	33 kOhm	5% 0.25W MF	
	C....35	59.22.3101	100 uF	ALU 10V	R....62	57.11.4333	33 kOhm	5% 0.25W MF	
	C....36	59.32.1680	68 pF	CER 400V	R....63	57.11.4333	33 kOhm	5% 0.25W MF	
	C....37		not used		R....64	57.11.4333	33 kOhm	5% 0.25W MF	
	C....41		not used		R....65	57.11.4333	33 kOhm	5% 0.25W MF	
01	C....41	59.06.0222	2.2 nF	PE	R....66	57.11.4222	2.2 kOhm	5% 0.25W MF	
	C....42	59.34.2470	47 pF	CER	R....67	57.11.4102	1 kOhm	5% 0.25W MF	
	C....43	59.06.0472	4.7 nF	PE	R....68	57.11.4103	10 kOhm	5% 0.25W MF	
	C....44	59.34.2470	47 pF	CER	R....70	57.11.3332	3.3 kOhm	1% 0.25W MF	
	C....45	59.22.3101	100 uF	ALU 10V	R....71	57.11.3332	3.3 kOhm	1% 0.25W MF	
	C....46	59.32.1680	68 pF	CER 400V	R....72	57.11.3222	2.2 kOhm	1% 0.25W MF	
	C....47		not used		R....73	57.11.3222	2.2 kOhm	1% 0.25W MF	
	C....51		not used		R....74	57.11.3242	2.4 kOhm	1% 0.25W MF	
01	C....51	59.06.0222	2.2 nF	PE	R....75	57.11.3242	2.4 kOhm	1% 0.25W MF	
	C....52	59.34.2470	47 pF	CER	R....76	57.11.4102	1 kOhm	5% 0.25W MF	
	C....53	59.06.0472	4.7 nF	PE	R....77	57.11.4392	3.9 kOhm	5% 0.25W MF	
	C....54	59.34.2470	47 pF	CER	R....78	57.11.4330	33 Ohm	5% 0.25W MF	
	C....55	59.22.3101	100 uF	ALU 10V	R....79	57.11.4330	33 Ohm	5% 0.25W MF	
	C....56	59.32.1680	68 pF	CER 400V	R....80	57.11.4330	33 Ohm	5% 0.25W MF	
	C....57		not used		R....81	57.11.4333	33 kOhm	5% 0.25W MF	
	C....61		not used		R....82	57.11.4000	0 Ohm	5% 0.25W MF	
01	C....61	59.06.0222	2.2 nF	PE	T....30	1.022.363.00			output trafo
	C....62	59.34.2470	47 pF	CER	T....40	1.022.363.00			output trafo
	C....63	59.06.0472	4.7 nF	PE	T....50	1.022.363.00			output trafo
	C....64	59.34.2470	47 pF	CER	T....60	1.022.363.00			output trafo
	C....65	59.22.3101	100 uF	ALU 10V	T....70	1.022.454.00			input trafo
	C....66	59.32.1680	68 pF	CER 400V					
	C....67		not used						
	C....70	59.22.4221	220 uF	ALU 6V					
	C....71	59.22.4101	100 uF	ALU 10V					
	C....72	59.06.0152	1.5 nF	CER					
	C....73	59.34.2470	47 pF	CER					
	C....74	59.34.4100	10 pF	CER					
	C....75	59.34.5471	470 pF	CER					
	C....76	59.05.1102	1 nF	1%					
	C....77	59.05.1102	1 nF	1%					
	C....79	59.22.4101	100 uF	ALU 10V					
	C....80	59.06.5105	1 uF	PE					
	C....81	59.06.5105	1 uF	PE					
	C....82	59.25.5101	100 uF	40V					
	C....83	59.25.5101	100 uF	40V					
	C....84	59.25.5101	100 uF	40V					
	D....70	50.04.0105	1N4004						
	D....71	50.04.0105	1N4004						
	F....1	51.01.0115	T 630mA /250V 5*20						
	F....2	51.01.0115	T 630mA /250V 5*20						
	IC....31	50.09.0106	NE5532AN	dual op. amp.					Ra,NE
	IC....32	50.09.0106	NE5532AN	dual op. amp.					Ra,NE
	IC....41	50.09.0106	NE5532AN	dual op. amp.					Ra,NE
	IC....42	50.09.0106	NE5532AN	dual op. amp.					Ra,NE
	IC....51	50.09.0106	NE5532AN	dual op. amp.					Ra,NE
	IC....52	50.09.0106	NE5532AN	dual op. amp.					Ra,NE
	IC....61	50.09.0106	NE5532AN	dual op. amp.					Ra,NE
	IC....62	50.09.0106	NE5532AN	dual op. amp.					Ra,NE
	IC....70	50.05.0244	NE5534AN	single op.amp.					Ra,NE
	JP....1	54.01.0021		JUMPER JACK					
	JS....1	54.01.0020		JUMPER PLUG 3-PIN					
	MP....1	53.03.0142	4 pcs	Fuse holder					
	MP....2	1.915.307.02	1 pcs	Abdeckwinkel					
	MP....3	1.915.307.05	1 pcs	Kuelblech					
	MP....4	1.022.400.03	1 pcs	Isolation T 70					
	R....30	58.01.9203	20 kOhm	10% 0.5 W					PMG trimming resistor
	R....31	57.11.4333	33 kOhm	5% 0.25W MF					
	R....32	57.11.4333	33 kOhm	5% 0.25W MF					
	R....33	57.11.4333	33 kOhm	5% 0.25W MF					
	R....34	57.11.4333	33 kOhm	5% 0.25W MF					
	R....35	57.11.4333	33 kOhm	5% 0.25W MF					
	R....36	57.11.4222	2.2 kOhm	5% 0.25W MF					
	R....37	57.11.4102	1 kOhm	5% 0.25W MF					
	R....38	57.11.4103	10 kOhm	5% 0.25W MF					
	R....40	58.01.9203	20 kOhm	10% 0.5 W					PMG trimming resistor
	R....41	57.11.4333	33 kOhm	5% 0.25W MF					
	R....42	57.11.4333	33 kOhm	5% 0.25W MF					
	R....43	57.11.4333	33 kOhm	5% 0.25W MF					
	R....44	57.11.4333	33 kOhm	5% 0.25W MF					
	R....45	57.11.4333	33 kOhm	5% 0.25W MF					
	R....46	57.11.4222	2.2 kOhm	5% 0.25W MF					
	R....47	57.11.4102	1 kOhm	5% 0.25W MF					
	R....48	57.11.4103	10 kOhm	5% 0.25W MF					
	R....50	58.01.9203	20 kOhm	10% 0.5 W					PMG trimming resistor
	R....51	57.11.4333	33 kOhm	5% 0.25W MF					
	R....52	57.11.4333	33 kOhm	5% 0.25W MF					
	R....53	57.11.4333	33 kOhm	5% 0.25W MF					
	R....54	57.11.4333	33 kOhm	5% 0.25W MF					
	R....55	57.11.4333	33 kOhm	5% 0.25W MF					

CER=Ceramic, PE=Polyester, SAL=Solid Aluminium
MF=Metal Film, PMG=Cermet

MANUFACTURER: Ex=Exar, NE=NEC, Ph=Philips, Ra=Raytheon,
Sig=Signetics, St=Studer,

1.915.308.00 DISTRIBUTION AMP.1/4 SE 87/09/0400
1.915.308.00 DISTRIBUTION AMP.1/4 SE 92/07/0201

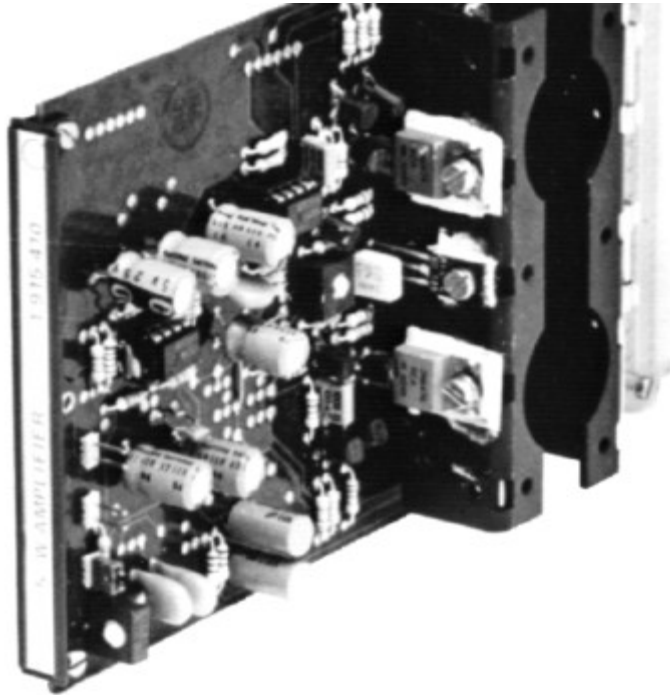
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2.2.6 5 W Power Amplifier

1.915.410/415

This amplifier on one Euro-card is designed for operation on a ± 15 V supply. It is capable of providing a power output of 5 W into a load of 8Ω .

With its low-to-medium power level, this amplifier is ideally suited for applications such as pre-listening or talkback speaker operation. Its output stage is protected by instantaneous output power limiting.



The standard version has an electronically balanced (transformerless) input. It is also available with the following options:

- Input balancing transformer
- Remote muting
- Remote gain control (VCA)
- Input balancing transformer plus remote muting
- Input balancing transformer plus remote gain control (VCA).

