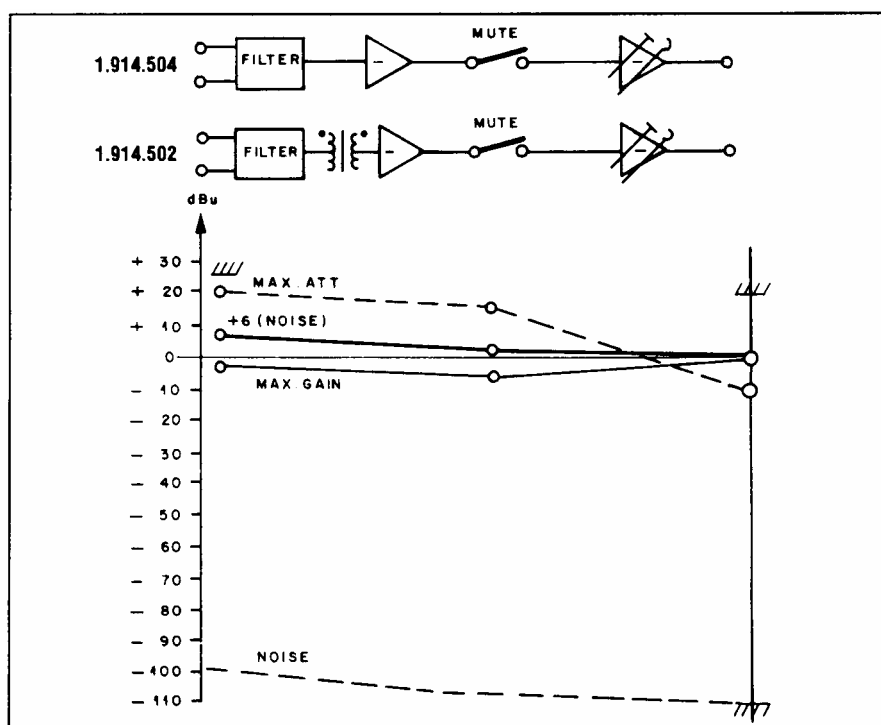
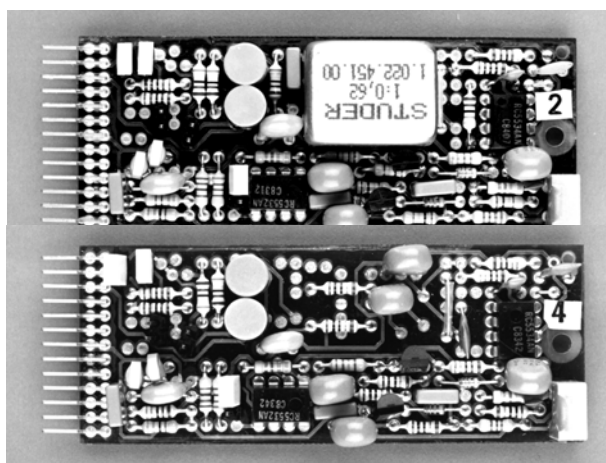


## High-Level Input Amplifier

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- $\Omega$  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  $\Omega$  load, or into the input of a 0- $\Omega$  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

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

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

EURO 32 P

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

## INPUT

Balanced, floating, RF-filter

Input impedance

0  $\Omega$  input with jumper

Max. input level

Common mode rejection ratio

Source impedance

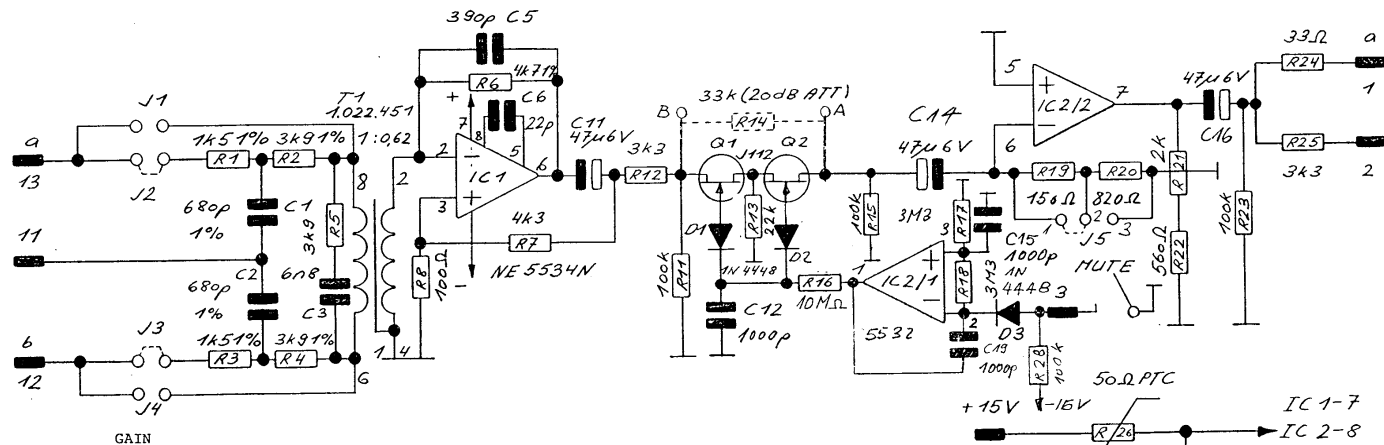
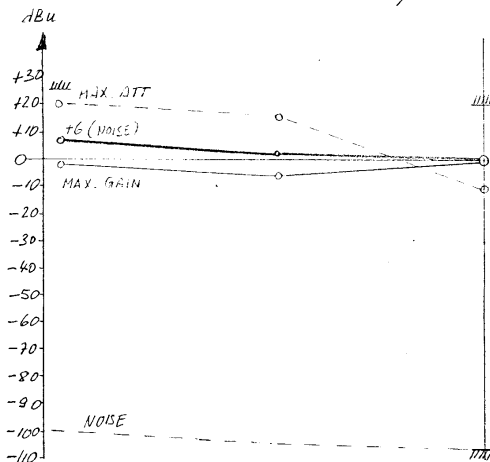
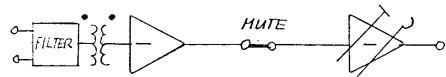
 $R_i > 10 \text{ k}\Omega$  $U_{in} = +24 \text{ dBu}$  $> 50 \text{ dB}$  $R_s \leq 200 \Omega$ 

## OUTPUT

Max. output level

Output impedance pin 1

Load

Output impedance pin 2 (to a 0  $\Omega$  amp.) $U_{out} = +20 \text{ dBu}$  $R_{out} = 33 \Omega$  $R_L \geq 600 \Omega$  $R_{out} = 3 \text{ k}\Omega$ 

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 a attenuator of 20 dB

## SUPPLY

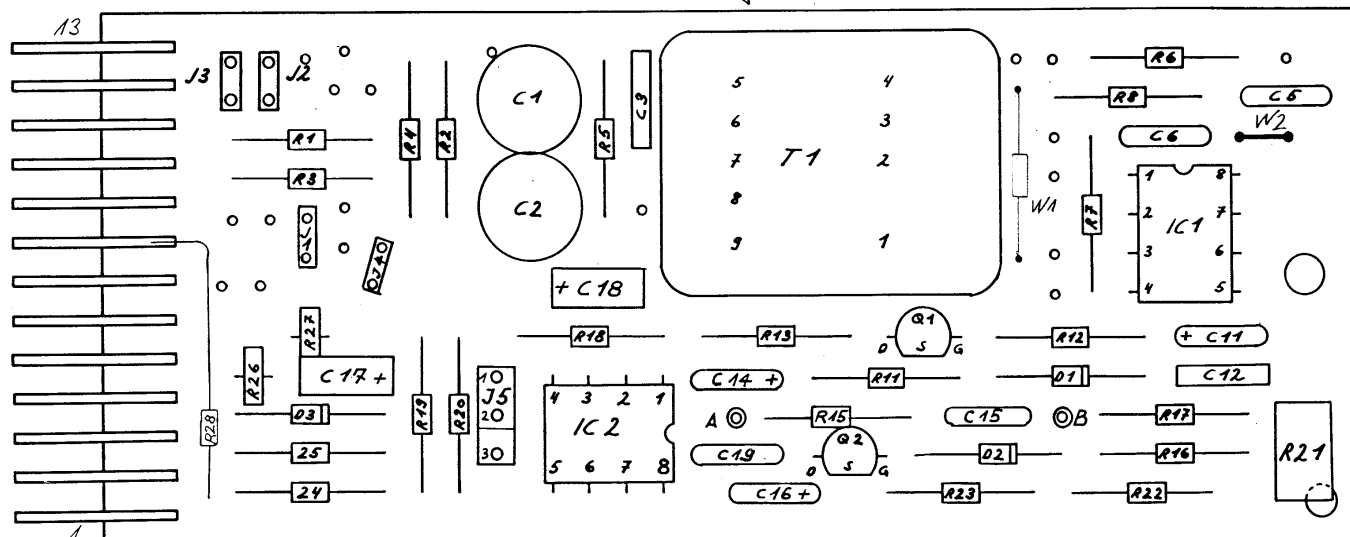
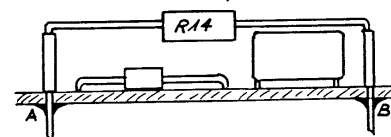
Supply voltage

Idle current

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

## OPTION

33k (20 dB Attenuation)



## HL Input Amp, transformer-balanced 1.914.502.81 ( 1)

Page: 1 of 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	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	Schalt draht Cu					

End of List

## Comments:

(01) W1, W2 added

STUDER

HL INPUT AMF. BALANCED (NR4)

300

1.944.504.81

PAGE 1 OF 1

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  $\Omega$  input with jumper

Max. input level

 $U_{in} = +24 \text{ dBu}$ 

Source impedance

 $R_s \leq 200 \Omega$ 

## OUTPUT

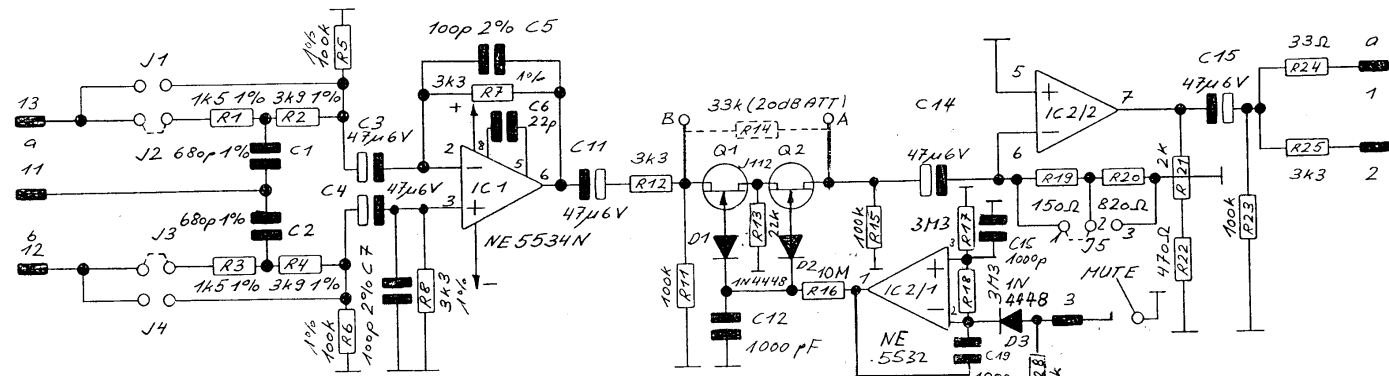
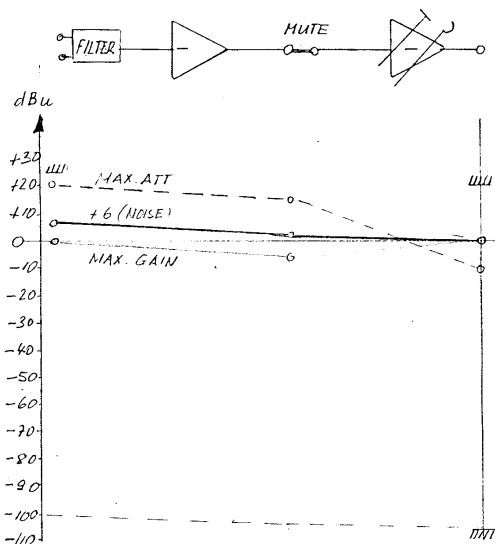
Max. output level

 $U_{out} = +20 \text{ dBu}$ 

Output impedance pin 1

 $R_{out} = 33 \Omega$ 

Load

 $R_L \geq 600 \Omega$ Output impedance pin 2 (to a 0  $\Omega$  amp.) $R_{out} = 3 \text{ k}\Omega$ 

## GAIN

Adjustable (see level diagram)

Max. gain

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

Max. attenuation

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

## 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

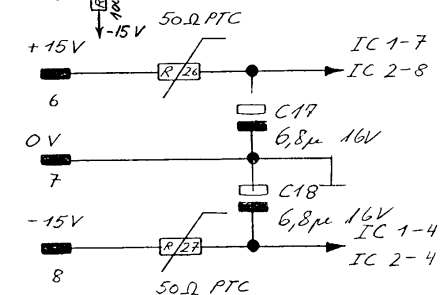
Mute switch, with resistor programmable to a attenuator of 20 dB

## SUPPLY

Supply voltage

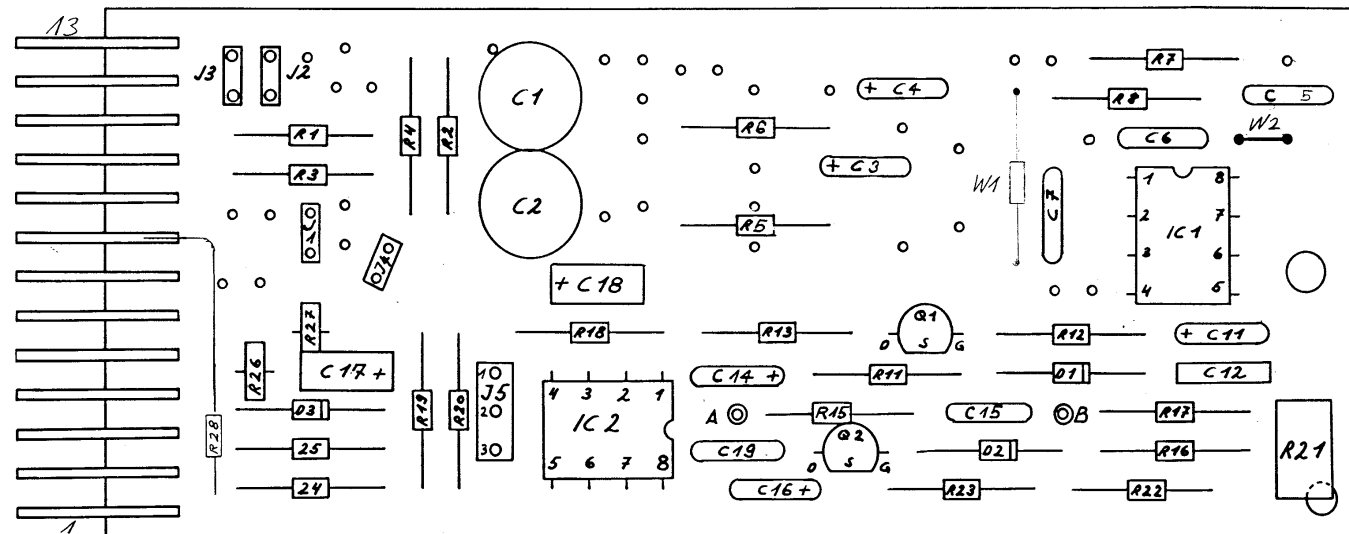
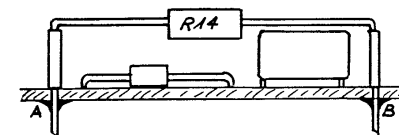
 $U = \pm 15 \text{ V}$ 

Idle current

 $I = 11 \text{ mA}$ 

OPTION

33k (20 dB Attenuation)



## HL Input Amp, electronically balanced 1.914.504.81 ( 1)

Page: 1 of 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 CIS parallelsteck					
0	P 2	54.01.0020 9 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	57.11.3104	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	Schalt draht Cu					

End of List

## Comments:

(01) R28, W1, W2 added