

Stereo Fader
184-430

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Dual Voltage Controlled Attenuator

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The 184-430 features:

- Two independent, identical channels, each containing:

- High quality VCA
 - Balanced floating input/output
 - Single ended, fixed gain input
 - Adjustable gain

- Internal 10V reference voltage
- Easy set-up
- Compact design on 100 x 160 mm EURO CARD.

Block Diagram:

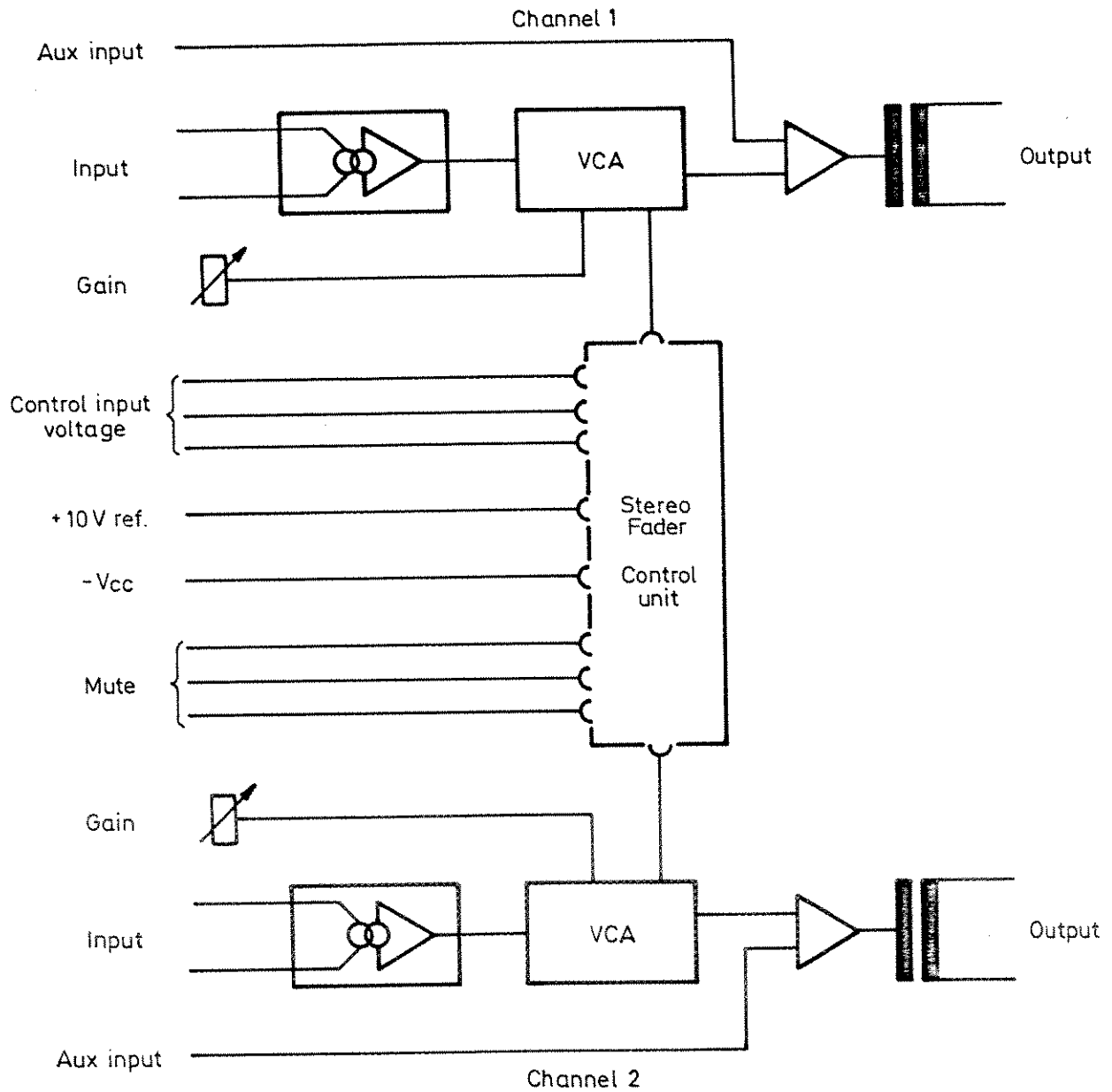
As it appears from the Block Diagram 184-4119-A-4, the 184-410 consists of two channels:

The input signal is fed to the VCA via a transformer-coupled input module.

The signal from the VCA is then summed with the Aux input signal, (Aux input is only in use when arranged as Stereo Cross Fader), and the sum is fed to the transformer-coupled output stage.

The gain of the VCAs are adjustable +/-12dB with the on-board potentiometers P1 and P2.

The control unit feeds a fixed, regulated 10V reference to the Fader potentiometer, whose wiper is connected to the control input.



3.2.8/PJ/11

General Specification

Supply voltage : 22-32 V DC
Max. ripple on supply voltage : 300 mVpp
Current consumption : 125-145 mA
Temperature range : 0 to 45°C ambient temp.

Input

Input impedance : 20 Kohm +/-10% balanced
Input CMRR at 15 kHz : >60 dB
Input overload level : +21 dBu

Output

Output impedance : 40 Ohms max.
Frequency range, 0.5 dB points : 20 Hz to 20 kHz
Min. load resistance : 300 Ohm.
Max. output level : +21 dBu
Distortion, 40 Hz to 20 kHz : <0.1% THD
Output noise, 0 dB gain
 Unweighted 23 kHz : -87 dBu rms
 Weighted (CCIR 468-II) : -77 dBu peak

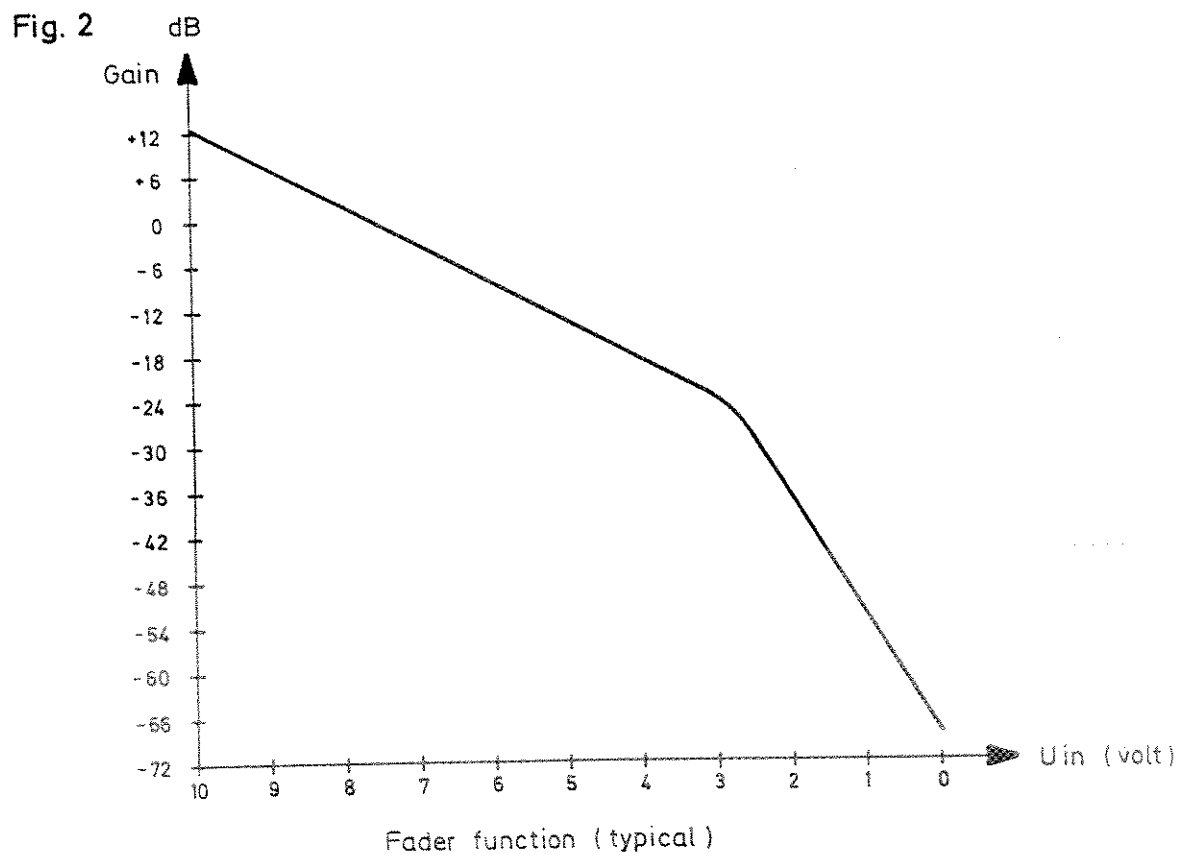
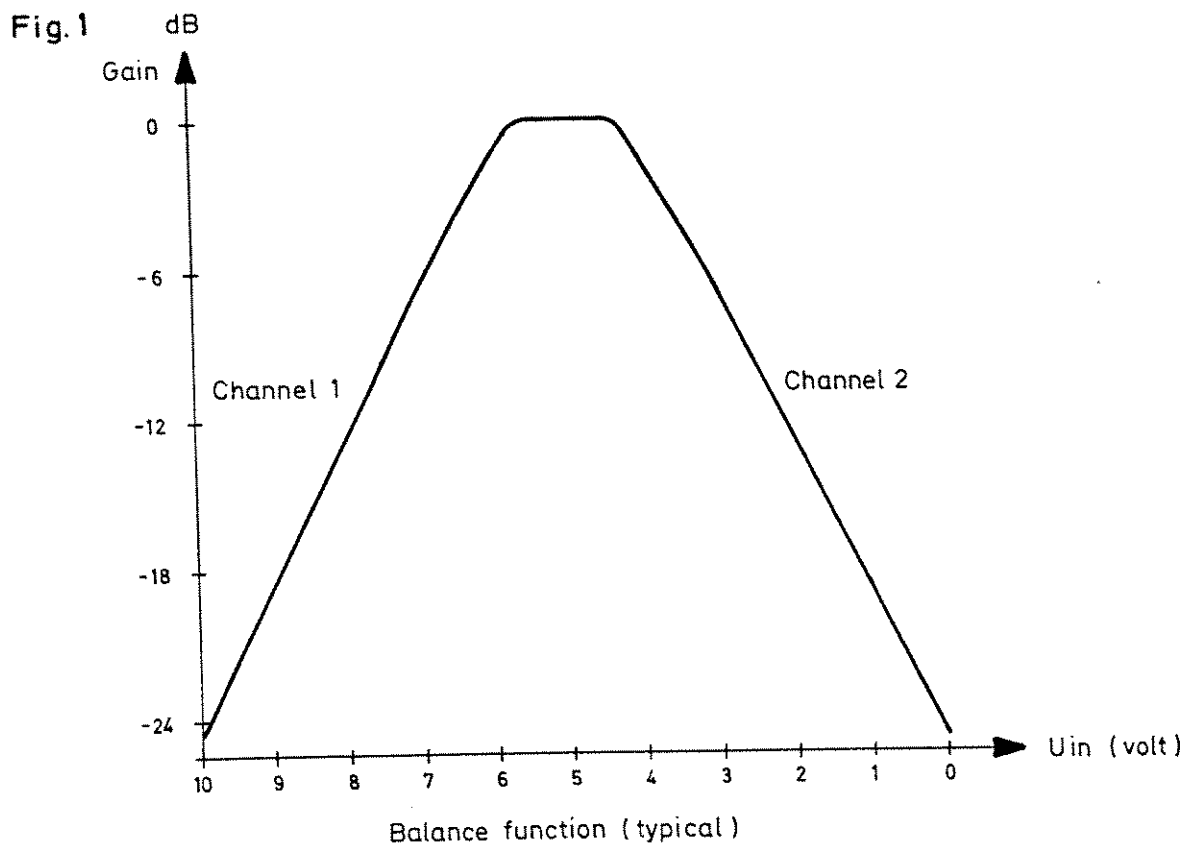
Gain

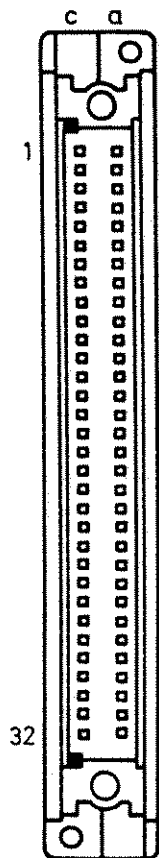
Gain adjustment : -12dB to +12dB
relative to +12dB

VCA Control characteristic (see fig.2)

Mechanical data

Size : Euro-card 100 x 160mm
Min. space between adjacent card : 20mm 4T
Connector : DIN 41612, 64 pole,
male design C
Design A and B
available on request





Pin no.

- 1 Screen
- 2 0°
- 3 180°
- 4 Screen
- 5 Screen
- 6 0°
- 7 180°
- 8 Screen
- 9 Aux input channel 1
- 10 CT out
- 11 Screen
- 12 0°
- 13 180°
- 14 Screen
- 15 Screen
- 16 0°
- 17 180°
- 18 Screen
- 19 Aux input channel 2
- 20 CT out
- 21 Mute channel 1
- 22 Mute channel 2
- 23 Mute control both channels
- 24 Ballance control voltage
- 25 +10V ref. voltage out
- 26 Control voltage channel 1
- 27 " " " 2
- 28 -Vcc out
- 29 +Vcc
- 30 CT
- 31 -Vcc
- 32 Screen

} Input channel 1

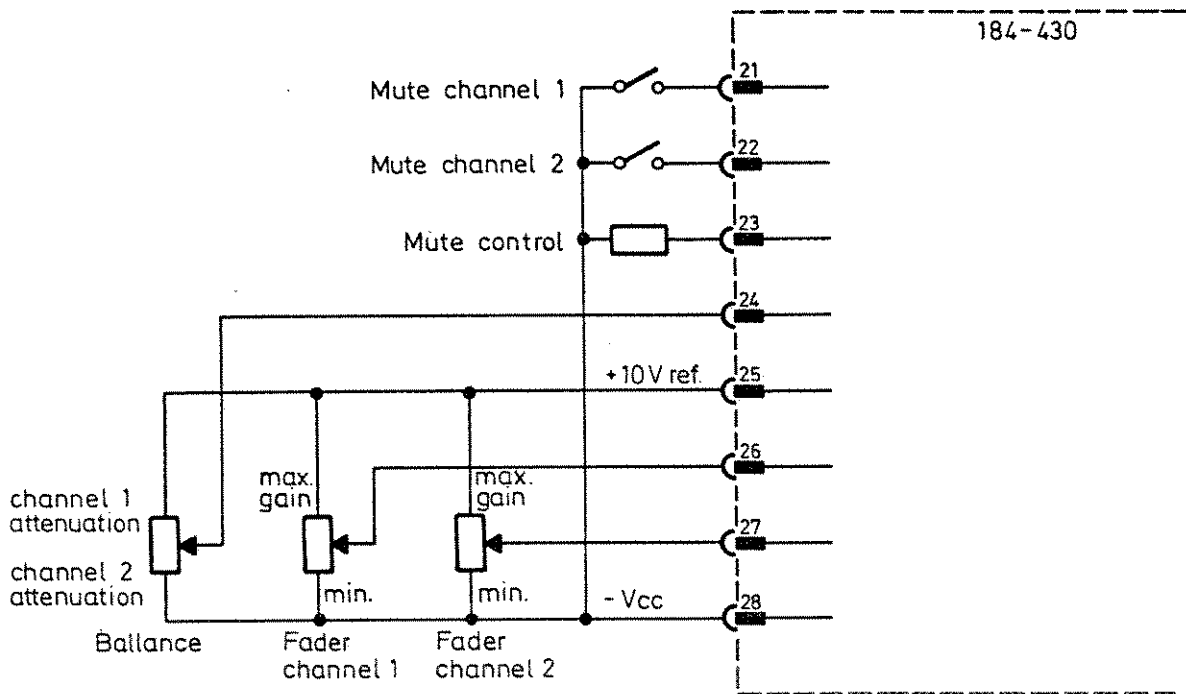
} Output channel 1

} Input channel 2

} Output channel 2

} Supply voltage

Seen from the connection side.



Målestok :	
Konstruktør: P.J.	
Tegnet : 13.11.86. tl.	
Godkendt :	
Revideret :	

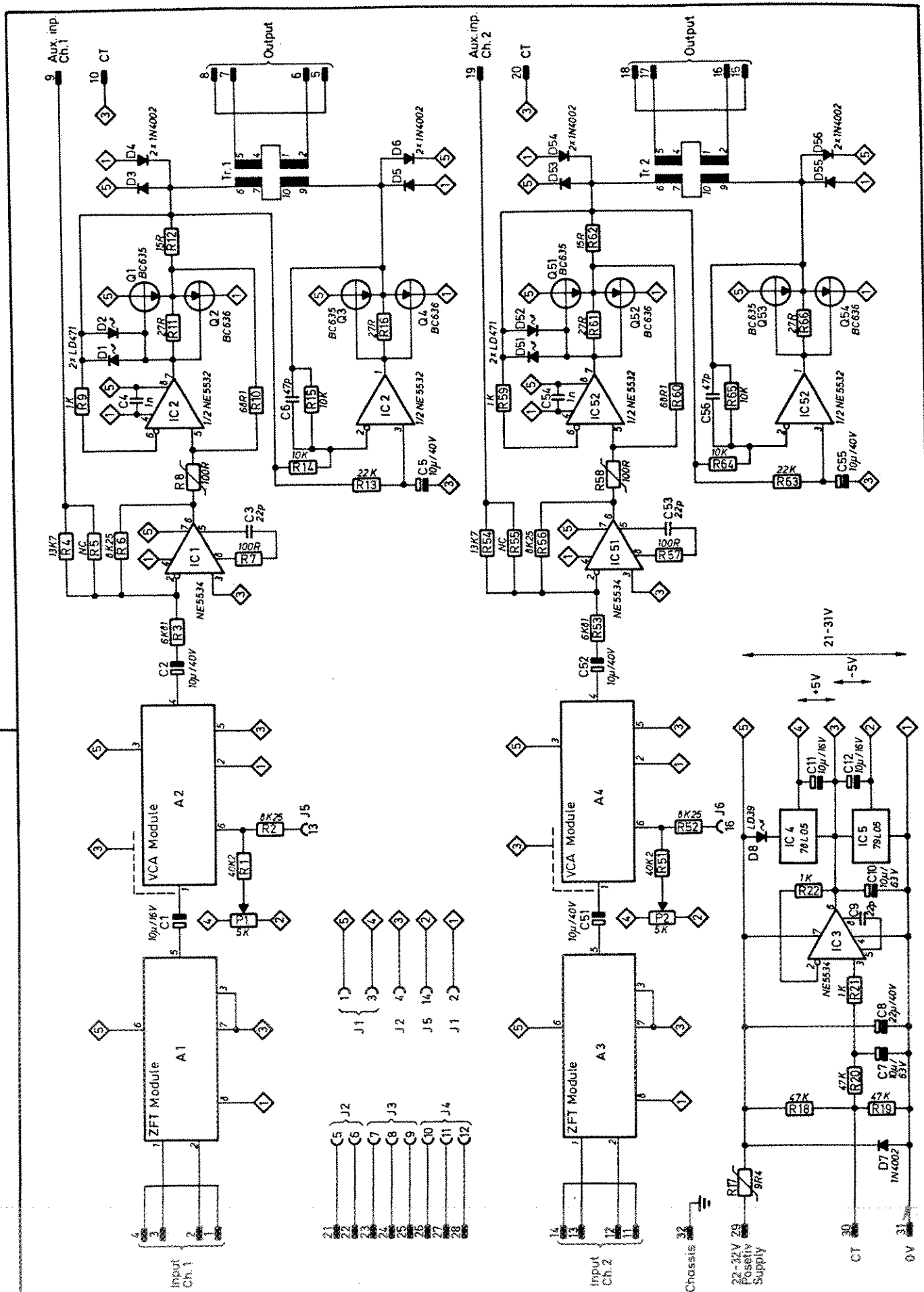
Stereo Fader 184-430

Fader connection

NTP


NTP ELEKTRONIK A/S

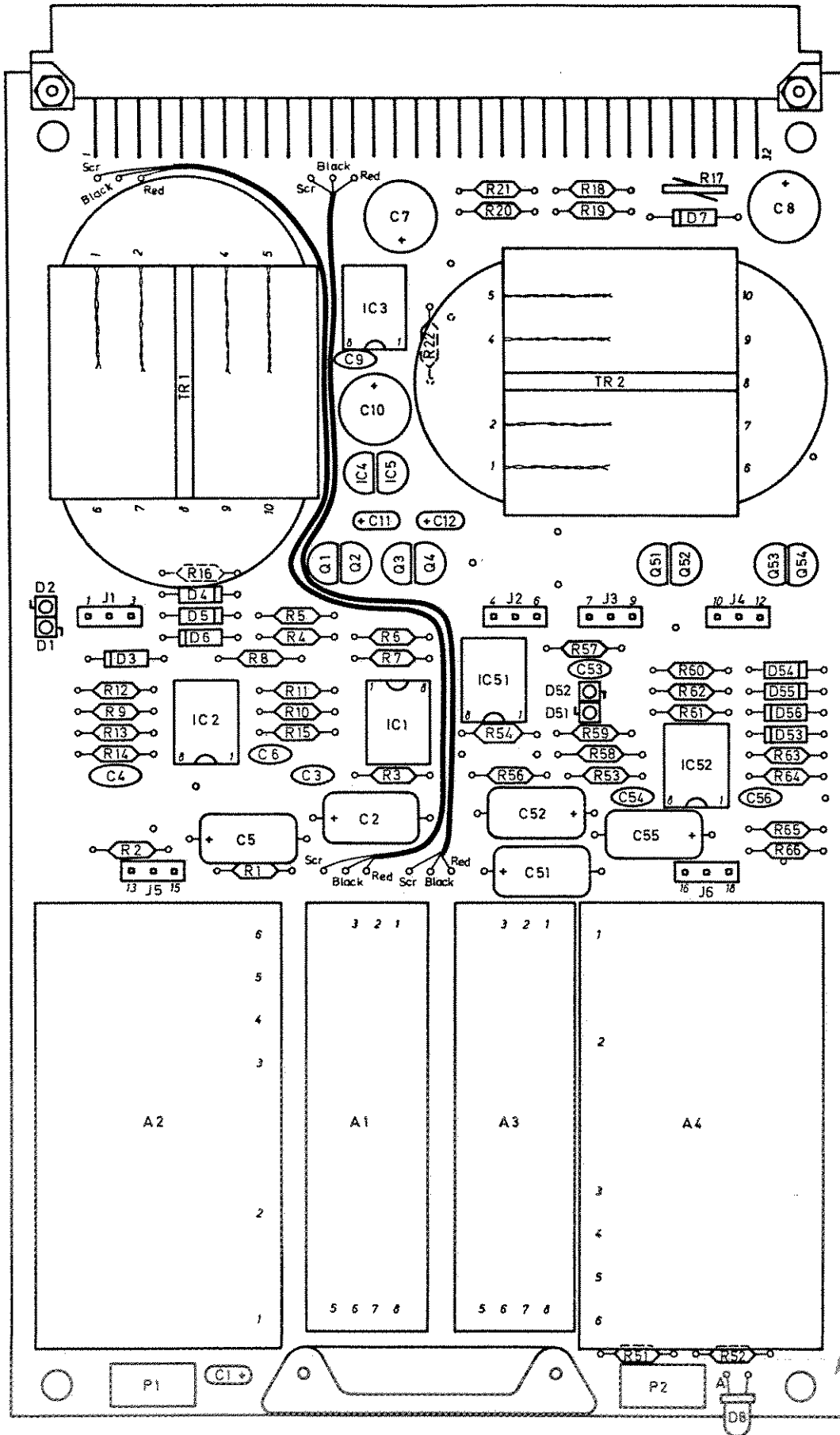
184-4307-A-4



Målestok :	
Konstruktør :	J.F.
Tegnet :	4.3.85. T.L.
Godkendt :	
Revideret :	2

Dual Voltage Controlled Attenuator 184-400
Diagram


NTP ELEKTRONIK A/S
 184-4030-A-3



Mål	: 100x160mm
Konstruktor	: J.F.
Tegnet	: 13.2.85.T.L.
Godkendt	:
Revideret	: 1

Dual Voltage Controlled Attenuator 184-400
Component Lay-out

NTP
NTP ELEKTRONIK A/S

184-4041-A-3

REF. NO	NTP-ID.	DESCRIPTION	QTY	MANUFACT/DRW.NO	PART NO.
1	KMF-0305	MOL/ER CONN. 3P FEM.	6.	BERG 76308	76308-103
2	KEM-6406	EUROCONNECTOR 64P ANGLE, MALE	1.	ELCO 8257	8257 096 000
3	MSC-2510	SCREW 2,5 X 10 CHJZ	2.	HFC 9033	2.5 X 10 CHJ
4	NMA-0025	NUT STEEL 2.5 MM	2.	HFC-9032	6 KT
5	MEO-0951	CARD HANDLE CLEAR	1.	ELMA	1091-51
6	MSC-2505	SCREW 2.5 X 5 CHJZ	2.	HFC 9033	2.5 X 5 CHJ
7	179-4056	SCREENPLATE	2.	179-4056	179-4056
8	250-3057	INSULATION PLATE, ZFT MODULE	2.	250-3057-A-4	250-3057
9	184-4050	SCREENPLATE	1.	184-4050-A-4	184-4050
10	184-4051	INSULATIONSPLATE	1.	184-4051-A-4	184-4051
11	512-1151	SOLDERING POST	4.	512-1151-A-4	512-1151
12	MSB-2003	SCREW BIX 2 X 3	4.	BIX	LKCS 2 X 3
13	250-5150	INSULATIONSPLATE	2.	250-5150-A-4	250-5150
14	184-4040	P.C. BOARD	1.	184-4040	184-4040
A 1	250-300J	ZFT-MODULE, 20K	1.	250-300J	250-300J
A 2	250-520B	VCA MODULE	1.	250-5241-B-4	250-520B
A 3	250-300J	ZFT-MODULE, 20K	1.	250-300J	250-300J
A 4	250-520B	VCA MODULE	1.	250-5241-B-4	250-520B
C 1	CFI-0810	CAP ELECTROLYTIC 10UF/16V	1.	PH 2222 122	2222 122 55109
C 2	CFD-0810	CAP ELECTROLYTIC 10UF/40V	1.	ROE EB	ROE EB 15UF
C 3	CCB-0222	CAP CERAMIC 22PF/100V	1.	PH 2222 632	2222 632 58229
C 4	CCA-0410	CAP CERAMIC 1NF/63V	1.	PH 2222 629	2222 629 02102
C 5	CFD-0810	CAP ELECTROLYTIC 10UF/40V	1.	ROE EB	ROE EB 15UF
C 6	CCB-0247	CAP CERAMIC 47PF/100V	1.	PH 2222 632	2222 632 58479
C 7	CFH-0810	CAP ELECTROLYTIC 10UF/63V	1.	SIEMENS B41316	B41316 A8106 V
C 8	CFG-0822	CAP ELECTROLYTIC 22UF/40V	1.	SIEMENS B41316	B41316 A7226 V
C 9	CCB-0222	CAP CERAMIC 22PF/100V	1.	PH 2222 632	2222 632 58229
C 10	CFH-0810	CAP ELECTROLYTIC 10UF/63V	1.	SIEMENS B41316	B41316 A8106 V
C 11	CFI-0810	CAP ELECTROLYTIC 10UF/16V	1.	PH 2222 122	2222 122 55109
C 12	CFI-0810	CAP ELECTROLYTIC 10UF/16V	1.	PH 2222 122	2222 122 55109
C 51	CFD-0810	CAP ELECTROLYTIC 10UF/40V	1.	ROE EB	ROE EB 15UF
C 52	CFD-0810	CAP ELECTROLYTIC 10UF/40V	1.	ROE EB	ROE EB 15UF
C 53	CCB-0222	CAP CERAMIC 22PF/100V	1.	PH 2222 632	2222 632 58229
C 54	CCA-0410	CAP CERAMIC 1NF/63V	1.	PH 2222 629	2222 629 02102
C 55	CFD-0810	CAP ELECTROLYTIC 10UF/40V	1.	ROE EB	ROE EB 15UF
C 56	CCB-0247	CAP CERAMIC 47PF/100V	1.	PH 2222 632	2222 632 58479
D 1	OES-0116	LED GREEN 1x1	1.	SIEMENS LD 471	Q62703-Q102
D 2	OES-0116	LED GREEN 1x1	1.	SIEMENS LD 471	Q62703-Q102
D 3	QDS-4002	DIODE, SILICIUM	1.	F-126	1N 4002
D 4	QDS-4002	DIODE, SILICIUM	1.	F-126	1N 4002

NTP

Date : 26.5.87

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No. : 184-4631-A-9

REF. NO	NTP-ID.	DESCRIPTION	QTY	MANUFACT/DRW.NO	PART NO.
D 5	QDS-4002	DIODE, SILICIUM	1.	F-126	1N 4002
D 6	QDS-4002	DIODE, SILICIUM	1.	F-126	1N 4002
D 7	QDS-4002	DIODE, SILICIUM	1.	F-126	1N 4002
D 8	OES-0108	LED GREEN 1x1	1.	SIEMENS CQV 15	Q62703 Q586
D 51	OES-0116	LED GREEN 1x1	1.	SIEMENS LD 471	Q62703-Q102
D 52	OES-0116	LED GREEN 1x1	1.	SIEMENS LD 471	Q62703-Q102
D 53	QDS-4002	DIODE, SILICIUM	1.	F-126	1N 4002
D 54	QDS-4002	DIODE, SILICIUM	1.	F-126	1N 4002
D 55	QDS-4002	DIODE, SILICIUM	1.	F-126	1N 4002
D 56	QDS-4002	DIODE, SILICIUM	1.	F-126	1N 4002
IC 1	ILA-1034	OP-AMP	1.	NE 5534	9334 405 90602
IC 2	ILA-5532	OP-AMP	1.	TEX. NE5532P	NE 5532P
IC 3	ILA-1034	OP-AMP	1.	NE 5534	9334 405 90602
IC 4	ILR-340AA	VOLTAGE REGULATOR 5V	1.	NAT. TO-92	LM 340LAZ-05
IC 5	ILR-320AA	VOLTAGE REGULATOR 5V	1.	NAT. TO-92	LM 320LZ-05
IC 51	ILA-1034	OP-AMP	1.	NE 5534	9334 405 90602
IC 52	ILA-5532	OP-AMP	1.	TEX. NE5532P	NE 5532P
P 1	RFD-4500	TRIMPOTENTIOMETER 5K	1.	BOURNS 3386	3386H-1-502
P 2	RFD-4500	TRIMPOTENTIOMETER 5K	1.	BOURNS 3386	3386H-1-502
Q 1	QBN-0635	TRANSISTOR, NPN	1.	TO-92	BC635
Q 2	QBP-0636	TRANSISTOR, PNP	1.	TO-92	BC636
Q 3	QBN-0635	TRANSISTOR, NPN	1.	TO-92	BC635
Q 4	QBP-0636	TRANSISTOR, PNP	1.	TO-92	BC636
Q 51	QBN-0635	TRANSISTOR, NPN	1.	TO-92	BC635
Q 52	QBP-0636	TRANSISTOR, PNP	1.	TO-92	BC636
Q 53	QBN-0635	TRANSISTOR, NPN	1.	TO-92	BC635
Q 54	QBP-0636	TRANSISTOR, PNP	1.	TO-92	BC636
R 1	RMA-5402	RESISTOR METAL 40K2 0.4W 1%	1.	PHILIPS MR25	2322 151 54023
R 2	RMA-4825	RESISTOR METAL 8K25 0.4W 1%	1.	PHILIPS MR25	2322 151 58252
R 3	RMA-4681	RESISTOR METAL 6K81 0.4W 1%	1.	PHILIPS MR25	2322 151 56812
R 4	RMA-5137	RESISTOR METAL 13K7 0.4W 1%	1.	PHILIPS MR25	2322 151 51373
R 5	RAA-9999	RESISTOR, NOT USED	1.	RAA-9999	RAA-9999
R 6	RMA-4825	RESISTOR METAL 8K25 0.4W 1%	1.	PHILIPS MR25	2322 151 58252
R 7	RCA-3100	RESISTOR CARBON 100R 0.66W 5%	1.	SBB 0207	SBB 0207 100R
R 8	RTA-3100	RESISTOR PTC 100R 0.13W 2%	1.	PTC GI-55	LP 1/8 100R
R 9	RCA-4100	RESISTOR CARBON 1K 0.66W 5%	1.	SBB 0207	SBB 0207 1K
R 10	RMA-2681	RESISTOR METAL 68R1 0.4W 1%	1.	PHILIPS MR25	2322 151 56819
R 11	RCA-2270	RESISTOR CARBON 27R 0.66W 5%	1.	SBB 0207	SBB 0207 27R
R 12	RCA-2150	RESISTOR CARBON 15R 0.66W 5%	1.	SBB 0207	SBB 0207 15R
R 13	RCA-5220	RESISTOR CARBON 22K 0.66W 5%	1.	SBB 0207	SBB 0207 22K

NTP

Date: 26.5.87.

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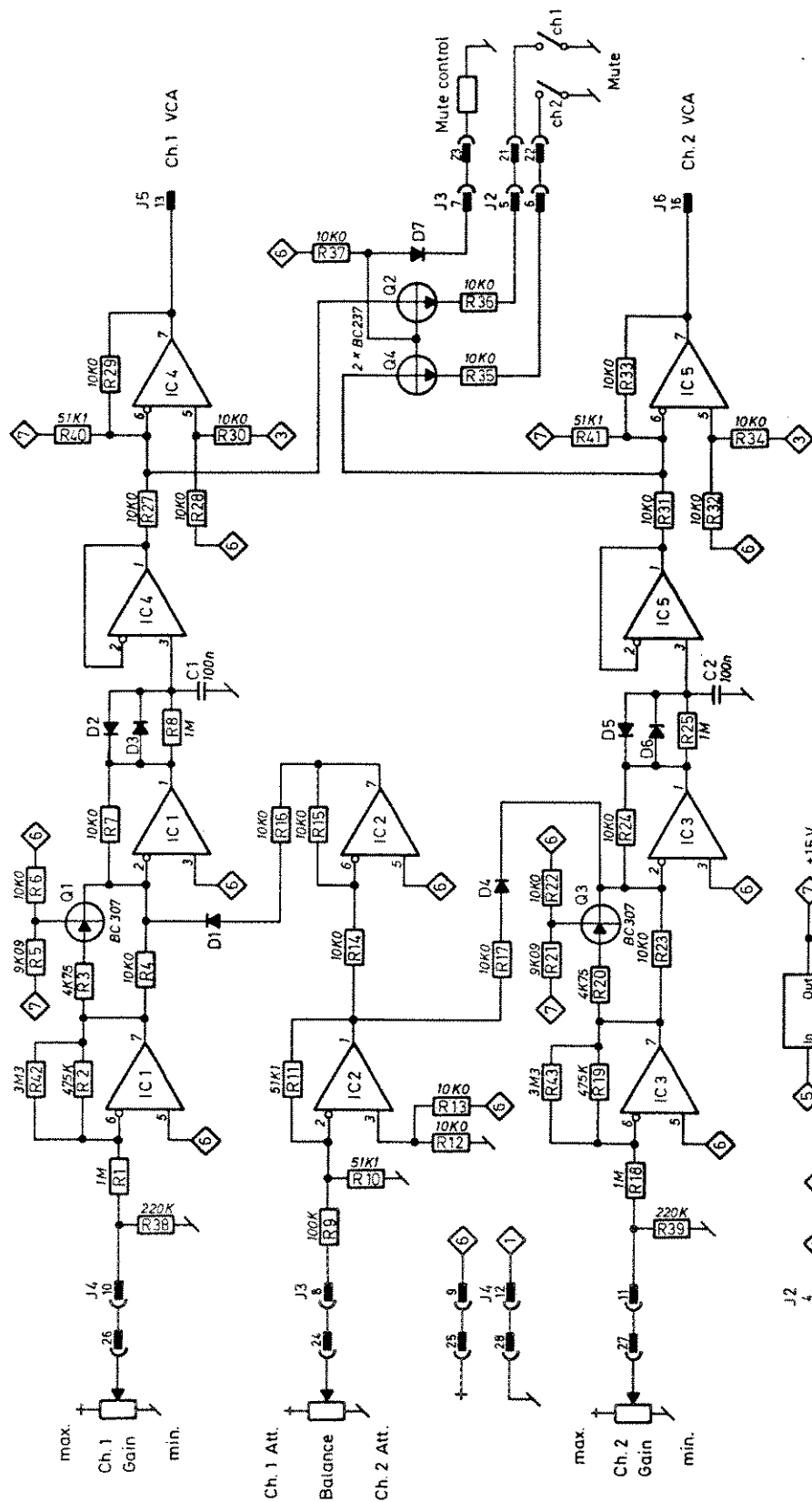


Date : 26.5.87

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No. : 184-4031-A4

REF. NO	NTP-ID.	DESCRIPTION	QTY	MANUFACT/DRW.NO	PART NO.
R 14	RCA-5100	RESISTOR CARBON 10K 0.66W 5%	1.	SBB 0207	SBB 0207 10K
R 15	RCA-5100	RESISTOR CARBON 10K 0.66W 5%	1.	SBB 0207	SBB 0207 10K
R 16	RCA-2270	RESISTOR CARBON 27R 0.66W 5%	1.	SBB 0207	SBB 0207 27R
R 17	RTC-1940	RESISTOR PTC 9R4	1.	PTC Q63100	P2390 C970
R 18	RCA-5470	RESISTOR CARBON 47K 0.66W 5%	1.	SBB 0207	SBB 0207 47K
R 19	RCA-5470	RESISTOR CARBON 47K 0.66W 5%	1.	SBB 0207	SBB 0207 47K
R 20	RCA-5470	RESISTOR CARBON 47K 0.66W 5%	1.	SBB 0207	SBB 0207 47K
R 21	RCA-4100	RESISTOR CARBON 1K 0.66W 5%	1.	SBB 0207	SBB 0207 1K
R 22	RCA-4100	RESISTOR CARBON 1K 0.66W 5%	1.	SBB 0207	SBB 0207 1K
R 51	RMA-5402	RESISTOR METAL 40K2 0.4W 1%	1.	PHILIPS MR25	2322 151 54023
R 52	RMA-4825	RESISTOR METAL 8K25 0.4W 1%	1.	PHILIPS MR25	2322 151 58252
R 53	RMA-4681	RESISTOR METAL 6K81 0.4W 1%	1.	PHILIPS MR25	2322 151 56812
R 54	RMA-5137	RESISTOR METAL 13K7 0.4W 1%	1.	PHILIPS MR25	2322 151 51373
R 55	RAA-9999	RESISTOR, NOT USED	1.	RAA-9999	RAA-9999
R 56	RMA-4825	RESISTOR METAL 8K25 0.4W 1%	1.	PHILIPS MR25	2322 151 58252
R 57	RCA-3100	RESISTOR CARBON 100R 0.66W 5%	1.	SBB 0207	SBB 0207 100R
R 58	RTA-3100	RESISTOR PTC 100R 0.13W 2%	1.	PTC GT-55	LP 1/8 100R
R 59	RCA-4100	RESISTOR CARBON 1K 0.66W 5%	1.	SBB 0207	SBB 0207 1K
R 60	RMA-2681	RESISTOR METAL 68R1 0.4W 1%	1.	PHILIPS MR25	2322 151 56819
R 61	RCA-2270	RESISTOR CARBON 27R 0.66W 5%	1.	SBB 0207	SBB 0207 27R
R 62	RCA-2150	RESISTOR CARBON 15R 0.66W 5%	1.	SBB 0207	SBB 0207 15R
R 63	RCA-5220	RESISTOR CARBON 22K 0.66W 5%	1.	SBB 0207	SBB 0207 22K
R 64	RCA-5100	RESISTOR CARBON 10K 0.66W 5%	1.	SBB 0207	SBB 0207 10K
R 65	RCA-5100	RESISTOR CARBON 10K 0.66W 5%	1.	SBB 0207	SBB 0207 10K
R 66	RCA-2270	RESISTOR CARBON 27R 0.66W 5%	1.	SBB 0207	SBB 0207 27R
TR 1	LTL-0008	OUTPUTTRANSFORMER	1.2:1	LUNDAHL 5011	LL 5011
TR 2	LTL-0008	OUTPUTTRANSFORMER	1.2:1	LUNDAHL 5011	LL 5011



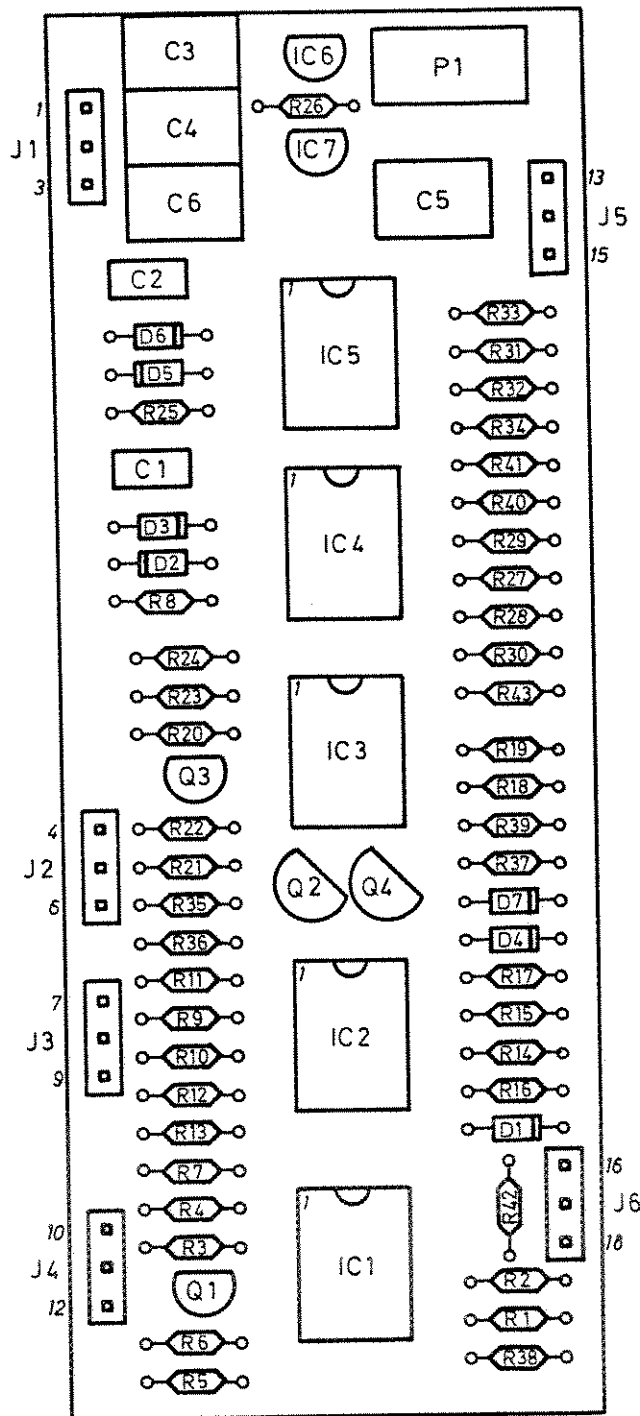
D1 - D7 : 1N4148
 IC1 - IC5 : TL072

Målestok :	
Konstruktør : PLJ	
Tegnet : 19.11.83. tl	
Godkendt :	
Revideret : 1	

Stereo Fader 184-430
 Control Unit
 Diagram



184-4330-A-3



Maletok	: 2:1
Konstruktor:	BN
Tegnet	8.12.86. tl.
Godkendt	:
Revideret	: 2

Stereo Fader 184-430
 Component Lay-out



184-4341-A-4

NTP 184-4331 CONTROL UNIT

REF. NO	NTP-ID.	DESCRIPTION	QTY	MANUFACT/DRW.NO	PART NO.
R 10	RMB-5511	RESISTOR, METAL 51K1 0.25W 1%	1.	PHILIPS MR16	2322 150 55513
R 11	RMB-5511	RESISTOR, METAL 51K1 0.25W 1%	1.	PHILIPS MR16	2322 150 55513
R 12	RMB-5100	RESISTOR METAL 10K0 0.25W 1%	1.	PHILIPS MR16	2322 150 51003
R 13	RMB-5100	RESISTOR METAL 10K0 0.25W 1%	1.	PHILIPS MR16	2322 150 51003
R 14	RMB-5100	RESISTOR METAL 10K0 0.25W 1%	1.	PHILIPS MR16	2322 150 51003
R 15	RMB-5100	RESISTOR METAL 10K0 0.25W 1%	1.	PHILIPS MR16	2322 150 51003
R 16	RMB-5100	RESISTOR METAL 10K0 0.25W 1%	1.	PHILIPS MR16	2322 150 51003
R 17	RMB-5100	RESISTOR METAL 10K0 0.25W 1%	1.	PHILIPS MR16	2322 150 51003
R 18	RMB-7100	RESISTOR, METAL 1M 0.25W 1%	1.	PHILIPS MR16	2322 150 51005
R 19	RMB-6475	RESISTOR METAL 475K 0.25W 1%	1.	PHILIPS MR16	2322 150 54754
R 20	RMB-4475	RESISTOR METAL 4K75 .025W 1%	1.	PHILIPS MR16	RMB-4475
R 21	RMB-4909	RESISTOR METAL 9K09 0.25W 1%	1.	PHILIPS MR16	2322 150 59092
R 22	RMB-5100	RESISTOR METAL 10K0 0.25W 1%	1.	PHILIPS MR16	2322 150 51003
R 23	RMB-5100	RESISTOR METAL 10K0 0.25W 1%	1.	PHILIPS MR16	2322 150 51003
R 24	RMB-5100	RESISTOR METAL 10K0 0.25W 1%	1.	PHILIPS MR16	2322 150 51003
R 25	RCB-7100	RESISTOR CARBON 1M 0.33W 5%	1.	SBA 0204 1M	SBA 0204 1M
R 26	RCB-3820	RESISTOR CARBON 820R 0.33W 5%	1.	SBA 0204	SBA 0204 820R
R 27	RMB-5100	RESISTOR METAL 10K0 0.25W 1%	1.	PHILIPS MR16	2322 150 51003
R 28	RMB-5100	RESISTOR METAL 10K0 0.25W 1%	1.	PHILIPS MR16	2322 150 51003
R 29	RMB-5100	RESISTOR METAL 10K0 0.25W 1%	1.	PHILIPS MR16	2322 150 51003
R 30	RMB-5100	RESISTOR METAL 10K0 0.25W 1%	1.	PHILIPS MR16	2322 150 51003
R 31	RMB-5100	RESISTOR METAL 10K0 0.25W 1%	1.	PHILIPS MR16	2322 150 51003
R 32	RMB-5100	RESISTOR METAL 10K0 0.25W 1%	1.	PHILIPS MR16	2322 150 51003
R 33	RMB-5100	RESISTOR METAL 10K0 0.25W 1%	1.	PHILIPS MR16	2322 150 51003
R 34	RMB-5100	RESISTOR METAL 10K0 0.25W 1%	1.	PHILIPS MR16	2322 150 51003
R 35	RMB-5100	RESISTOR METAL 10K0 0.25W 1%	1.	PHILIPS MR16	2322 150 51003
R 36	RMB-5100	RESISTOR METAL 10K0 0.25W 1%	1.	PHILIPS MR16	2322 150 51003
R 37	RMB-5100	RESISTOR METAL 10K0 0.25W 1%	1.	PHILIPS MR16	2322 150 51003
R 38	RCB-6220	RESISTOR CARBON 220K 0.33W 5%	1.	SBA 0204	SBA-0204 220K
R 39	RCB-6220	RESISTOR CARBON 220K 0.33W 5%	1.	SBA 0204	SBA-0204 220K
R 40	RMB-5511	RESISTOR, METAL 51K1 0.25W 1%	1.	PHILIPS MR16	2322 150 55513
R 41	RMB-5511	RESISTOR, METAL 51K1 0.25W 1%	1.	PHILIPS MR16	2322 150 55513
R 42	RCB-7330	RESISTOR CARBON 3M3 0.33W 5%	1.	SBA 0204	SBA 0204 3M3
R 43	RCB-7330	RESISTOR CARBON 3M3 0.33W 5%	1.	SBA 0204	SBA 0204 3M3

NTP

Date : 26. 5. 87.

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