

STUDER

TLS 4000

SET OF SCHEMATICS



Prepared and edited by

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SICHERHEIT

Durch Entfernen von Gehäuseteilen, Abschirmungen etc. werden stromführende Teile freigelegt. Aus diesem Grunde müssen die folgenden Sicherheitsvorschriften unbedingt beachtet werden:

1. Eingriffe in ein Gerät

dürfen nur von Fachpersonal vorgenommen werden.

2. Vor Entfernen von Gehäuseteilen:

Gerät ausschalten und vom Netz trennen.

3. Bei geöffnetem Gerät:

- Netzteil- oder Motorkondensatoren mit einem passenden Widerstand entladen.
- Bauteile grosser Leistung, wie Leistungstransistoren und -widerstände sowie Magnetspulen und Wickelmotoren erst nach dem Abkühlen berühren.

4. Servicearbeiten bei geöffnetem, unter Spannung stehendem Gerät:

- Keine blanken Schaltungsteile berühren
- Isolierte Werkzeuge verwenden
- Metallene Halbleitergehäuse nicht berühren, da sie hohe Spannungen aufweisen können.

ERSTE HILFE (bei Stromunfällen)**1. Bei einem Stromunfall die betroffene Person raschmöglichst vom Strom trennen:**

- Durch Ausschalten des Gerätes
- Ausziehen oder Unterbrechen der Netzzuleitung
- Betroffene Person mit isolierendem Material (Holz, Kunststoff) von der Gefahrenquelle wegstossen
- Nach einem Stromunfall sollte immer ein Arzt aufgesucht werden.

ACHTUNG

EINE UNTER SPANNUNG STEHENDE PERSON DARF NICHT BERÜHRT WERDEN, SIE KÖNNEN DABEI SELBST ELEKTRISIERT WERDEN!

2. Bei Bewusstlosigkeit des Verunfallten:

- Puls kontrollieren,
- bei ausgesetzter Atmung künstlich beatmen,
- Seitenlagerung des Verunfallten und Arzt verständigen.

SAFETY

There are no user serviceable components inside the equipment, live parts are laid open when removing protective covers and shieldings. It is essential therefore to ensure that the subsequent safety rules are strictly observed when performing service work or repairs.

1. Servicing of electronic equipment

must be performed by qualified personnel only.

2. Before removing covers:

Switch off the equipment and unplug the mains cable.

3. When the equipment is open:

- Discharge power supply- and motor capacitors through a suitable resistor.
- Components, that carry heavy electrical loads, such as power transistors and resistors as well as solenoid coils and motors should not be touched before a cooling off interval, as a precaution to avoid burns.

4. Servicing unprotected and operating equipment:

- Never touch bare wires or circuitry
- Use insulated tools only
- Never touch metal semiconductor cases because they may carry high voltages.

FIRST AID (in case of electric shock)**1. Separate the person as quickly as possible from the electric power source:**

- by switching off the equipment,
- unplugging or disconnecting the mains cable,
- pushing the person away from the power source by using dry insulating material (such as wood or plastic).
- After having sustained an electric shock, always consult a doctor.

WARNING:

DO NOT TOUCH THE PERSON OR HIS CLOTHING BEFORE POWER IS TURNED OFF, OTHERWISE YOU STAND THE RISK OF SUSTAINING AN ELECTRIC SHOCK AS WELL!

2. If the person is unconscious

- Check the pulse,
- reanimate the person if respiration is poor,
- lay the body down and turn it to one side, call for a doctor immediately.

SÉCURITÉ

Si les couvercles de protection sont enlevés, les parties de l'appareil qui sont sous tension ne sont plus protégées. Il est donc d'une nécessité absolue de suivre les instructions suivantes:

1. Les interventions dans les appareils électriques

doivent être faites uniquement que par du personnel qualifié

2. Avant d'enlever les couvercles de protection:

Couper l'interrupteur principal et débrancher le câble secteur.

3. Après avoir enlevé les couvercles de protection:

- Les condensateurs de l'alimentation et des moteurs doivent être déchargés à l'aide d'une résistance appropriée.
- Il est prudent de laisser refroidir les composants de haute puissance, par ex.: transistors de puissance, résistances de puissances de même que des électroaimants et les moteurs de bobinage.

4. S'il faut que l'appareil soit sous tension pendant les réglages internes:

- Ne jamais toucher les circuits non isolés
- Travailler seulement avec des outils isolés

PREMIERS SECOURS (en cas d'électrocution)**1. Si la personne est dans l'impossibilité de se libérer:**

- Couper l'interrupteur principal
- Couper le courant
- Repousser la personne de l'appareil à l'aide d'un objet en matière non conductrice (matière plastique ou bois)
- Après une électrocution, consulter un médecin.

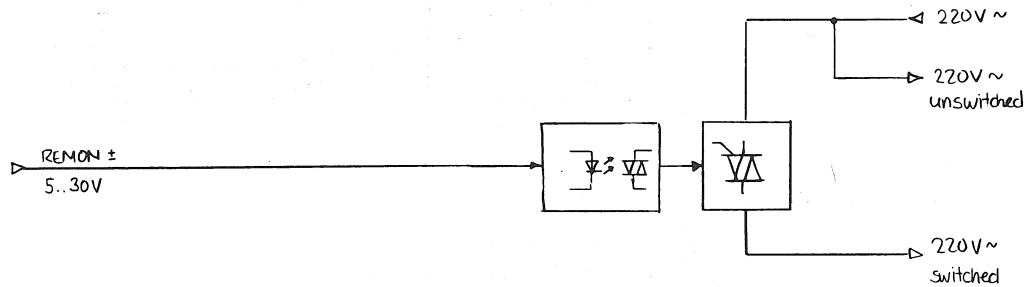
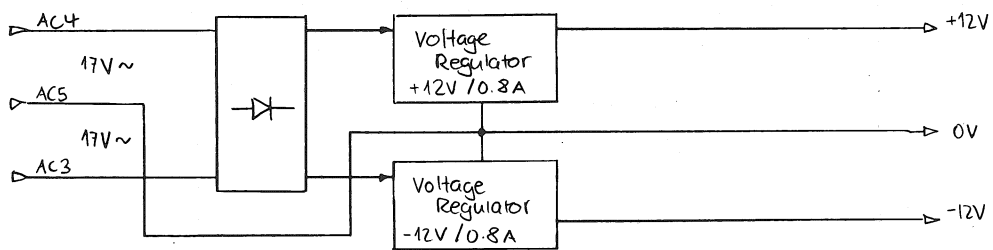
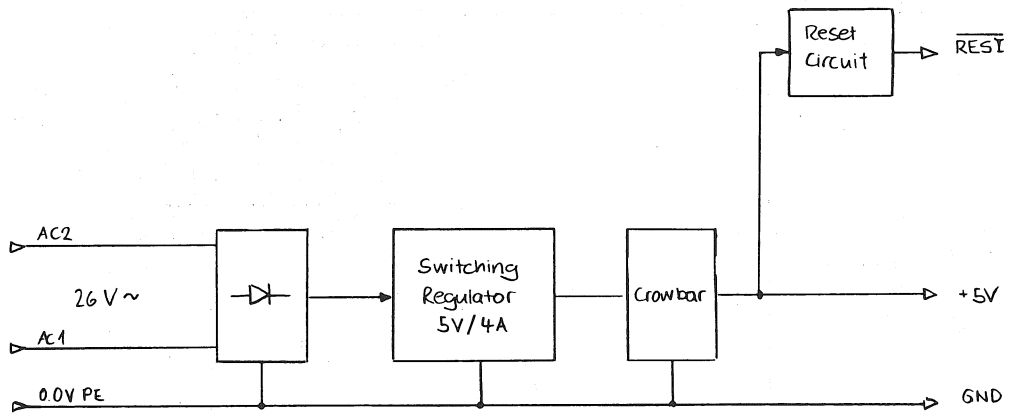
ATTENTION

NE JAMAIS TOUCHER UNE PERSONNE QUI EST SOUS TENSION, SOUS PEINE DE SUBIR ÉGALEMENT UNE ÉLECTROCUTION!

2. En cas de perte de connaissance de la personne électrocutée:

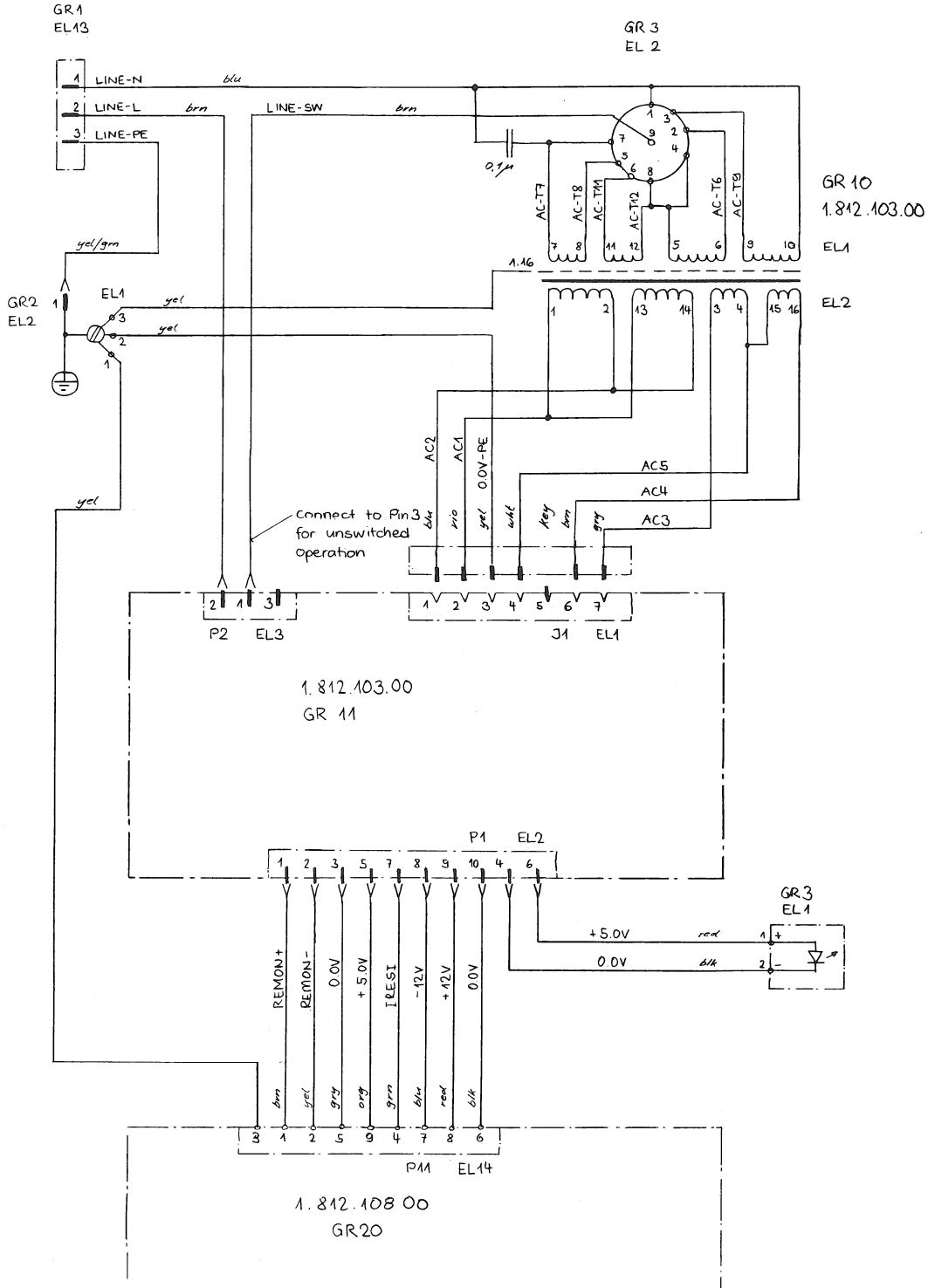
- Contrôler le pouls
- Si nécessaire, pratiquer la respiration artificielle
- Mettre l'accidenté sur le côté latérale et consulter un médecin.

BLOCK DIAGRAM SYNCHRONIZER POWER SUPPLY



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POWER SUPPLY WIRING 1.812.101-00

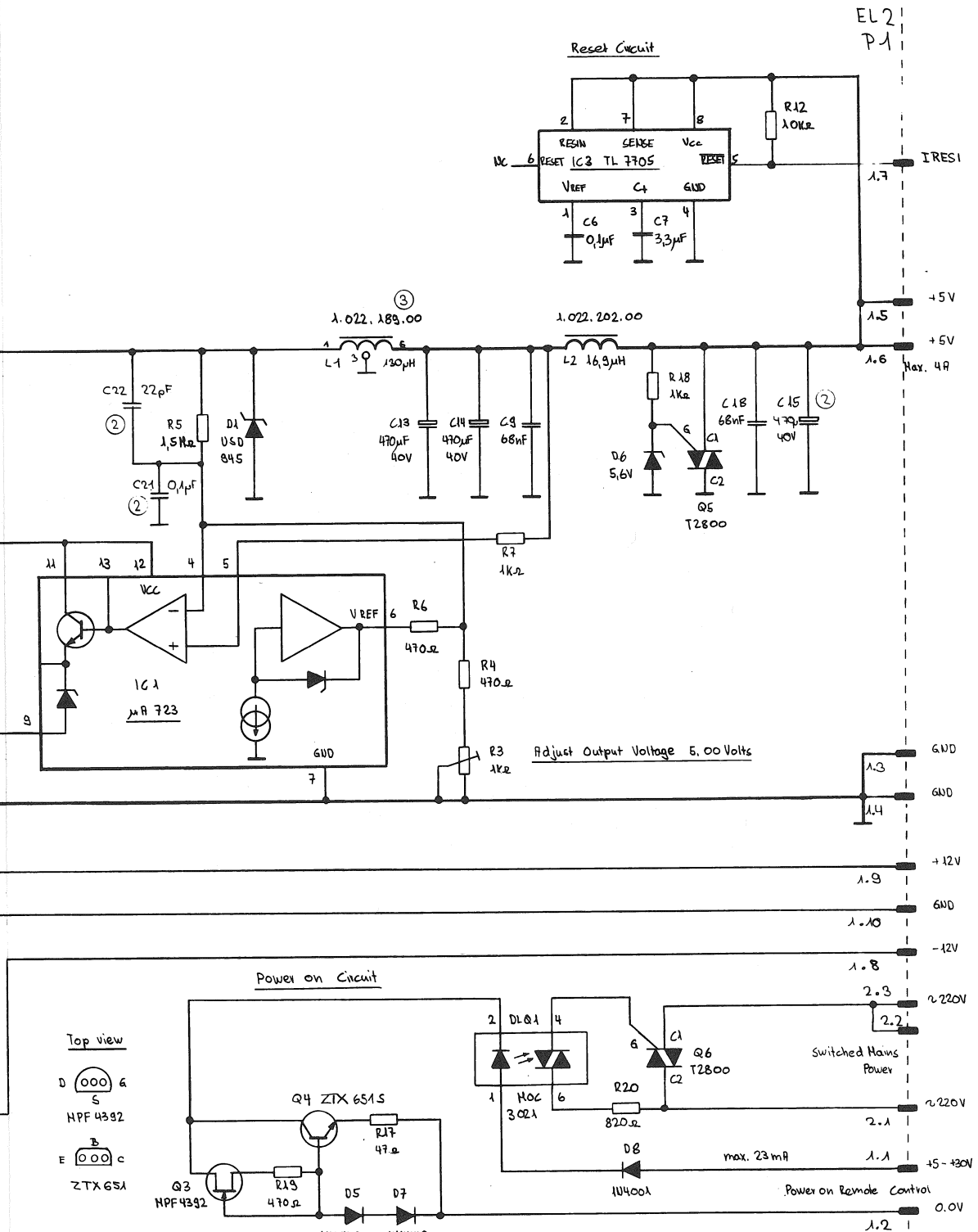
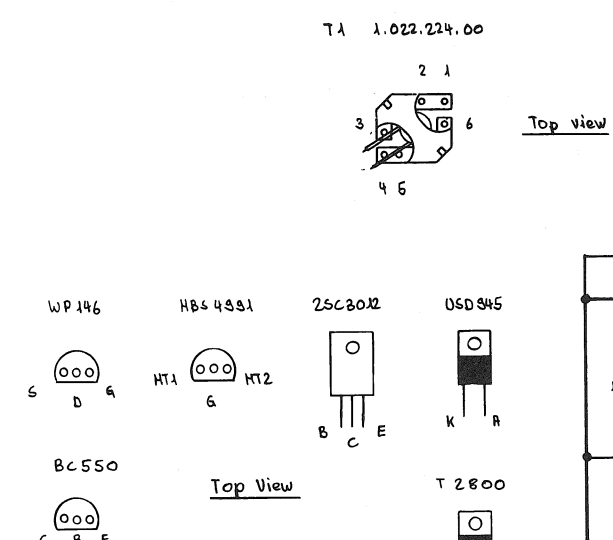
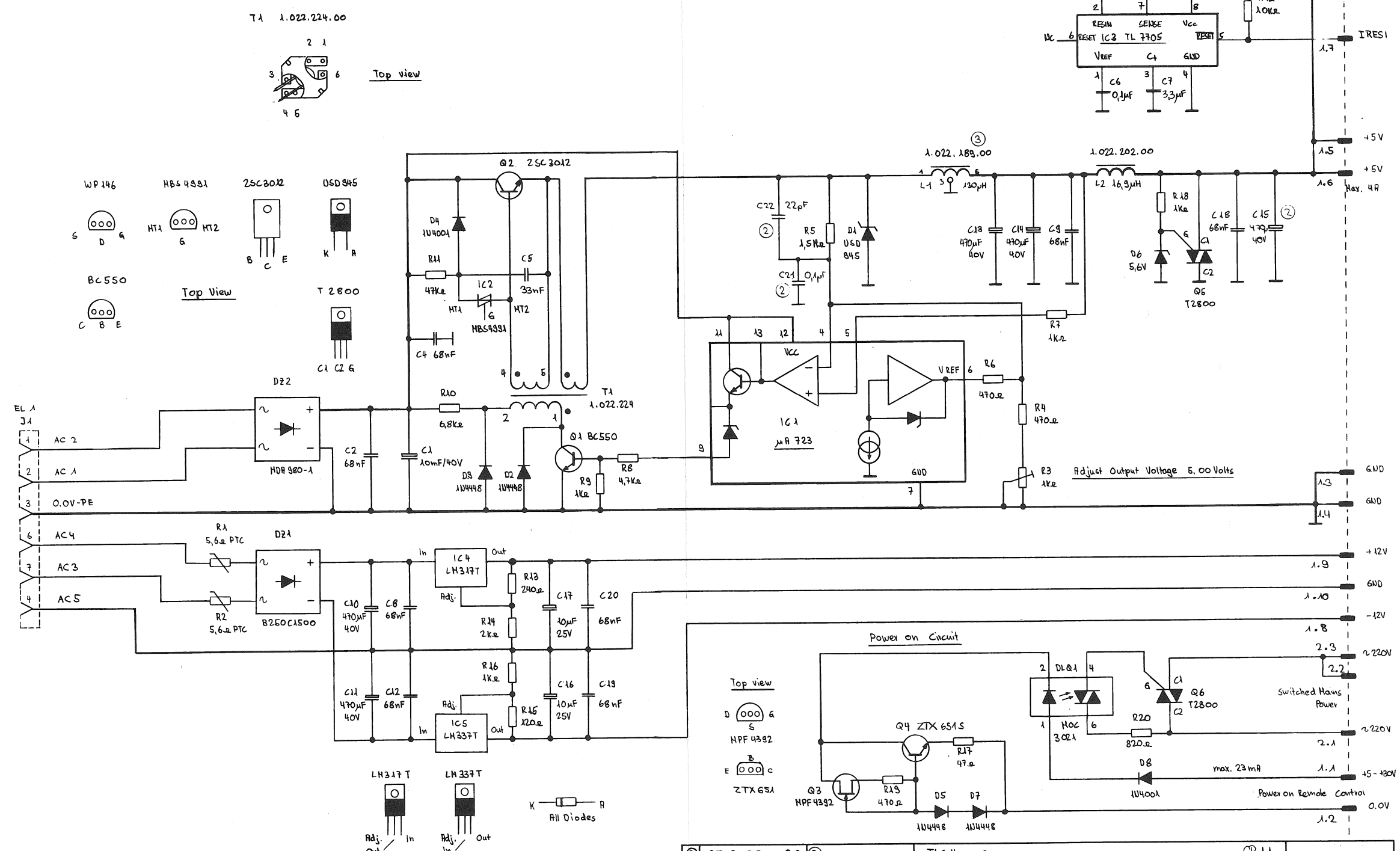


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STUDER	POWER SUPPLY WIRING	1.812.101.00	PAGE 1 OF 1

SYNCHRONIZER POWER SUPPLY 1.812.103-00

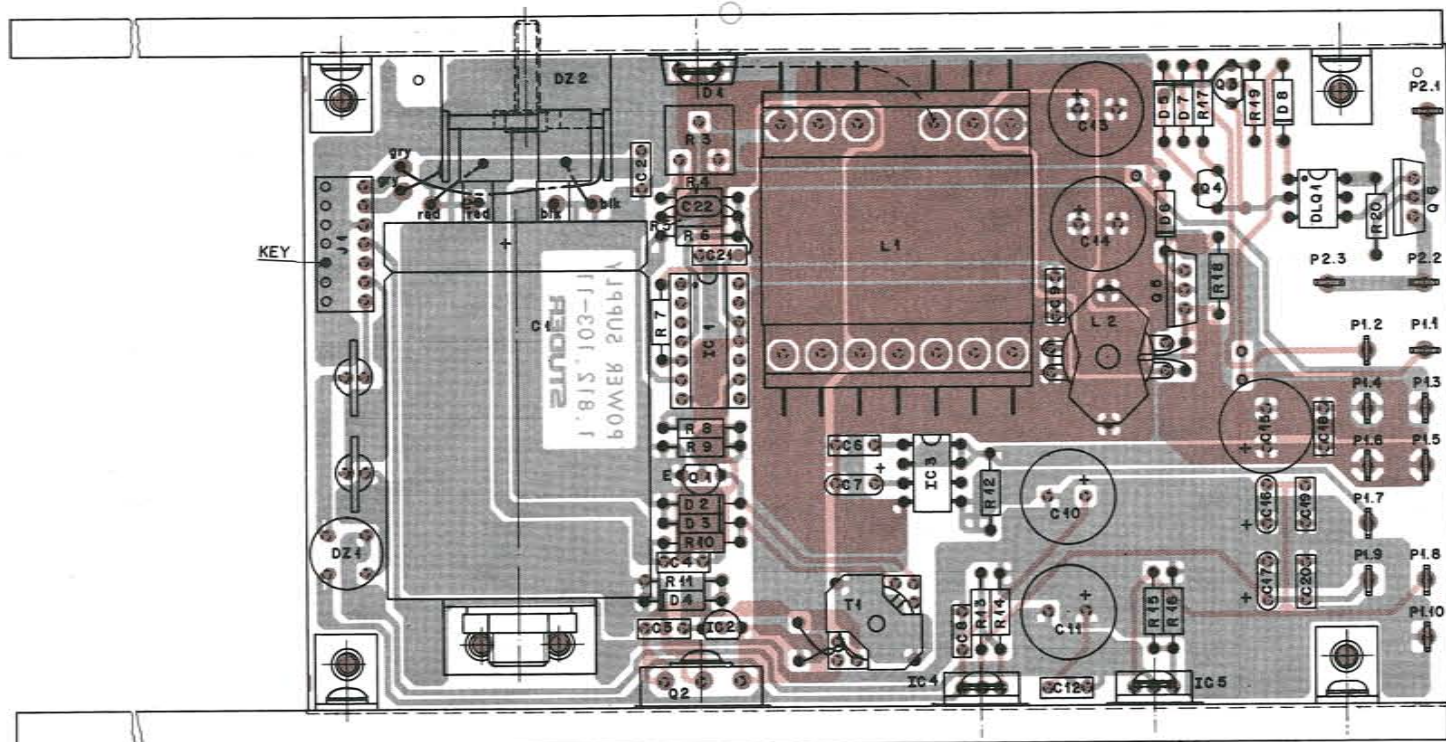
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STUDER	Synchronizer Power Supply			SC 1.812.103.00	PAGE 1 OF 1

SYNCHRONIZER POWER SUPPLY 1.812.103-00



IND.	POS-NO.	PART NO.	VALUE	SPECIFICATIONS / EQUIVALENT	MANUF.	PROG.
IC-0001		50.05-0115	uA 723 DC	Voltage Regulator IC	Fc	
IC-0002		50.03-0337	2N 4991	Bidirectional Switch	GE+Mot	
IC-0003		50.11-0122	TL 7705CP	Reset Generator	TI	
IC-0004		50.10-0104	LM 317	+1.2-37 V Voltage Regulator IC	NS+TI	
IC-0005		50.10-0105	LM 337 KC	-1.2-37 V Voltage Regulator IC	NS+TI	
DL0001		50.04-2139	MOC 3021	Optocoupler	Mot	
Q-0001		50.03-0497	BC 950	Transistor npn	Sie	
Q-0002		50.03-0517	Z SC 3012	Powertransistor npn	NEC	
Q-0003		50.03-0350	MPF 4392	Transistor ND-FET	Mot	
Q-0004		50.03-0523	ZTX 651 S	Transistor npn	Fe	
Q-0005		50.99-0106	T2800	Triac 400V/8A	RCA+GE	
Q-0006		50.99-0106	T2800	Triac 400V/8A	RCA+GE	
D-0001		50.04-0516	USD 945	Schottkydiode	Un	
D-0002		50.04-0125	1N 4448	Si-Diode	Ph+ITT+Sem	
D-0003		50.04-0125	1N 4448	Si-Diode	Ph+ITT+Sem	
D-0004		50.04-0122	1N 4001	Si-Diode	Mot+GI	
D-0005		50.04-0125	1N 4448	Si-Diode	Ph+ITT+Sem	
D-0006		50.04-1108	5x6V	Zenerdiode D.4w. 5V	ITT+Sem	
D-0007		50.04-0125	1N 4448	Si-Diode	Ph+ITT+Sem	
D-0008		50.04-0122	1N 4001	Si-Diode	Mot+GI	
DZ-0001		70-01-0224	B250C1500	Bridge Rectifier	GI	
DZ-0002		70-01-0225	MDA 980-1	Bridge Rectifier	Va	
L-0001		1-022-189-00		Choke 130uH	St	
L-0002		1-022-202-00		Choke 16uHm	St	
T-0001		1-022-224-00		Power Supply Transformer	St	
C-0001		59.26-6103	10000 uF	10%, 40V + EL		
C-0002		59.99-0205	68 nF	-20%, 63V + CER		
C-0004		59.99-0205	68 nF	-20%, 63V + KER		
C-0005		59.06-0333	33 nF	10%, 63V + PETP		
C-0006		59.06-0104	100 nF	10%, 63V + PETP		

STUDER (03) 84/07/02 KS SYNCHRONIZER POWER SUPPLY 1.812.103.00 PAGE 1

IND.	POS-NO.	PART NO.	VALUE	SPECIFICATIONS / EQUIVALENT	MANUF.	PROG.
C-0007		59.26-2339	3.3 uF	-20%, 16V + SAL		
C-0008		59.99-0205	68 nF	-20%, 63V + CER		
C-0009		59.99-0205	68 nF	-20%, 63V + CER		
C-0010		59.22-6471	470 uF	-10%, 40V + EL		
C-0011		59.22-6471	470 uF	-10%, 40V + EL		
C-0012		59.99-0205	68 nF	-20%, 63V + CER		
C-0013		59.22-6471	470 uF	-10%, 40V + EL		
C-0014		59.22-6471	470 uF	-10%, 40V + EL		
(02) C-0015		59.22-6471	470 uF	-10%, 40V + EL		
C-0016		59.26-2100	10 uF	-20%, 25V + SAL		
C-0017		59.26-2100	10 uF	-20%, 25V + SAL		
C-0018		59.99-0205	68 nF	-20%, 63V + CER		
C-0019		59.99-0205	68 nF	-20%, 63V + CER		
(02) C-0020		59.99-0205	68 nF	-20%, 63V + CER		
(02) C-0021		59.06-0104	0.1 uF	-10% 63V + PETP		
(02) C-0022		59.34-2220	22 pF	-5% CER		
R-0001		57.99-0209	5-6 Ohm	PTC		
R-0002		57.99-0209	5-6 Ohm	PTC		
R-0003		59.01-6102	1-0 Kohm	10%, .25W PMG	Trimpot	
R-0004		57.11-4471	470 Ohm	2%, 0207 + MF		
R-0005		57.11-4155	1-5 MOhm	2%, 0207 + MF		
R-0006		57.11-4471	470 Ohm	2%, 0207 + MF		
R-0007		57.11-4102	1-0 Kohm	2%, 0207 + MF		
R-0008		57.11-4472	4-7 Kohm	2%, 0207 + MF		
R-0009		57.11-4102	1-0 Kohm	2%, 0207 + MF		
R-0010		57.11-4482	6-8 Kohm	2%, 0207 + MF		
R-0011		57.11-4473	47 Kohm	2%, 0207 + MF		
R-0012		57.11-4103	10 Kohm	2%, 0207 + MF		
R-0013		57.11-3261	240 Ohm	1%, 0207 + MF		
R-0014		57.11-3202	2-0 Kohm	1%, 0207 + MF		
R-0015		57.11-3121	120 Ohm	1%, 0207 + MF		
R-0016		57.11-3102	1-0 Kohm	1%, 0207 + MF		
R-0017		57.11-4470	47 Ohm	2%, 0207 + MF		
R-0018		57.11-4102	1-0 Kohm	2%, 0207 + MF		
R-0019		57.11-4471	470 Ohm	2%, 0207 + MF		
R-0020		57.11-4821	820 Ohm	2%, 0207 + MF		

STUDER (03) 84/07/02 KS SYNCHRONIZER POWER SUPPLY 1.812.103.00 PAGE 2

IND.	POS-NO.	PART NO.	VALUE	SPECIFICATIONS / EQUIVALENT	MANUF.	PROG.
J-0001		54-01-0218	7 Pin	Female Print CIS Connector		
(01) P-0001		54-02-0320		10 Pcs Soldering Pin 2.8mm		
(01) P-0002		54-02-0320		03 Pcs Soldering Pin 2.8mm		

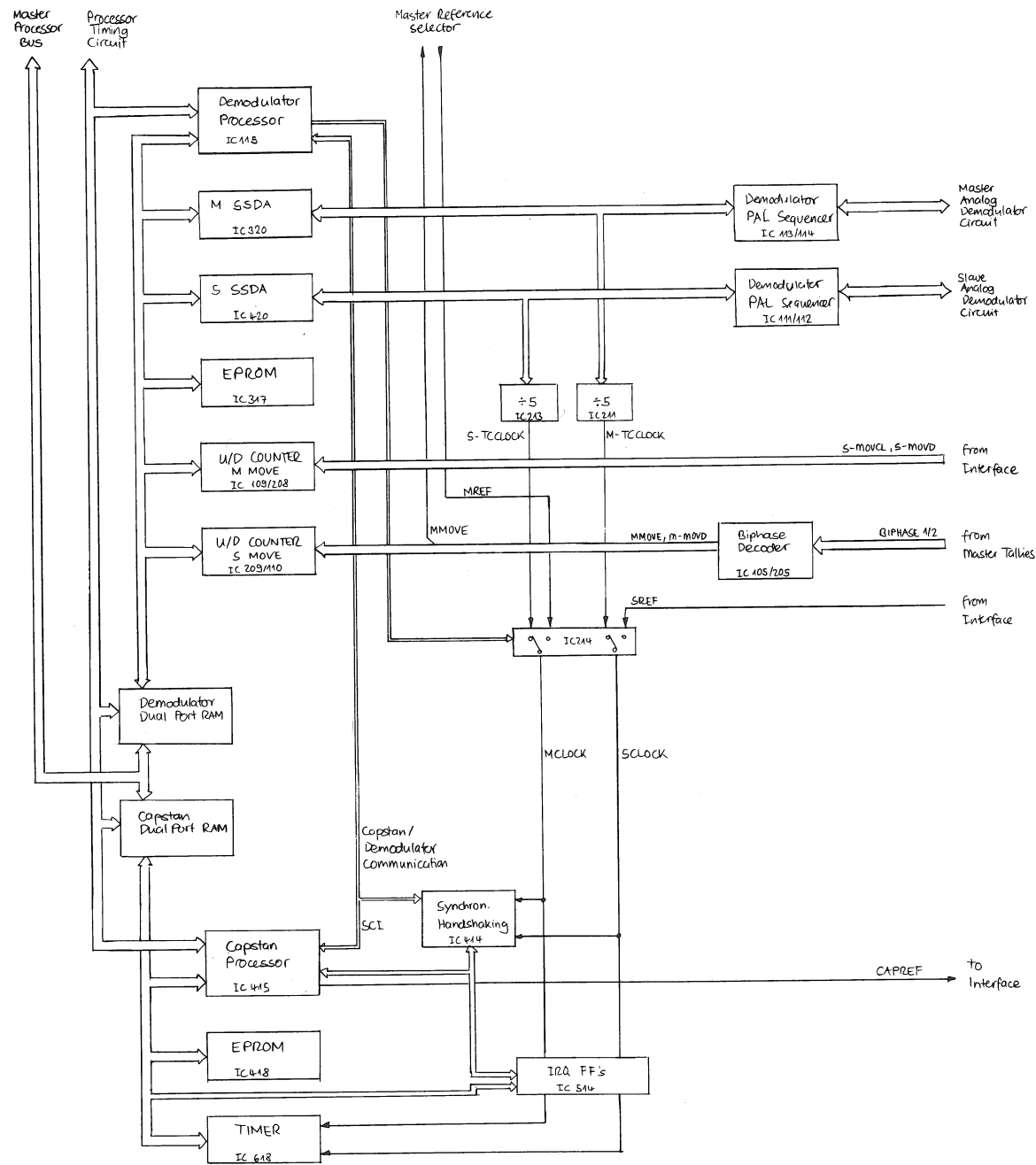
(01) 04-01-84 New Pin Layout
 (02) 05-03-84 Improvement of switching regulator stability at low ambient temperature.
 (03) 02-07-84 Blocking capacitor C3 is left for better 5V stability.

EL=Electrolytic, CER=Ceramic, PETP=Polyester,
 SAL=Solid Aluminium

MANUFACTURER: Fc=Fairchild, NS=National Semiconductors, Mot=Motorola,
 TI=Texas Instruments, GE=General Electric, VA=Varo,
 NEC=Nippon Electronic Corp., Sie=Siemens,
 ITT=Intermetall, GI=General Instruments, Ph=Philips,
 Ses=Secosem, ST=Studer, Fe=Ferranti

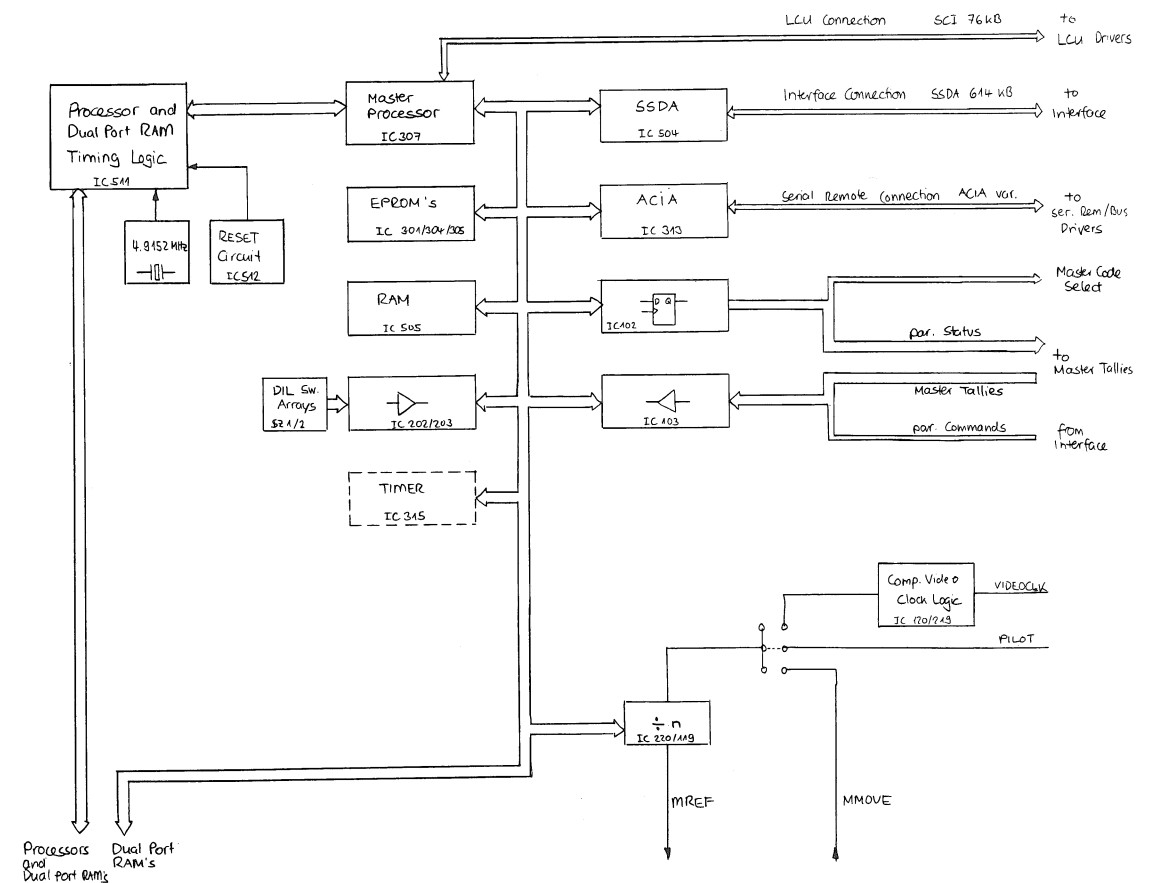
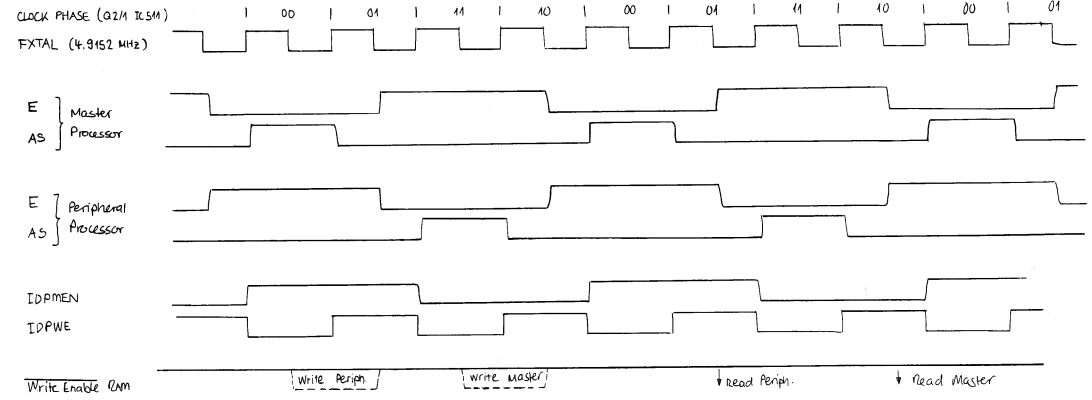
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 STUDER (03) 84/07/02 KS SYNCHRONIZER POWER SUPPLY 1.812.103.00 PAGE 3

BLOCK DIAGRAM SYNCHRONIZER PCB



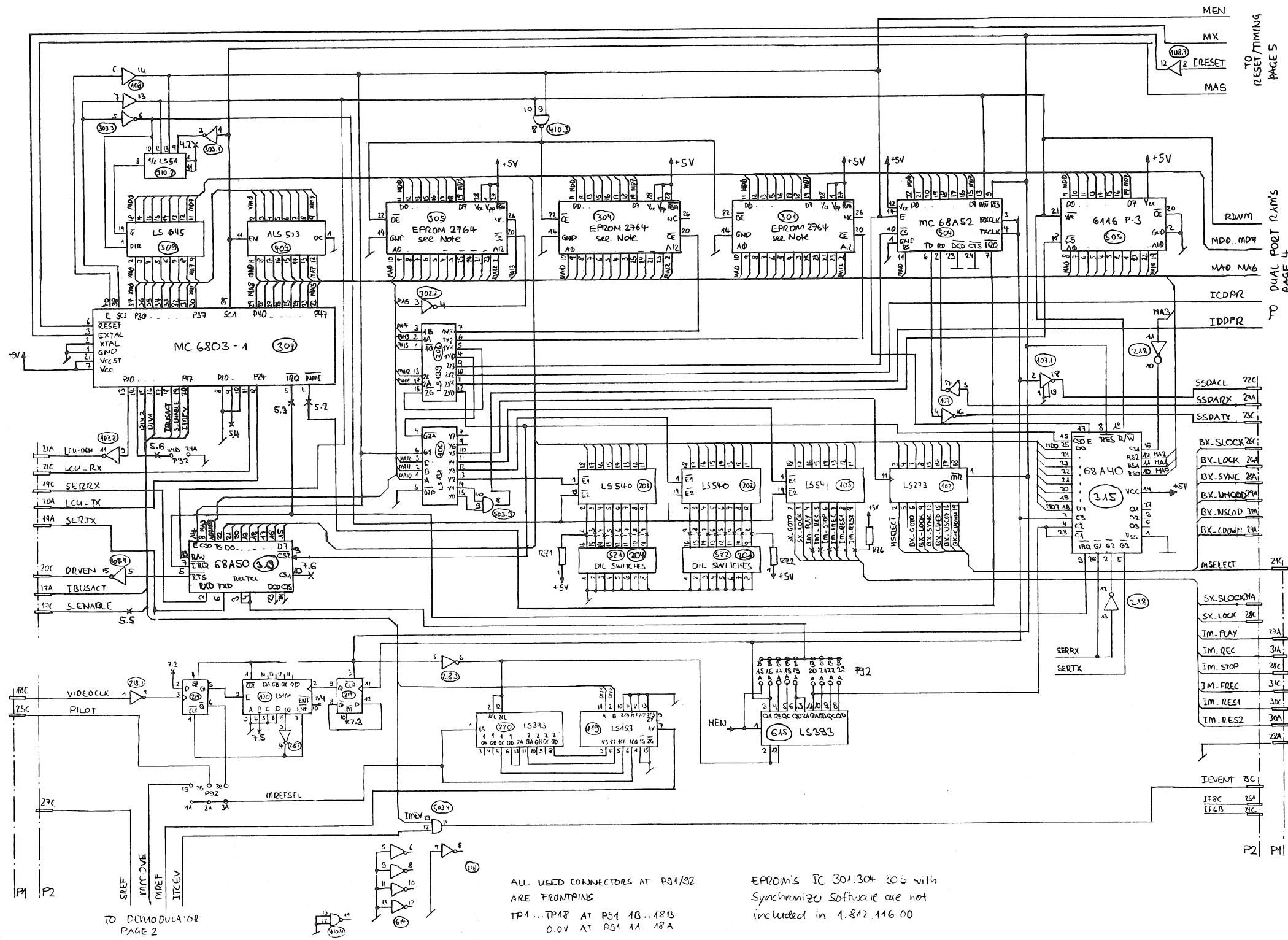
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STUDER	SYNCHRONIZER BOARD	BL	1.812.116.00	PAGE 1 OF 2	

Dual Port RAM Timing:



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STUDER	SYNCHRONIZER BOARD	BL	1.812.116.00	PAGE 2 OF 2	

SYNCHRONIZER PCB EXCL. SOFTWARE 1.812.116-00 "ESE" (NO. INCL. SOFTWARE IS 1.812.106-00/-81)



ALL USED CONNECTORS AT P31/P32
 ARE FRONTPIES
 TP1...TP8 AT P51 1B...18B
 0.0V AT P51 1A 18A

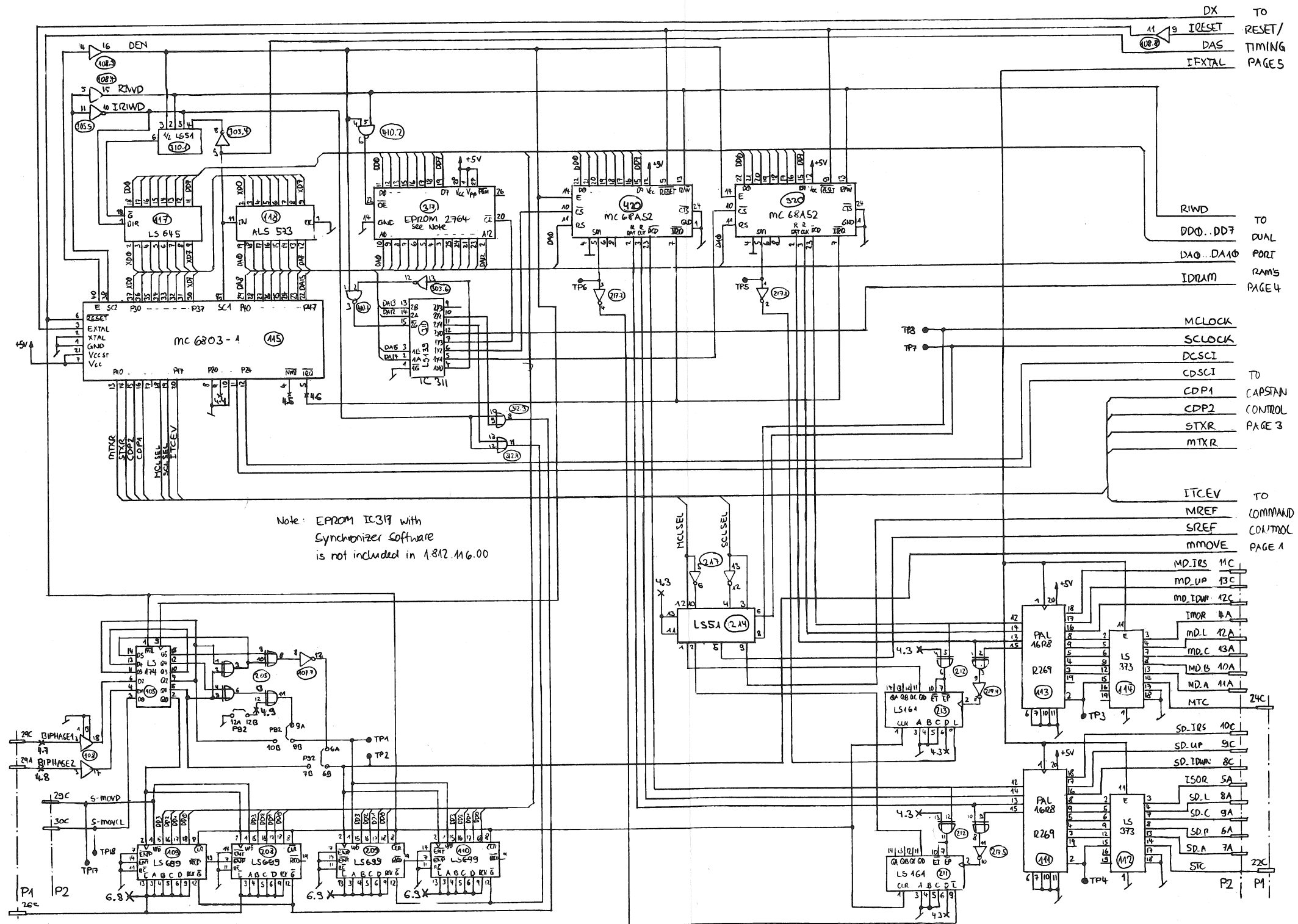
EPROM'S IC 301,304,305 WITH
 Synchronizer Software are not
 included in 1.812.116.00

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STUDER		SYNCHRONIZER BOARD EXCL. SOFTW. 'ESE'		SC	1.812.116.00	PAGE 1 OF 5

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SYNCHRONIZER PCB EXCL. SOFTWARE 1.812.116-00 "ESE" (NO. INCL. SOFTWARE IS 1.812.106-00/-81)

(CONTINUED)



Note: EPROM IC317 with Synchronizer Software is not included in 1.812.116.00

DX TO
9 IRESET RESET/
DAS TIMING
IFXTAL PAGES

RIWD TO
DD0..DD7 DUAL
DA0..DA10 PORT
IDRAM RAMS
PAGE 4

MCLK
SCLOCK
DCSCI
CDSCI TO
CDP1 CAPSTAN
CDP2 CONTROL
STXR PAGE 3
MTXR

ITCEV TO
MREF COMMAND
SREF CONTROL
mmove PAGE 1

MD_IRS MC
MD_UP 13C
MD_IDM 12C
IMOR 11A
MD_L 12A
MD_C 13A
MD_B 10A
MD_A 11A
MTC 24C

SD_IRS 10C
SD_UP 9C
SD_IDM 8C
ISOR 5A
SD_L 8A
SD_C 9A
SD_P 6A
SD_A 7A
STC 72C
P2 P1

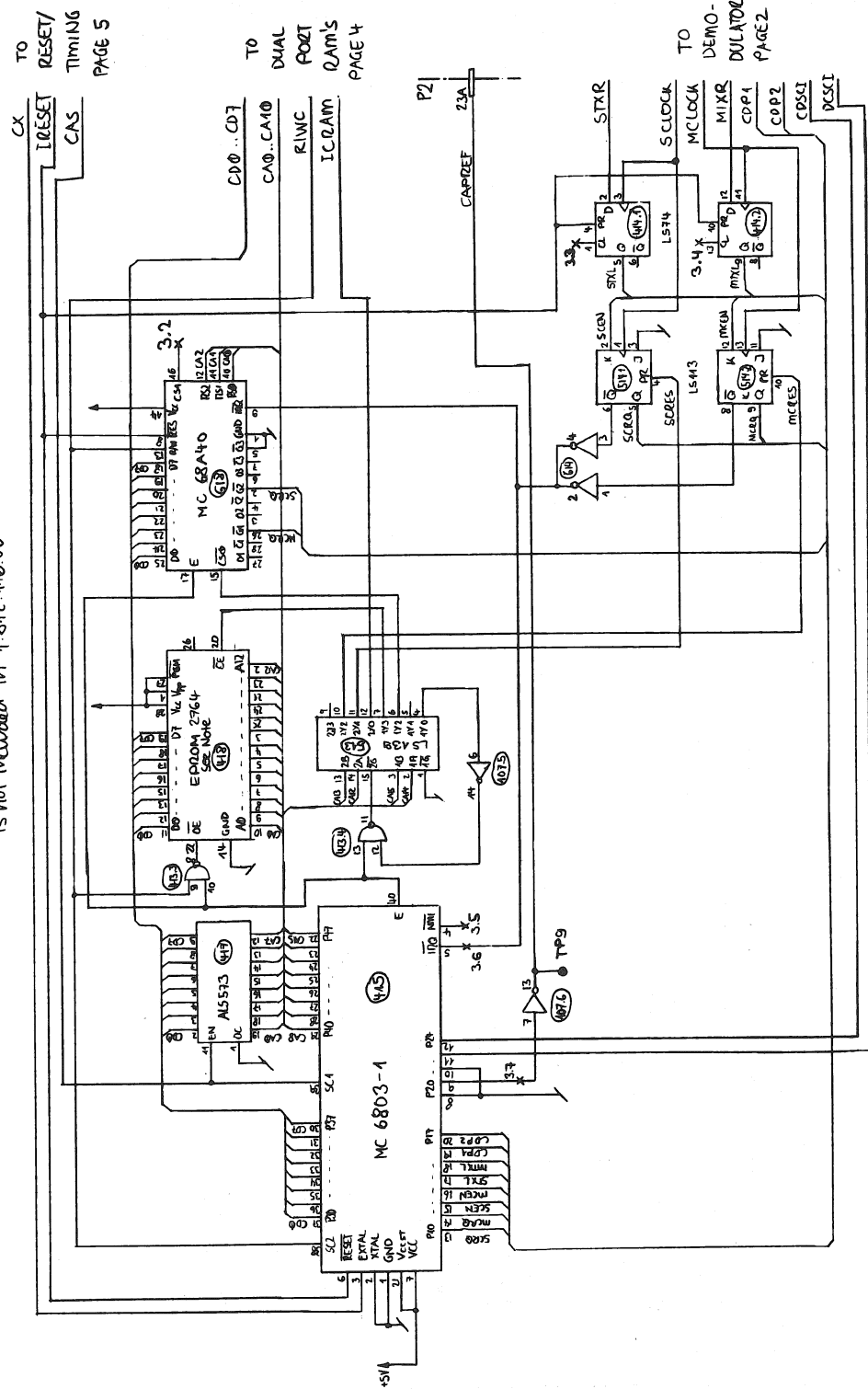
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STUDER		SYNCHRONIZER BOARD		EXCL. SOFTW 'ESE' SC	1.812.116.00	PAGE 2 OF 5

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SYNCHRONIZER PCB EXCL. SOFTWARE 1.812.116-00 "ESE" (NO. INCL. SOFTWARE IS 1.812.106-00/-81)

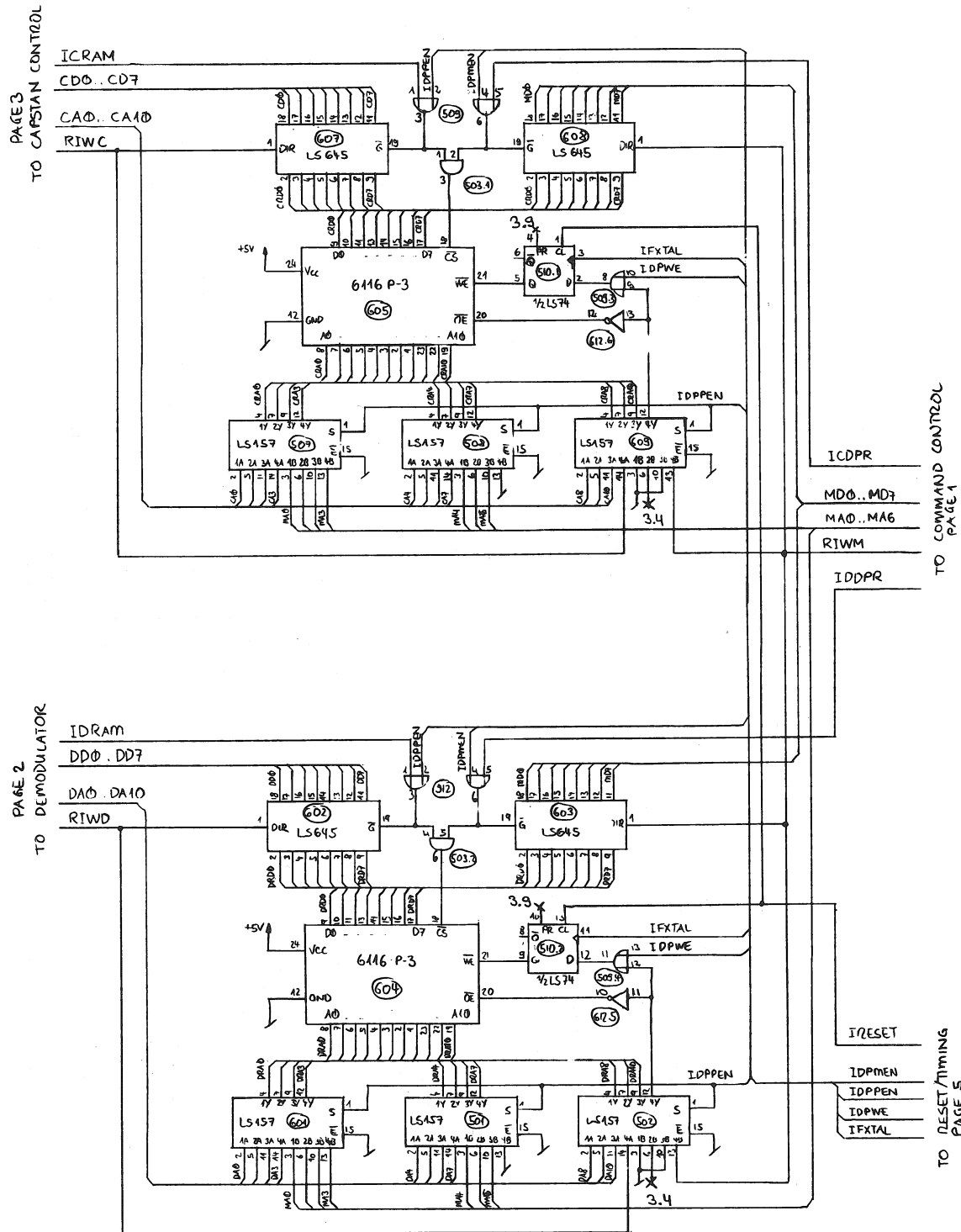
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Note: EPROM IC418 with Synchronizer Software is not included in 1.812.116.00



CAPSTAR CONTROL

① 28.2.84 KS	① 2.7.84 KS	TLS 4000	
STUDER	SYNCHRONIZER BOARD EXCL. SOFTW. 'ESE'	SC 1.812.116.00	PAGE 3 OF 5



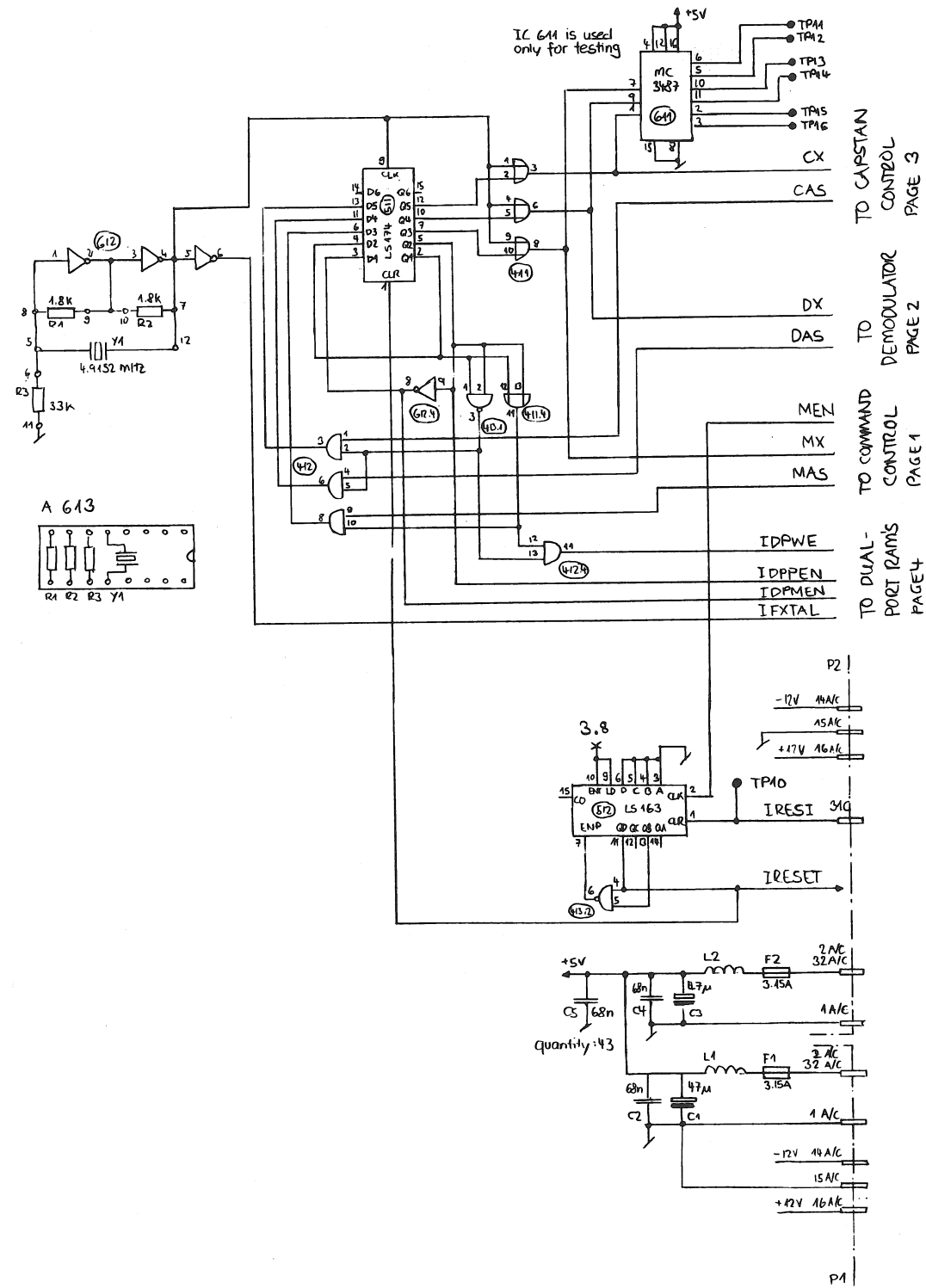
DUAL PORT RAM'S

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SYNCHRONIZER PCB EXCL. SOFTWARE 1.812.116-00 "ESE" (NO INCL. SOFTWARE IS 1.812.106-00/-81)

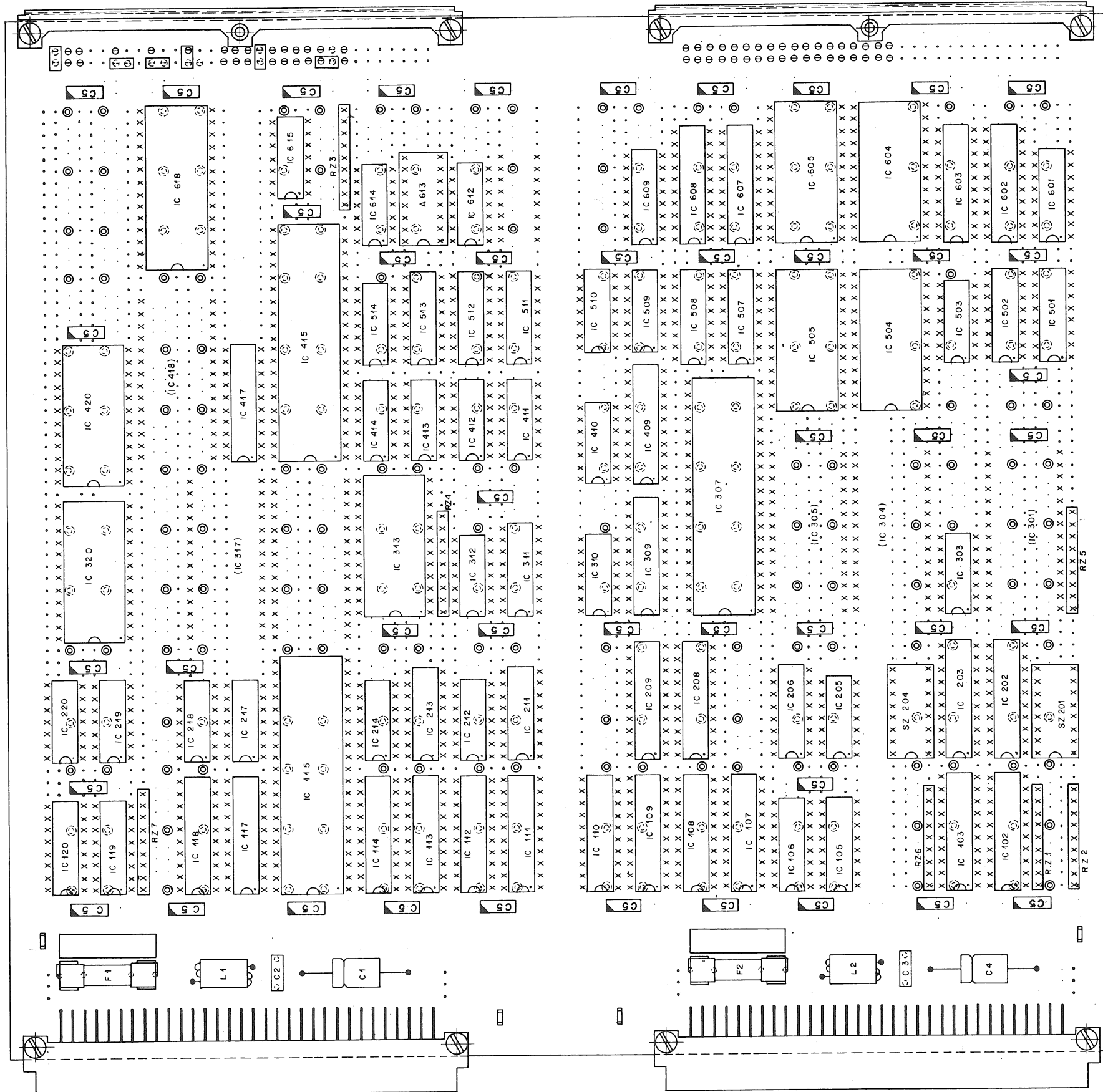
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RESET/TIMING

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STUDER	SYNCHRONIZER BOARD	EXCL. SOFTW 'ESE'	SC	1.812.116.00	PAGE 5 OF 5

SYNCHRONIZER PCB EXCL. SOFTWARE 1.812.116-00 "ESE" (NO INCL. SOFTWARE IS 1.812.106-00/-81)

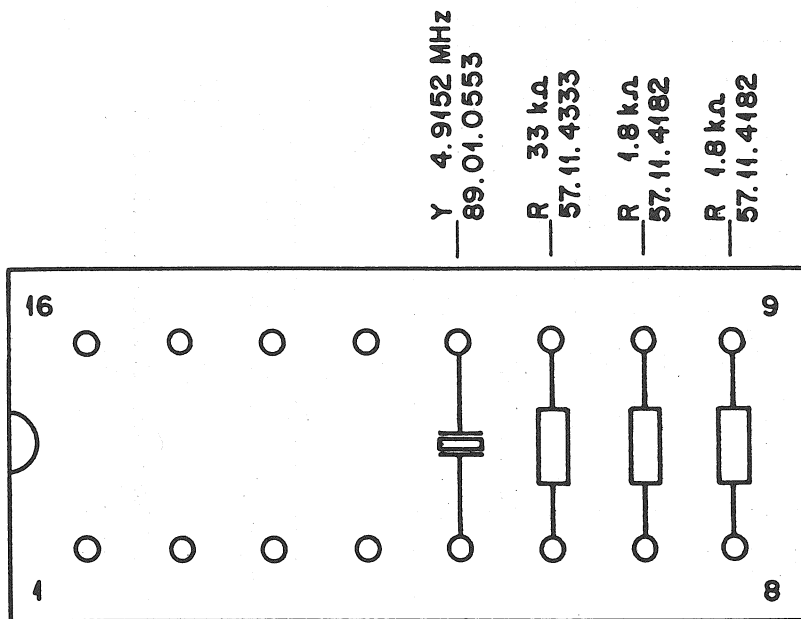


IND.	POS.NO.	PART NO.	VALUE	SPECIFICATIONS / EQUIVALENT	MANUF.	PROG.
		IC-0102	50.06-0273	SN 74 LS 273 N	TTL	
		IC-0103	50.06-0541	SN 74 LS 541 N	TTL	
		IC-0105	50.06-0174	SN 74 LS 174 N	TTL	
		IC-0106	50.06-0138	SN 74 LS 138 N	TTL	
		IC-0107	50.06-0540	SN 74 LS 540 N	TTL	
		IC-0108	50.06-0541	SN 74 LS 541 N	TTL	
		IC-0109	50.06-0699	SN 74 LS 699 N	TTL	
		IC-0110	50.06-0699	SN 74 LS 699 N	TTL	
		IC-0111	1.025-026-90	Demodulator PAL		St
		IC-0112	50.06-0373	SN 74 LS 373 N	TTL	
		IC-0113	1.025-026-90	Demodulator PAL		St
(01)		IC-0114	50.06-0373	SN 74 LS 373 N	TTL	
		IC-0115	50.16-0107	MC 6803 G-1, HD 6803 P-1,A		
		IC-0117	50.06-0645	SN 74 LS 645 N	TTL	
		IC-0118	50.06-1573	SN 74 ALS 573 N	TTL	
		IC-0119	50.06-0153	SN 74 LS 153 N	TTL	
		IC-0120	50.06-0161	SN 74 LS 161 AN	TTL	
		IC-0202	50.06-0540	SN 74 LS 540 N	TTL	
		IC-0203	50.06-0540	SN 74 LS 540 N	TTL	
		IC-0205	50.06-0086	SN 74 LS 86 N	TTL	
		IC-0206	50.06-0139	SN 74 LS 139 N	TTL	
		IC-0208	50.06-0699	SN 74 LS 699 N	TTL	
		IC-0209	50.06-0699	SN 74 LS 699 N	TTL	
		IC-0211	50.06-0161	SN 74 LS 161 AN	TTL	
		IC-0212	50.06-0086	SN 74 LS 86 N	TTL	
		IC-0213	50.06-0153	SN 74 LS 153 N	TTL	
		IC-0214	50.06-0051	SN 74 LS 51 N	TTL	
		IC-0217	50.06-0004	SN 74 LS 04 N	TTL	
		IC-0218	50.06-0004	SN 74 LS 04 N	TTL	
		IC-0219	50.06-0174	SN 74 LS 174 N	TTL	
(01)		IC-0220	50.06-0393	SN 74 LS 393 AN	TTL	
		IC-0301		R 5483	see Note 3	
		IC-0303	50.06-0014	SN 74 LS 14 N	TTL	
		IC-0304		R 5484	see Note 3	
		IC-0305		R 5485	see Note 3	
		IC-0307	50.16-0107	MC 6803 G-1, HD 6803 P-1,A		
		IC-0309	50.06-0645	SN 74 LS 645 N	TTL	
		IC-0310	50.06-0051	SN 74 LS 51 N	TTL	
		IC-0311	50.06-0139	SN 74 LS 139 N	TTL	
		IC-0312	50.06-0032	SN 74 LS 32 N	TTL	
(01)		IC-0313	50.16-0101	MC 68A50, HD 68A50, S 68A50		
		IC-0317		R 5482	see Note 3	
		IC-0320	50.16-0114	MC 68A52, HD 68A52, S 68A52		
(01)		IC-0409	50.06-1573	SN 74 ALS 573 N	TTL	
		IC-0409	50.06-1573	SN 74 ALS 573 N	TTL	
		IC-0410	50.06-0000	SN 74 LS 00 N	TTL	
		IC-0411	50.06-0174	SN 74 LS 174 N	TTL	
		IC-0412	50.06-0008	SN 74 LS 08 N	TTL	
		IC-0413	50.06-0000	SN 74 LS 00 N	TTL	
		IC-0414	50.06-0074	SN 74 LS 74 N	TTL	
		IC-0415	50.06-0107	MC 6803G-1, HD 6803P-1,A		
		IC-0417	50.06-1573	SN 74 ALS 573 N	TTL	
		IC-0418		R 5481	see Note 3	
(01)		IC-0510	50.16-0114	MC 68A52, HD 68A52, S 68A52		
		IC-0501	50.06-0157	SN 74 LS 157 N	TTL	
		IC-0502	50.06-0157	SN 74 LS 157 N	TTL	
		IC-0503	50.06-0008	SN 74 LS 08 N	TTL	
		IC-0504	50.16-0114	MC 68A52, HD 68A52, S 68A52		
		IC-0505	50.14-0107	HM 6116 LP-3, MSM 5128-15,A		
		IC-0507	50.06-0157	SN 74 LS 157 N	TTL	
		IC-0508	50.06-0157	SN 74 LS 157 N	TTL	
		IC-0509	50.06-0032	SN 74 LS 32 N	TTL	
		IC-0510	50.06-0074	SN 74 LS 74 N	TTL	
		IC-0511	50.06-0174	SN 74 LS 174 N	TTL	
		IC-0512	50.06-0163	SN 74 LS 163 N	TTL	
		IC-0513	50.06-0139	SN 74 LS 139 N	TTL	
		IC-0514	50.06-0113	SN 74 LS 113 N	TTL	
		IC-0601	50.06-0157	SN 74 LS 157 N	TTL	
		IC-0602	50.06-0645	SN 74 LS 645 N	TTL	
		IC-0603	50.06-0645	SN 74 LS 645 N	TTL	
		IC-0604	50.14-0107	HM 6116 LP-3, MSM 5128-15,A		
		IC-0605	50.16-0107	HM 6116 LP-3, MSM 5128-15,A		
		IC-0607	50.06-0645	SN 74 LS 645 N	TTL	
		IC-0608	50.06-0645	SN 74 LS 645 N	TTL	
(01)		IC-0611	50.06-0157	SN 74 LS 157 N	TTL	
		IC-0612	50.06-0004	SN 74 LS 04 N	TTL	
(01)		IC-0614	50.06-0005	SN 74 LS 05 N	TTL	
		IC-0615	50.06-0393	SN 74 LS 393 N	TTL	
		IC-0618	50.16-0113	MC 68A40, HD 68A40,		
		RZ-0001	57.88-4332	8 #3-3K	5%, Single Line	
		RZ-0002	57.88-4332	8 #3-3K	5%, Single Line	
		RZ-0003	57.88-4332	8 #3-3K	5%, Single Line	
		RZ-0004	57.88-4332	8 #3-3K	5%, Single Line	
		RZ-0005	57.88-4332	8 #3-3K	5%, Single Line	
		RZ-0006	57.88-4332	8 #3-3K	5%, Single Line	
		RZ-0007	57.88-4332	8 #3-3K	5%, Single Line	
		SZ-0201	55-01-0168	8 # A	DIL..	
		SZ-0204	55-01-0168	8 # A	DIL..	
		A..0613	1.812.204-00		Assembly 106-613	
		C..0001	59-25-3470	47uF	-20%, 10V, EL	any
		C..0002	59-99-0205	68nF	-20%, 30V, CER	any
		C..0003	59-99-0205	68nF	-20%, 30V, CER	any
		C..0004	59-25-3470	47uF	-20%, 10V, EL	any
		C..0005	59-99-0267	68nF	-20%, 20V, MPETP	any
		F..0001	51-01-0122		Fuse, T3.15/250V, 5920mm	any
		F..0002	51-01-0122		Fuse, T3.15/250V, 5920mm	any
		R..0001	62-01-0115		Wide-Band HF-Choke	Ph
		L..0002	62-01-0115		Wide-Band HF-Choke	Ph
		P..0001	54-01-0354		Card Connector, 3932 EURO WRAP	any
		P..0002	54-01-0354		Card Connector, 3932 EURO WRAP	any
		P..0092			see Note 1	

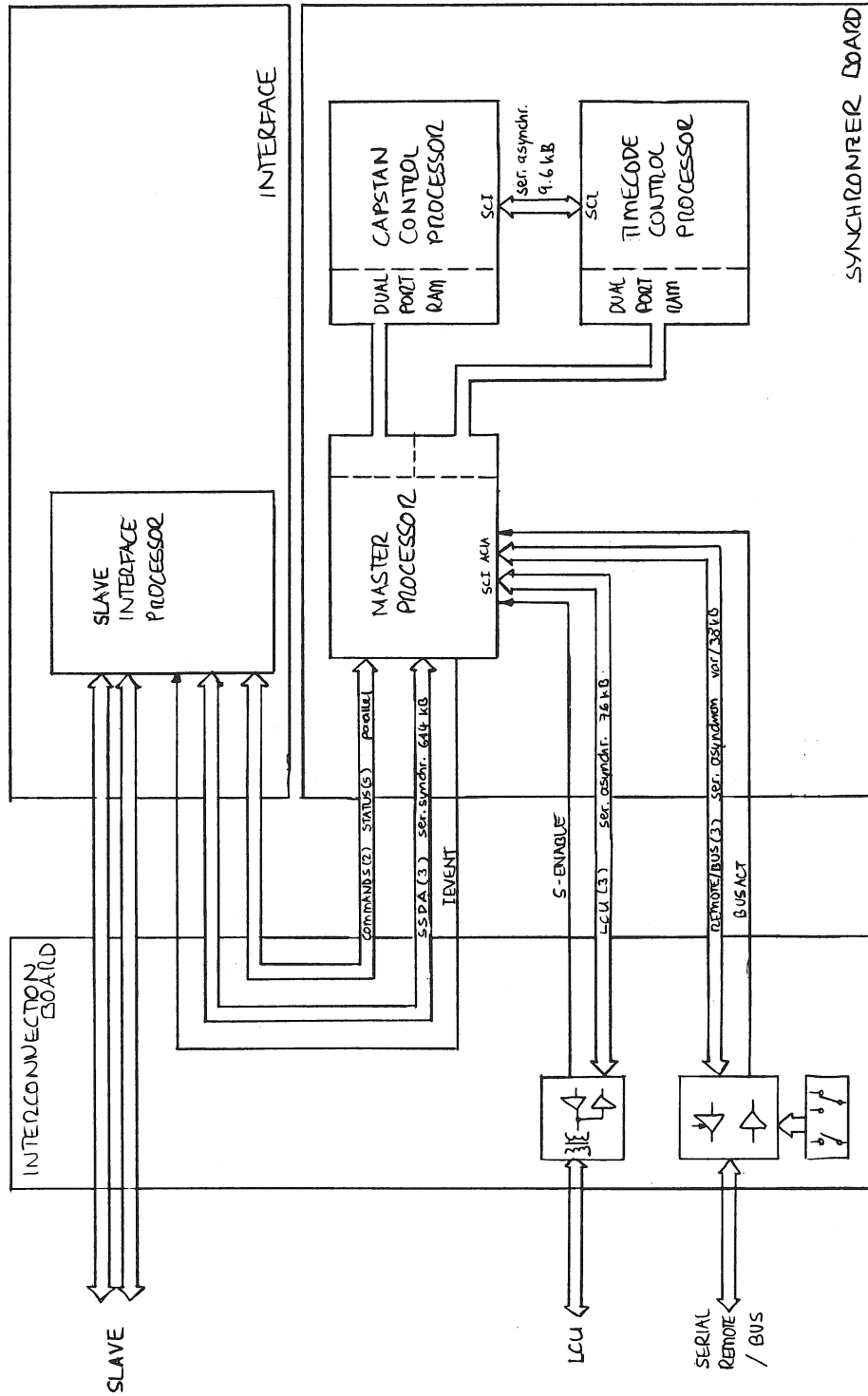
Note 1 : 6 pcs 54-01-0021 Female Jumpers for use with frontpins
 Note 2 : IC 611,MC 3487 (50.15-0105) is used only for testing
 Note 3 : EPROMs IC 301,304,305,317,418 are available with Software 1.100.548

CER=Ceramic, EL=Electrolytic, MPETP=met. Polyester
 Manufacturers : St=Studer, Ph=Philips

ASSEMBLY 1.812.204-00



BLOCK DIAGRAM INTERPROCESSOR AND I/O COMMUNICATION

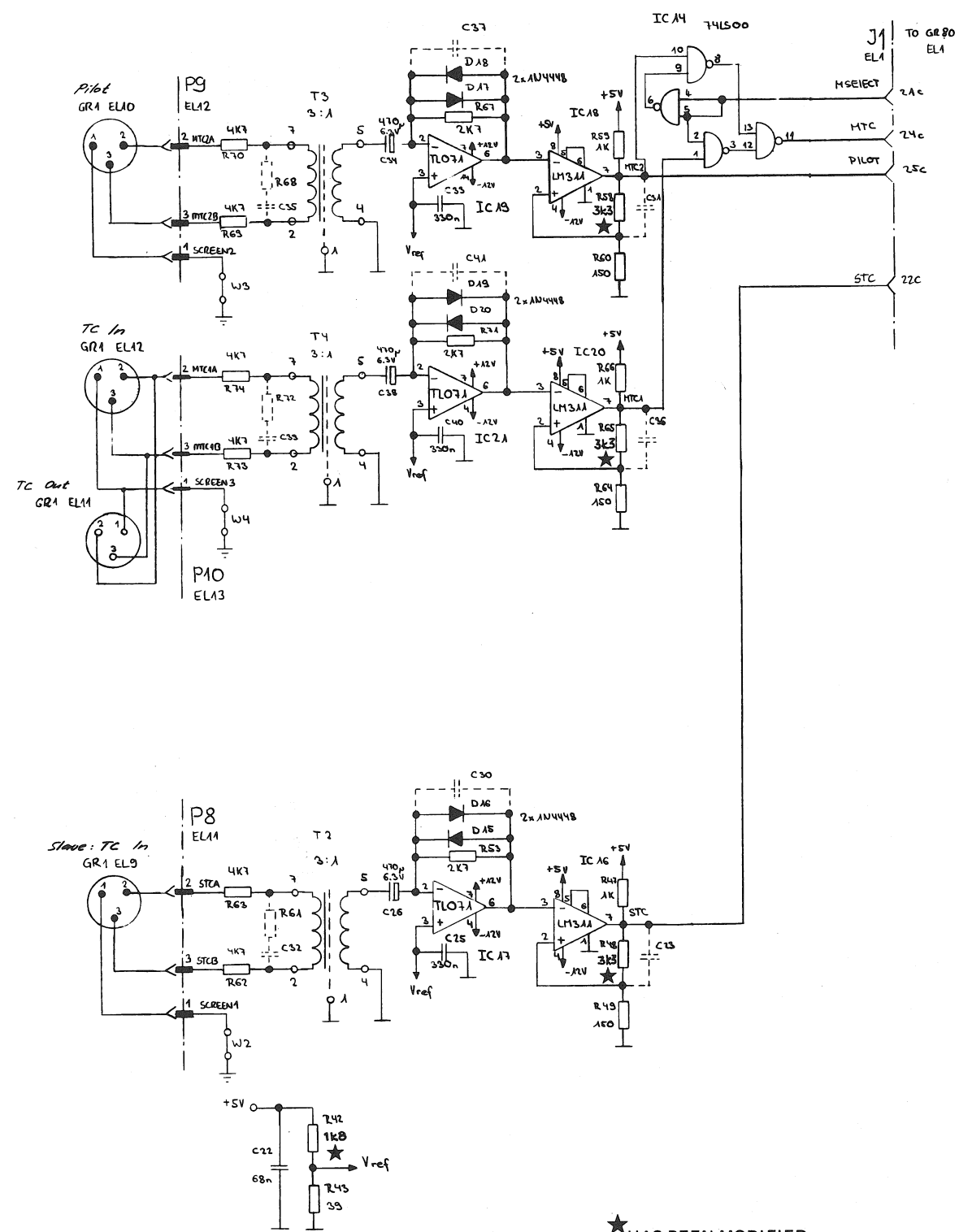


24.5.84 KS	TLS 4000	
STUDER	INTERPROCESSOR and I/O COMMUNICATION	PAGE 1 OF 1

INTERCONNECTION PCB 1.812.107-00 "ESE"
INTERCONNECTION PCB 1.812.108-00/-81 "ESE"

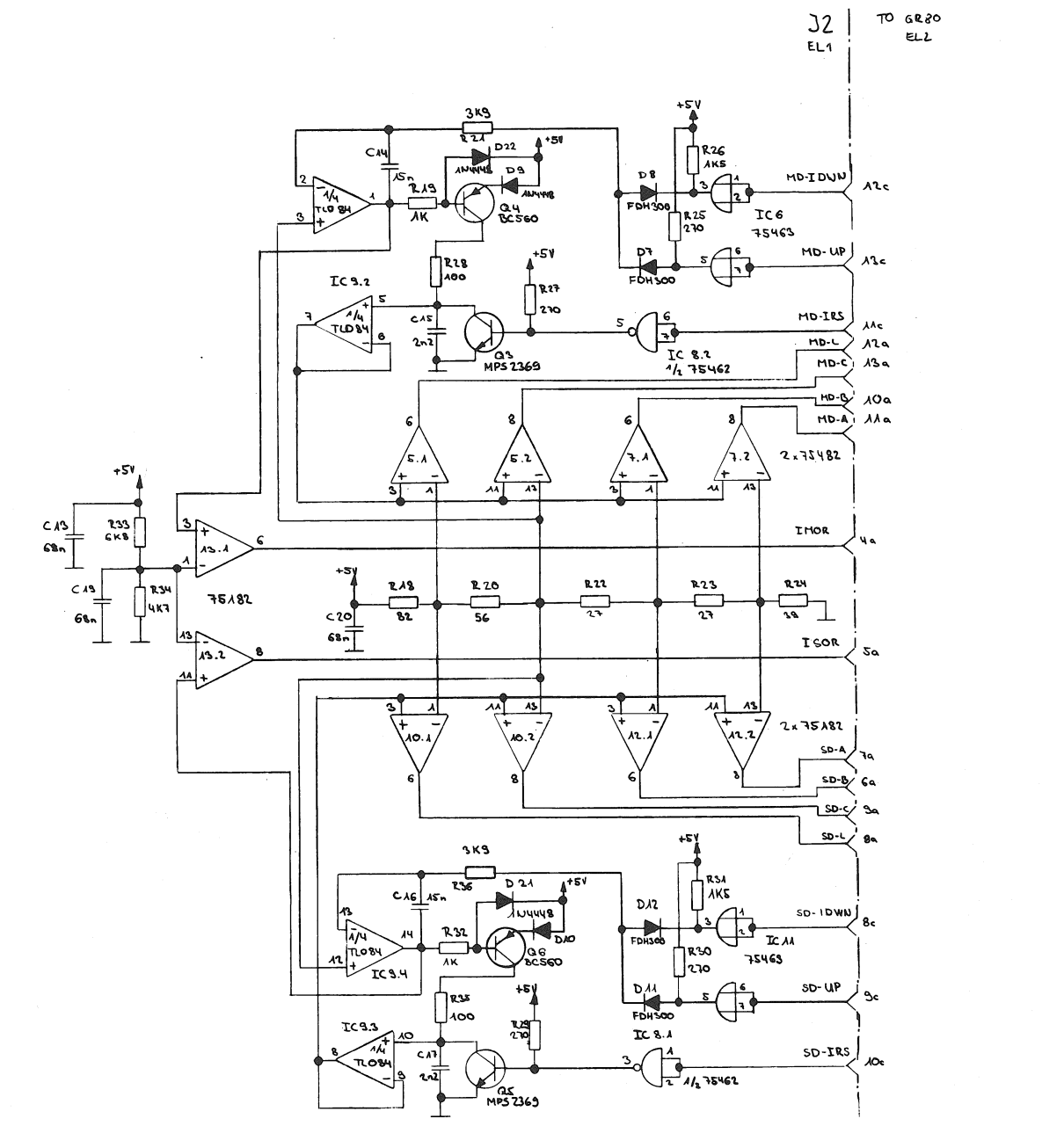
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R _____
C _____



★ HAS BEEN MODIFIED

R _____
C _____

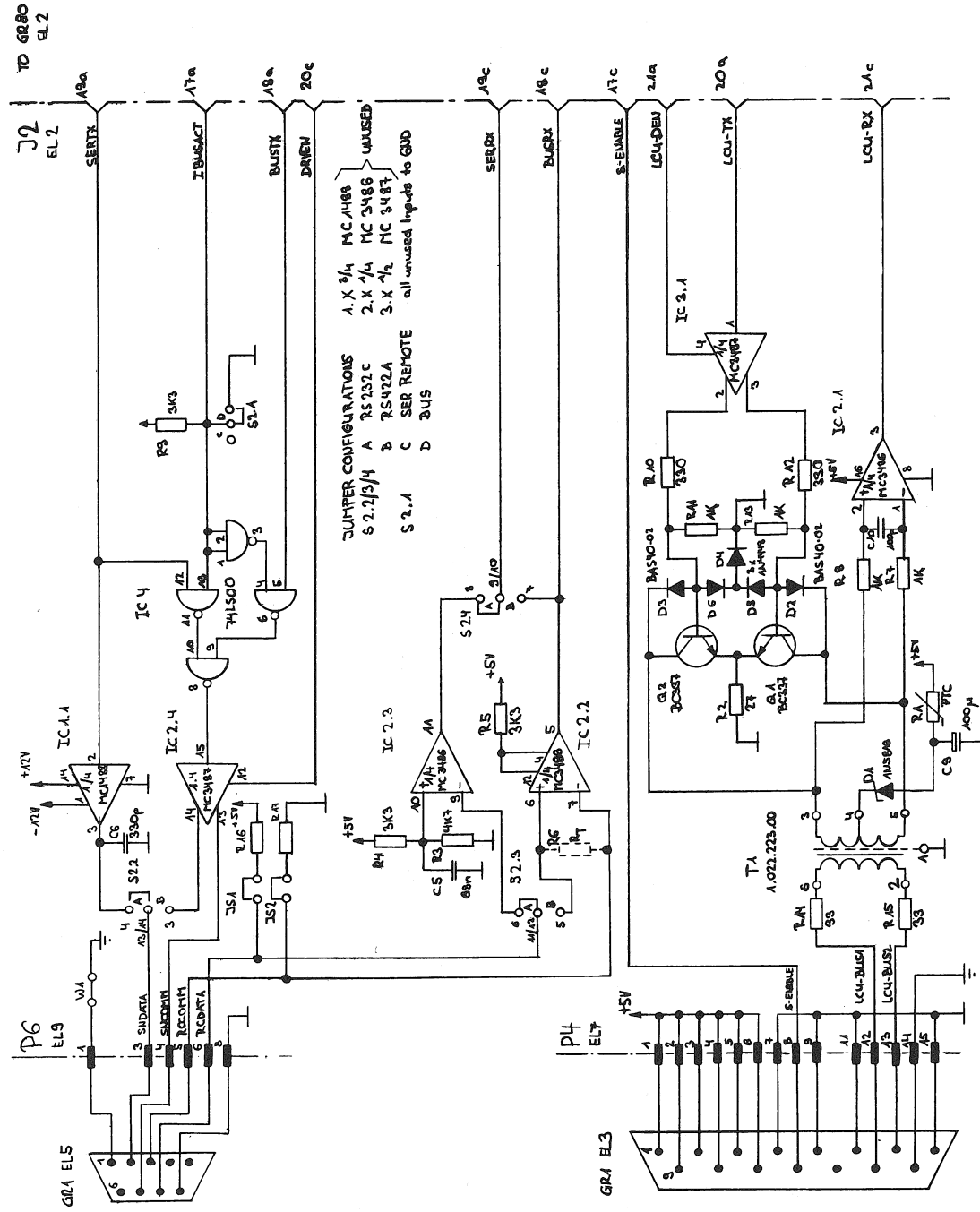


16.04.84	HUR				
STUDER					PAGE 2 OF 3
INTERCONNECTION BOARD			GR20	1.812.108.81	

CONTINUED ON NEXT PAGE

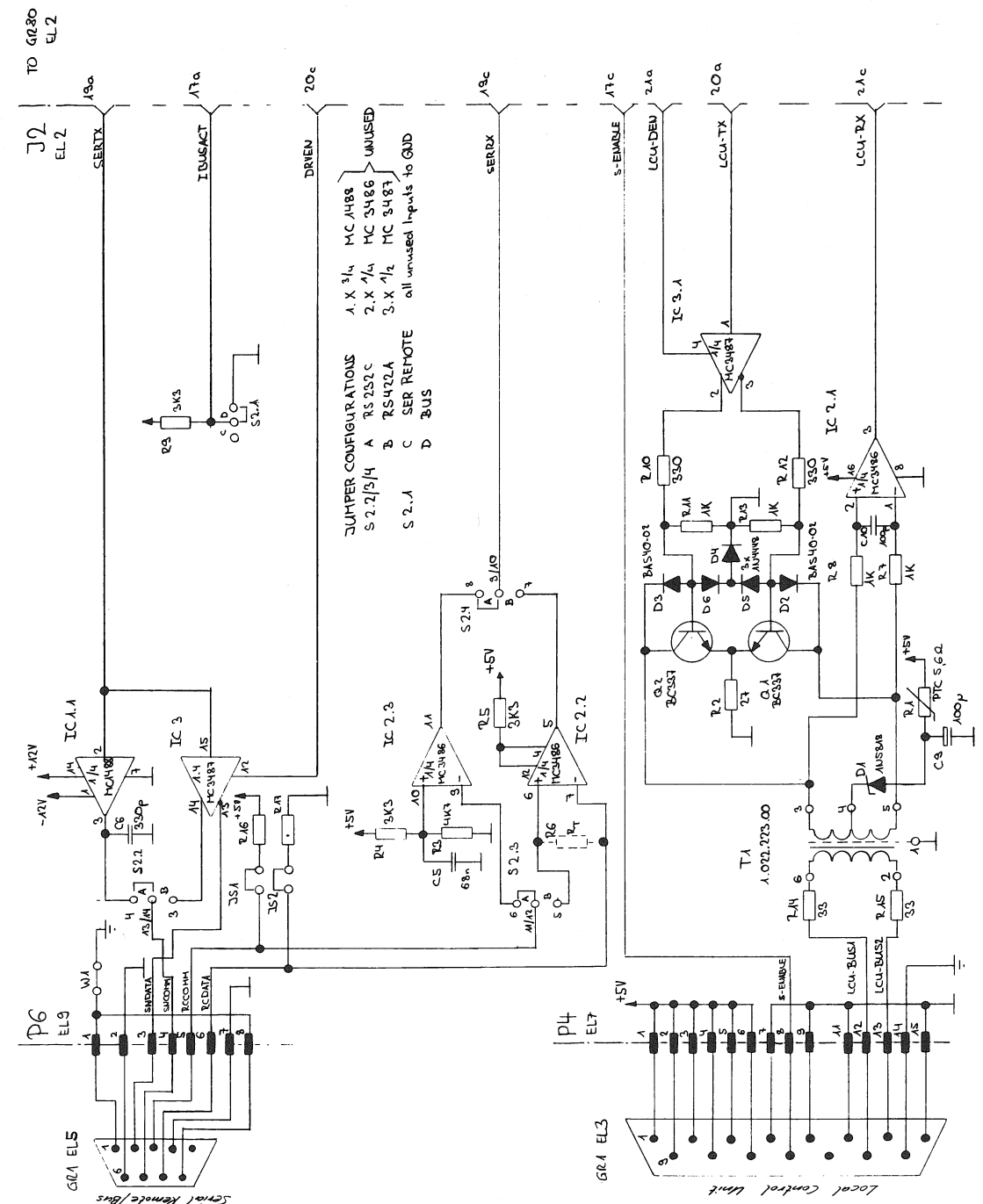
INTERCONNECTION PCB 1.812.107-00 "ESE"

(CONTINUED)



JUMPER CONFIGURATIONS
 S 2.2/3/4 A RS 232C
 B RS 422A
 C SER REMOTE
 D BUS
 1. X 1/4 MC 4188
 2. X 1/4 MC 3486
 3. X 1/2 MC 3487
 all unused inputs to GND

INTERCONNECTION PCB 1.812.108-00/-81 "ESE"



JUMPER CONFIGURATIONS
 S 2.2/3/4 A RS 232C
 B RS 422A
 C SER REMOTE
 D BUS
 1. X 1/4 MC 4188
 2. X 1/4 MC 3486
 3. X 1/2 MC 3487
 all unused inputs to GND

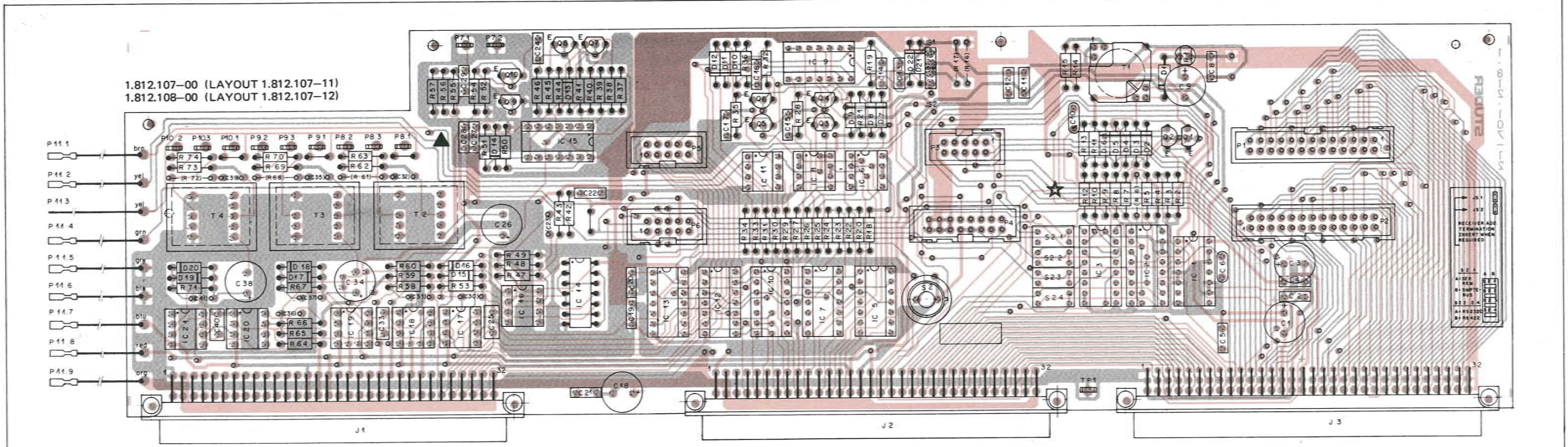
14.11.83	MUR	TLS 4000			
STUDER	INTERCONNECTION BOARD	GR20	SC	1.812.107.00	PAGE 3 OF 3

UP TO SERIAL NO. 1020
 SERIAL REMOTE CONNECTOR: RS 232 ONLY

16.4.84	MUR	TLS 4000			
STUDER	INTERCONNECTION BOARD	GR20	SC	1.812.108.81	PAGE 3 OF 3

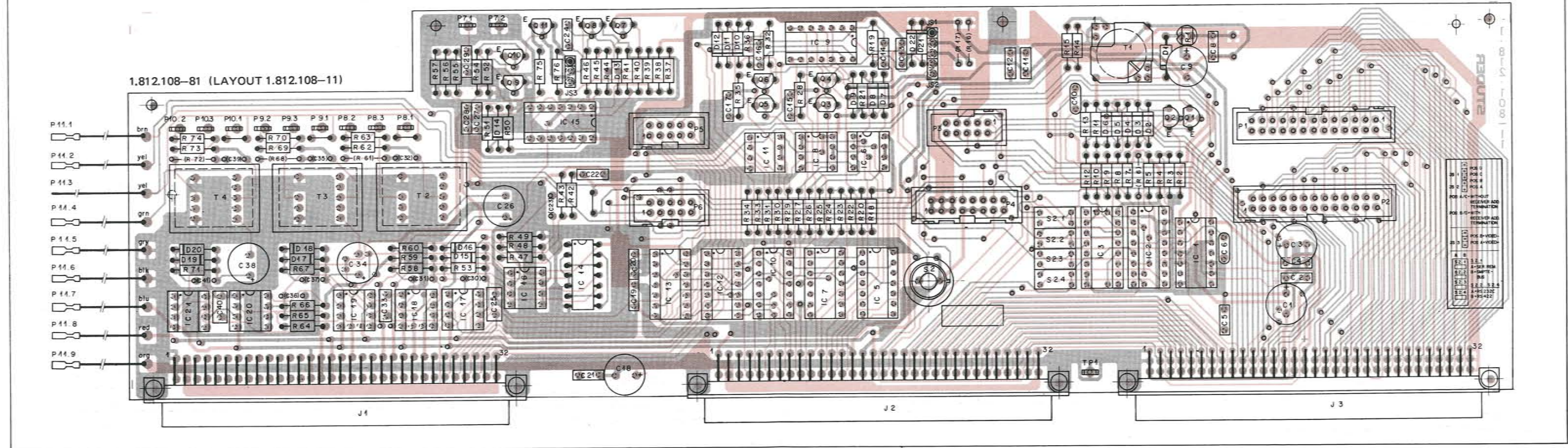
FROM SERIAL NO. 1021

INTERCONNECTION PCB 1.812.107-00 "ESE"
INTERCONNECTION PCB 1.812.108-00/-81 "ESE"



▲ POS. OF TP1 ON 1.812.107-00

★ POS. OF IC4 ON 1.812.107-00



RECEIVER ADD. TERMINATION INSERT WHEN REQUIRED	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	
A1-8A	B1-8B	C1-8C	D1-8D	E1-8E	F1-8F	G1-8G	H1-8H	I1-8I	J1-8J	K1-8K	L1-8L	M1-8M	N1-8N	O1-8O	P1-8P	Q1-8Q	R1-8R	S1-8S	T1-8T	U1-8U	V1-8V	W1-8W	X1-8X	Y1-8Y	Z1-8Z	AA1-8AA	AB1-8AB	AC1-8AC	AD1-8AD	AE1-8AE	AF1-8AF	AG1-8AG	AH1-8AH

INTERCONNECTION PCB 1.812.107-00 "ESE"

Table with columns: IND., POS.NO., PART NO., VALUE, SPECIFICATIONS / EQUIVALENT, MANUF. Contains component list for PCB 1.812.107-00.

Table with columns: IND., POS.NO., PART NO., VALUE, SPECIFICATIONS / EQUIVALENT, MANUF. Contains component list for PCB 1.812.107-00.

STUDER (02) 84/08/30 MUR INTERCONNECTION BOARD 1.812.107.00 PAGE 1

STUDER (02) 84/08/30 MUR INTERCONNECTION BOARD 1.812.107.00 PAGE 4

INTERCONNECTION PCB 1.812.108-00 "ESE"

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STUDER (01) 84/08/30 MUR INTERCONNECTION BOARD 1.812.108.00 PAGE 1

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STUDER (02) 84/08/30 MUR INTERCONNECTION BOARD 1.812.107.00 PAGE 2

STUDER (02) 84/08/30 MUR INTERCONNECTION BOARD 1.812.107.00 PAGE 5

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STUDER (02) 84/08/30 MUR INTERCONNECTION BOARD 1.812.107.00 PAGE 3

STUDER (02) 84/08/30 MUR INTERCONNECTION BOARD 1.812.107.00 PAGE 6

Table with columns: IND., POS.NO., PART NO., VALUE, SPECIFICATIONS / EQUIVALENT, MANUF. Contains component list for PCB 1.812.108-00.

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STUDER (01) 84/08/30 MUR INTERCONNECTION BOARD 1.812.108.00 PAGE 2

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STUDER (01) 84/08/30 MUR INTERCONNECTION BOARD 1.812.108.00 PAGE 3

STUDER (01) 84/08/30 MUR INTERCONNECTION BOARD 1.812.108.00 PAGE 6

(02) Inputhysteresis has changed. Note: 2 Pieces Contact Pin Studer Nr. 54.11.0126 1 Piece Bridge Studer Nr. 54.01.0021 R6,16;17 Terminating Resistors for SMPT E Bus, not defined yet C23;30-32;35-37;39;41 and R61;68 are unused yet

(01) Inputhysteresis has changed. R6,16;17 Terminating Resistors for SMPT E Bus, not defined yet C23;30-32;35-37;39;41 and R61;68 are unused yet

EL=Electrolytic, CER=Ceramic, PETP=Polyester, SAL=Solid Aluminium, TA=Tantalum

EL=Electrolytic, CER=Ceramic, PETP=Polyester, SAL=Solid Aluminium, TA=Tantalum

MANUFACTURER: Fc=Fairchild, NS=National Semiconductors, Mot=Motorola, TI=Texas Instruments, Si=Siemens, ST=Studer, Ph=Philips, So=Souriau, Bu=Burdury, Ya=Yamachi

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ORIG 83/11/23 (01) 84/01/23 (02) 84/08/30

ORIG 84/03/12 (01) 84/08/30

INTERCONNECTION PCB 1.812.108-81 "ESE"

IND.	POS.NO.	PART NO.	VALUE	SPECIFICATIONS / EQUIVALENT	MANUF.
IC-0001	50-15-0106	MC 1488P	05 1488	Quad Line Driver RS 232	NS
IC-0002	50-15-0104	MC 3486P	05 3486P	Quad Line Receiver RS 232	NS
IC-0003	50-15-0105	MC 3487P	05 3487P	Quad Line Driver RS 422	NS
IC-0004	50-06-0000	SN74LS00N	05 0820AN	Quad 2-Input NAND-Gate	TI
IC-0005	50-05-0173	SN 75182N	05 0820AN	Dual Diff. Line Receiver	TI
IC-0006	50-05-0203	SN 75463P	05 3613N	Dual OR-Driver	TI
IC-0007	50-05-0173	SN 75182N	05 0820AN	Dual Diff. Line Receiver	TI
IC-0008	50-05-0227	SN 75462P	05 0820AN	Dual NAND-Driver	TI
IC-0009	50-09-0104	TL 084 N	05 0820AN	Dual Diff. Line Receiver	TI
IC-0010	50-05-0173	SN 75182N	05 0820AN	Dual Diff. Line Receiver	TI
IC-0011	50-05-0203	SN 75463P	05 3613 N	Dual OR-Driver	TI
IC-0012	50-05-0173	SN 75182N	05 0820AN	Dual Diff. Line Receiver	TI
IC-0013	50-05-0173	SN 75182N	05 0820AN	Dual Diff. Line Receiver	TI
IC-0014	50-06-0000	SN74LS00N	05 0820AN	Quad 2-Input NAND-Gate	TI
IC-0015	50-05-0228	SN75107AN	LM75107AN	Dual Line Receiver	TI
IC-0016	50-11-0114	LM 311 P	LM 311 P	Voltage Comparator	TI
IC-0017	50-09-0103	TL 071CP	LM 311 P	BI-JFET Opamp	TI
IC-0018	50-11-0114	LM 311 P	LM 311 P	Voltage Comparator	TI
IC-0019	50-09-0103	TL 071CP	LM 311 P	BI-JFET Opamp	TI
IC-0020	50-11-0114	LM 311 P	LM 311 P	Voltage Comparator	TI
IC-0021	50-09-0103	TL 071 CP	LM 311 P	BI-JFET Opamp	TI
Q-0001	50-03-0340	BC 337-25	BC 337-25	Transistor NPN	Mot
Q-0002	50-03-0340	BC 337-25	BC 337-25	Transistor NPN	Mot
Q-0003	50-03-0508	MPS 2369	MPS 2369	Switching Transistor NPN	Mot
Q-0004	50-03-0496	BC 560	BC 560	Transistor PNP	Sie
Q-0005	50-03-0496	BC 560	BC 560	Transistor PNP	Sie
Q-0006	50-03-0496	BC 560	BC 560	Transistor PNP	Sie
Q-0007	50-03-0496	BC 560	BC 560	Transistor PNP	Sie
Q-0008	50-03-0496	BC 560	BC 560	Transistor PNP	Sie
Q-0009	50-03-0496	BC 560	BC 560	Transistor PNP	Sie
Q-0010	50-03-0497	BC 550	BC 550	Transistor NPN	Sie
Q-0011	50-03-0496	BC 560	BC 560	Transistor PNP	Sie
D-0001	50-04-0512	1N 5818	1N 5818	Schottkydiode	Mot
D-0002	50-04-0127	BAT 85	BAT 85	Schottkydiode	Sie
D-0003	50-04-0127	BAT 85	BAT 85	Schottkydiode	Sie

STUDER (01) 84/08/30 MUR INTERCONNECTION BOARD 1.812.108.81 PAGE 1

IND.	POS.NO.	PART NO.	VALUE	SPECIFICATIONS / EQUIVALENT	MANUF.
D-0004	50-04-0125	1N 4448	1N 4448	SI-Diode	Ph
D-0005	50-04-0125	1N 4448	1N 4448	SI-Diode	Ph
D-0006	50-04-0125	1N 4448	1N 4448	SI-Diode	Ph
D-0007	50-04-0134	F0H 300	IN 3595	SI-Diode	Fc
D-0008	50-04-0134	F0H 300	IN 3595	SI-Diode	Fc
D-0009	50-04-0125	1N 4448	1N 4448	SI-Diode	Ph
D-0010	50-04-0125	1N 4448	1N 4448	SI-Diode	Ph
D-0011	50-04-0134	F0H 300	IN 3595	SI-Diode	Fc
D-0012	50-04-0134	F0H 300	IN 3595	SI-Diode	Fc
D-0013	50-04-0125	1N 4448	1N 4448	SI-Diode	Ph
D-0014	50-04-1102	6.8 V	6.8 V	Zenerdiode 5% 0.4W	Ph
D-0015	50-04-0125	1N 4448	1N 4448	SI-Diode	Ph
D-0016	50-04-0125	1N 4448	1N 4448	SI-Diode	Ph
D-0017	50-04-0125	1N 4448	1N 4448	SI-Diode	Ph
D-0018	50-04-0125	1N 4448	1N 4448	SI-Diode	Ph
D-0019	50-04-0125	1N 4448	1N 4448	SI-Diode	Ph
D-0020	50-04-0125	1N 4448	1N 4448	SI-Diode	Ph
D-0021	50-04-0125	1N 4448	1N 4448	SI-Diode	Ph
D-0022	50-04-0125	1N 4448	1N 4448	SI-Diode	Ph
C-0001	59-22-4101	100 uF	-10%, 16V- EL		
C-0002	59-99-0205	68 nF	-20%, 63V + KER		
C-0003	59-22-4101	100 uF	-10%, 16V- EL		
C-0004	59-99-0205	68 nF	-20%, 63V + KER		
C-0005	59-99-0205	68 nF	-20%, 63V + KER		
C-0006	59-34-4331	330 pF	5%, 50V + KER		
C-0008	59-99-0205	68 nF	-20%, 63V + KER		
C-0009	59-22-4101	100 uF	-10%, 16V- EL		
C-0010	59-34-1101	100 pF	2%, NP 0 + KER		
C-0011	59-99-0205	68 nF	-20%, 63V + KER		
C-0012	59-99-0205	68 nF	-20%, 63V + KER		
C-0013	59-99-0205	68 nF	-20%, 63V + KER		
C-0014	59-06-0153	15 nF	10%, 100V + PETP		
C-0015	59-06-0222	2200 pF	10%, 63V + PETP		
C-0016	59-06-0153	15 nF	10%, 100V + PETP		
C-0017	59-06-0222	2200 pF	10%, 63V + PETP		
C-0018	59-22-4101	100 uF	-10%, 16V- EL		

STUDER (01) 84/08/30 MUR INTERCONNECTION BOARD 1.812.108.81 PAGE 2

IND.	POS.NO.	PART NO.	VALUE	SPECIFICATIONS / EQUIVALENT	MANUF.
C-0019	59-99-0205	68 nF	-20%, 63V + KER		
C-0020	59-99-0205	68 nF	-20%, 63V + KER		
C-0021	59-99-0205	68 nF	-20%, 63V + KER		
C-0022	59-99-0205	68 nF	-20%, 63V + KER		
C-0024	59-06-0103	10 nF	10%, 63V + PETP		
C-0025	59-06-0334	330 nF	10%, 63V + PETP		
C-0026	59-22-2471	470 uF	-10%, 6.3V + EL		
C-0027	59-99-0205	68 nF	-20%, 63V + KER		
C-0028	59-99-0205	68 nF	-20%, 63V + KER		
C-0029	59-06-0104	100 nF	10%, 63V + PETP		
C-0033	59-06-0334	330 nF	10%, 63V + PETP		
C-0034	59-22-2471	470 uF	-10%, 6.3V + EL		
C-0038	59-22-2471	470 uF	-10%, 6.3V + EL		
C-0040	59-06-0334	330 nF	10%, 63V + PETP		
R-0001	57-99-0209	5.6 Ohm	2%, 0207 + MFC		
R-0002	57-11-4270	27 Ohm	2%, 0207 + MF		
R-0003	57-11-4472	4.7 kOhm	2%, 0207 + MF		
R-0004	57-11-4332	3.3 kOhm	2%, 0207 + MF		
R-0005	57-11-4332	3.3 kOhm	2%, 0207 + MF		
R-0007	57-11-4102	1.0 kOhm	2%, 0207 + MF		
R-0008	57-11-4102	1.0 kOhm	2%, 0207 + MF		
R-0009	57-11-4332	3.3 kOhm	2%, 0207 + MF		
R-0010	57-11-4331	330 Ohm	2%, 0207 + MF		
R-0011	57-11-4102	1.0 kOhm	2%, 0207 + MF		
R-0012	57-11-4331	330 Ohm	2%, 0207 + MF		
R-0013	57-11-4102	1.0 kOhm	2%, 0207 + MF		
R-0014	57-11-4330	33 Ohm	2%, 0207 + MF		
R-0015	57-11-4330	33 Ohm	2%, 0207 + MF		
R-0018	57-11-4820	82 Ohm	2%, 0207 + MF		
R-0019	57-11-4102	1.0 kOhm	2%, 0207 + MF		
R-0020	57-11-4560	56 Ohm	2%, 0207 + MF		
R-0021	57-11-4392	3.9 kOhm	2%, 0207 + MF		
R-0022	57-11-4270	27 Ohm	2%, 0207 + MF		
R-0023	57-11-4270	27 Ohm	2%, 0207 + MF		
R-0024	57-11-4390	39 Ohm	2%, 0207 + MF		
R-0025	57-11-4271	270 Ohm	2%, 0207 + MF		

STUDER (01) 84/08/30 MUR INTERCONNECTION BOARD 1.812.108.81 PAGE 3

IND.	POS.NO.	PART NO.	VALUE	SPECIFICATIONS / EQUIVALENT	MANUF.
R-0026	57-11-4152	1.5 kOhm	2%, 0207 + MF		
R-0027	57-11-4271	270 Ohm	2%, 0207 + MF		
R-0028	57-11-4101	100 Ohm	2%, 0207 + MF		
R-0029	57-11-4271	270 Ohm	2%, 0207 + MF		
R-0030	57-11-4271	270 Ohm	2%, 0207 + MF		
R-0031	57-11-4152	1.5 kOhm	2%, 0207 + MF		
R-0032	57-11-4102	1.0 kOhm	2%, 0207 + MF		
R-0033	57-11-4482	6.8 kOhm	2%, 0207 + MF		
R-0034	57-11-4472	4.7 kOhm	2%, 0207 + MF		
R-0035	57-11-4101	100 Ohm	2%, 0207 + MF		
R-0036	57-11-4392	3.9 kOhm	2%, 0207 + MF		
R-0037	57-11-4823	82 kOhm	2%, 0207 + MF		
R-0038	57-11-4332	3.3 kOhm	2%, 0207 + MF		
R-0039	57-11-4152	1.5 kOhm	2%, 0207 + MF		
R-0040	57-11-4152	1.5 kOhm	2%, 0207 + MF		
R-0041	57-11-4272	2.7 kOhm	2%, 0207 + MF		
R-0042	57-11-4182	1.8 kOhm	2%, 0207 + MF		
R-0043	57-11-4390	39 Ohm	2%, 0207 + MF		
R-0044	57-11-4101	100 Ohm	2%, 0207 + MF		
R-0045	57-11-4103	10 kOhm	2%, 0207 + MF		
R-0046	57-11-4105	1.0 kOhm	2%, 0207 + MF		
R-0047	57-11-4102	1.0 kOhm	2%, 0207 + MF		
R-0048	57-11-4332	3.3 kOhm	2%, 0207 + MF		
R-0049	57-11-4151	150 Ohm	2%, 0207 + MF		
R-0050	57-11-4222	2.2 kOhm	2%, 0207 + MF		
R-0051	57-11-4332	3.3 kOhm	2%, 0207 + MF		
R-0052	57-11-4103	10 kOhm	2%, 0207 + MF		
R-0053	57-11-4272	2.7 kOhm	2%, 0207 + MF		
R-0054	57-11-4222	2.2 kOhm	2%, 0207 + MF		
R-0055	57-11-4103	10 kOhm	2%, 0207 + MF		
R-0056	57-11-4104	100 kOhm	2%, 0207 + MF		
R-0057	57-11-4104	100 kOhm	2%, 0207 + MF		
R-0058	57-11-4332	3.3 kOhm	2%, 0207 + MF		
R-0059	57-11-4102	1.0 kOhm	2%, 0207 + MF		
R-0060	57-11-4151	150 Ohm	2%, 0207 + MF		
R-0062	57-11-4472	4.7 kOhm	2%, 0207 + MF		
R-0063	57-11-4472	4.7 kOhm	2%, 0207 + MF		

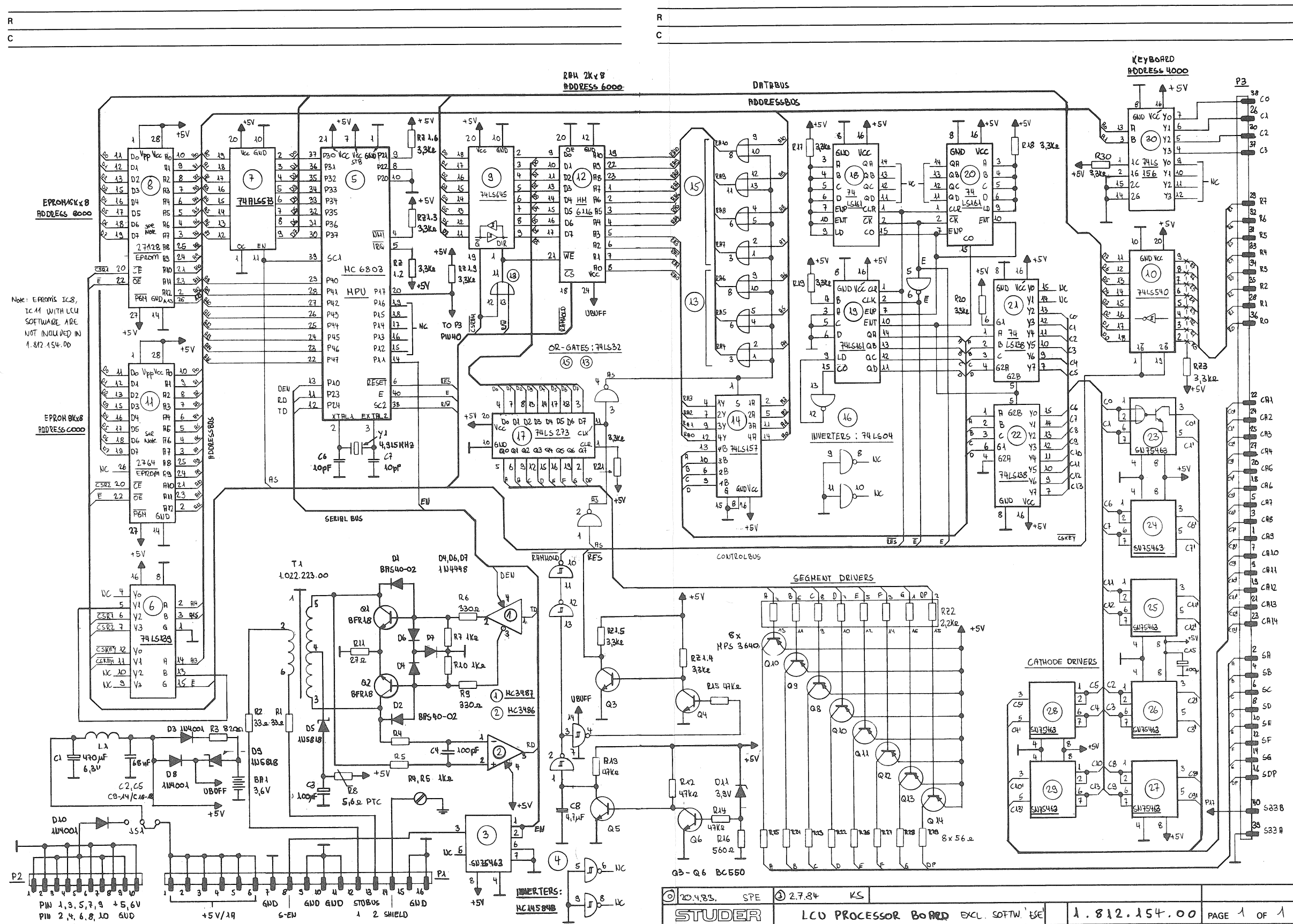
STUDER (01) 84/08/30 MUR INTERCONNECTION BOARD 1.812.108.81 PAGE 4

IND.	POS.NO.	PART NO.	VALUE	SPECIFICATIONS / EQUIVALENT	MANUF.
R-0064	57-11-4151	150 Ohm	2%, 0207 + MF		
R-0065	57-11-4332	3.3 kOhm	2%, 0207 + MF		
R-0066	57-11-4102	1.0 kOhm	2%, 0207 + MF		
R-0067	57-11-4272	2.7 kOhm	2%, 0207 + MF		
R-0069	57-11-4472	4.7 kOhm	2%, 0207 + MF		
R-0070	57-11-4472	4.7 kOhm	2%, 0207 + MF		
R-0071	57-11-4272	2.7 kOhm	2%, 0207 + MF		
R-0073	57-11-4472	4.7 kOhm	2%, 0207 + MF		
R-0074	57-11-4472	4.7 kOhm	2%, 0207 + MF		
R-0075	57-11-4271	270 Ohm	2%, 0207 + MF		
R-0076	57-11-4271	270 Ohm	2%, 0207 + MF		
T-0001	1.022-223-00		Studio Bus Transformer	ST	
T-0002	1.022-409-00		Summen-Trafo	ST	
T-0003	1.022-409-00		Summen-Trafo	ST	
T-0004	1.022-409-00		Summen-Trafo	ST	
J-0001	54-01-0373		Female Multipole Connector 2 x 32 Pin	So	
J-0002	54-01-0373		Female Multipole Connector 2 x 32 Pin	So	
J-0003	54-11-2009		Female Multipole Connector 3 x 32 Pin	So	
J-0001			See Note		
J-0002			See Note		
J-0003			See Note		
P-0001	54-14-2003		Male Multipole Connector 26 Pins	BuYa	
P-0002	54-14-2003		Male Multipole Connector 26 Pins	BuYa	
P-0003	54-14-2001		Male Multipole Connector 10 Pins	BuYa	
P-0004	54-14-2002		Male Multipole Connector 16 Pins	BuYa	
P-0005	54-14-2001		Male Multipole Connector 10 Pins	BuYa	
P-0006	54-14-2001		Male Multipole Connector 10 Pins	BuYa	
P-0007			2 pcs Soldering pin 54-02-0320		
P-0008			3 pcs Soldering pin 54-02-0320		
P-0009			3 pcs Soldering pin 54-02-0320		
P-0010			3 pcs Soldering pin 54-02-0320		
TP-0001	54-02-0320		Soldering pin 2.8x0.8		

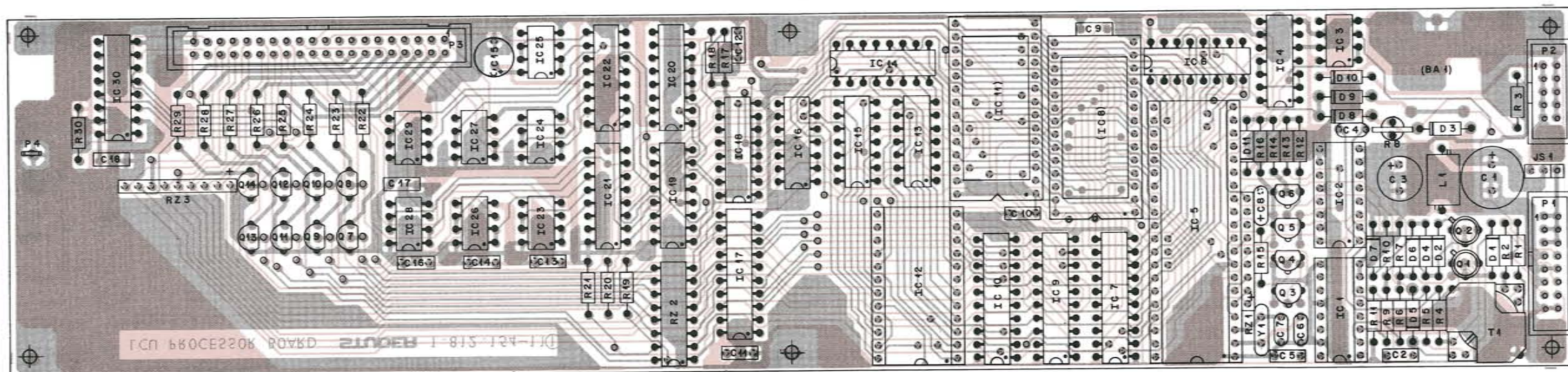
STUDER (01) 84/08/30 MUR INTERCONNECTION BOARD 1.812.108.81 PAGE 5

IND.	POS.NO.	PART NO.	VALUE	SPECIFICATIONS / EQUIVALENT	MANUF.
S-0001	55-01-0181				

LCU PROCESSOR EXCL. SOFTWARE 1.812.154-00 "ESE" (NO. INCL. SOFTWARE IS 1.812.153-00 FOR STANDARD VERSION, 1.812.163-00 FOR LIMITED VERSION)



LCU PROCESSOR EXCL. SOFTWARE 1.812.154-00 "ESE" (NO. INCL. SOFTWARE IS 1.812.153-00 FOR STANDARD VERSION, 1.812.163-00 FOR LIMITED VERSION)



IND.	POS-NO.	PART NO.	VALUE	SPECIFICATIONS / EQUIVALENT	MANUF.
BA-0001	59.01.0274			Battery, NI-CD, 3.6V.	
C..0001	59.22.2471	470 uF	-10%, 6.3V, EL		
C..0002	59.99.0205	68 nF	-20%, 63V, KER		
C..0003	59.22.4101	100 uF	-10%, 16V, EL		
C..0004	59.34.2101	100 pF	2%, N150, KER		
C..0005	59.99.0205	68 nF	-20%, 63V, KER		
C..0006	59.34.1100	10 pF	5%, NP 0, KER		
C..0007	59.34.1100	10 pF	5%, NP 0, KER		
C..0008	59.26.1479	4.7 uF	-20%, 10V, SAL		
C..0009	59.99.0205	68 nF	-20%, 63V, KER		
C..0010	59.99.0205	68 nF	-20%, 63V, KER		
C..0011	59.99.0205	68 nF	-20%, 63V, KER		
C..0012	59.99.0205	68 nF	-20%, 63V, KER		
C..0013	59.99.0205	68 nF	-20%, 63V, KER		
C..0014	59.99.0205	68 nF	-20%, 63V, KER		
(01) C..0015	59.22.3101	100 uF	-20%, 10V, EL		
C..0016	59.99.0205	68 nF	-20%, 63V, KER		
C..0017	59.99.0205	68 nF	-20%, 63V, KER		
C..0018	59.99.0205	68 nF	-20%, 63V, KER		
D..0001	50.04.0127	8AS 40-02		Schottkydiode	
D..0002	50.04.0127	8AS 40-02		Schottkydiode	
D..0003	50.04.0122	1N 4001		SI-Diode	
D..0004	50.04.0125	1N 4448		SI-Diode	
D..0005	50.04.0512	1N 5818		Schottkydiode	
D..0006	50.04.0125	1N 4448		SI-Diode	
D..0007	50.04.0125	1N 4448		SI-Diode	
D..0008	50.04.0122	1N 4001		SI-Diode	
D..0009	50.04.0512	1N 5818		Schottkydiode	
D..0010	50.04.0122	1N 4001		SI-Diode	
D..0011	50.04.1101	3.4 V		Zenerdiode 5%/ 0.4W	
IC-0001	50.15.0105	MC 3487	DS 3487	Quad Line Driver RS 422	
IC-0002	50.15.0104	MC 3486P	DS 3486	Quad Line Receiver RS 232	
IC-0003	50.05.0203	SN 75463P	DS 3613N	Dual OR-Driver	
IC-0004	50.07.0014	400148PC	MC145848CP	Hex Schmitt Trigger	

IND.	POS-NO.	PART NO.	VALUE	SPECIFICATIONS / EQUIVALENT	MANUF.
IC-0005	50.16.0107	MC6803G-1	HD 6803P-1	Microprocessor	
IC-0006	50.06.0139	SN74LS139N		Dual 1 of 4 Decoder	
IC-0007	50.06.1573	SN74ALS573	R 5151	8 Bit Transparent Latch	
IC-0008				see Note 2	
IC-0009	50.06.0645	SN74LS645N		Octal Bus Transceiver	
IC-0010	50.06.0540	SN74LS540N	R 5152	Octal Bus Driver	
IC-0011				see Note 2	
IC-0012	50.14.0107	HM6116L-P-3	MSM 5128-12	2K8 static CMOS-RAM	
IC-0013	50.06.0032	SN74LS32 N		Quad 2-Input OR-Gate	
IC-0014	50.06.0157	SN74LS157N		Quad 2-Input Multiplexer	
IC-0015	50.06.0032	SN74LS32 N		Quad 2-Input OR-Gate	
IC-0016	50.06.0004	SN74LS04 N		Hex Inverter	
IC-0017	50.06.0273	SN74LS273N		Octal D-Type Flip-Flop	
IC-0018	50.06.0161	SN74LS161N		4-Bit Binary Counter	
IC-0019	50.06.0161	SN74LS161N		4-Bit Binary Counter	
IC-0020	50.06.0161	SN74LS161N		4-Bit Binary Counter	
IC-0021	50.06.0138	SN74LS138N		1 of 8 Decoder	
IC-0022	50.06.0138	SN74LS138N		1 of 8 Decoder	
IC-0023	50.05.0203	SN 75463P	DS 3613 N	Dual OR-Driver	
IC-0024	50.05.0203	SN 75463P	DS 3613 N	Dual OR-Driver	
IC-0025	50.05.0203	SN 75463P	DS 3613 N	Dual OR-Driver	
IC-0026	50.05.0203	SN 75463P	DS 3613 N	Dual OR-Driver	
IC-0027	50.05.0203	SN 75463P	DS 3613 N	Dual OR-Driver	
IC-0028	50.05.0203	SN 75463P	DS 3613 N	Dual OR-Driver	
IC-0029	50.05.0203	SN 75463P	DS 3613 N	Dual OR-Driver	
IC-0030	50.06.0156	SN74LS156N		Dual 1 of 4 Decoder	
JS-0001				See Note 1	
L..0001	62.01.0115			Choke	
P..0001	54.14.2002			Male Multipole Connector, 16 Pins	
P..0002	54.14.2001			Male Multipole Connector, 10 Pins	
P..0003	54.14.2004			Male Multipole Connector, 40 Pins	
P..0004	54.02.0320			Soldering Pin 2.80-8	
Q..0001	50.03.0434	BFR 18		Transistor NPN	

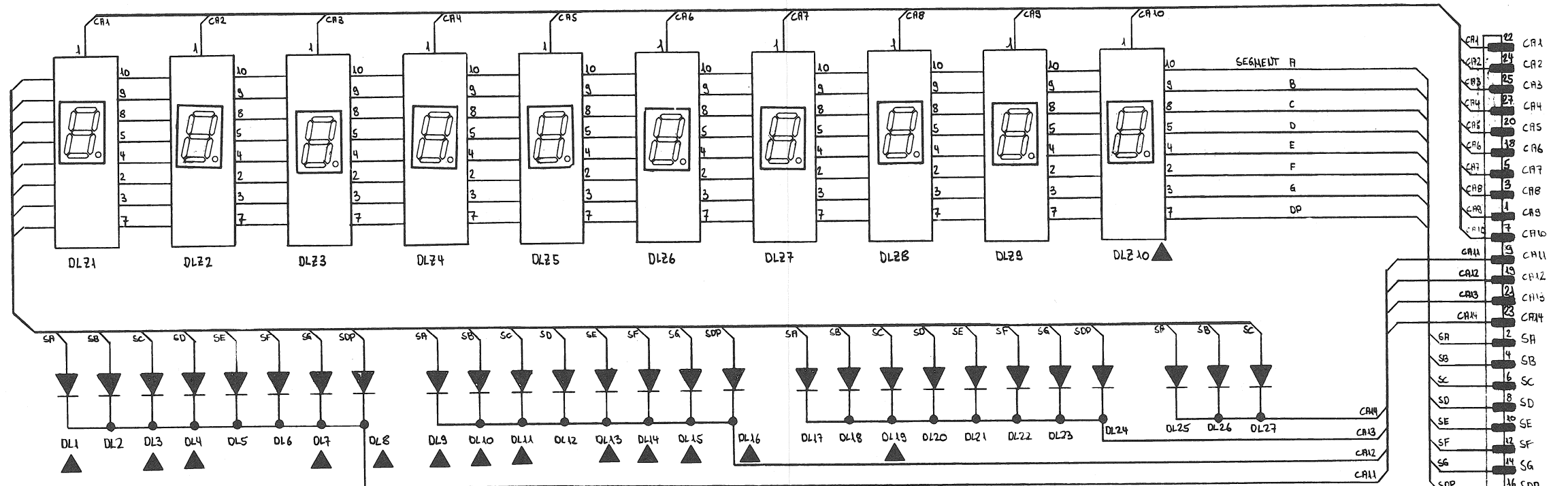
IND.	POS-NO.	PART NO.	VALUE	SPECIFICATIONS / EQUIVALENT	MANUF.
Q..0002	50.03.0434	BFR 18		Transistor NPN	
Q..0003	50.03.0497	BC 550		Transistor NPN	
Q..0004	50.03.0497	BC 550		Transistor NPN	
Q..0005	50.03.0497	BC 550		Transistor NPN	
Q..0006	50.03.0497	BC 550		Transistor NPN	
Q..0007	50.03.0489	MPS 3640		Transistor PNP	
Q..0008	50.03.0489	MPS 3640		Transistor PNP	
Q..0009	50.03.0489	MPS 3640		Transistor PNP	
Q..0010	50.03.0489	MPS 3640		Transistor PNP	
Q..0011	50.03.0489	MPS 3640		Transistor PNP	
Q..0012	50.03.0489	MPS 3640		Transistor PNP	
Q..0013	50.03.0489	MPS 3640		Transistor PNP	
Q..0014	50.03.0489	MPS 3640		Transistor PNP	
R..0001	57.11.4330	33 Ohm	2%, 0207, MF		
R..0002	57.11.4330	33 Ohm	2%, 0207, MF		
R..0003	57.11.4821	820 Ohm	2%, 0207, MF		
R..0004	57.11.4102	1.0 kOhm	2%, 0207, MF		
R..0005	57.11.4102	1.0 kOhm	2%, 0207, MF		
R..0006	57.11.4331	330 Ohm	2%, 0207, MF		
R..0007	57.11.4102	1.0 kOhm	2%, 0207, MF		
R..0008	57.99.0209	5.6 Ohm		PTC	
R..0009	57.11.4331	330 Ohm	2%, 0207, MF		
R..0010	57.11.4202	1.0 kOhm	2%, 0207, MF		
R..0011	57.11.4270	27 Ohm	2%, 0207, MF		
R..0012	57.11.4473	47 kOhm	2%, 0207, MF		
R..0013	57.11.4473	47 kOhm	2%, 0207, MF		
R..0014	57.11.4473	47 kOhm	2%, 0207, MF		
R..0015	57.11.4473	47 kOhm	2%, 0207, MF		
R..0016	57.11.4561	560 Ohm	2%, 0207, MF		
R..0017	57.11.4332	3.3 kOhm	2%, 0207, MF		
R..0018	57.11.4332	3.3 kOhm	2%, 0207, MF		
R..0019	57.11.4332	3.3 kOhm	2%, 0207, MF		
R..0020	57.11.4332	3.3 kOhm	2%, 0207, MF		
R..0021	57.11.4332	3.3 kOhm	2%, 0207, MF		
R..0022	57.11.4560	56 Ohm	2%, 0207, MF		
R..0023	57.11.4560	56 Ohm	2%, 0207, MF		

IND.	POS-NO.	PART NO.	VALUE	SPECIFICATIONS / EQUIVALENT	MANUF.
R..0024	57.11.4560	56 Ohm	2%, 0207, MF		
R..0025	57.11.4560	56 Ohm	2%, 0207, MF		
R..0026	57.11.4560	56 Ohm	2%, 0207, MF		
R..0027	57.11.4560	56 Ohm	2%, 0207, MF		
R..0028	57.11.4560	56 Ohm	2%, 0207, MF		
R..0029	57.11.4560	56 Ohm	2%, 0207, MF		
R..0030	57.11.4332	3.3 kOhm	2%, 0207, MF		
RZ-0001	57.88.4332	8 #3.3 k	5%	Single Line	
RZ-0002	57.88.3222	8 #2.2 k	5%	Dual In Line	
RZ-0003	57.88.4332	8 #3.3 k	5%	Single Line	
T..0001	1-022.223.00			Studio Bus Transformer	
Y..0001	89.01.0553			Quarz 4.9152 MHz, TD 18	

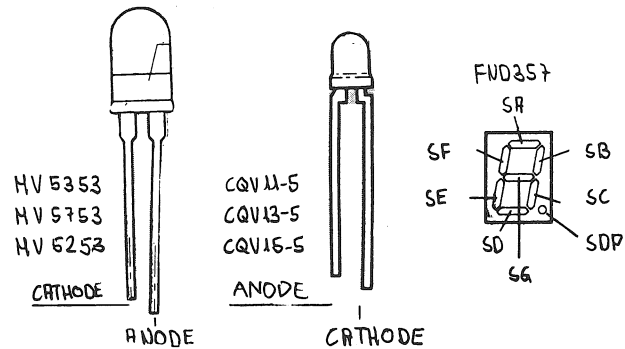
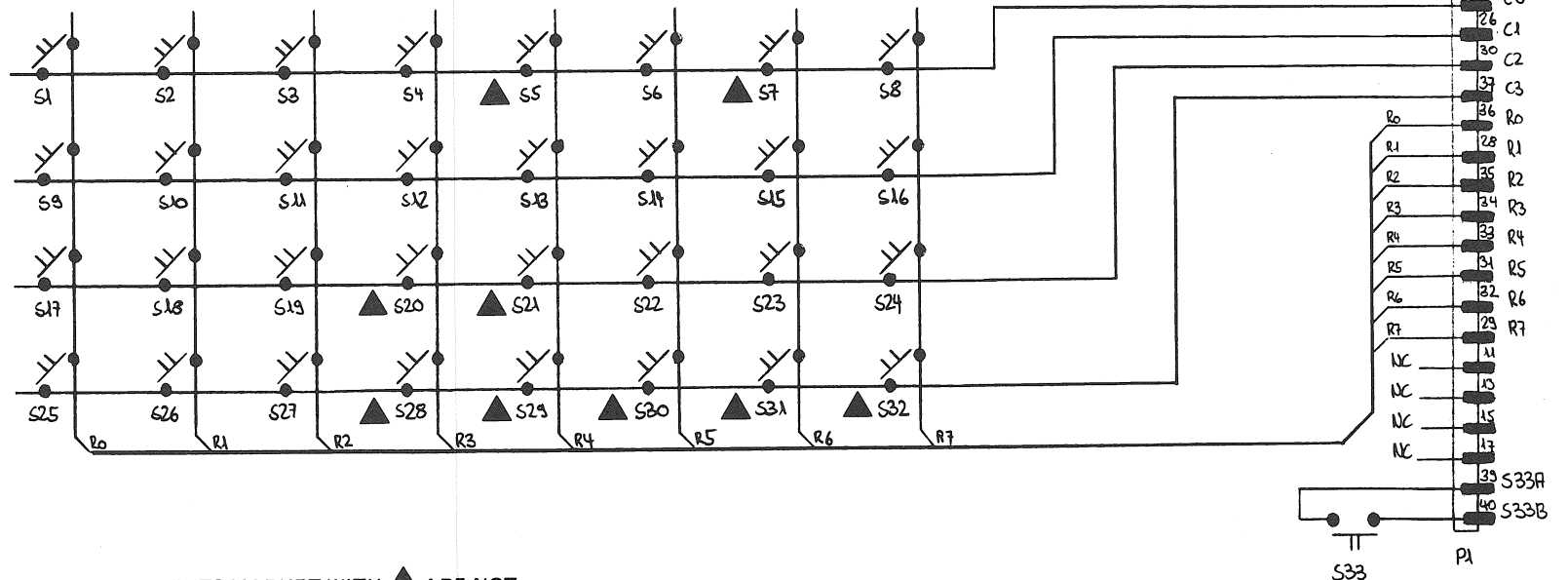
Note 1: 3 Pieces Contact Pin 1 Piece Bridge Studer Nr. 54.01.0020 Studer Nr. 54.01.0021

Note 2: EPROM's R5151 and R5152 are included in Software 1.100.915

LCU FRONTBOARD 1.812.152-00 (STANDARD VERSION) 1.812.162-00 (LIMITED VERSION)



DL21 - DL210	FND 357 COMMON CATHODE
DL 19	HV 5353
DL 25-27	HV 5753
DL 22, DL23	HV 5253
DL1, DL5, DL10, DL11, DL13, DL17, DL18, DL21, DL24	CQV13-5
DL2, DL3 DL6, DL7, DL12, DL14, DL15, DL16,	CQV16-5
DL8, DL9, DL20, DL3	CQV11-5

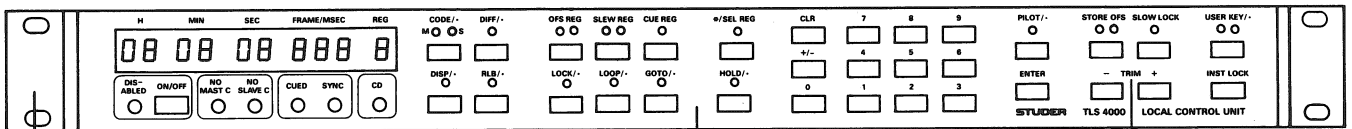


COMPONENTS MARKET WITH ▲ ARE NOT
INSERTED IN LIMITED VERSION 1.812.162-00

SPARE PARTS

LCU

Order No.	Pos.	Designation
1.812.151.01	1	Front panel (standard version)
1.812.161.01	1	Front panel (limited version)
1.812.151.05	2	Mounting brackets (for mounting in A810 VU meter penthouse)
or		
1.812.170.01	2	Mounting brackets (for flush mounting of LCU)
54.13.5001	-	D type socket, male, 15 pins (SYNCHRONIZER connector)
54.13.5004	-	D type socket, male, 9 pins (EXT. SUPPLY connector)



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SYNCHRONIZER

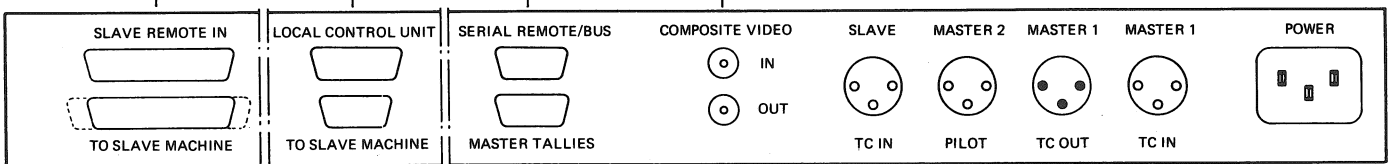
Order No.	Pos.	Designation
1.812.101.01	-	Front panel
33.02.0110	-	CamLock screw (to above)
33.02.0180	-	Washer (to above)
33.02.0191	-	Cam (to above)
1.918.100.23	-	Mounting brackets (for flush mounting of synchron.)
51.01.0117	-	Fuse 220 V: T 1 A SLOW
51.01.0120	-	Fuse 110 V: T 2 A SLOW
54.01.0631	3	D type socket, female, 25 pins (SLAVE remote connector B)
54.01.0627	4	D type socket, male, 25 pins (SLAVE remote connector A)
54.13.5001	5	D type socket, female, 15 pins (LCU connector)
54.13.5004	6	D type socket, male, 9 pins (SLAVE remote connector C)
54.13.5002	7	D type socket, female, 9 pins (Serial remote / SMPTE/EBU bus connector)
54.13.5002	8	D type socket, female, 9 pins (MASTER TALLIES connector)
54.99.0122	9	BNC socket

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CABLE CONNECTORS

Order No.	Pos.	Designation
20.020.303.12	-	D type plug set, female, 25 pins
20.020.303.10	-	D type plug set, male, 25 pins
20.020.303.13	-	D type plug set, female, 15 pins
20.020.303.14	-	D type plug set, male, 15 pins
20.020.303.11	-	D type plug set, female, 9 pins
20.020.303.09	-	D type plug set, male, 9 pins

EXTENSION BOARDS

Order No.	Pos.	Designation
1.228.325.00	-	EURO card extension board (96 pins)
1.228.326.00	-	Double EURO card extension board (2 x 96 pins)