Home computer VG8230/00

Service
Service
Service

38 571 A12

Service Manual

See also:
VY0010/0011 supplement

(GB) SPECIFICATION

Micro processor	: Z80A
Memory	: 48k ROM 16k Disk-ROM 128k video RAM 64k user RAM
Video processor	: V9938
MSX controller	: S-3527
Floppy-disc drive	: 3.5", 0.5 MB
Interfaces	: RF output (UHF channel E36) Monitor output SCART Audio cassette recorder 2 joysticks Printer 2 cartridge slots External disk drive
Keyboard	: QWERTY
Power supply voltage	: 220 V ± 10%, 50 Hz

(NL) SPECIFICATIE

Micro processor	: Z80A
Geheugen	: 48k ROM 16k Disk-ROM 128k video RAM 64k gebruikers RAM
Video processor	: V9938
MSX controller	: S-3527
Floppy-disc drive	: 3.5", 0.5 MB
Interfaces	: RF uitgang (UHF kanaal E36) Monitor uitgang SCART Audio cassette recorder 2 handbedieningen Printer 2 cartridge sleuven Externe disk drive
Toetsenbord	: QWERTY
Voedingsspanning	: 220 V ± 10%, 50 Hz

(F) CARACTERISTIQUES TECHNIQUES

Micro processeur	: Z80A
Mémoire	: 48k ROM 16k ROM à disque 128k RAM vidéo 64k RAM utilisateur
Processeur vidéo	: V9938
Controle MSX	: S-3527
Lecteur de disquette	: 3.5", 0.5 MB
Interfaces	: Sortie RF (Canal UHF E36) Sortie moniteur SCART Audio cassette 2 poignées Imprimante 2 "slots" cartouche Lecteur externe
Clavier	: QWERTY
Tension d'alimentation	: 220 V ± 10%, 50 Hz

(D) TECHNISCHE DATEN

Mikro Prozessor	: Z80A
Speicher	: 48k ROM 16k Disk-ROM 128k Video RAM 64k Gebrauchers-RAM
Video Prozessor	: V9938
MSX Steuereinheit	: S-3527
Floppy-Disk-Laufwerk	: 3.5", 0.5 MB
Schnittstellen	: RF Ausgang (UHF kanal E36) Monitor Ausgang SCART Audio Kassette Recorder 2 Handbedienungen Drucker 2 Kassettenschlitze Externes Disk-Laufwerk
Tastatur	: QWERTY
Versorgungsspannung	: 220 V ± 10%, 50 Hz

(I) DATA TECNICI

Microprocessore	: Z80A
Memoria	: 48k ROM 16k ROM a disco 128k RAM video 64k RAM utilizzatori
Processore video	: V9938
MSX di controllo	: S-3527
Lettore di dischetto	: 3.5", 0.5 MB
Interfaccie	: Uscita RF (Canale UHF E36) Uscita monitore SCART Registratore audio a cassetta 2 leve manuali Stampa 2 scanalature per cartuccia Lettore esterno
Tastiera	: QWERTY
Tensione d'aliment.	: 220 V ± 10%, 50 Hz

Documentation Technique Service Dokumentation Documentazione di Servizio Huolto-Ohje Manual de Servicio Manual de Serviço

"Pour votre sécurité, ces documents doivent être utilisés par des spécialisés agréés, seuls habilités à réparer votre appareil en panne".

Subject to modification

4822 727 15424

Printed in The Netherlands

PHILIPS

Published by
Audio/Video Service

(GB) WARNING

The cassettes should be exchanged with the set switched off.

Adjustments

VDP clock frequency

- Connect via a 10:1 probe a frequency meter to 8-U28.
- Adjust TC3 for a frequency of 3.554685 MHz.

FDC clock frequency

- Connect via a 10:1 probe a frequency meter to 24-U7.
- Adjust TC1 for a frequency of 1 MHz.

RTC clock frequency

- Connect via a 10:1 probe a frequency meter to 17-U24.
- Adjust TC2 for a frequency of 32.768 kHz.

Encoder unit

- Connect a resistor (75 Ω 1/4 W) to 5-CN2.
- Enter the program of table 1.
- Adjust VR1 for 1 Vpp across 5-CN2.

- Connect a resistor (75 Ω 1/4 W) to 4-CN2.
- Enter the program of table 1.
- Adjust VR2 for 1 Vpp across U-CN2.

Power supply voltage

- Adjust on the supply PCB VR1 for a voltage of -11.9 V across the output (CN2-1). Check CN2-6 (+5 V) and CN2-8 (+12 V).

(NL) WAARSCHUWING

Het uitwisselen van cartridges dient plaats te vinden bij een uitgeschakeld apparaat.

Instellingen

VDP klokfrequentie

- Sluit via een 10:1 probe een frequentiemeter aan op 8-U28.
- Regel TC3 af op een frequentie van 3,554685 MHz.

FDC klokfrequentie

- Sluit via een 10:1 probe een frequentiemeter aan op 24-U7.
- Regel TC1 af op een frequentie van 1 MHz.

RTC klokfrequentie

- Sluit via een 10:1 probe een frequentiemeter aan op 17-U24.
- Regel TC2 af op een frequentie van 32,768 kHz.

Encoder unit

- Sluit een weerstand (75 Ω 1/4 W) aan op 5-CN2.
- Voer het programma van tabel 1 in.
- Regel VR1 af op 1 Vtt over 5-CN2.

- Sluit een weerstand (75 Ω 1/4 W) aan op 4-CN2.
- Voer het programma van tabel 1 in.
- Regel VR2 af op 1 Vtt over 4-CN2.

Voedingsspanning

- Stel op het voedingsspanningspaneel VR1 in op een spanning van -11,9 V over de uitgang (CN2-1). Controleer nu CN2-6 (+5 V) en CN2-8 (+12 V).

(F) ATTENTION

Le remplacement de cartouches doit avoir lieu lorsque l'appareil est hors service.

Réglages

Fréquence d'horloge VDP

- A travers une sonde 10:1 brancher un fréquencemètre sur 8-U28.
- Ajuster TC3 à une fréquence de 3,554685 MHz.

Fréquence d'horloge FDC

- A travers une sonde 10:1 brancher un fréquencemètre sur 24-U7.
- Ajuster TC1 à une fréquence de 1 MHz.

Fréquence d'horloge RTC

- A travers une sonde 10:1 brancher un fréquencemètre sur 17-U24.
- Ajuster TC2 à une fréquence de 32,768 kHz.

Ensemble codeur

- Brancher une résistance (75 Ω 1/4 W) sur 5-CN2.
- Introduire le programme du tableau 1.
- Aligner VR1 a 1 Vcc sur 5-CN2.

- Raccorder une résistance (75 Ω 1/4 W) sur 4-CN2.
- Introduire le programme du tableau 1.
- Ajuster VR2 à 1 Vcc sur 4-CN2.

Tension d'alimentation

- Sur la platine de tension d'alimentation VR1 ajuster pour une tension de -11,9 V sur la sortie (CN2-1). Contrôler CN2-6 (+5 V) et CN2-8 (+12 V).

(D) WARNUNG

Cassetten müssen bei ausgeschaltetem Gerät ausgewechselt werden.

Einstellungen

VDP Taktfrequenz

- Über einen Taster 10:1 einen Frequenzmesser an 8-U28 schalten.
- TC3 auf eine Frequenz von 3,554685 MHz einstellen.

FDC Taktfrequenz

- Über einen Taster 10:1 einen Frequenzmesser an 24-U7 schalten.
- TC1 auf eine Frequenz von 1 MHz einstellen.

RTC Taktfrequenz

- Über einen Taster 10:1 einen Frequenzmesser an 17-U24 schalten.
- TC2 auf eine Frequenz von 32,768 kHz einstellen.

Encoder Abstimmeinheit

- Einen Widerstand (75 Ω 1/4 W) an 5-CN2 anschliessen.
- Das Programm der Tabelle 1 einführen.
- VR1 über 5-CN2 auf 1 Vs-s abreglen.

- Einen Widerstand (75 Ω 1/4 W) an 4-CN2 anschliessen.
- Das Programm der Tabelle 1 einführen.
- VR2 über 4-CN2 auf 1 Vs-s abreglen.

Versorgungsspannung

- An der Versorgungsspannungsplatte VR1 auf eine Spannung von -11,9 V an dem Ausgang (CN2-1) einstellen. Jetzt CN2-6 (+5 V) und CN2-8 (+12 V) überprüfen.

(I) AVVERTIMENTO

La sostituzione delle cartuccie deve farsi quando l'apparecchio è fuori servizio

Regolazioni

Frequenza d'orologio VDP

- Tramite una sonda 10:1 collegare un frequenziometro su 8-U28.
- Regolare TC3 per una frequenza di 3,554685 MHz.

Frequenza d'orologio FDC

- Tramite una sonda 10:1 collegare un frequenziometro su 24-U7.
- Regolare TC1 per una frequenza di 1 MHz.

Frequenza d'orologio RTC

- Tramite una sonda 10:1 collegare un frequenziometro su 17-U24.
- Regolare TC2 per una frequenza di 32,768 kHz.

Unità codificatore

- Collegare una resistenza (75 Ω 1/4 W) su 5-CN2.
- Introdurre il programma della tavola 1.
- Aggiustare VR1 a 1 Vcc su di 5-CN2.

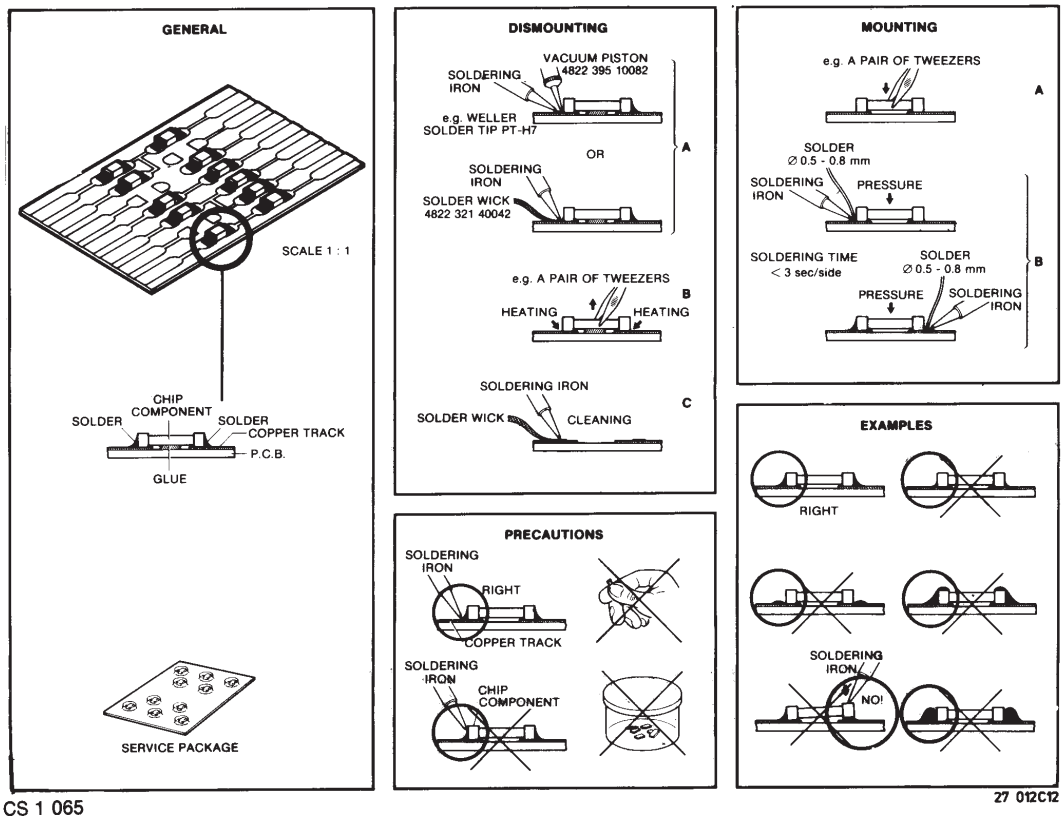
- Collegare una resistenza (75 Ω 1/4 W) su 4-CN2.
- Introdurre il programma della tavola 1.
- Aggiustare VR2 per 1 Vcc su di 4-CN2.

Tensione di alimentazione

- Sulla piastra di tensione di alimentazione VR1, regolare per una frequenza di -11,9 V sull'uscita (CN2-1). Verificare CN2-6 (+5 V) e CN2-8 (+12 V).

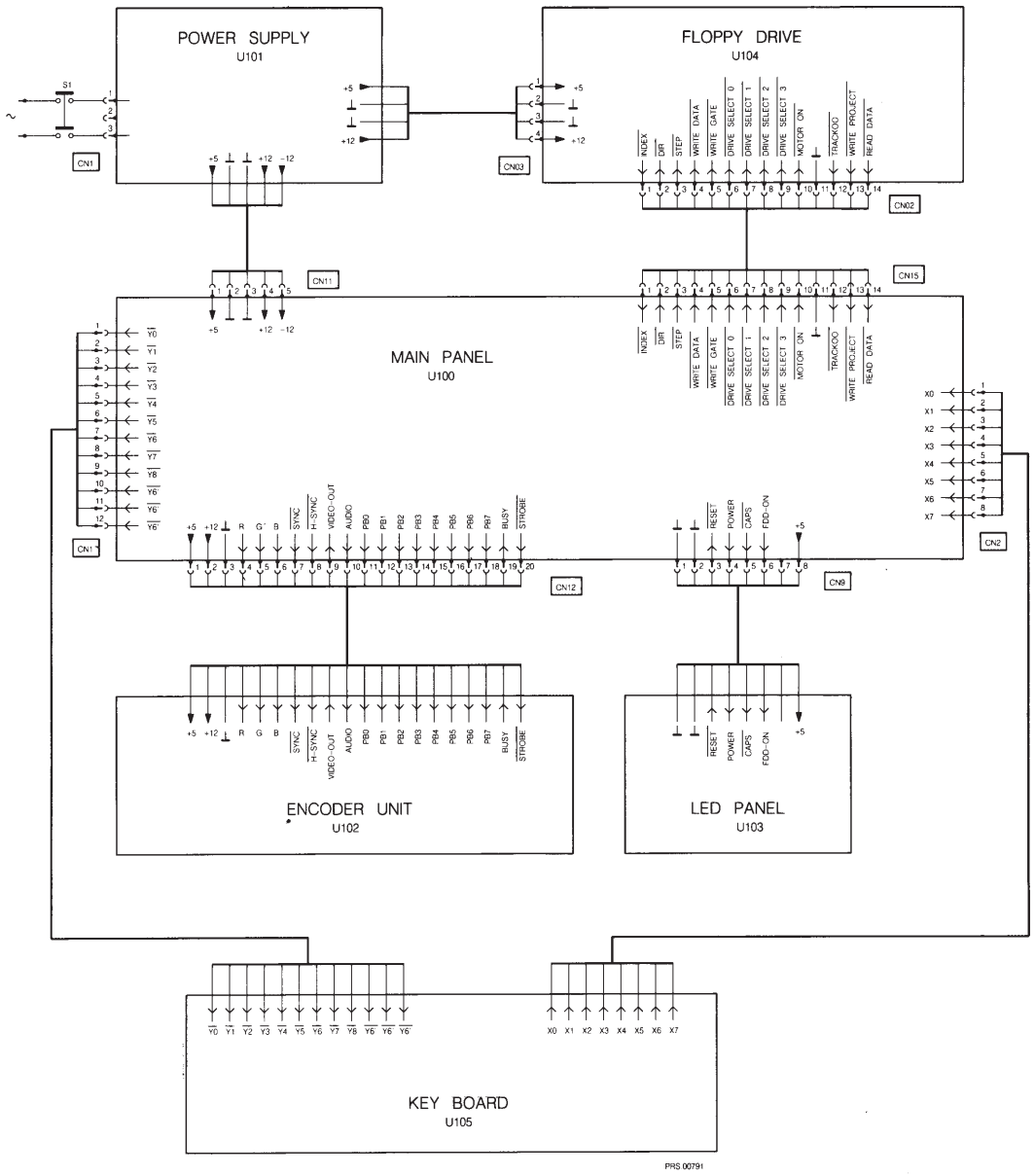
```
  5   REM ENCODER ADJUSTMENT
 10   CLEAR 100, &H9FFF
 20   FOR I=0 TO 36
 30   AD=&HA000+I
 40   READ Z
 50   POKEAD, Z
 60   NEXT I
 70   DEF USR0=&HA000
 80   SCREEN2
 90   COLOR ,,2
100   FOR I=1 TO 8
110   X=32*(I-1) : XX=X+31
120   LINE (X,0)-(XX,191), I,BF
130   NEXT I
140   Y=USR0 (0)
150   GOTO 150
160   DATA &HF3, &H3E, &H1, &HD3, &H99
170   DATA &H3E, &H90, &HD3, &H99, &HE
180   DATA &H9A, &H26, &HA0, &H2E, &H15
190   DATA &H6, &H10, &HED, &HB3, &HFB
200   DATA &HC9, &HFF, &HF, &HF0, &HF
210   DATA &HF, &HF, &H0, &HF, &HFF
220   DATA &H0, &HF0, &H0, &HF, &H0
230   DATA &H0, &H0
```

TABLE 1



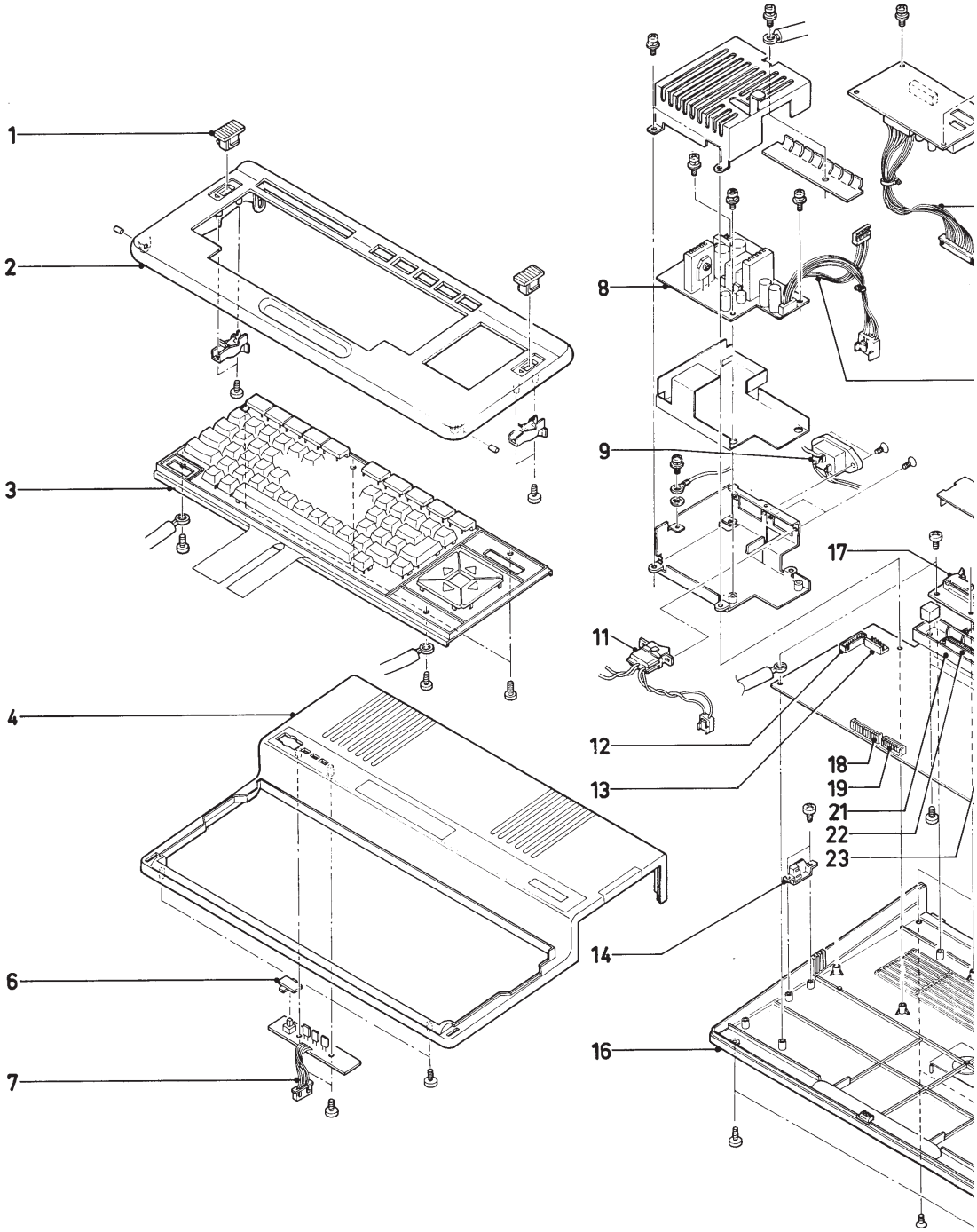
CS 1 065

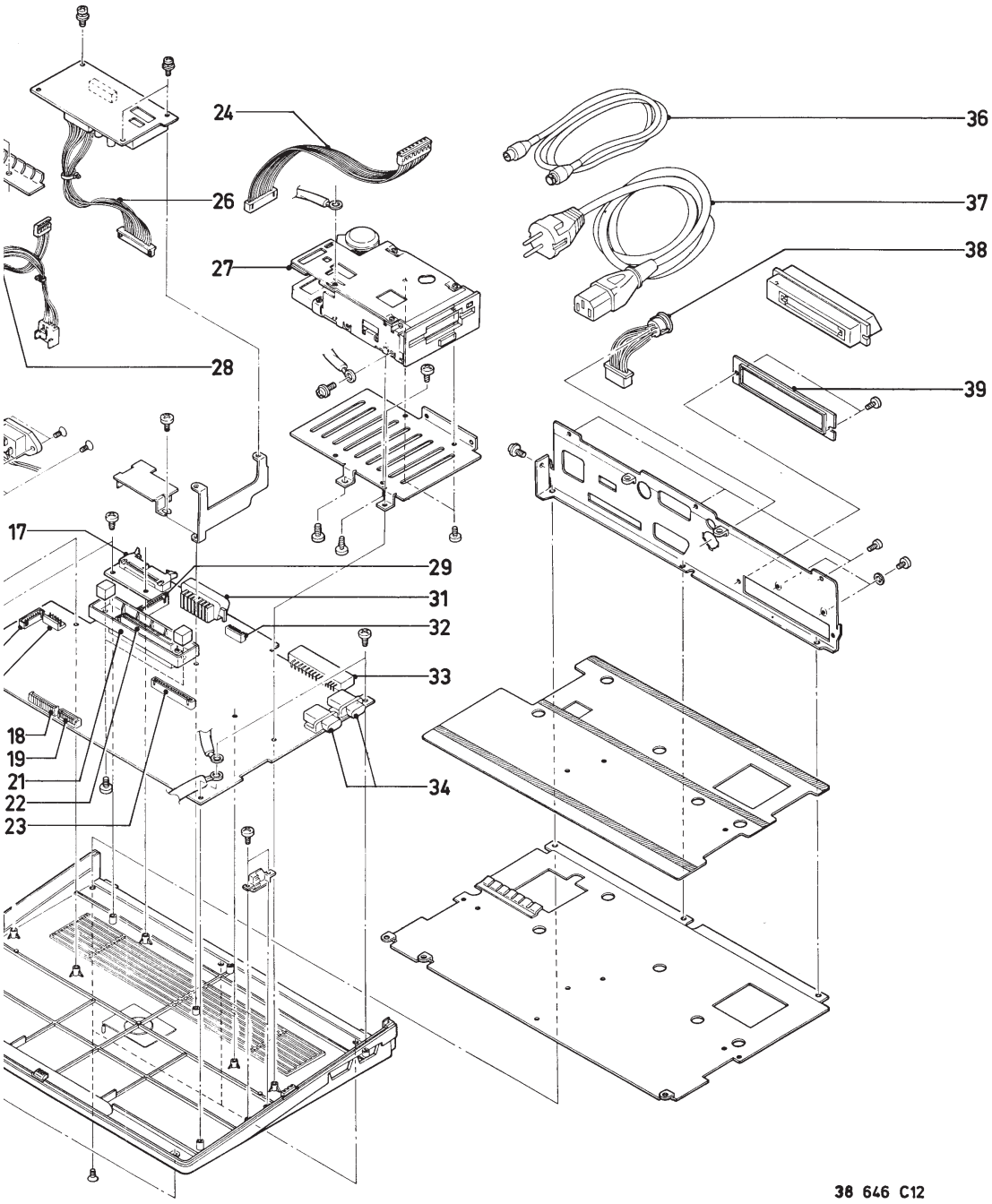
27 012C12


POWER SUPPLY
U101
FLOPPY DRIVE
U104
MAIN PANEL
U100
ENCODER UNIT
U102
LED PANEL
U103
KEY BOARD
U105
CN1
CN03
CN02
CN11
CN15
CN12
CN9
CN2
INDEX
DIR
STEP
WRITE DATA
WRITE GATE
DRIVE SELECT 0
DRIVE SELECT 1
DRIVE SELECT 2
DRIVE SELECT 3
MOTOR ON
TRACK00
WRITE PROJECT
READ DATA
SYNC
H-SYNC
VIDEO-OUT
AUDIO
PB0
PB1
PB2
PB3
PB4
PB5
PB6
PB7
BUSY
STROBE
RESET
POWER
CAPS
FDD-ON
PRS 0079I

MECHANICAL PARTS LIST

1	4822 417 50206	Lock knob
2	4822 219 80662	Keyboard case
3	4822 219 80661	Keyboard assy
4	4822 432 10546	Cabinet top case
6	4822 410 24402	Reset knob
7	4822 267 40633	Connector assy LED
8	4822 212 22406	Power supply
9	4822 265 20274	AC inlet
11	4822 276 11708	Mains switch
12	4822 267 40632	Connector LED
13	4822 267 40591	Connector power supply
14	4822 417 50207	Lock catch
16	4822 432 10547	Cabinet bottom case
17	4822 267 50605	Connector external drive
18	4822 267 50603	Connector keyboard (12p)
19	4822 267 50602	Connector keyboard (8p)
21	4822 417 50203	Slot guide
22	4822 267 60167	Connector 2×25 fold
23	4822 267 60166	Connector (20p)
24	4822 267 30685	Connector assy FDD
26	4822 267 50622	Connector assy tuner unit
27	4822 693 90446	Floppy drive unit
28	4822 321 21452	Connector assy power supply
29	4822 267 30687	Connector FDD
31	4822 267 50604	SCART connector
32	4822 267 40632	Connector (8p)
33	4822 267 70168	Connector 2×25 fold
34	4822 267 50553	Connector joystick
36	4822 321 10394	Video cable
37	4822 321 10393	AC cable
38	4822 267 30686	Connector assy
39	4822 432 91854	Slot rear cover


1
2
3
4
6
7
8
9
11
12
13
14
16
17
18
19
21
22
23



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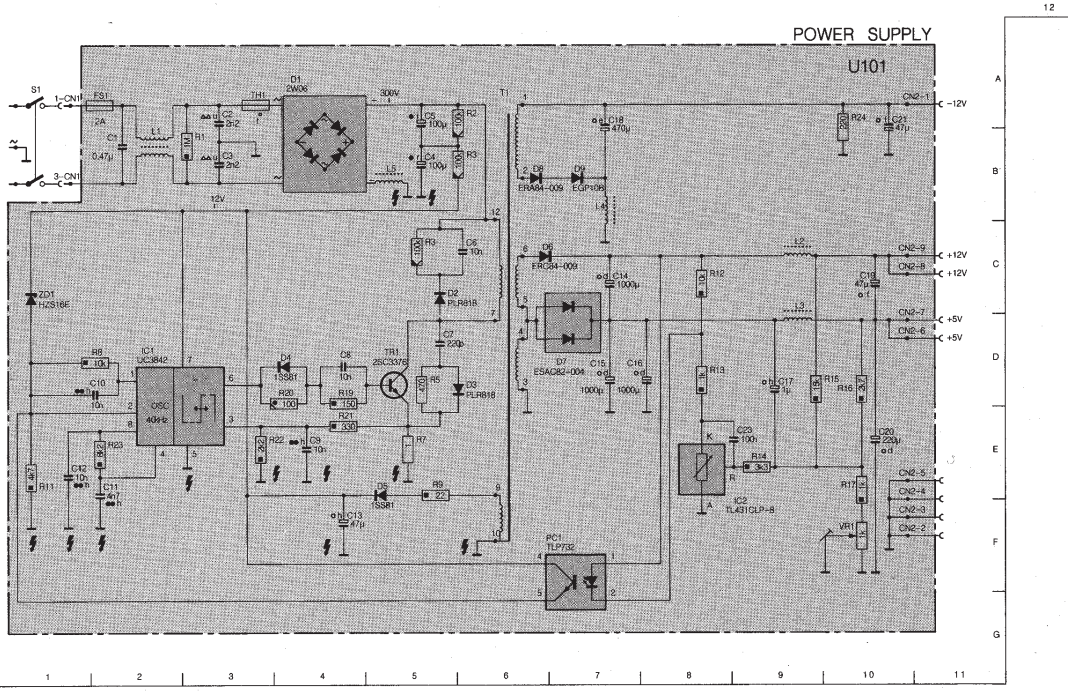
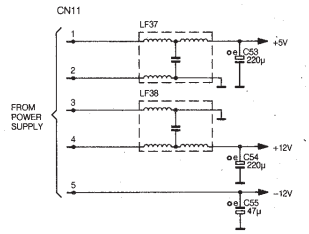
CS 1 066

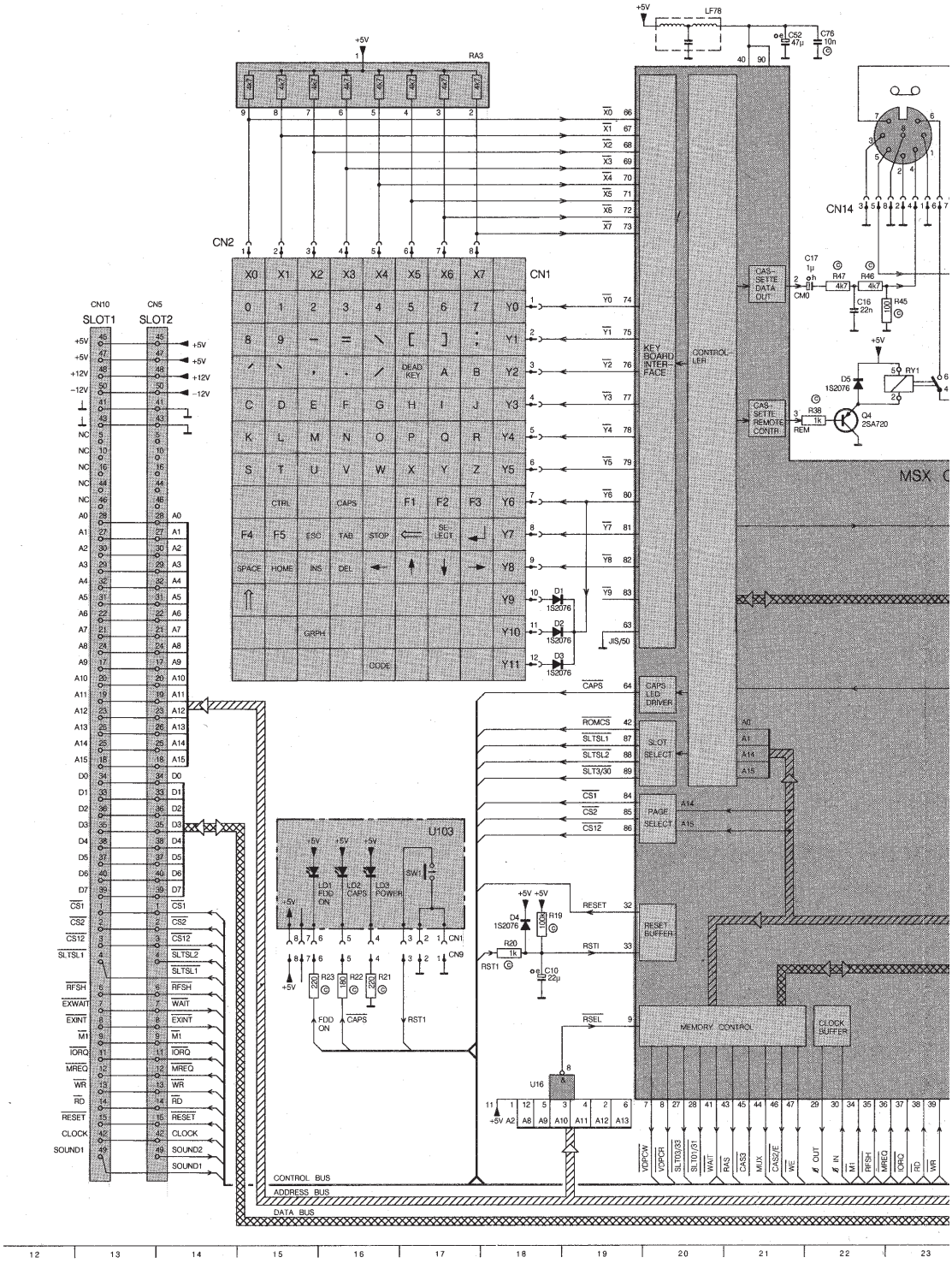


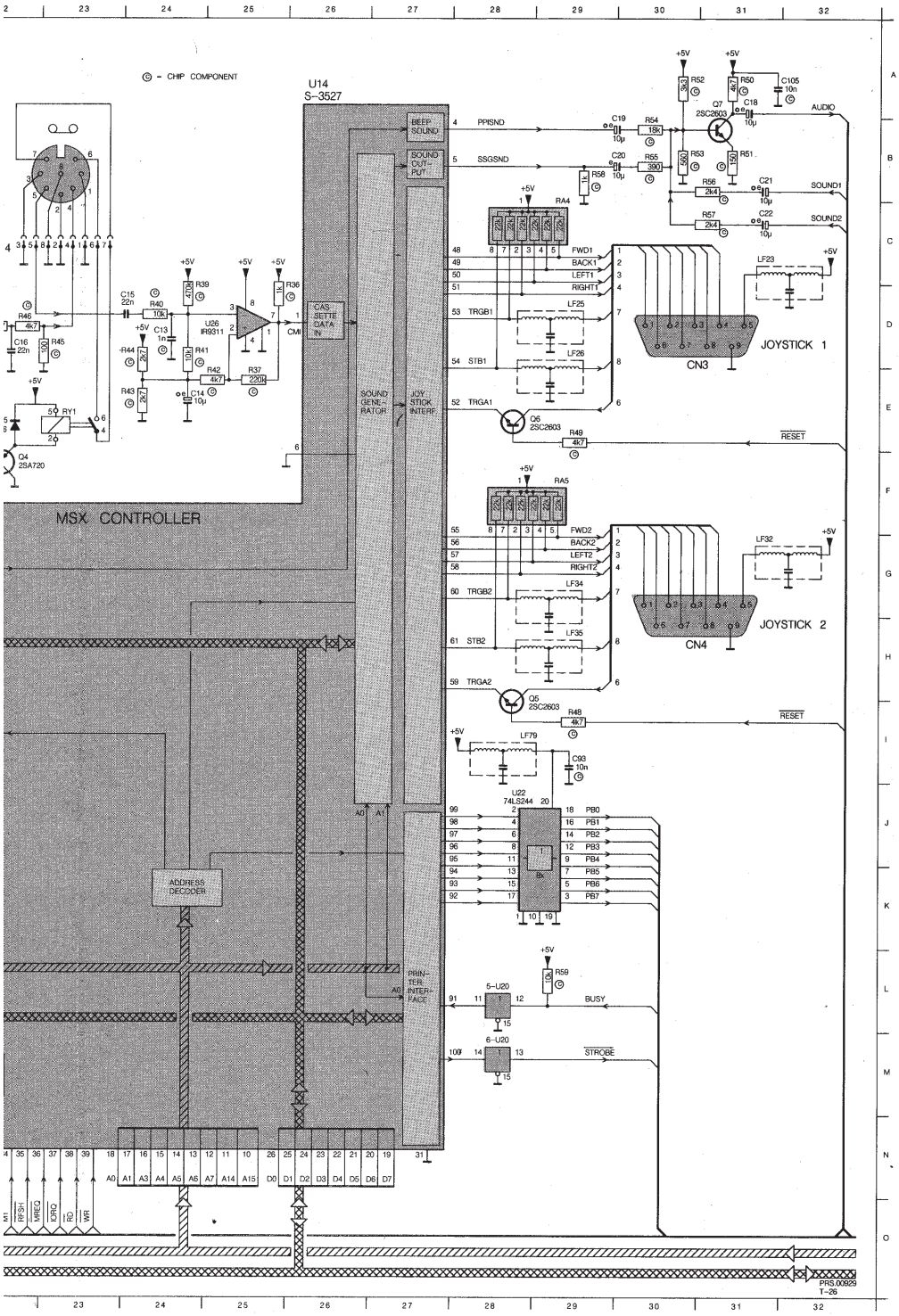
TYPENUMBERS AND POWERSUPPLY–CONNECTIONS OF IC'S

POS.NR.	TYPE	DESCRIPTION	+5V	⊥	DECOUPLING CAPACITOR	Vcc FILTER
U10	74LS74	2 FOLD D FLIP/FLOP	14	7	C81 – 10n Ⓒ	
U16	74LS30	8-INPUT NAND	14	7	C71 – 10n Ⓒ	LF85 – C–22n
U23	74LS30	8-INPUT NAND	14	7	C79 – 10n Ⓒ	
U27	74LS133	13-INPUT NAND	16	8	C89 – 10n Ⓒ	LF84 – C–22n
U34	7438	4 2-INPUT NAND	14	7	C96 – 10n Ⓒ	
U35	74LS368	6 3-STATE INV.	16	8		
U36	74LS04	6 INVERTERS	14	7	C101 – 10n Ⓒ	
U37	74LS32	4 2-INPUT OR	14	7	C102 – 10n Ⓒ	
U38	74LS08	4 2-INPUT AND	14	7	C92 – 10n Ⓒ	LF90 – C–22n
U39	74LS32	4 2-INPUT OR	14	7	C103 – 10n Ⓒ	
U40	74LS32	4 2-INPUT OR	14	7		
U41	74LS32	4 2-INPUT OR	14	7		
U42	7438	4 2-INPUT NAND	14	7	C94 – 10n Ⓒ	
U43	74LS14	6 INVERTER	14	7	C95 – 10n Ⓒ	LF81 – C–22n
U44	74LS00	4 2-INPUT NAND	14	7	C97 – 10n Ⓒ	LF83 – C–22n
U45	74LS32	4 2-INPUT OR	14	7		
U46	74LS04	6 INVERTER	14	7	C104 – 10n Ⓒ	

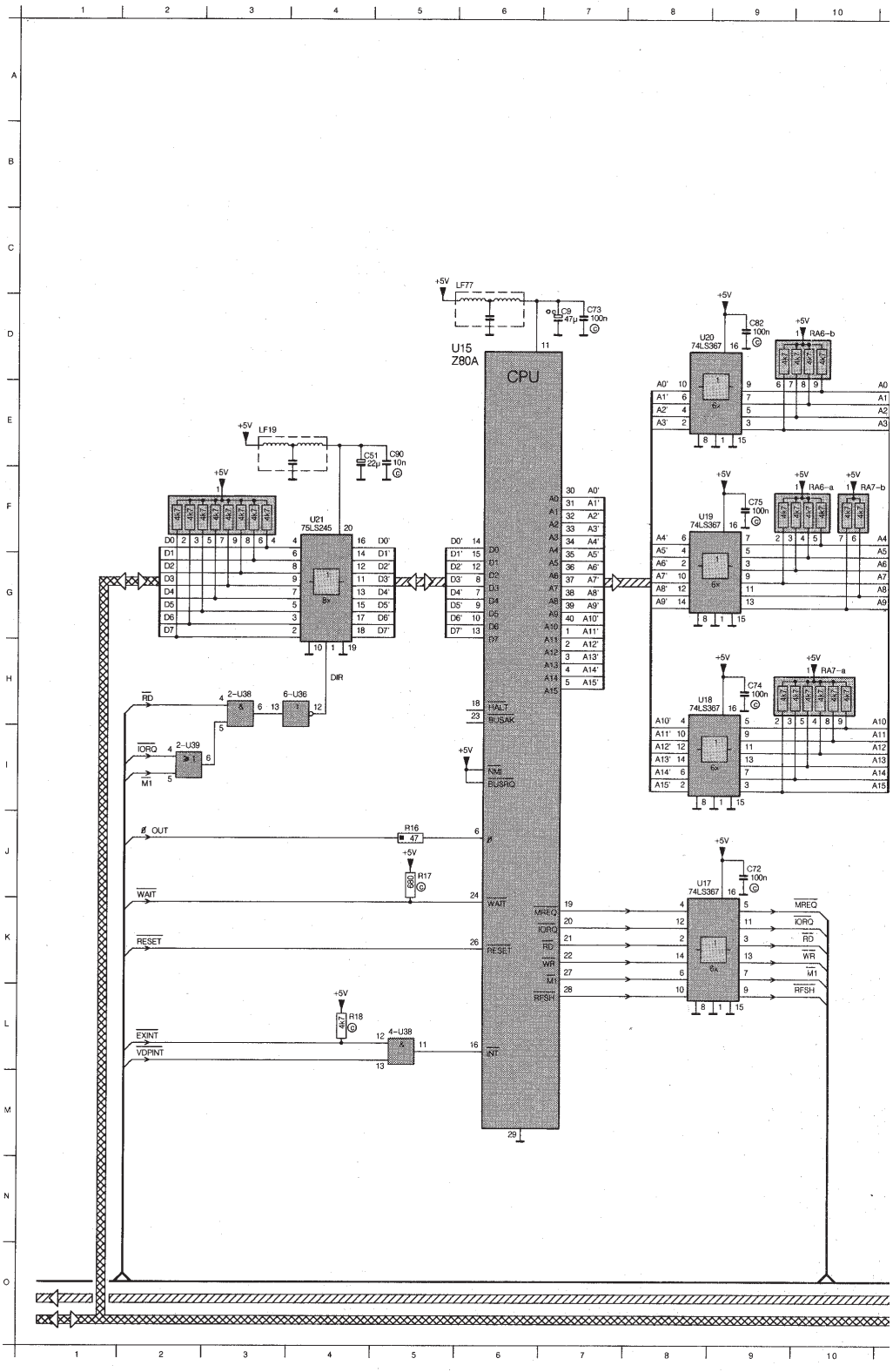


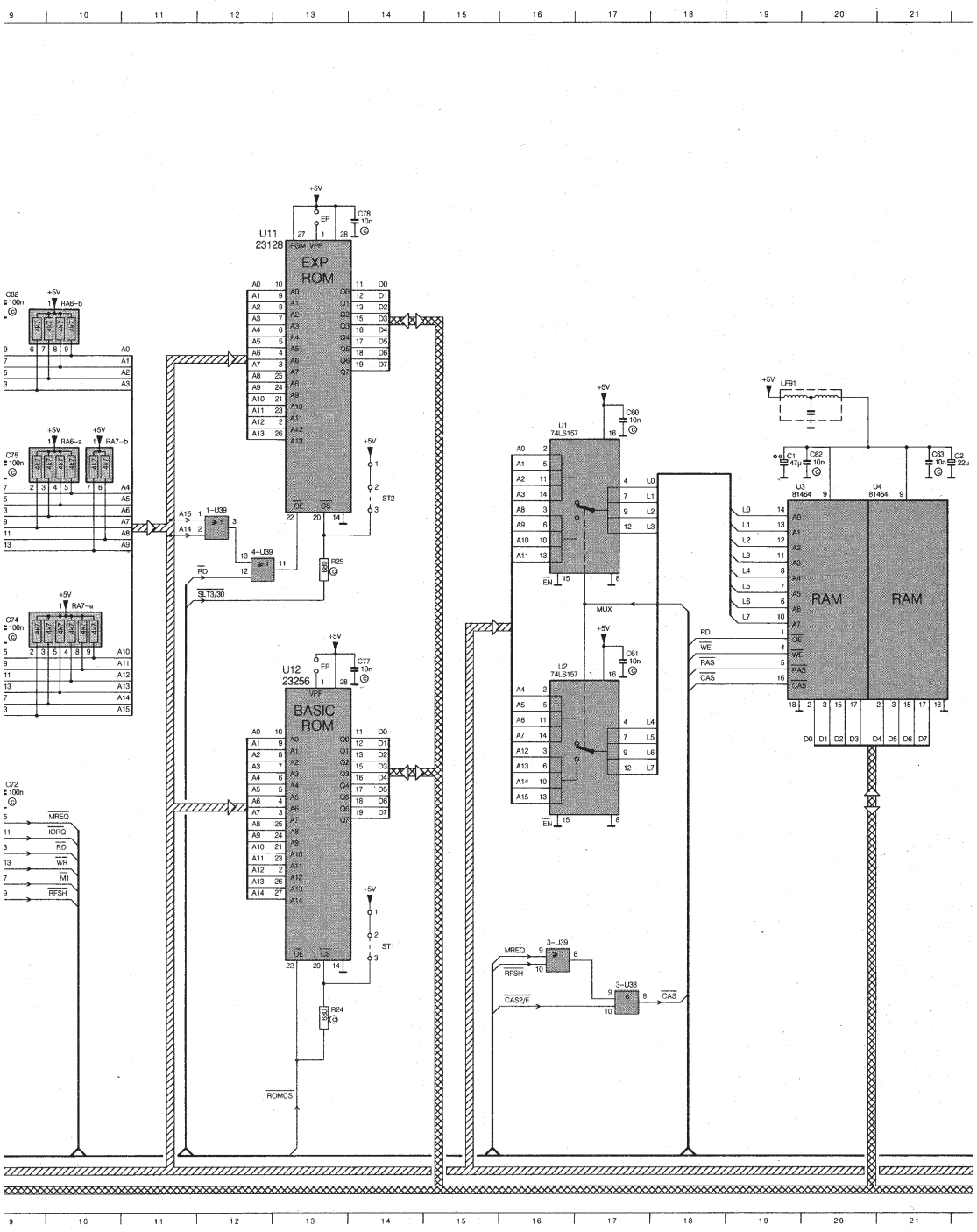
CS 1 067

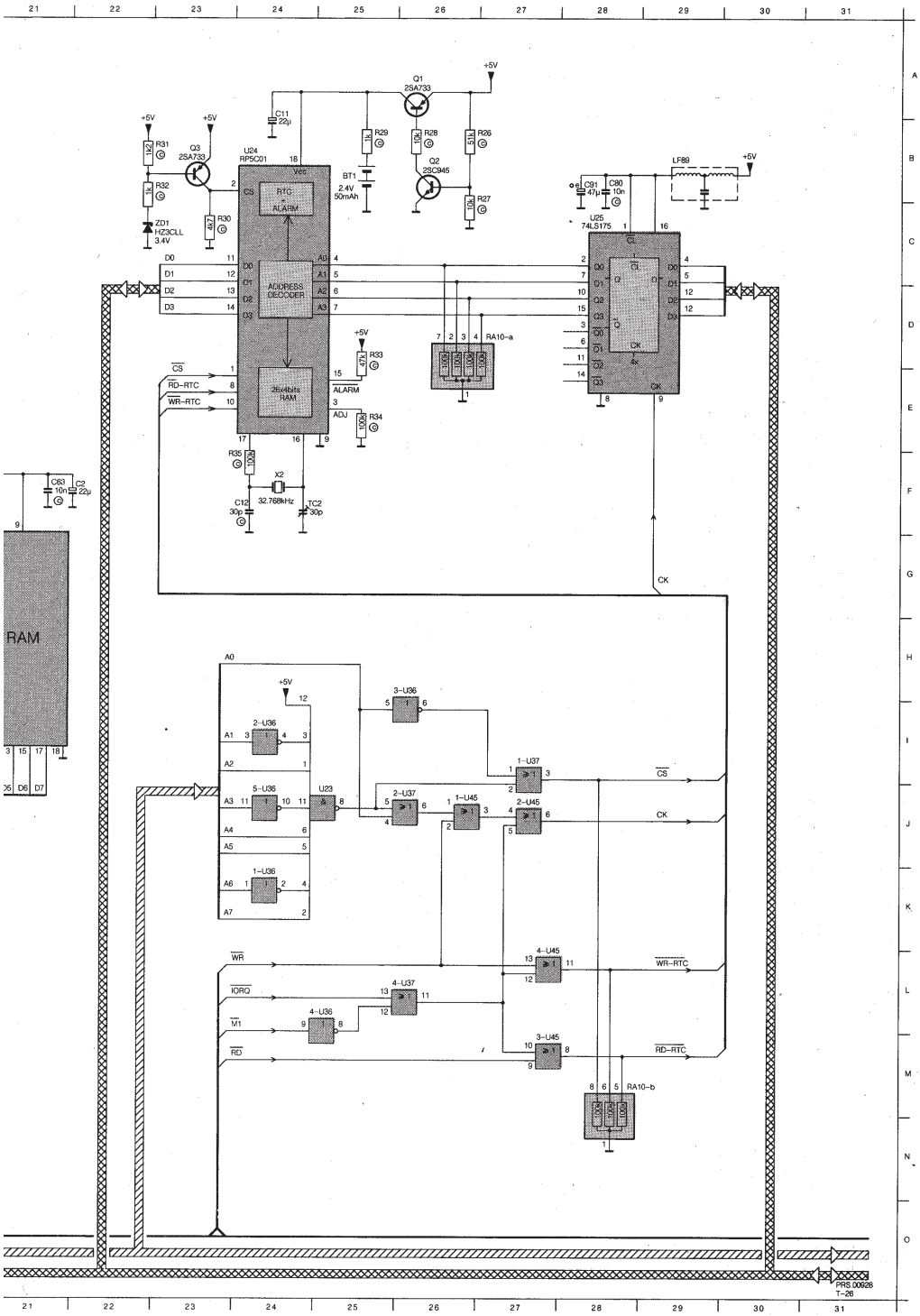

RA3
CN2
CN1
CN14
CN10
SLOT1
CN5
SLOT2
LF78
KEY BOARD INTER-FACE
CONTROL-LER
CAS-SETTE DATA OUT
CAS-SETTE REMOTE CONTR.
CAPS LED DRIVER
SLOT SELECT
PAGE SELECT
RESET BUFFER
MEMORY CONTROL
CLOCK BUFFER
U103
U16
MSX
CONTROL BUS
ADDRESS BUS
DATA BUS

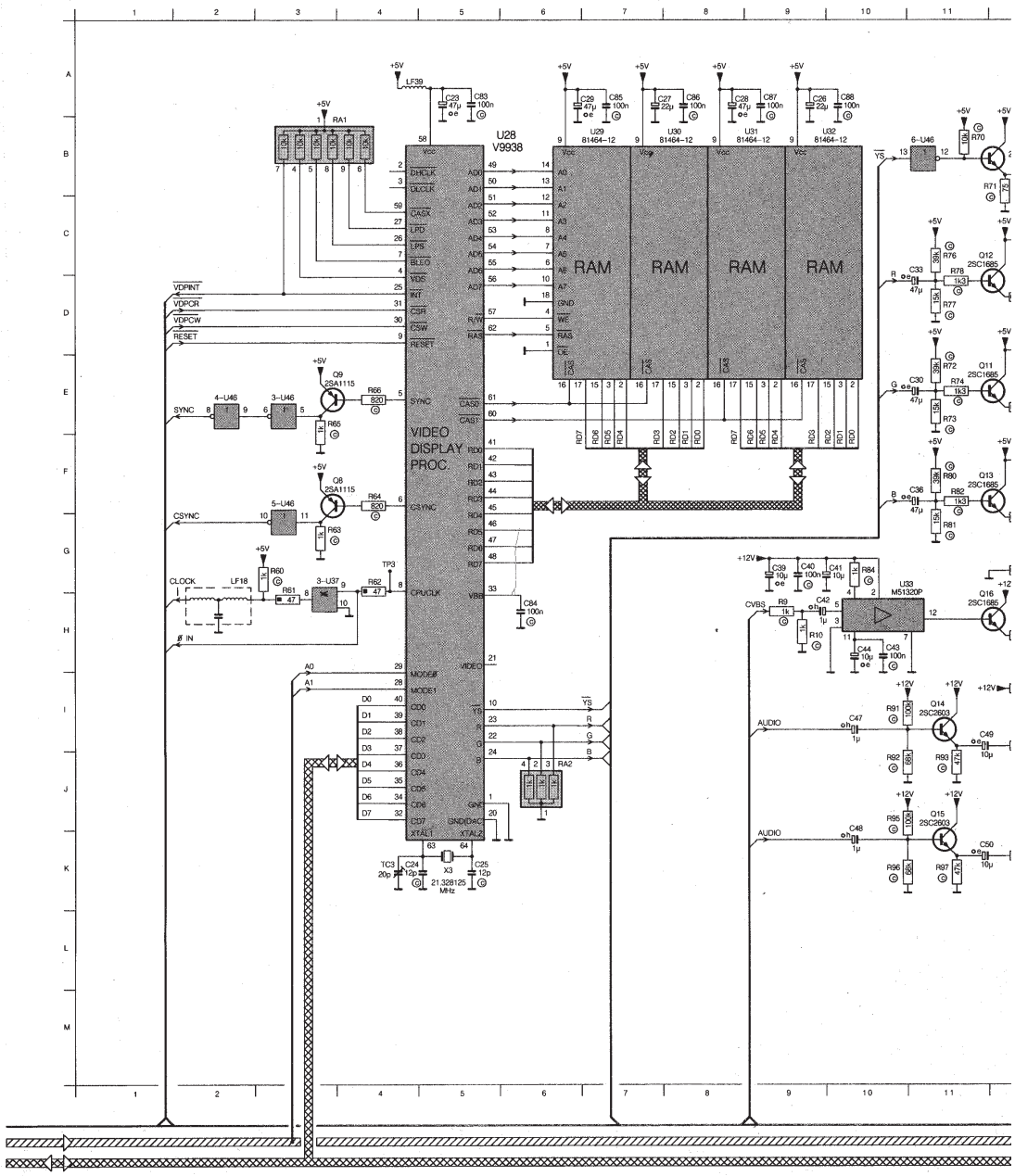


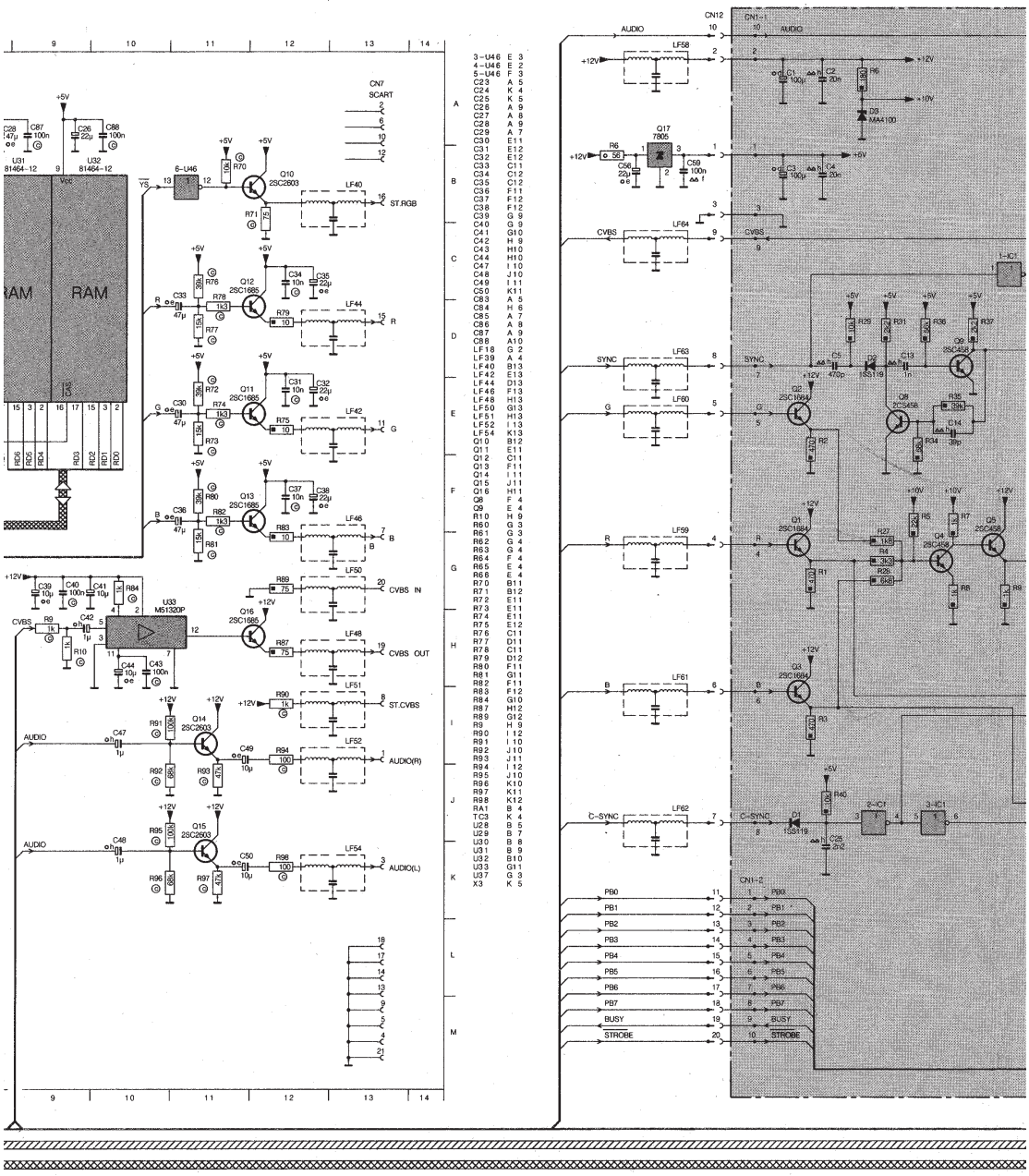
5-U20	L28
6-U20	M28
C10	L18
C105	A32
C13	D24
C14	E24
C15	D24
C16	D22
C17	D22
C18	A31
C19	A30
C20	B30
C21	B31
C22	C31
C52	A21
C53	M11
C54	N11
C55	C11
C76	A22
C93	I29
CN1	D18
CN10	D13
CN11	M9
CN12	J29
CN14	C22
CN2	C14
CN3	D31
CN4	H31
CN5	D14
D1	H18
D2	H18
D3	I18
D4	L18
D5	E22
LD1	K16
LD2	K16
LD3	K16
LF23	C31
LF25	D29
LF26	D29
LF32	G31
LF34	G29
LF35	H29
LF37	M10
LF38	M10
LF78	A20
LF79	I28
Q4	F22
Q5	H29
Q6	E29
Q7	A31
R19	L18
R20	L18
R21	L16
R22	L16
R23	L16
R36	D26
R37	E25
R38	F22
R39	D25
R40	D24
R41	D25
R42	E25
R43	E24
R44	D24
R45	D23
R46	D22
R47	D22
R48	I29
R49	E29
R50	A31
R51	B31
R52	A31
R53	B31
R54	B30
R55	B30
R56	B31
R57	C31
R58	B29
R59	L29
RA3	A17
RA4	B29
RA5	F29
RY1	E23
SW1	K17
U101	A10
U103	K17
U14	A26
U16	N18
U22	J28
U26	D25


U15
Z80A
CPU
U21
75LS245
U20
74LS367
U19
74LS367
U18
74LS367
U17
74LS367
LF77
LF19
C9
47µ
C73
100n
C51
22µ
C90
10n
C82
100n
C75
100n
C74
100n
C72
100n
RA6-b
RA6-a
RA7-b
RA7-a
4k7
DIR
RD
IORQ
M1
2-U38
6-U36
2-U39
R16
47
R17
680
R18
4k7
WAIT
RESET
EXINT
VDPINT
4-U38
HALT
BUSAK
NMI
BUSRQ
INT
MREQ
IORQ
RD
WR
M1
RFSH
+5V
OUT


9 10 11 12 13 14 15 16 17 18 19 20 21
U11
23128
EXP
ROM
U12
23256
BASIC
ROM
U1
74LS157
U2
74LS157
U3
81464
U4
81464
RAM
RAM
LF91
C1
47µ
C2
22µ
C60
10n
C61
10n
C62
10n
C63
10n
C72
100n
C74
100n
C75
100n
C78
10n
C77
10n
C82
100n
RA6-b
RA6-a
RA7-b
RA7-a
1-U39
3-U39
4-U39
3-U38
R24
R25
ST1
ST2
MUX
SLT3/0
ROMCS
MREQ
IORQ
RD
WR
M1
RFSH
CAS2/E
CAS
WE
RAS
+5V

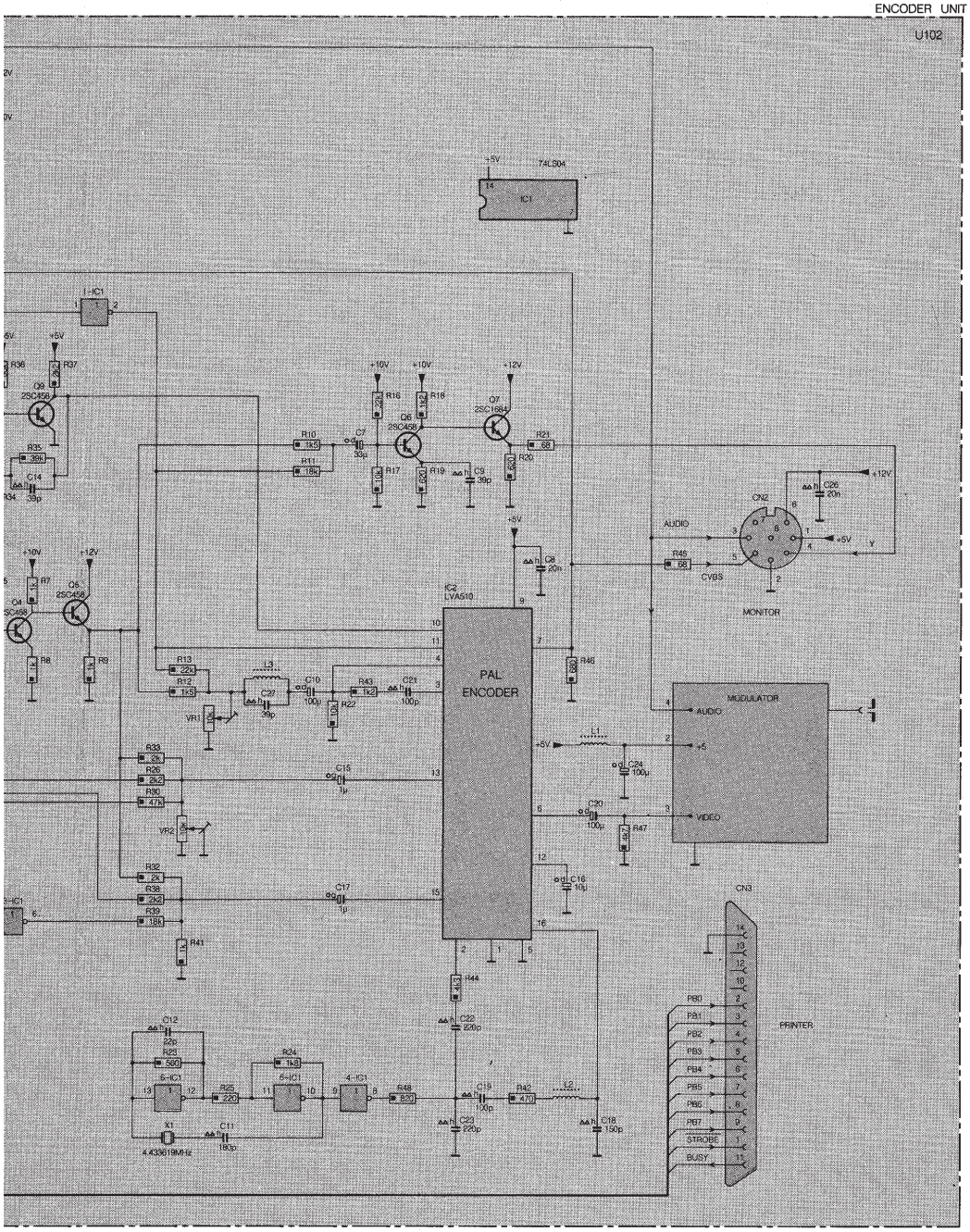



U28
V9938
VIDEO
DISPLAY
PROC.
U29
81464-12
U30
81464-12
U31
81464-12
U32
81464-12
RAM
RAM
RAM
RAM
RA1
RA2
LF39
LF18
X3
21.328125
MHz
U33
M51320P
Q8
2SA1115
Q9
2SA1115
Q11
2SC1685
Q12
2SC1685
Q13
2SC1685
Q14
2SC2603
Q15
2SC2603
Q16
2SC1685
VDPINT
VDPDR
VDPCW
RESET
SYNC
CSYNC
CLOCK
CVBS
AUDIO
+5V
+12V


CN7
SCART
ST.RGB
R
G
B
CVBS IN
CVBS OUT
ST.CVBS
AUDIO(R)
AUDIO(L)
CN12
AUDIO
CVBS
SYNC
C-SYNC
BUSY
STROBE
PB0
PB1
PB2
PB3
PB4
PB5
PB6
PB7

ENCODER UNIT

U102



PRS.00927

MAIN PRINTED BOARD

U100	Main printed board	4822 212 22407

U1,U2	74LS157P	5322 209 81521
U3,U4	81464-12	4822 209 83426
U5	74LS139P	5322 209 81631
U6	74LS175P	5322 209 84999
U7	1793-02P	4822 209 11193
U8	74145AN	5322 209 80236
U9	SED9421C03	4822 209 83441
U10	74LS74AP	5322 209 81647
U11	Exp. ROM	4822 209 50576
U12	BASIC ROM	4822 209 50575
U13	FDC ROM	4822 209 50577
U14	S-3527	4822 209 11097
U15	Z80A	4822 209 10569
U16	74LS30P	4822 209 83428
U17-U20	74LS367AP	5322 209 85558
U21	74LS245	5322 209 82215
U22	74LS244	5322 209 86017
U23	74LS30P	4822 209 83428
U24	RP5C01	4822 209 83431
U25	74LS175P	5322 209 84999
U26	IR9311	5322 209 85503
U27	74LS133	4822 209 83429
U28	V9938	4822 209 83425
U29-U32	81464-12	4822 209 83426
U33	M51320	4822 209 83432
U34	7438P	5322 209 84285
U35	74LS368AP	4822 209 81433
U36	74LS04P	5322 209 81625
U37	74LS32P	5322 209 81634
U38	74LS08P	5322 209 81626
U39-U41	74LS32P	5322 209 81634
U42	7438P	5322 209 84285
U43	74LS14P	4822 209 83427
U44	74LS00P	5322 209 81623
U45	74LS32P	5322 209 81634
U46	74LS04P	5322 209 81625

RA1	10k × 8	4822 116 90189
RA2	1k × 8	4822 111 90934
RA3	4k7 × 8	4822 116 90191
RA4,RA5	22k × 8	4822 111 90935
RA6-RA8	47k × 8	4822 116 90223
RA9	330Ω × 4	4822 116 90234
RA10	100k × 8	4822 111 90936

Q1,Q3	2SA733	4822 130 42758
Q2	2SC945A	4822 130 42761
Q4	2SA720	4822 209 11045
Q5,Q6,Q10, Q14,Q15	2SC2603	4822 130 42545
Q8,Q9	2SA1115	4822 130 42759
Q11,Q12, Q13,Q16	2SC1685	4822 130 42568

D1-D5	1S2076	4822 130 31304
ZD1	Zener HZ3CLL	4822 130 33009

C2,C11,C26 C27,C51	Tantal 22 µF 16 V	4822 124 10527
C4,C5	Cer. chip C 560 pF 50 V	4822 116 90233
C6	Mylar 100 nF 50 V	4822 121 90044
C8	Cer. chip C 10 pF 50 V	4822 116 90228
C12	Cer. chip C 30 pF 50 V	4822 122 32731
C13	Cer. chip C 1 nF 50 V	4822 116 90229
C15,C16	Mylar 22 nF 50 V	4822 121 42417
C24,C25	Cer. chip C 12 pF 50 V	4822 122 32804
C31,C34, C37,C61-C65,C68, C69,C71, C76-C81, C89,C90, C92-C97, C101-C105	Cer. chip C 10 nF 50 V	4822 122 32803
C40,C43, C67,C70, C72,C75, C82,C88,	Cer. chip C 100 nF 25 V	4822 116 90227
C41	Tantal 10 µF 16 V	4822 124 10523
TC1,TC3	Trimmer 20 pF	4822 125 50298
TC2	Trimmer 30 pF	4822 125 50299

LF1-LF16, LF18,LF25, LF26,LF34, LF35,LF40, LF42,LF44, LF46,LF48, LF50,LF51, LF52,LF54, LF59-LF64	Filter C = 100 pF	4822 157 52361
LF19,LF23, LF32,LF58, LF91	Filter C = 22 nF	4822 157 52359
LF37,LF38	Line filter	4822 158 10755
LF39	Filter	4822 158 10756
LF77-LF86, LF89,LF90	Filter C = 22 nF	4822 157 52666

Various

RY1	Relay	4822 280 20166
X1	Crystal 16 MHz	4822 242 71346
X2	Crystal 32.768 kHz	4822 242 71347
X3	Crystal 21.32812 MHz	4822 242 71345
	NI-CD accumulator	4822 138 30036
ST1,ST2	Service jumper	4822 276 11572

POWER SUPPLY

U101	Power supply	4822 212 22406
IC1	UC3842	4822 209 83909
IC2	TLP431CLP-B	4822 209 83911
D1	2W06 1.8 A 600 V	4822 130 33259
D2,D3	PLR818 1 A 1000 V	4822 130 33266
D4,D5	1SS81 0.2 A 150 V	4822 130 33267
D6	ERC84-009 3 A 90 V	4822 130 33262
D7	ESA82-004 10 A 40 V	4822 130 33263
D8	ERA84-009 1 A 90 V	4822 130 33264
D9	EGP10B 1 A 100 V	4822 130 33265
ZD1	HSZ16E 0.4 W zener	4822 130 33261
R5	470 Ω 2 W	4822 113 60171
R7	1 Ω 2 W	4822 113 60168
R24	220 Ω 2 W	4822 113 60169
VR1	1k 0.5 W variable	4822 111 20382
C1	0.47 µF 250 V polyester	4822 121 42553
C6	0.01 µF 250 V polyester	4822 121 42554
C7	220 pF 2 kV ceramic	4822 122 50089
C8,C23	0.1 µF 63 V polyester	4822 121 42555
L1	10 mH 1 A	4822 157 52467
L2	47 mH 2.2 A	4822 157 52468
L3	8 mH 5 A	4822 157 52469
L4,L5	100 mH 1.5 A	4822 157 52471

VARIOUS

TR1	2SC3376 transistor	4822 130 43505
TH1	16D-9 16 Ω thermistor	4822 138 30037
T1	Transformer	4822 146 21114

FLOPPY DISC DRIVE

U104	Floppy disc drive	4822 693 90446

LED PANEL

LD1	LED yellow	4822 130 32984
LD2	LED green	4822 130 32983
LD3	LED red	4822 130 32982

VARIOUS

SW1	Reset switch	4822 277 10862
	Reset knob	4822 410 24402

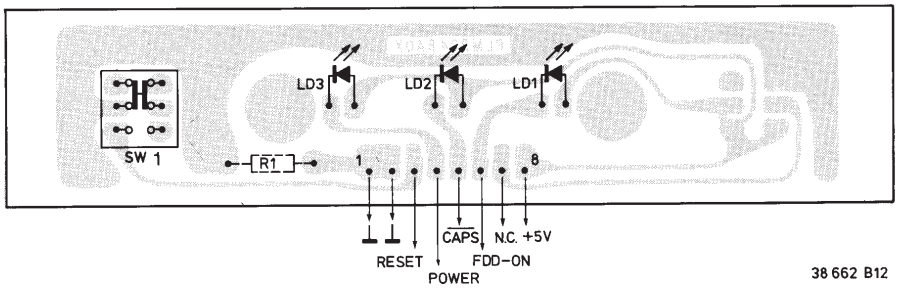
ENCODER UNIT

IC1	74LS04	5322 209 81625
IC2	LVA510	4822 209 83582
Q1-Q3	2SC1684	4822 130 42814
Q4-Q6	2SC458	4822 130 42815
Q7	2SC1684	4822 130 42814
Q8,Q9	2SC458	4822 130 42815
D1,D2	1SS119	4822 130 33038
D3	MA4100	4822 130 33039
VR1	Variable 2k	4822 116 21084
VR2	Variable 10k	4822 116 21085

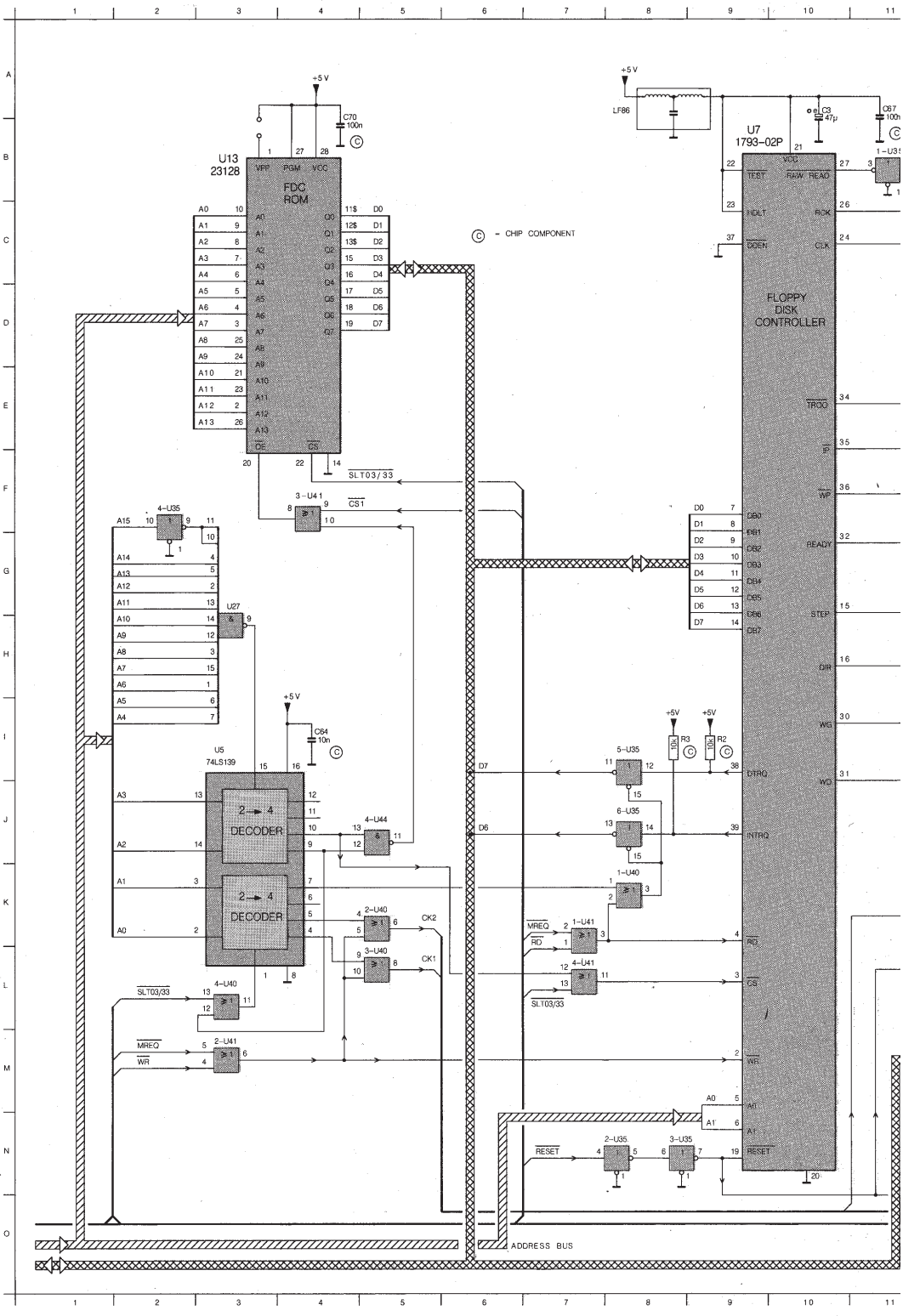
VARIOUS

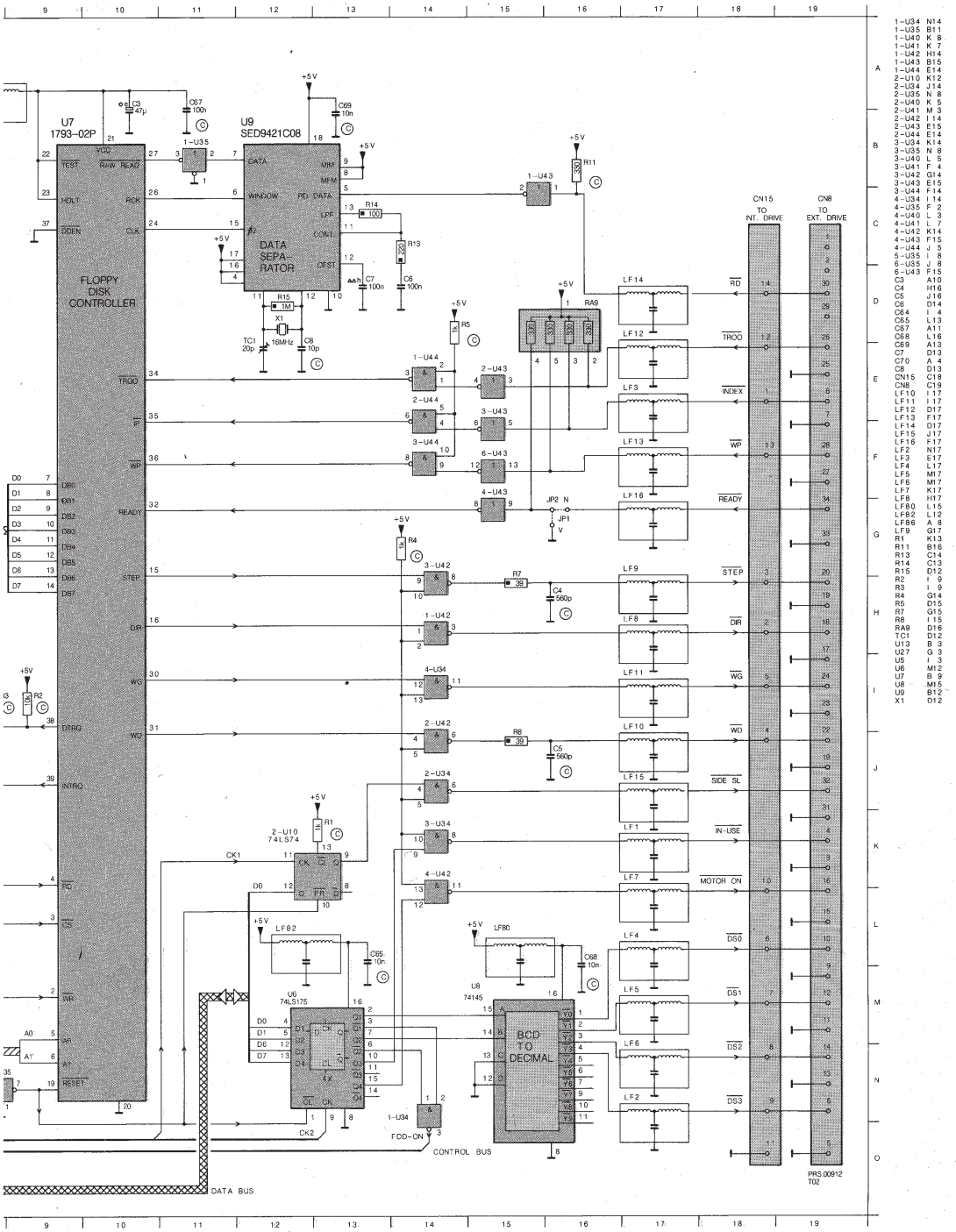
L1,L2	22 µ	4822 157 52419
L3	33 µ	4822 157 52421
X1	4.433619 MHz	4822 242 71393
	Modulator	4822 218 20547

LED PANEL



38 662 B12

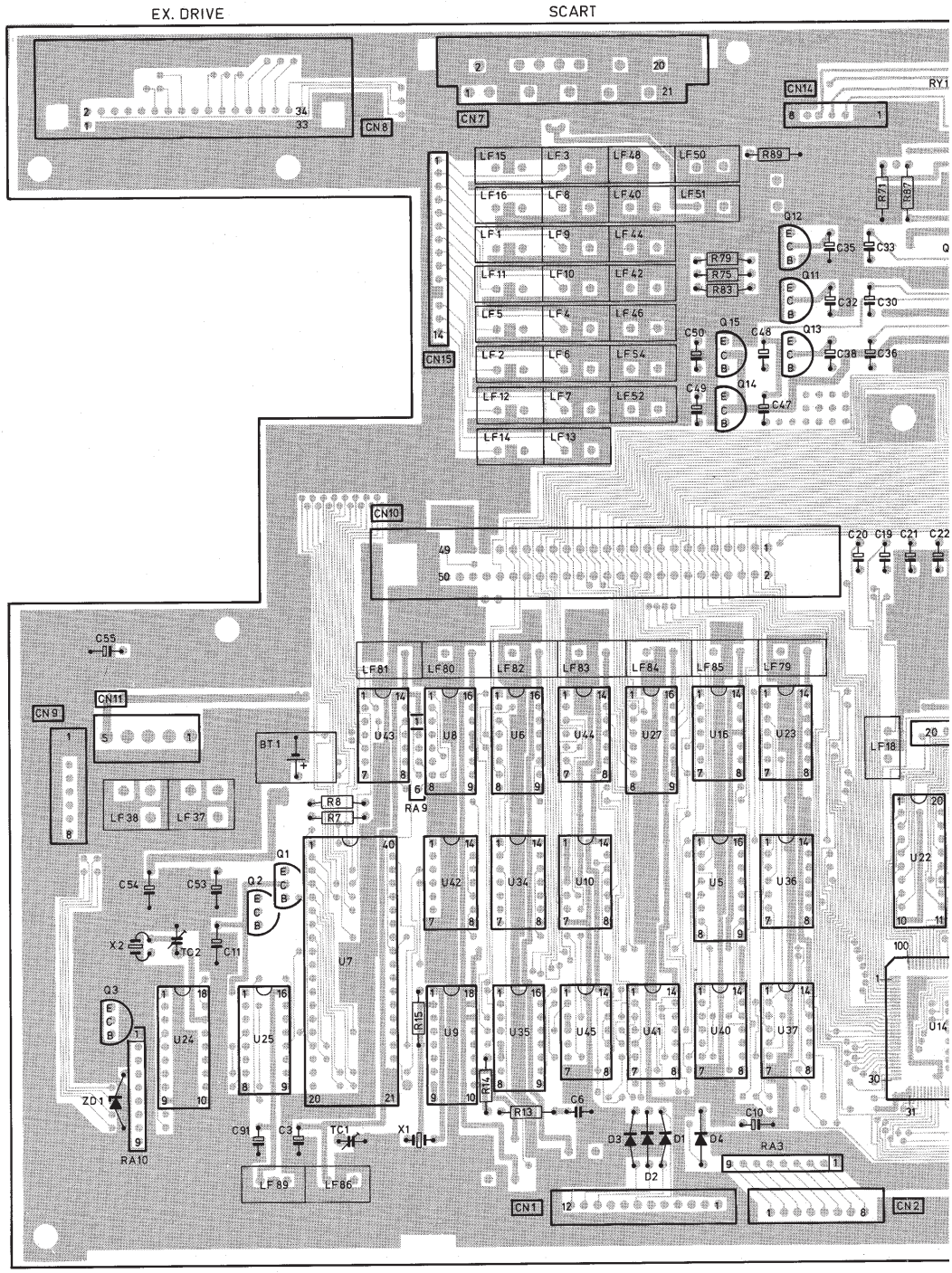

U13
23128
FDC
ROM
U7
1793-02P
FLOPPY
DISK
CONTROLLER
+5 V
C70
100n
LF86
C3
47µ
C67
100n
C = CHIP COMPONENT
SLT03/33
CS1
4-U35
3-U41
U27
U5
74LS139
DECODER
C84
10n
R3
10k
R2
10k
5-U35
6-U35
4-U44
1-U40
2-U40
3-U40
4-U40
1-U41
2-U41
3-U41
MREQ
RD
WR
CK2
CK1
RESET
2-U35
3-U35
ADDRESS BUS

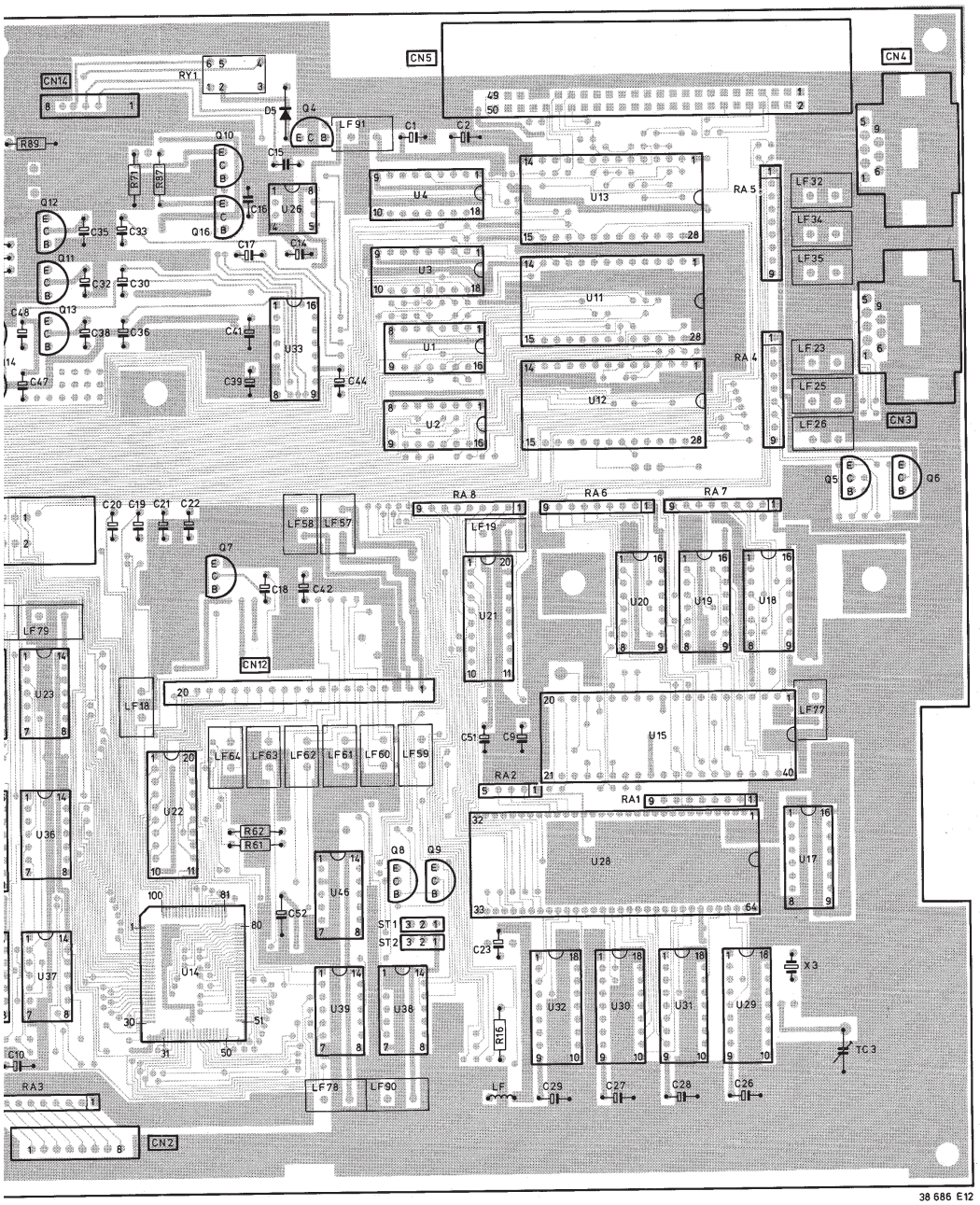


1-U34 N14
1-U35 B11
1-U40 K 8
1-U41 K 7
1-U42 H14
1-U43 B15
1-U44 E14
2-U10 K12
2-U34 J14
2-U35 N 8
2-U40 K 5
2-U41 M 3
2-U42 I 14
2-U43 E15
2-U44 E14
3-U34 K14
3-U35 N 8
3-U40 L 5
3-U41 F 4
3-U42 G14
3-U43 E15
3-U44 F14
4-U34 I 14
4-U35 F 2
4-U40 L 3
4-U41 L 7
4-U42 K14
4-U43 F15
4-U44 J 5
5-U35 I 8
6-U35 J 8
6-U43 F15
C3 A10
C4 H16
C5 J16
C6 D14
C64 I 4
C65 L13
C67 A11
C68 L16
C69 A13
C7 D13
C70 A 4
C8 D13
CN15 C18
CN8 C19
LF10 I 17
LF11 I 17
LF12 D17
LF13 F17
LF14 D17
LF15 J17
LF16 F17
LF2 N17
LF3 E17
LF4 L17
LF5 M17
LF6 M17
LF7 K17
LF8 H17
LF80 L15
LF82 L12
LF86 A 8
LF9 G17
R1 K13
R11 B16
R13 C14
R14 C13
R15 D12
R2 I 9
R3 I 9
R4 G14
R5 D15
R7 G15
R8 I 15
RA9 D16
TC1 D12
U13 B 3
U27 G 3
U5 I 3
U6 M12
U7 B 9
U8 M15
U9 B12
X1 D12

CS 1 070

MAIN PRINTED BOARD

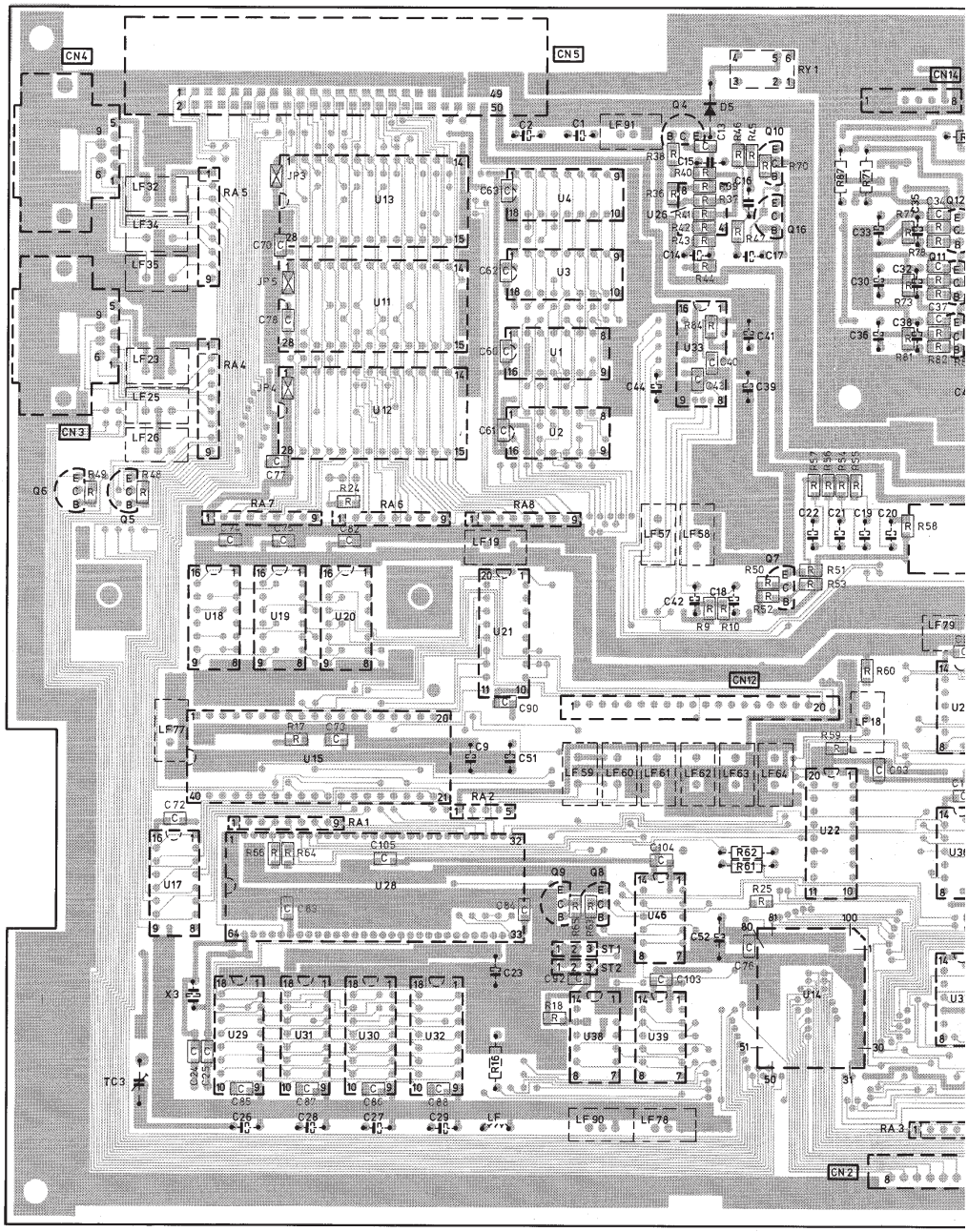




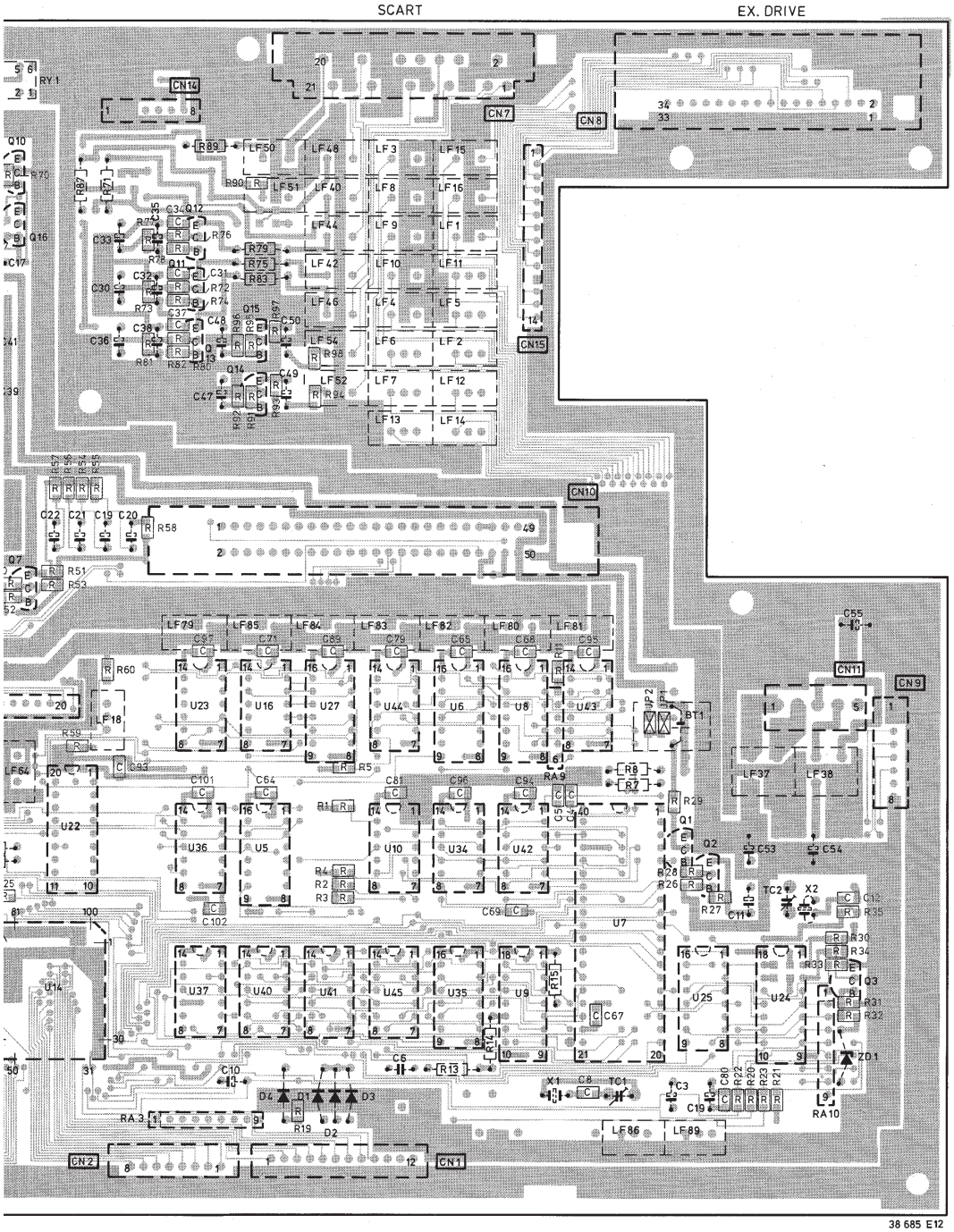
38 686 E12

CS 1 07

MAIN PRINTED BOARD

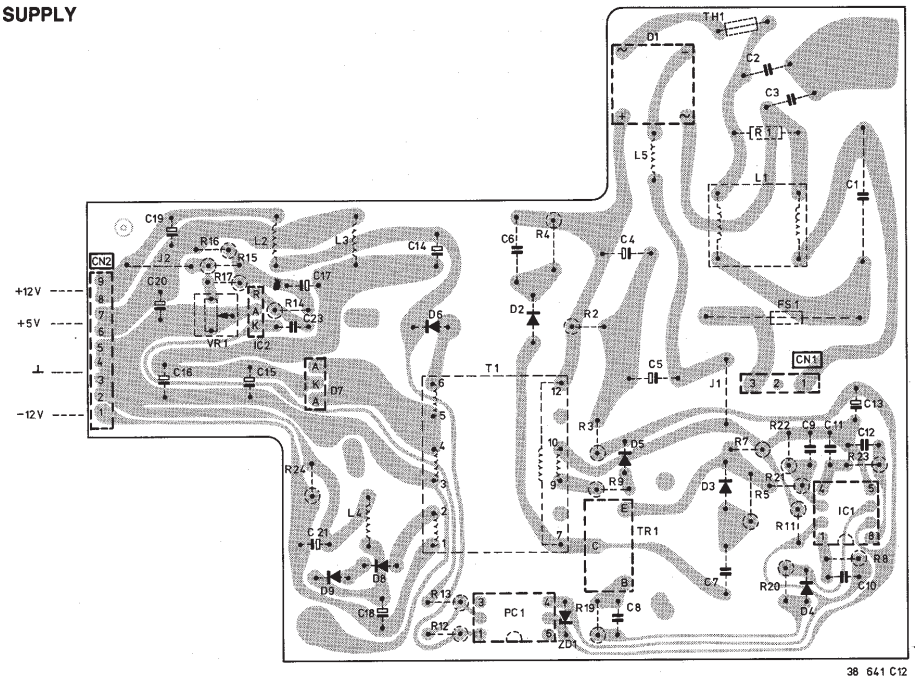


CS 1 073

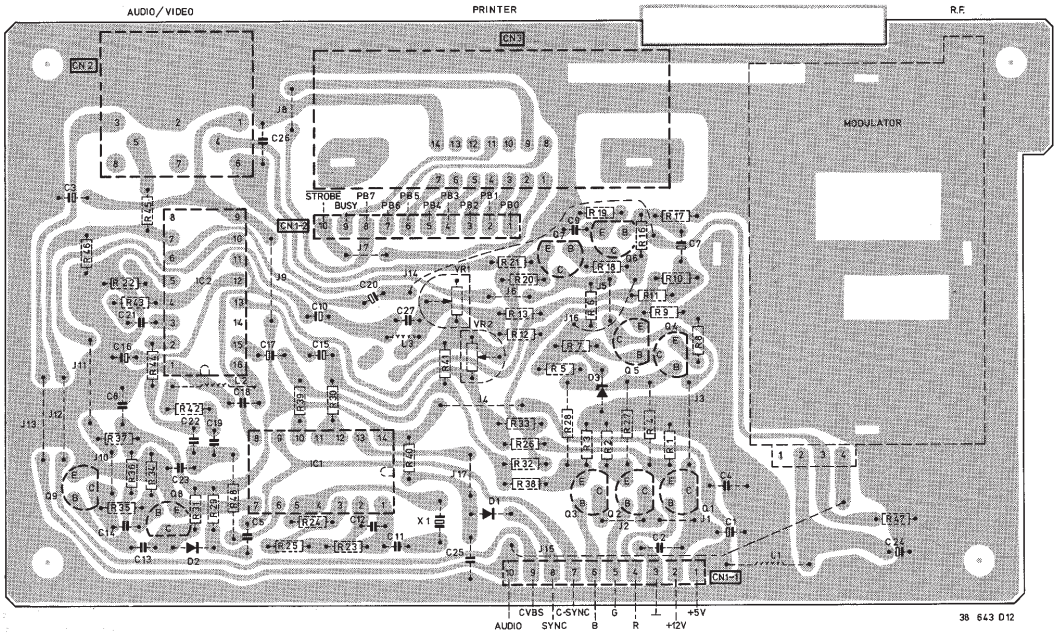

SCART
EX. DRIVE
CN14
CN7
CN8
CN15
CN10
CN11
CN9
CN2
CN1
RY1
Q10
Q16
Q11
Q12
Q14
Q15
Q7
LF50
LF48
LF3
LF15
LF51
LF40
LF8
LF16
LF44
LF9
LF1
LF42
LF10
LF11
LF46
LF4
LF5
LF54
LF6
LF2
LF52
LF7
LF12
LF13
LF14
LF79
LF85
LF84
LF83
LF82
LF80
LF81
LF18
LF64
LF37
LF38
LF86
LF89
U23
U16
U27
U44
U6
U8
U43
U22
U36
U5
U10
U34
U42
U14
U37
U40
U41
U45
U35
U9
U7
U25
U24
BT1
JP2
JP1
X1
X2
TC1
TC2
D1
D2
D3
D4
ZD1
RA3
RA9
RA10
L1
Q1
Q2
Q3

38 685 E12

POWER SUPPLY



ENCODER UNIT



SYMBOLS USED IN CIRCUIT DIAGRAMS

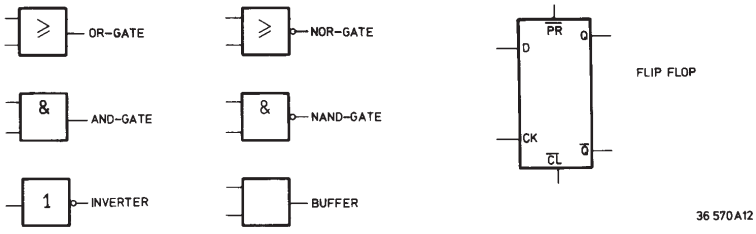
SYMBOL	TYPE	$P_{t\ amb}$ 70°	TOLERANCE	SERIES	RANGE 2322...
	SFR16	0.2	10Ω – 1M 5%	E24	180
	SFR25	0.33	1Ω – 10M 5%	E24	181
	SFR30	0.5	1Ω – 10M 5%	E24	182
	CR52	0.67	1Ω – 1M 5%	E24	213
	MR25	0.4	1Ω – 1M 1% (2%)	E24	151
	MR30	0.5	1Ω – 1M 1% (2%)	E24	152
	VR37	0.5	220k – 33M 5%	E24	242
	VR68	1	100k – 68M 5%	E24	244

SYMBOL	TYPE	VOLTAGE DC	TOLERANCE	RANGE 2222...
●●*	POLYESTER FLATFOIL	SEE NOTE	10%	342 ÷ 352 365 ÷ 368
△△*	PLATE CERAMIC	SEE NOTE	DEPENDING ON CAPACITY	629 ÷ 683
o*	ELCO MINIATURE SINGLE	SEE NOTE	−10+50%	015 ÷ 033 041 ÷ 043
●*	ELCO SINGLE ENDED	SEE NOTE	± 20%	035

NOTE :
*

a = 2.5V
b = 4V
c = 6.3V
d = 10V
e = 16V
f = 25V
g = 40V
h = 63V
j = 100V
l = 125V
m = 150V
n = 160V
q = 200V
r = 250V
s = 300V
t = 350V
u = 400V
v = 500V
w = 630V
x = 1000V
z = 1600V
A = 1.6V
B = 6V
C = 12V
D = 15V
E = 20V
F = 35V
G = 50V
H = 75V
I = 80V

34 498 A12



36 570A12

(GB)

Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified be used.

(NL)

Veiligheidsbepalingen vereisen, dat het apparaat in zijn oorspronkelijke toestand wordt teruggebracht en dat onderdelen, identiek aan de gespecificeerde, worden toegepast.

(D)

Bei jeder Reparatur sind die geltenden Sicherheitsvorschriften zu beachten. Der Originalzustand des Geräts darf nicht verändert werden; für Reparaturen sind Original-Ersatzteile zu verwenden.

(F)

Les normes de sécurité exigent que l'appareil soit remis à l'état d'origine et que soient utilisées les pièces de rechange identiques à celles spécifiées.

(I)

Le norme di sicurezza esigono che l'apparecchio venga rimesso nelle condizioni originali e che siano utilizzati i pezzi di ricambiago identici a quelli specificati.

Service Information

1986-01-31

VG8230

HC86-2

Home computer

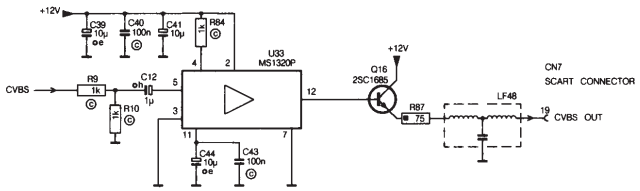
(GB)

When a monitor connected to a VG8230, shows sync problems the current circuit must be changed into the circuit modified.

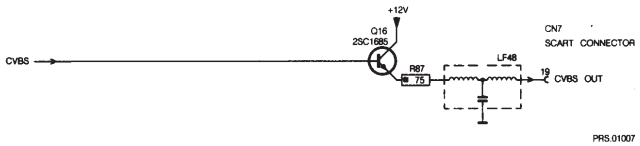
(NL)

Wanneer een monitor, aangesloten op een VG8230 synchronisatie problemen geeft moet de huidige schakeling naar de gemodificeerde schakeling gewijzigd worden.

CURRENT CIRCUIT



MODIFIED CIRCUIT



PRS.01007