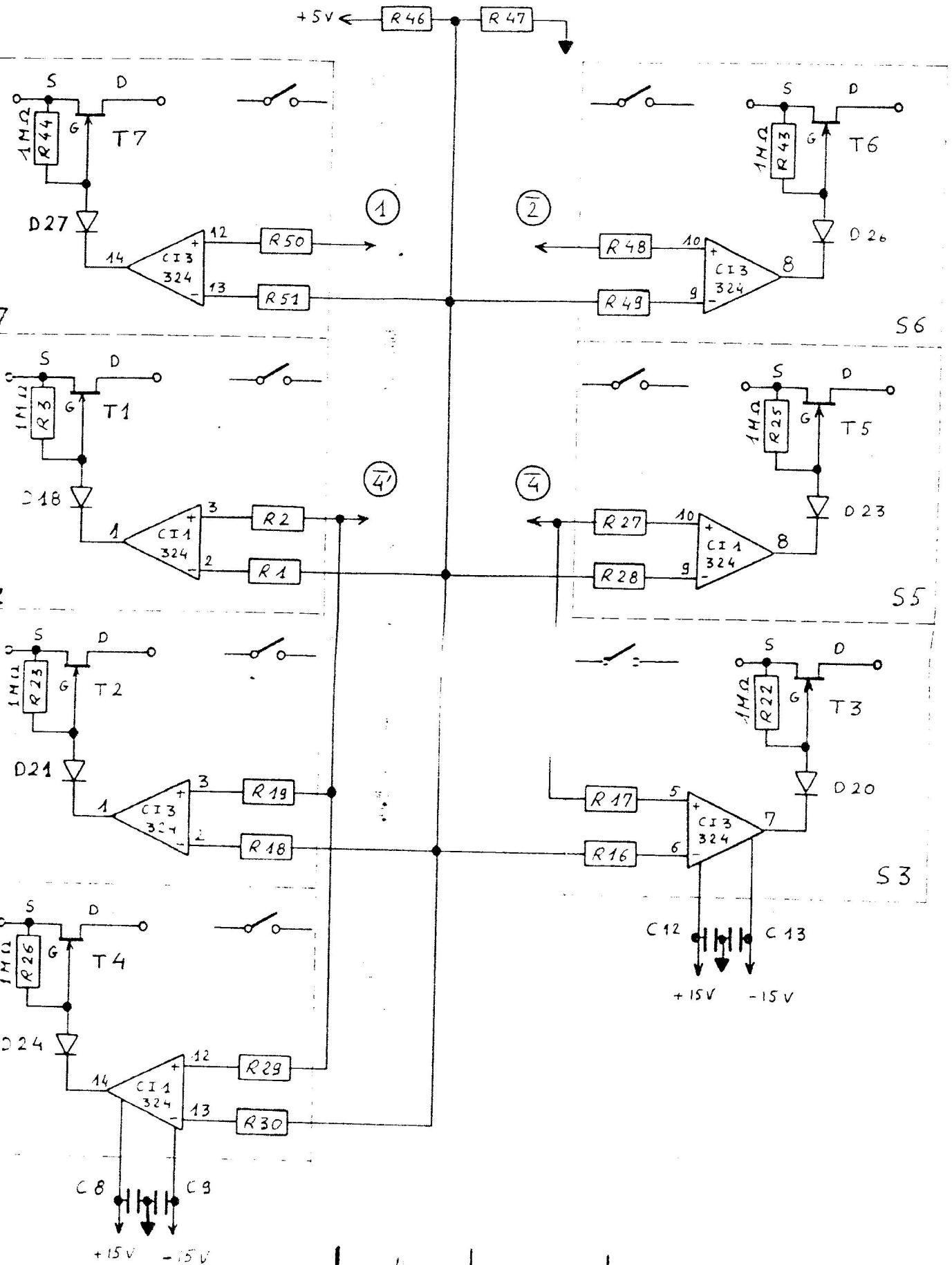


indications 1N414B
ns indications 10 kΩ
indications 47nF
s indications LN4391

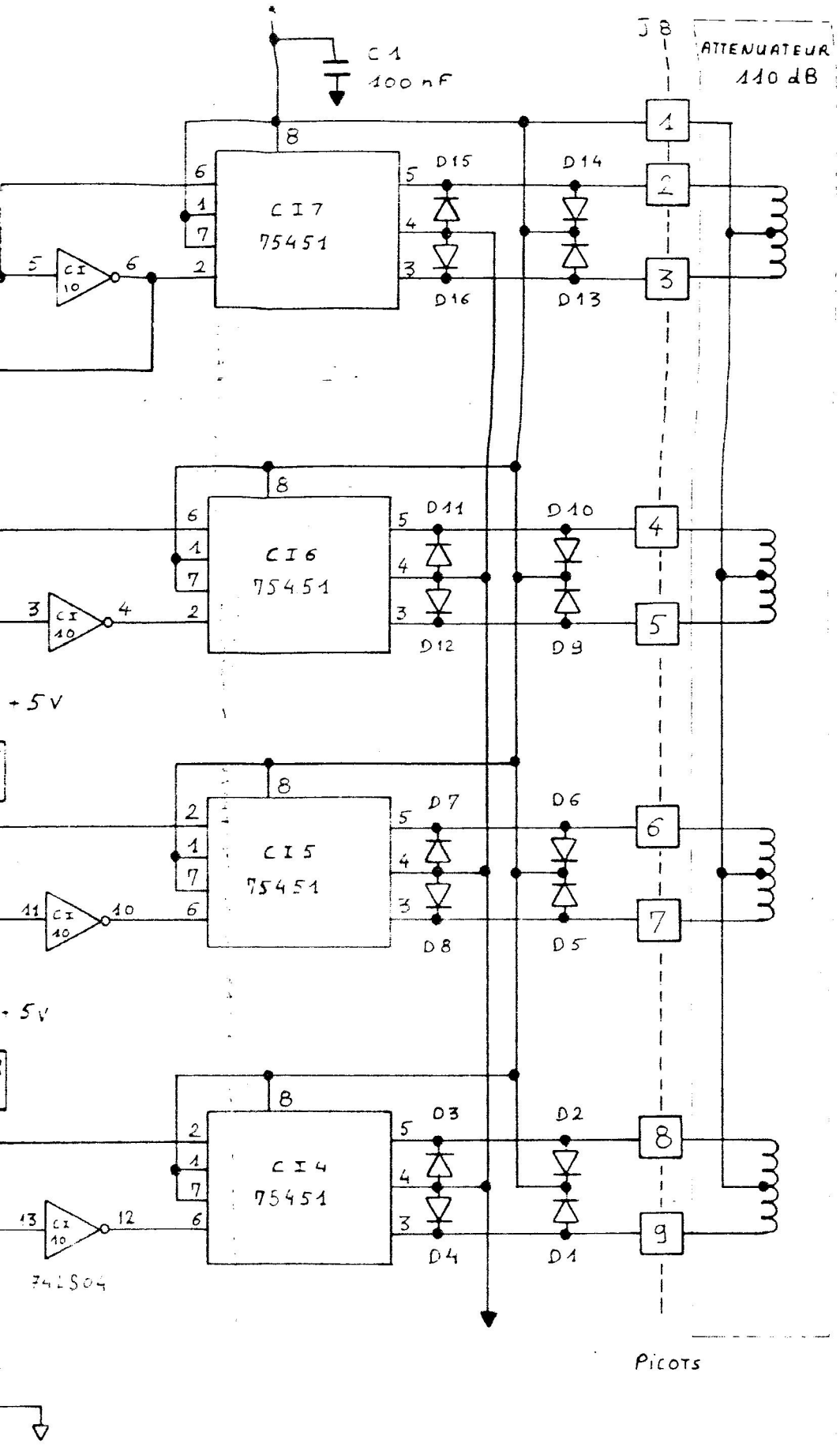
EDITION	MODIF N	NATURE DE LA MODIFICATION

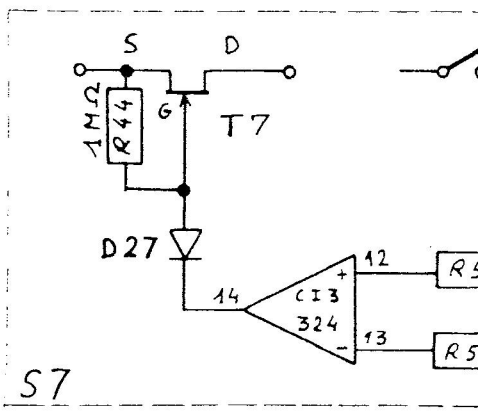
COMMUNICATION ET UTILISATION INTERDITES

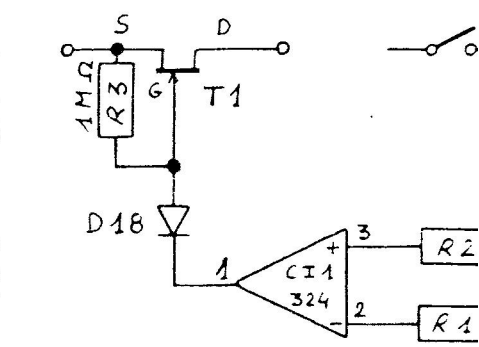
GIGA INSTRUMENTATION

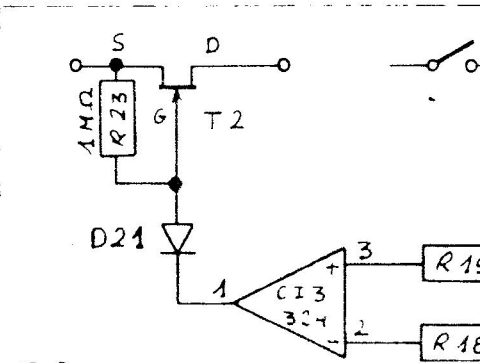
37 avenue de la Marne
92120 Montrouge Te

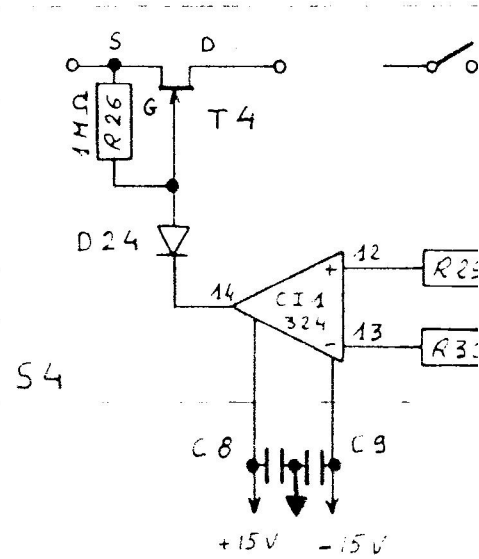
SCHEMA DE PRINCIPE



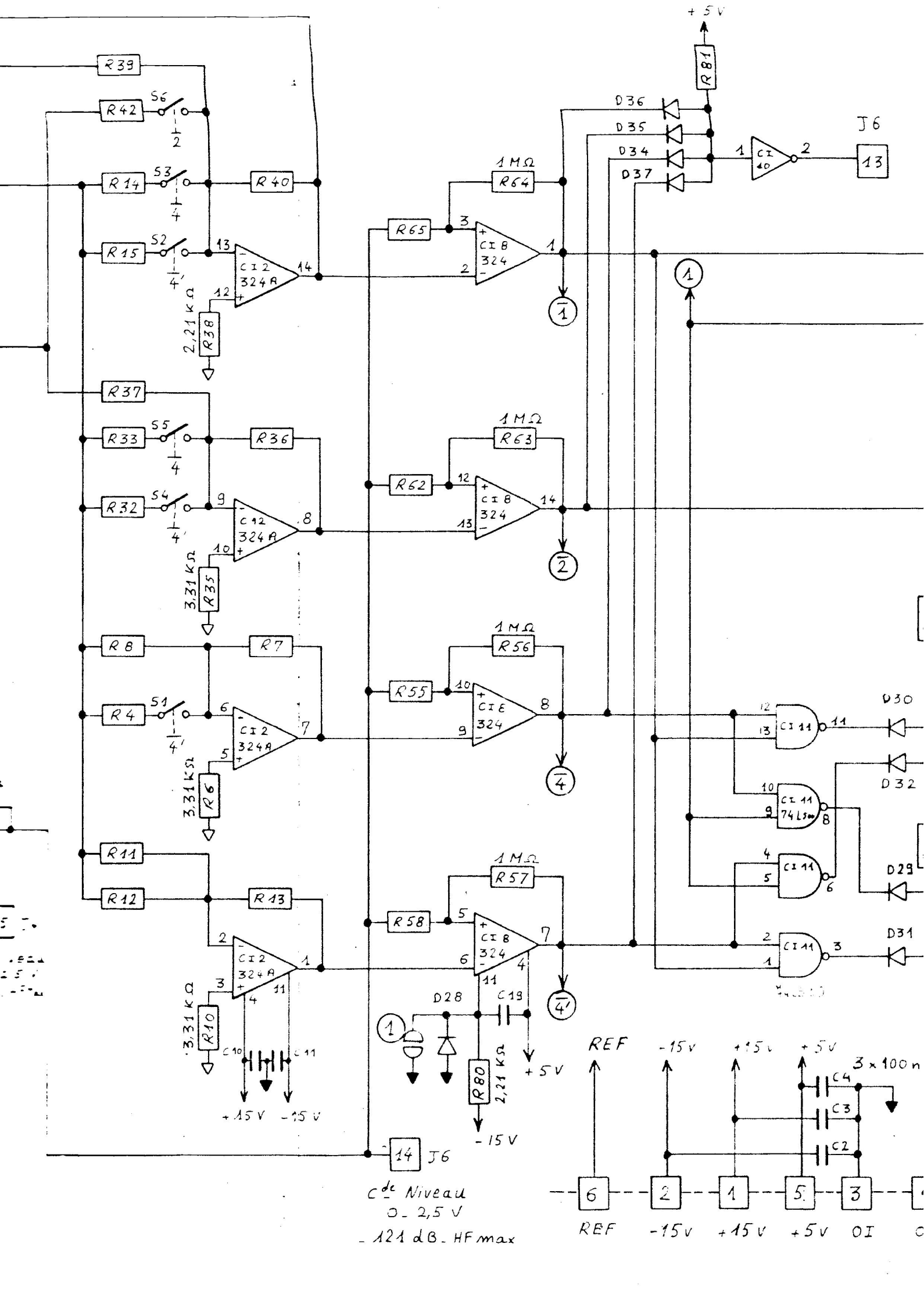




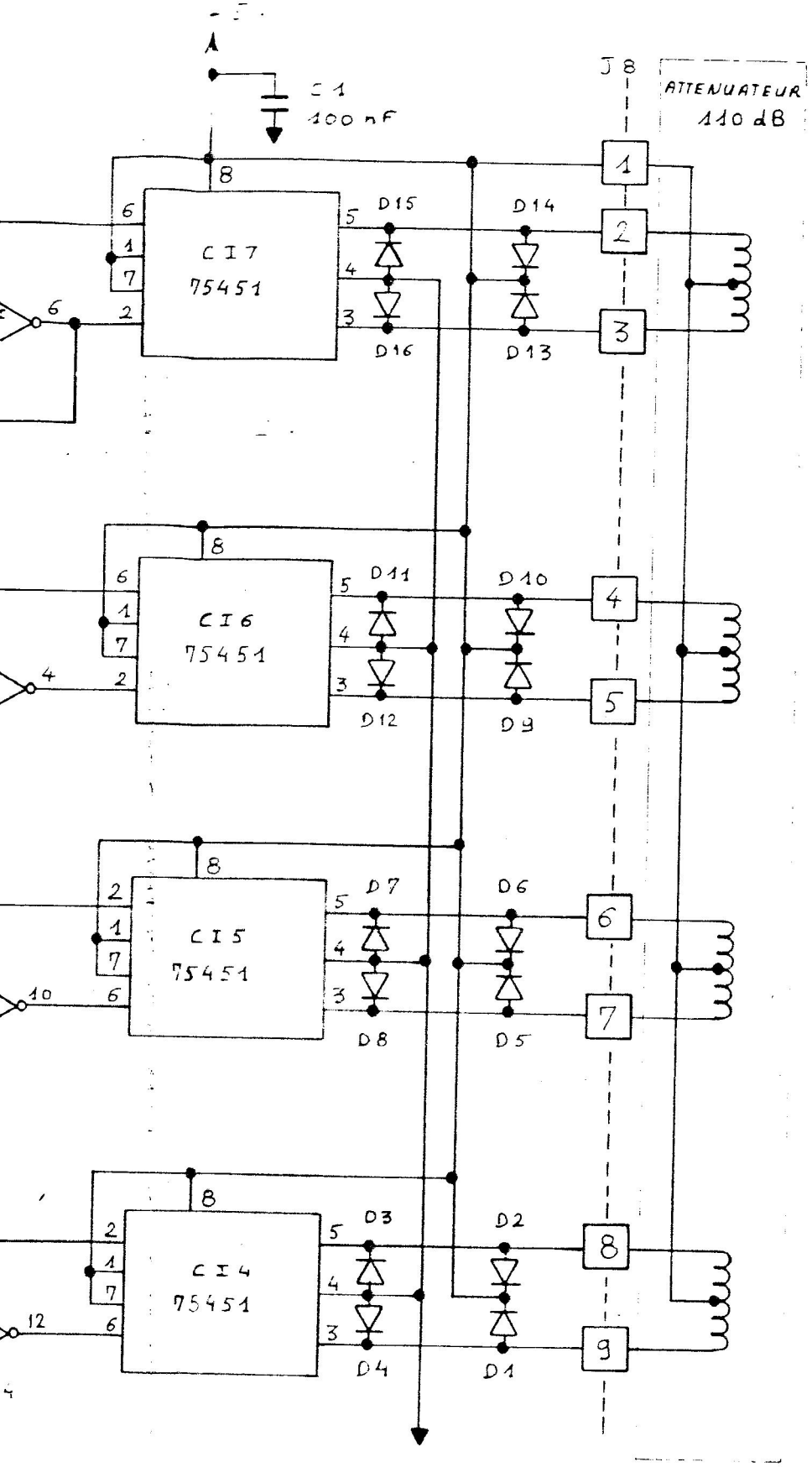


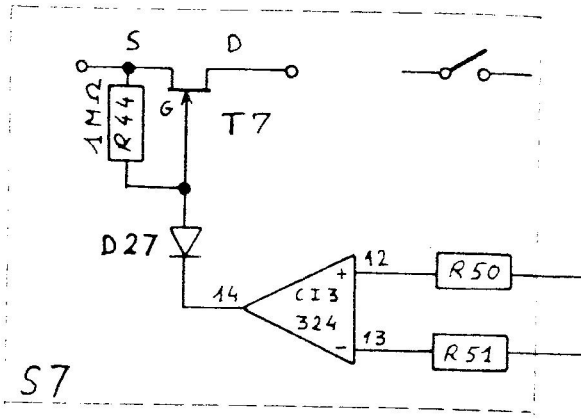


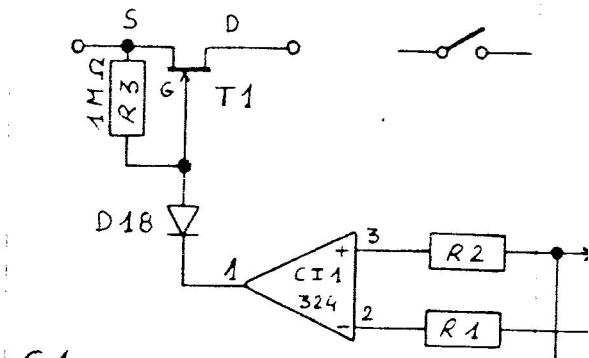
- Diodes sans indications 1N41
- Résistances sans indications
- Capacité sans indications 47n
- Transistor sans indications 2N43

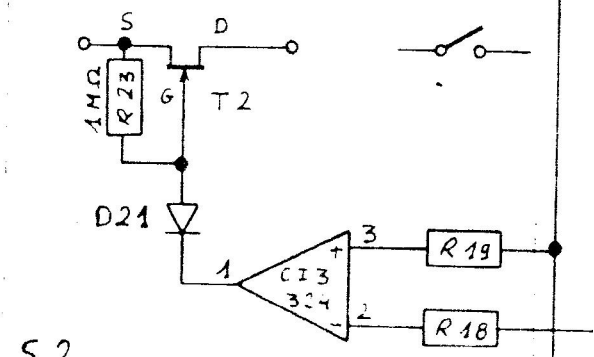


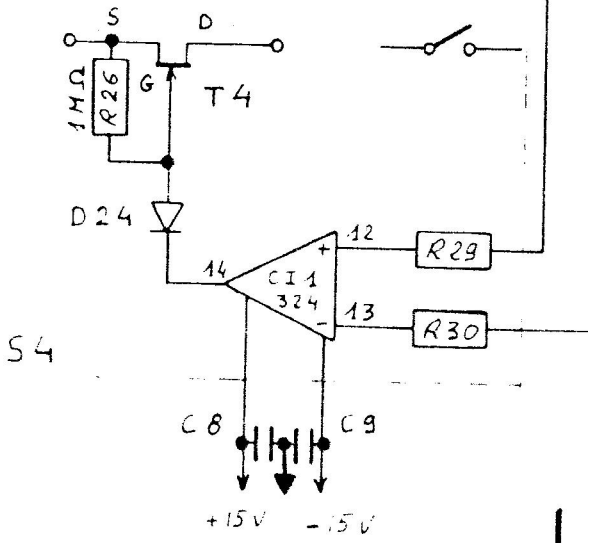
+5V
R81
D36
D35
D34
D37
CI 10
J6
13
R39
R42
S6
R14
S3
R40
R15
S2
CI 2 324A
2,21 kΩ
R38
R37
R33
S5
R36
R32
S4
CI 2 324A
3,31 kΩ
R35
R8
R7
R4
S1
CI 2 324A
3,31 kΩ
R6
R11
R12
R13
CI 2 324A
3,31 kΩ
R10
C10
C11
+15V
-15V
1 MΩ
R64
R65
CI 8 324
1 MΩ
R63
R62
CI 8 324
1 MΩ
R56
R55
CI 8 324
1 MΩ
R57
R58
CI 8 324
D28
C19
R80
2,21 kΩ
+5V
-15V
14
J6
Cde Niveau
0 - 2,5 V
- 121 dB - HF max
CI 11
CI 11 74LS00
CI 11
CI 11
D30
D32
D29
D31
REF
-15V
+15V
+5V
3 x 100 n
C4
C3
C2
REF
-15V
+15V
+5V
OI



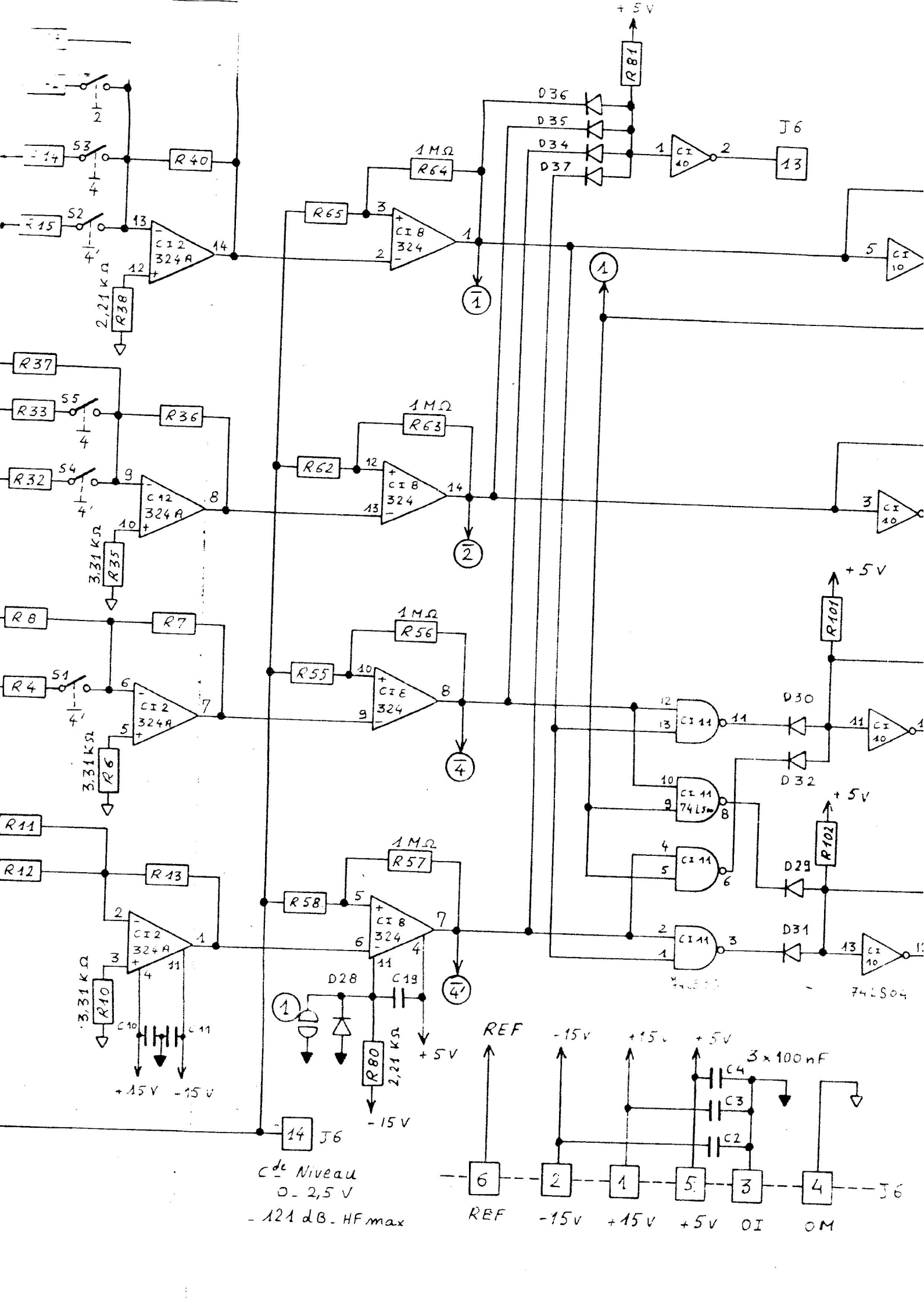




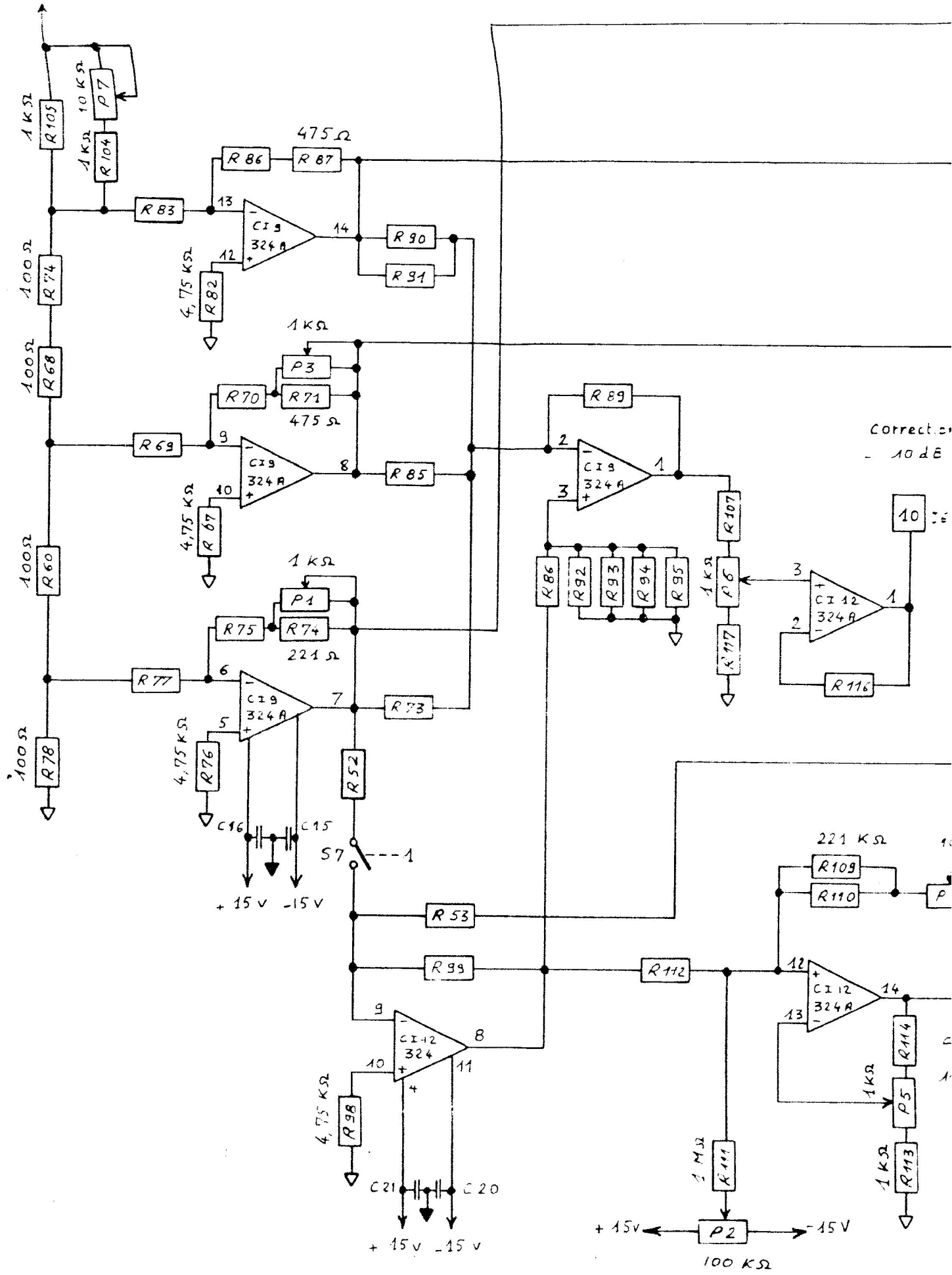




- Diodes sans indications 1N4148
- Résistances sans indications 10 kΩ
- Capacité sans indications 47nF
- Transistor sans indications 2N4391



+5V
R81
D36
D35
D34
D37
J6
13
CI 10
1MΩ
R64
R65
CI 8 324
R40
S3
S2
R15
CI 2 324A
2,21 KΩ
R38
R37
R33
S5
R36
R32
S4
CI 2 324A
3,31 KΩ
R35
R63
R62
R8
R7
R4
S1
R6
R56
R55
R11
R12
R13
R10
R57
R58
D28
C19
R80
2,21 KΩ
C10
C11
+15V
-15V
R101
R102
D30
D32
D29
D31
CI 11
74LS04
REF
3 x 100 nF
C4
C3
C2
OI
OM
Cde Niveau
0 - 2,5 V
- 121 dB - HF max


1 KΩ
R 105
10 KΩ
P 7
1 KΩ
R 104
475 Ω
R 86
R 87
R 83
CI 9
324 A
R 90
R 91
4,75 KΩ
R 82
100 Ω
R 74
1 KΩ
P 3
R 70
R 71
475 Ω
100 Ω
R 68
R 69
CI 9
324 A
R 85
4,75 KΩ
R 67
R 89
CI 9
324 A
R 107
1 KΩ
P 6
R 117
R 86
R 92
R 93
R 94
R 95
CI 12
324 A
R 116
10
100 Ω
R 60
1 KΩ
P 1
R 75
R 74
221 Ω
R 77
CI 9
324 A
R 73
100 Ω
R 78
4,75 KΩ
R 76
R 52
C 16
C 15
+ 15 V
- 15 V
S 7
1
R 53
221 KΩ
R 109
R 110
R 99
R 112
CI 12
324 A
CI 12
324
R 114
1 KΩ
P 5
1 KΩ
R 113
4,75 KΩ
R 98
C 21
C 20
+ 15 V
- 15 V
1 MΩ
R 111
+ 15 V
P 2
- 15 V
100 KΩ

NOMENCLATURE

CN 1310/2

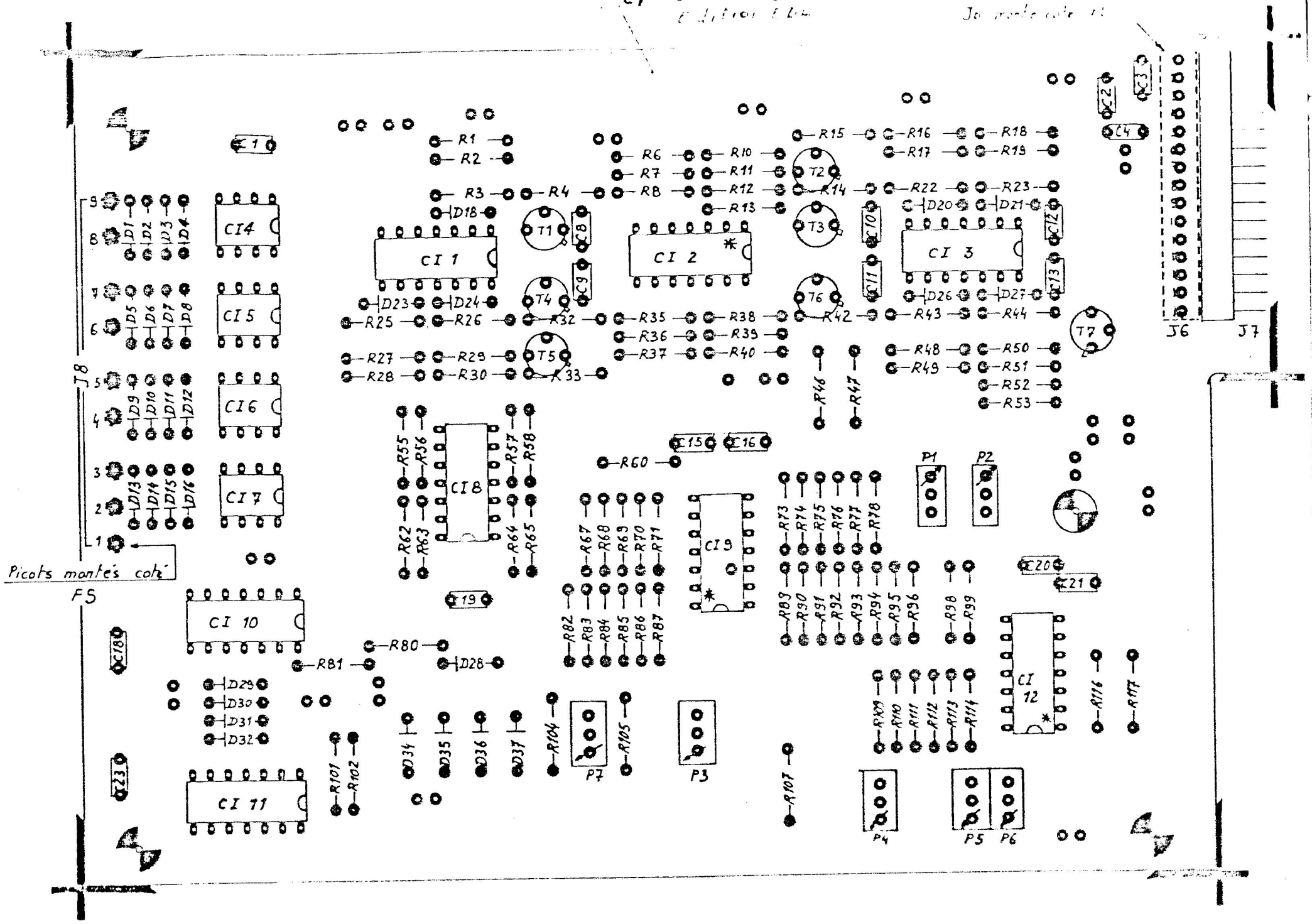
1/2

REFERENCES	Q	REPERES	DESCRIPTIONS
CN1310/2	1		CIRCUITS IMPRIMES
			Résistances
R 1000	4	R60,68,78,84	100 Ω 1/8w 1 % 50PPM
R 2210	1	R74	221 Ω 1/8w 1 % 50PPM
R 4750	2	R71,87	475 Ω 1/8w 1 % 50PPM
R 1001	3	R104,105,113	1 KΩ 1/8w 1 % 50PPM
R 2211	2	R38,80	2,21 KΩ 1/8W 1 % 50PPM
R 3311	3	R6,10,35	3,3 KΩ 1/8w 1 % 50PPM
R 4751	4	R76,82,98,67,	4,75 KΩ 1/8w 1 % 50PPM
R 1002	63	R1,2,4,7,8,11à19,27à 30,32,33,36,37,39,40, 42,46 à 49,50,51à53, 55,58,62,65,69,70,73, 75,77,81,83,85,86,89 à 96,99,101,102,107, 110,112,114,116,117.	10 KΩ 1/8w 1 % 50PPM
R 2213	1	R109	221KΩ 1/8w 1 % 50PPM
RC 105	12	R3,22,23,25,26,43,44 56,57,63,64,111,	1 MΩ Carbonne 5 % 1/4 w
			Potentiomètres
64 W 101	1	P4	100Ω multitours CERMET
64 W 102	4	P1,P3,P5,P6	1KΩ multitours CERMET
64 W 103	1	P7	10 KΩ multitours CERMET
64 W 104	1	P2	100 KΩ multitours CERMET

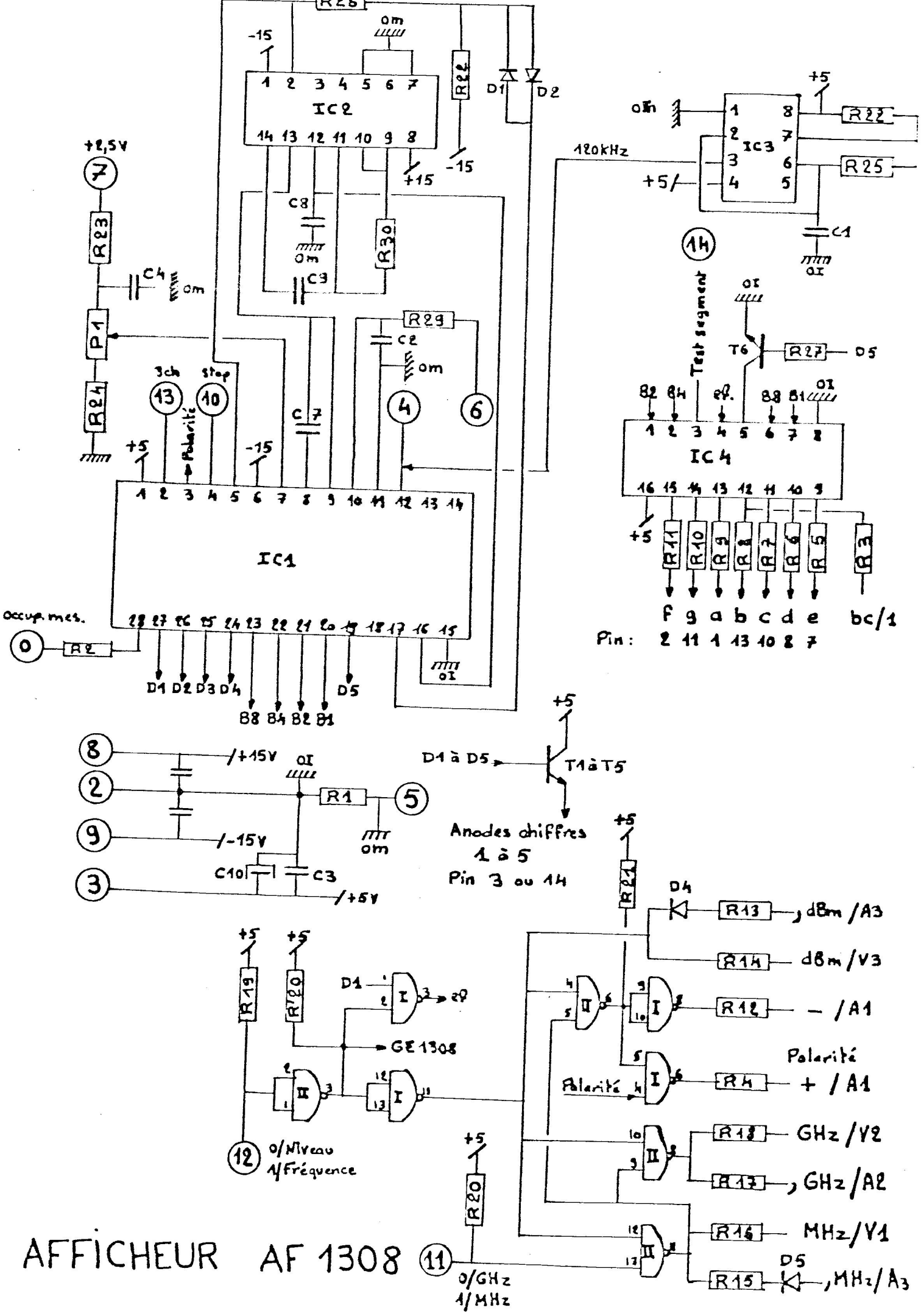
.../...

NOMENCLATURE

REFERENCES	Q	REPERES	DESCRIPTIONS
			Condensateurs
CK 473	11	C8 à 13,14,15,16,19 à 21.	47 nF céramique CK 05
CK 104	4	C1 à C4	100 nF céramique CK 05
			Diodes
D 1N4148	32	D1 à 16,18,20,21,23 24,26 à 32,34 à 37.	Commutation 4nS - 30V
			Transistors
T 2N4391	7	T1 à T7	2N4391 transistor FET canal N R"ON" 30
			Circuits intégrés
CI LM 324 A	6	CI1 à 3,8,9,12	Quadruple ampli opérationnel
CI 74 LS 00	1	CI11	Quadruple porte NAND
CI 74 LS 04	1	CI10	Sextuple inverseur
CI 75451 N	4	CI4 à 7	Interface commande de Relais
			Connecteurs
CIF 15	1	J6	Connecteur mâle droit 15 broches
CIP 15	1	J7	Connecteur mâle coudé 90° 15 broches
	9	J8	Picots à souder
J 23 814	3		Support CI 14 pattes



C1
CI 1
CI 2
CI 3
CI 4
CI 5
CI 6
CI 7
CI 8
CI 9
CI 10
CI 11
CI 12
J6
J7
J8
Picots montés coté
FS
P1
P2
P3
P4
P5
P6
P7



AFFICHEUR AF 1308

Nomenclature : AF 1305

Utilisation : GU 1300 SERIE

REPERES	DESCRIPTIONS	REFERENCES
	R E S I S T A N C E S	
R 1	100 Ohm 1 % 1/8 W 50ppm	RM 1000
R 2	100 Ohm " " "	RM 1000
R 3	33.2 Ohm " " "	RM 33.2
R 4	33.2 Ohm " " "	RM 33,2
R 5	100 Ohm " " "	RM 1000
R 6	100 Ohm " " "	RM 1000
R 7	100 Ohm " " "	RM 1000
R 8	100 Ohm " " "	RM 1000
R 9	100 Ohm " " "	RM 1000
R 10	100 Ohm " " "	RM 1000
R 11	100 Ohm " " "	RM 1000
R 12	100 Ohm " " "	RM 1000
R 13	33,2 Ohm " " "	RM 33.2
R 14	100 Ohm " " "	RM 1000
R 15	33,2 Ohm " " "	RM 33.2
R 16	100 Ohm " " "	RM 1000
R 17	100 Ohm " " "	RM 1000
R 18	100 Ohm " " "	RM 1000
R 19	1 KOhm " " "	RM 1001
R 20	1 KOhm " " "	RM 1001
R'20	1 KOhm " " "	RM 1001
R 21	1 KOhm " " "	RM 1001
R 22	3,32 KOhm " " "	RM 3321
R 23	2,21 KOhm " " "	RM 2211
R 24	3,32 KOhm " " "	RM 3321
R 25	10 KOhm " " "	RM 1002
R 26	10 KOhm " " "	RM 1002
R 27	100 KOhm " " "	RM 1003
R 28	100 KOhm " " "	RM 1003
R 29	100 KOhm " " "	RM 1003
R 30	220 KOhm " " "	RM 2203
	P O T E N T I O M E T R E	
P 1	100 KOhm Multitours Cermet	PM 101
	D I O D E S	
D 1	Signal 30 V - 4 ns	D 1N 4148
D 2	" " "	D 1N 4148
D 3	" " "	D 1N 4148
D 4	" " "	D 1N 4148
D 5	" " "	D 1N 4148

Nomenclature : AF 1308

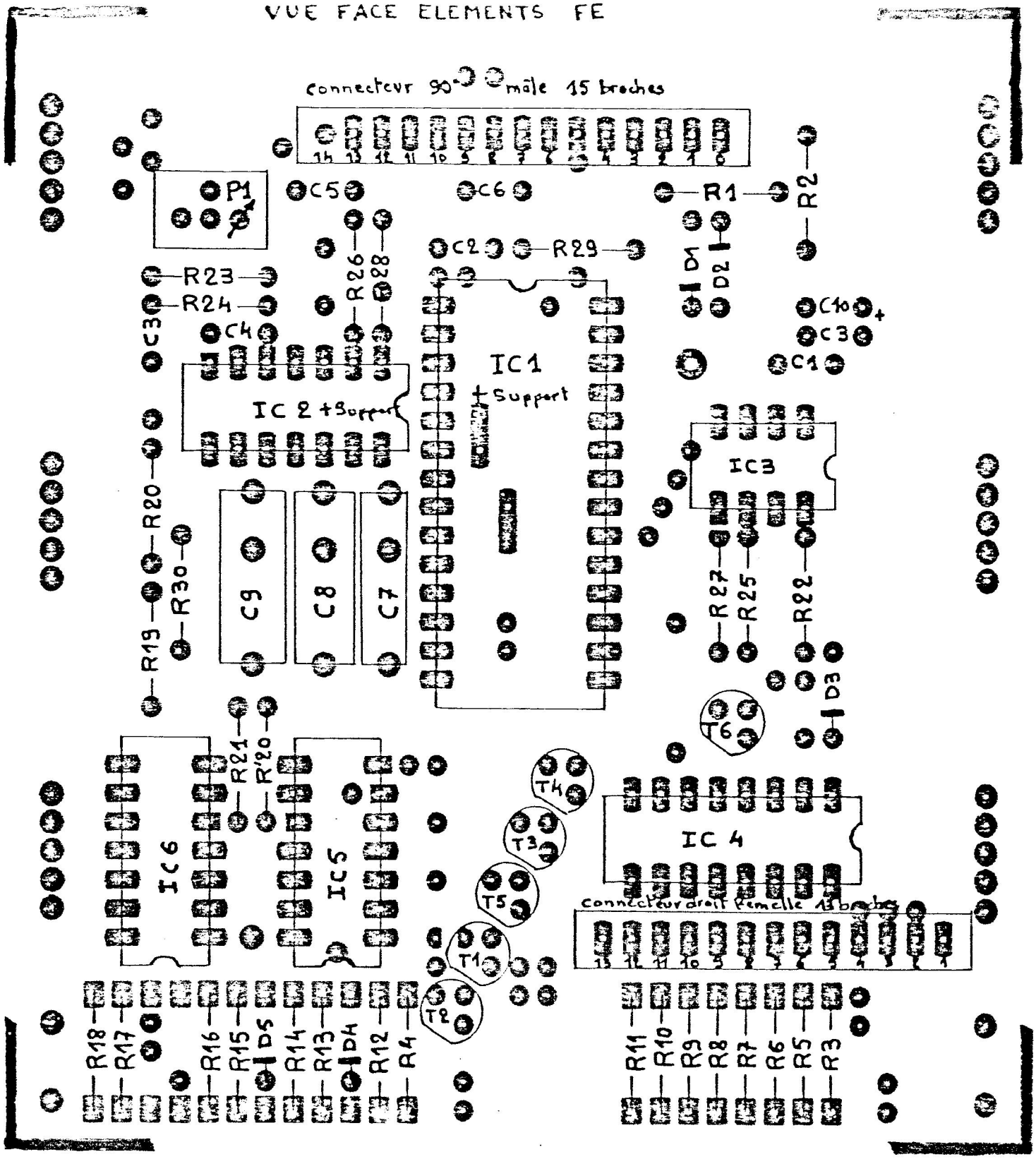
Utilisation : GU 1300 SERIE

REPERES	DESCRIPTIONS	REFERENCES
	C O N D E N S A T E U R S	
C 1	470 pF céramique CK 05 (type)	CK 471
C 2	100 nF " "	CK 104
C 3	100 nF " "	CK 104
C 4	100 nF " "	CK 104
C 5	100 nF " "	CK 104
C 6	100 nF " "	CK 104
C 7	0.1 µF 160 V polycarbonate	CM 104
C 8	1 µF 40 V polycarbonate	CM 105
C 9	0.1 µF 160 V polypropylène	CP 104
C 10	10 F 25 V tantale	CT 106
	C I R C U I T S I N T E G R E S	
I C 1	Logique Afficheur	CI 7103 A (Intersil)
I C 2	Analogique Afficheur	CI 8052 A (Intersil)
I C 3	Monostable	CI 555
I C 4	Décodeur BCD - 7 segments	CI 7447 AN
I C 5	Quadruple porte 2 entrées	CI 7438
I C 6	Quadruple porte 2 entrées	CI 7438
	P I C O T S 1	DF 929
	C O N N E C T E U R	
	15 brochesmâles90° RCBR 254	CIP 15 (O.E.C.)
	13 broches droits femelles (pour GE 1308)	SCD 13 (O.E.C.)
	T R A N S I S T O R S	
T 1	N P N Commutation	T BC 238
T 2	N P N "	T BC 238
T 3	N P N "	T BC 238
T 4	N P N "	T BC 238
T 5	N P N "	T BC 238
T 6	N P N "	T BC 238

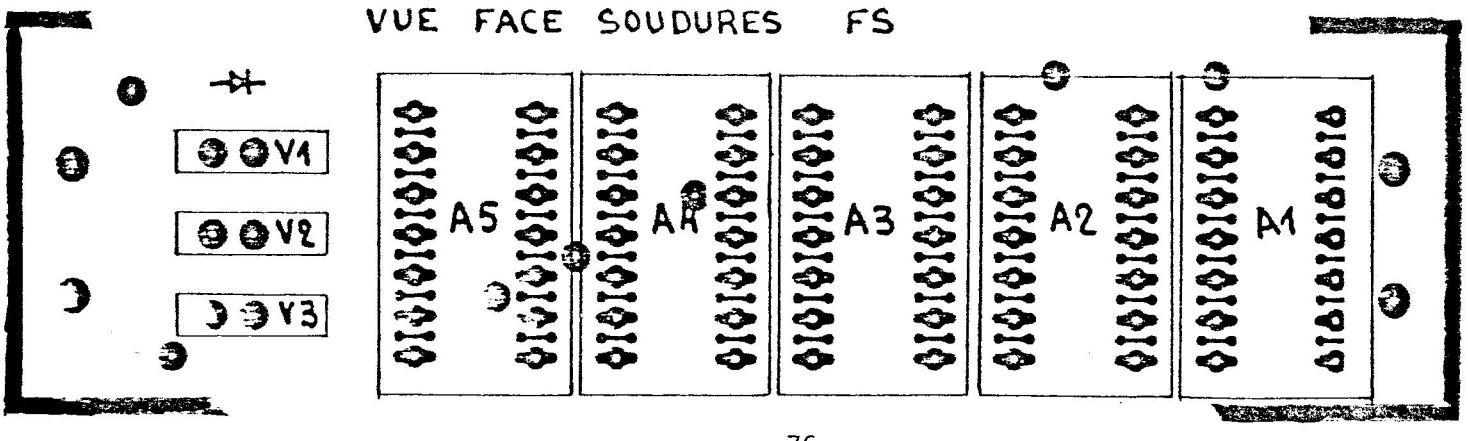
Nomenclature : AF 1308

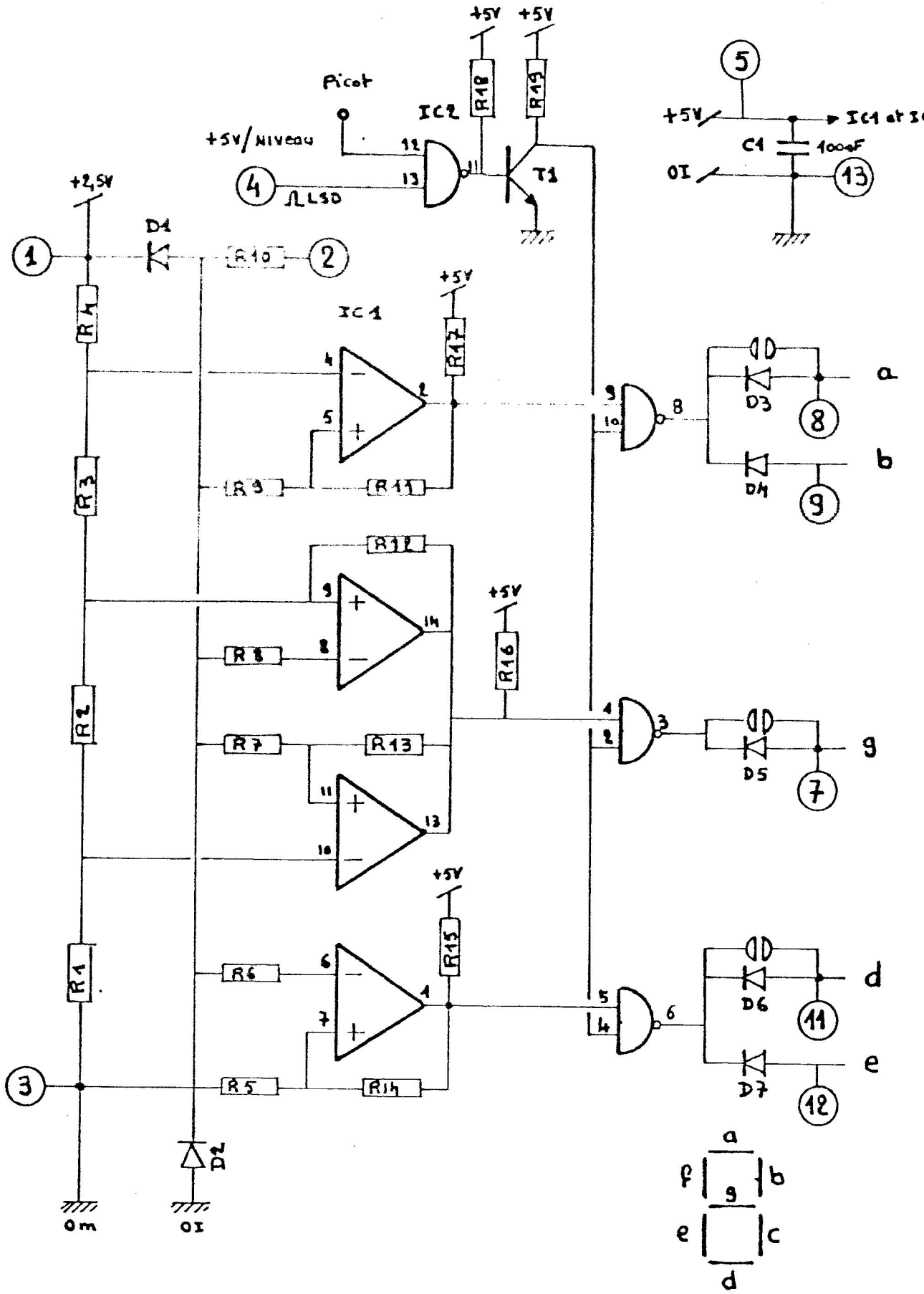
Utilisation : GU 1300 SERIE

REPERES	DESCRIPTIONS	REFERENCES
	C I R C U I T I M P R I M E	
	Double face - Trous métallisés	AF 1308 a
	" "	AF 1308 b
	A F F I C H A G E	
A 1	Signe	AF 745-0015
A 2	7 segments + Virgule	AF 745-0014
A 3	" "	AF 745-0014
A 4	" "	AF 745-0014
A 5	" "	AF 745-0014
V 1	Unités - D.E.L. rectangulaire	VY 4670 (H.P.)
V 2	" "	VY 4670 (H.P.)
V 3	" "	VY 4670 (H.P.)
	Pions 5 x 5	
	Pions 5 x 5	



PLAN DE CABLAGE AF 1308





GALVANOMETRE ELECTRONIQUE GE 1308

Nomenclature : [illegible]

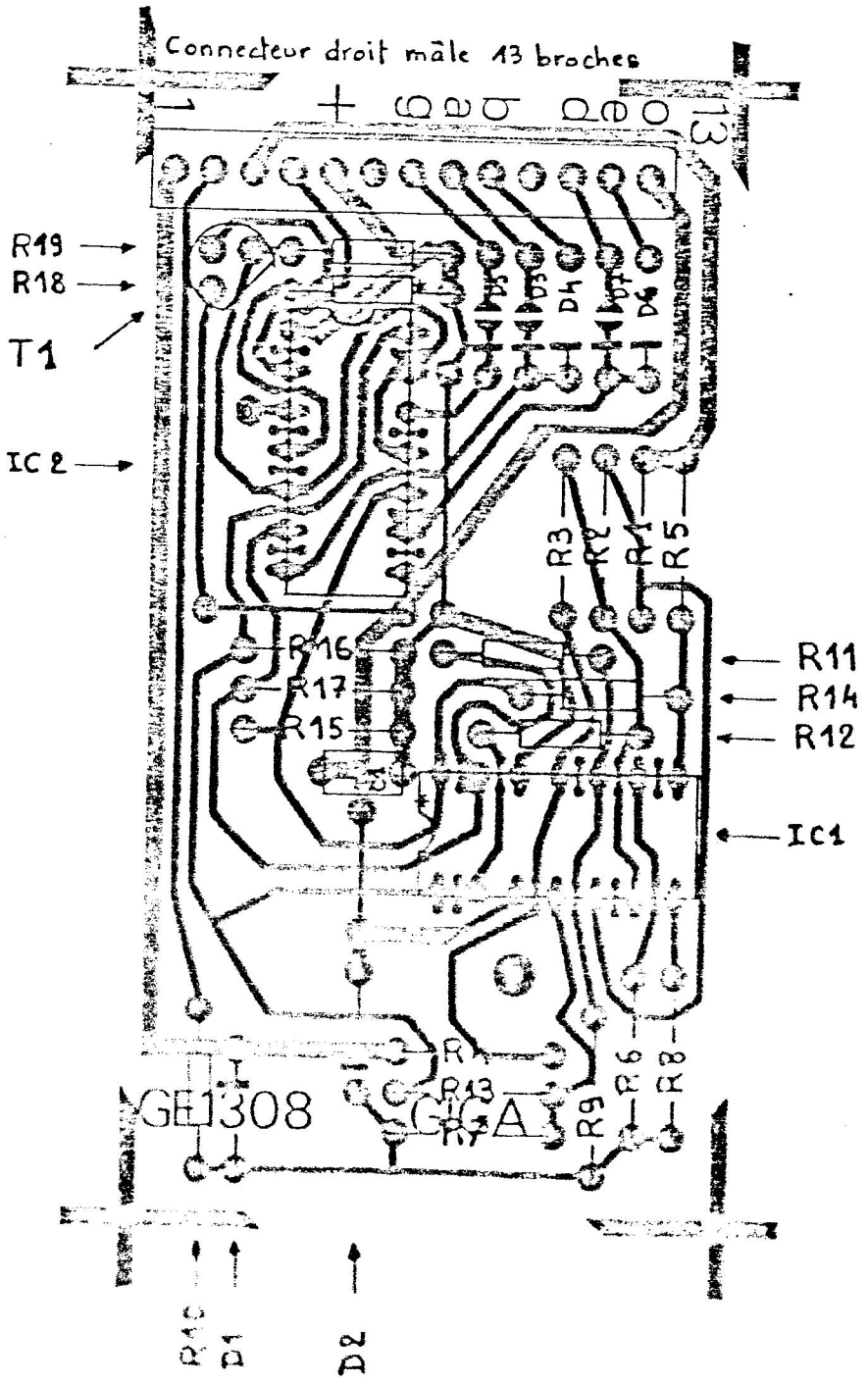
Utilisation : SU 1300 SERIE

REPERES	DESCRIPTIONS	REFERENCES
	R E S I S T A N C E S	
R 1	100 Ohm 1% 1/8 W 50 ppm	RM 1000
R 2	100 Ohm " " "	RM 1000
R 3	100 Ohm " " "	RM 1000
R 4	10 KOhm " " "	RM 1002
R 5	100 Ohm " " "	RM 1000
R 6	100 Ohm " " "	RM 1000
R 7	100 Ohm " " "	RM 1000
R 8	100 Ohm " " "	RM 1000
R 9	100 Ohm " " "	RM 1000
R 10	100 Ohm " " "	RM 1000
R 11	100 KOhm " " "	RM 1003
R 12	100 KOhm " " "	RM 1003
R 13	100 KOhm " " "	RM 1003
R 14	100 KOhm " " "	RM 1003
R 15	1 KOhm " " "	RM 1001
R 16	1 KOhm " " "	RM 1001
R 17	1 KOhm " " "	RM 1001
R 18	10 KOhm " " "	RM 1002
R 19	1 KOhm " " "	RM 1001
	C O N D E N S A T E U R	
C 1	100 nF Céramique CK 05 (type)	CK 104
	D I O D E S	
D 1	Signal 30 V - 4 ns	D 1N 4148
D 2	" " "	D 1N 4148
D 3	Néant	
D 4	Néant	
D 5	Néant	
D 6	Néant	
D 7	Néant	
	T R A N S I S T O R S	
T 1	N P N Commutation	T BC 238

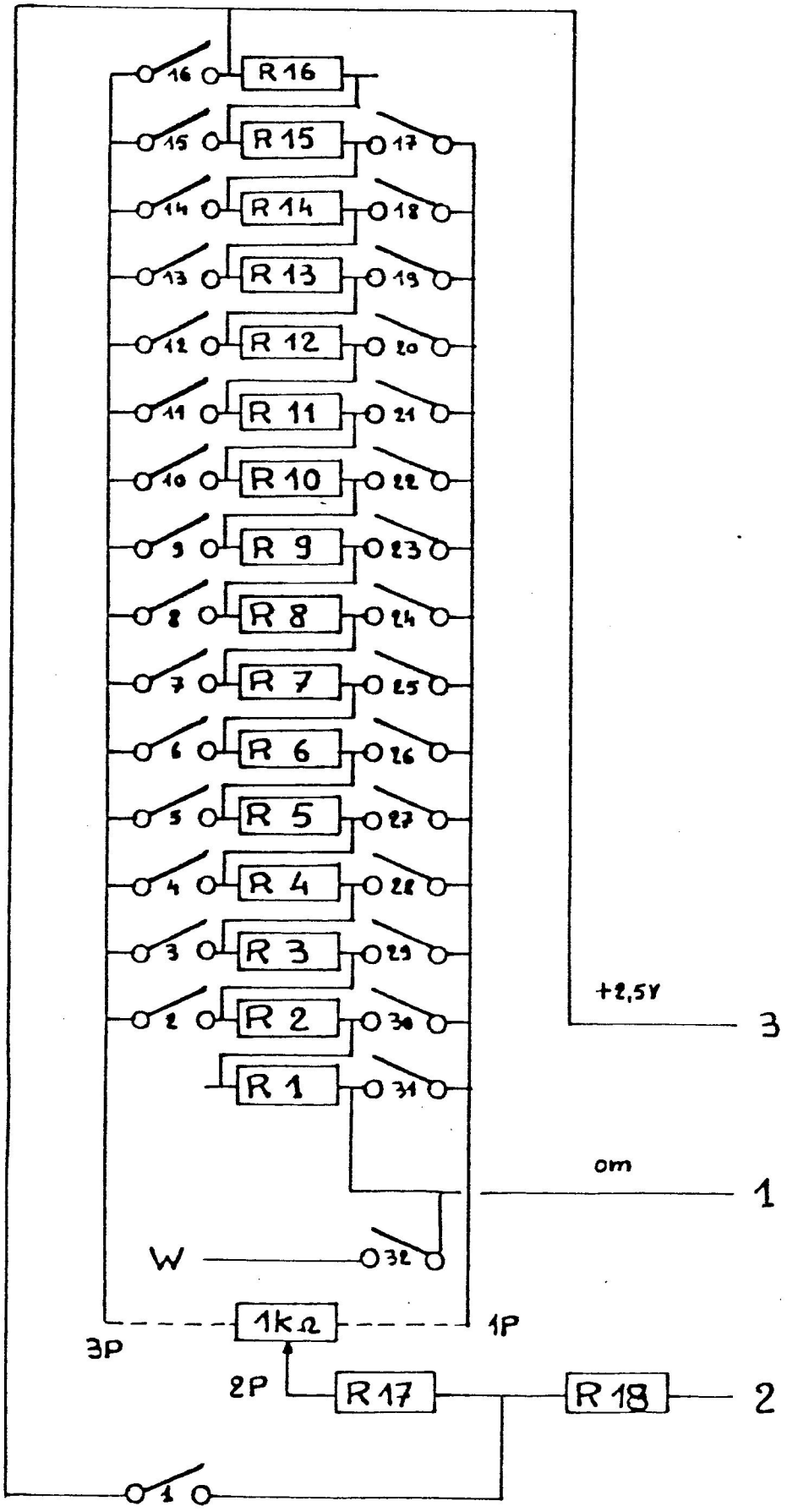
Nomenclature : GE 1308

Utilisation : GU 1300 SERIE

REPERES	DESCRIPTIONS	REFERENCES
	C I R C U I T S I N T E G R E S	
IC 1	Quadruple comparateur	CI 339 N
IC 2	Quadruple porte 2 entrées	CI 7438 N
	C O N N E C T E U R S	
	13 broches mâles droit	CIH 13 (O.E.C.)
	C I R C U I T I M P R I M E	
	Simple face	GE 1308
	C O L O N N E T T E S	
	ø 3 x 12	



PLAN DE CABLAGE GE 1308

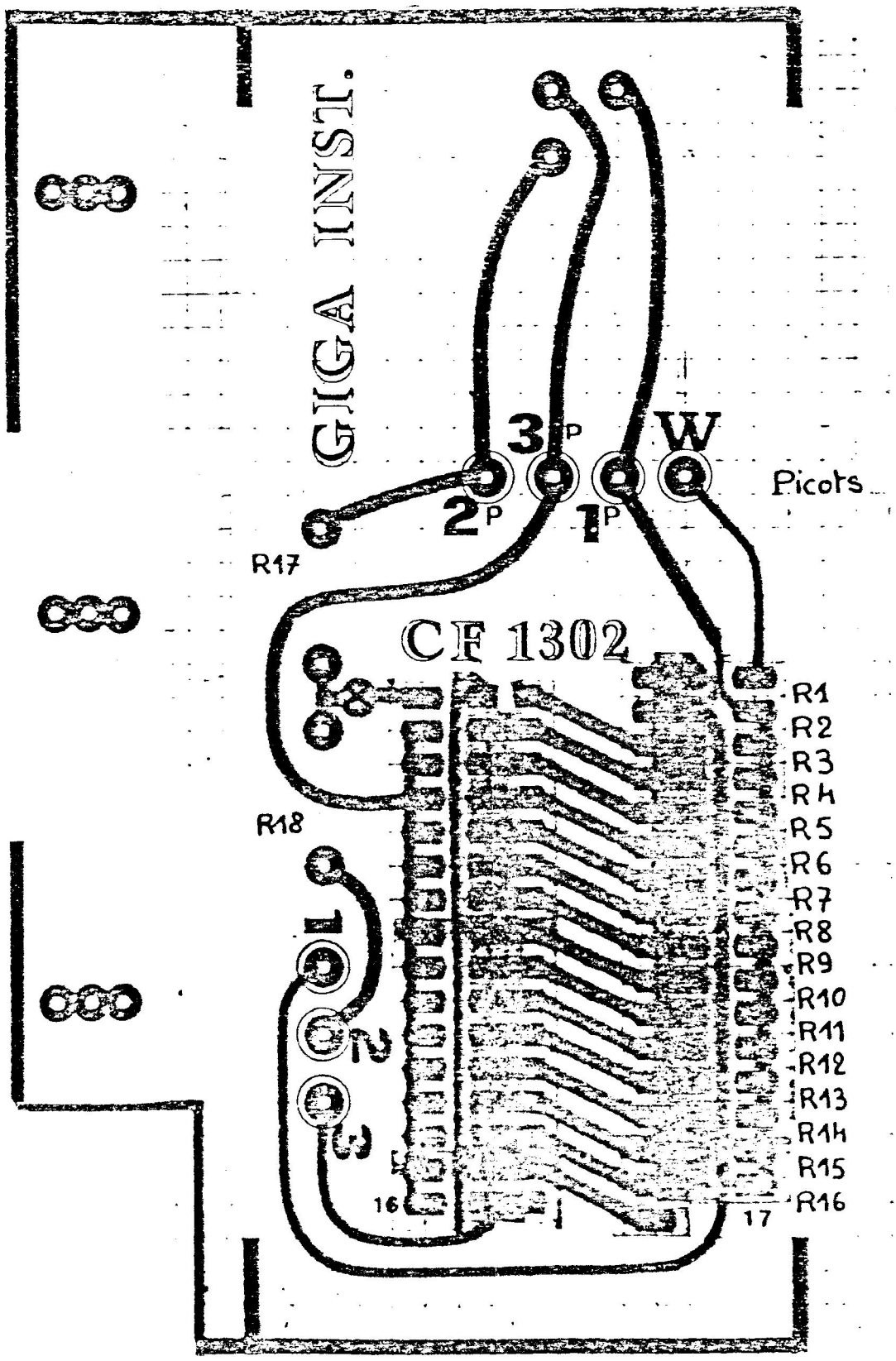


COMMANDE DE FREQUENCE CF 1302

Nomenclature : CF 1302

Utilisation : GU 1300 SERIE

REPERES	DESCRIPTIONS	REFERENCES
	R E S I S T A N C E S	
R 1	402 Ohm 1% 1/8 W 50 ppm	RM 4020
R 2	402 Ohm " " "	RM 4020
R 3	402 Ohm " " "	RM 4020
R 4	402 Ohm " " "	RM 4020
R 5	402 Ohm " " "	RM 4020
R 6	402 Ohm " " "	RM 4020
R 7	402 Ohm " " "	RM 4020
R 8	402 Ohm " " "	RM 4020
R 9	402 Ohm " " "	RM 4020
R 10	402 Ohm " " "	RM 4020
R 11	402 Ohm " " "	RM 4020
R 12	402 Ohm " " "	RM 4020
R 13	402 Ohm " " "	RM 4020
R 14	402 Ohm " " "	RM 4020
R 15	402 Ohm " " "	RM 4020
R 16	402 Ohm " " "	RM 4020
R 17	402 Ohm " " "	RM 4020
R 18	402 Ohm " " "	RM 4020
	C O M M U T A T E U R	
	Programmable 15 positions 4 circuits	CF 1302
	C I R C U I T I M P R I M E	
	Simple face	CF 1302
	P I C O T S	
	7 picots à souder	DF 929
	P O T E N T I O M E T R E	
P 1	1 KOhm 10 tours Panneau	PPM 102



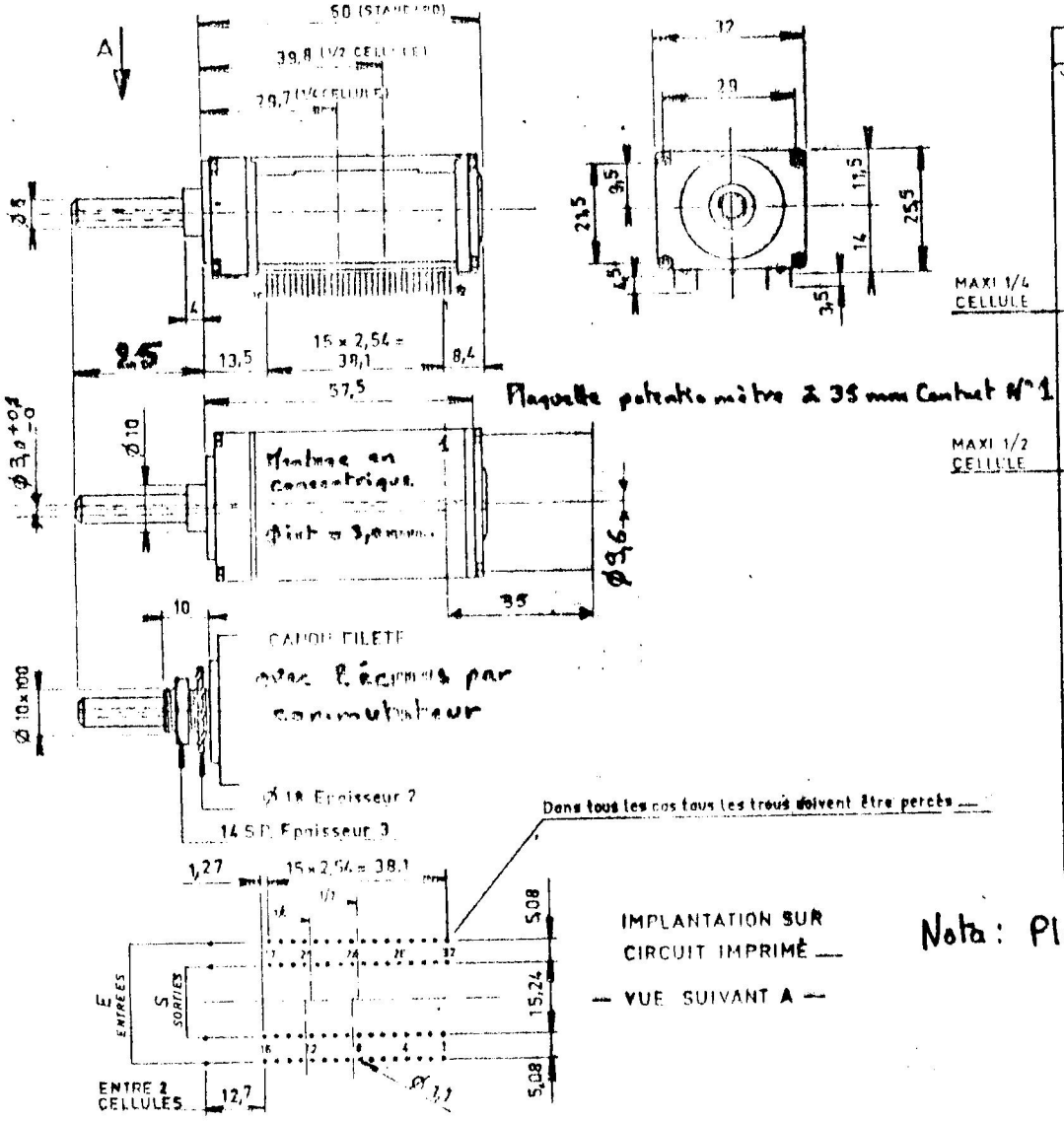
PLAN DE CABLAGE CF 1302

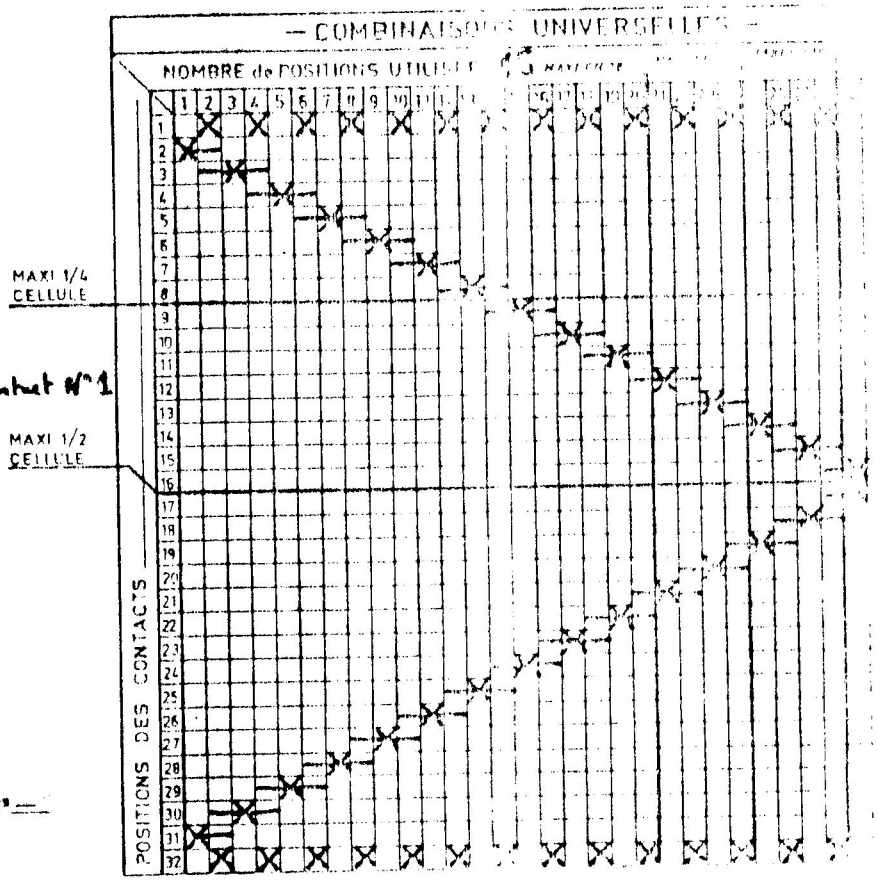
COMMUTATEUR ROTATIF PROFESSIONNEL

LES COMMUTATEURS [illegible] CHAMBAUD

CH 20 . 24 . 28 . 32

PROGRAMMATION





Nota : Plaquette de renfort de la fixation du canon

CLIENT : GISA INST.

QUANTITÉ

STANDARD | 1/2 CELLULE | 1/4 CELLULE

COCHER LA MENTION UTILE

CONSULTATION

COMMANDE

A NE REMPLIR QU'EN CAS

A PRÉCISER

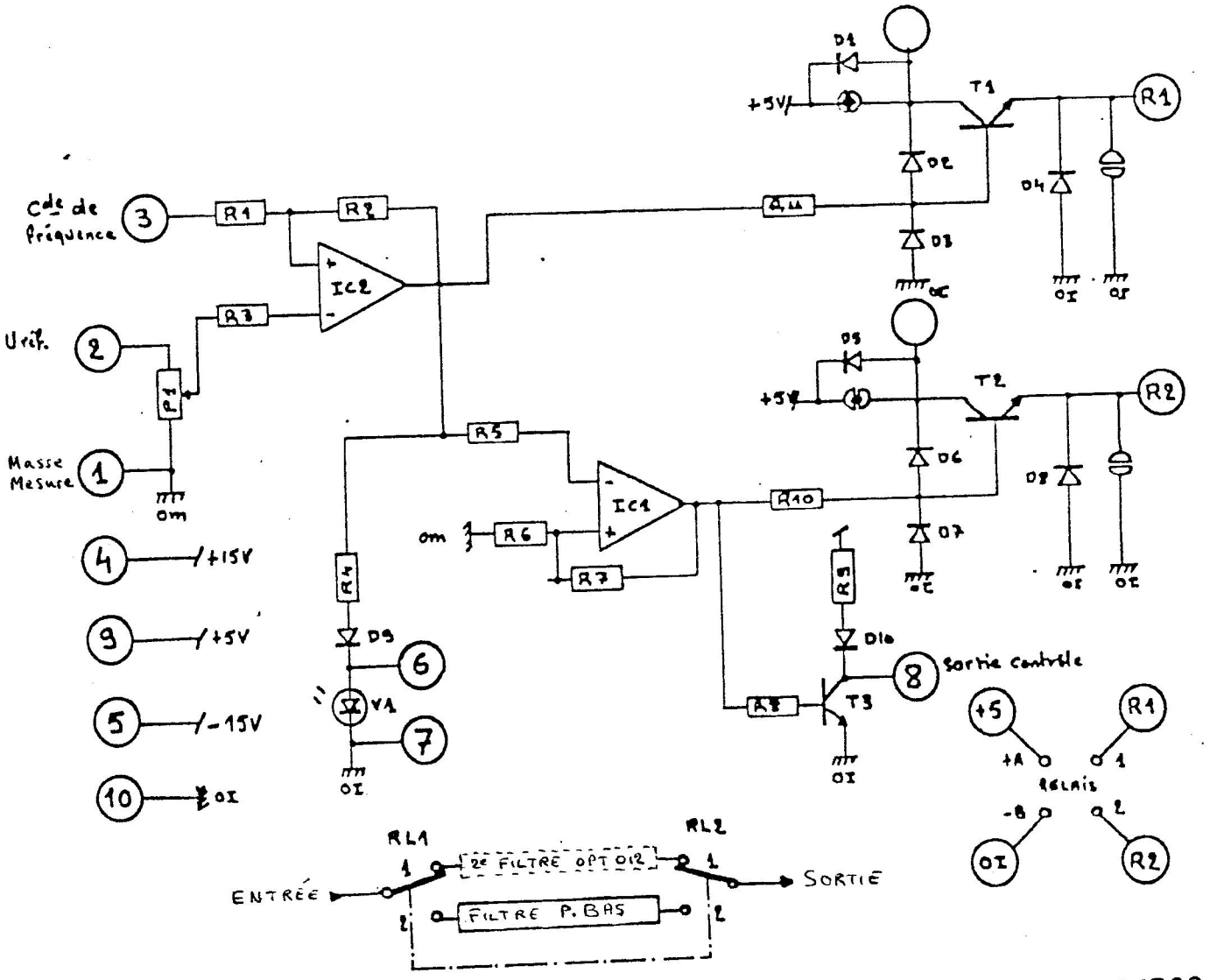
NOMBRE DE [illegible] 4

NOMBRE DE [illegible] 15

TYPE [illegible]

N° CF 1302

ORIGINAL A CONSERVER — FAITES NOUS PARVENIR UN [illegible] SUR LEQUE[illegible]



COMMANDE AUTOMATIQUE POUR FILTRE PASSE-BAS CR1309

NOMENCLATURE : CR 1309

UTILISATION : GU 1300

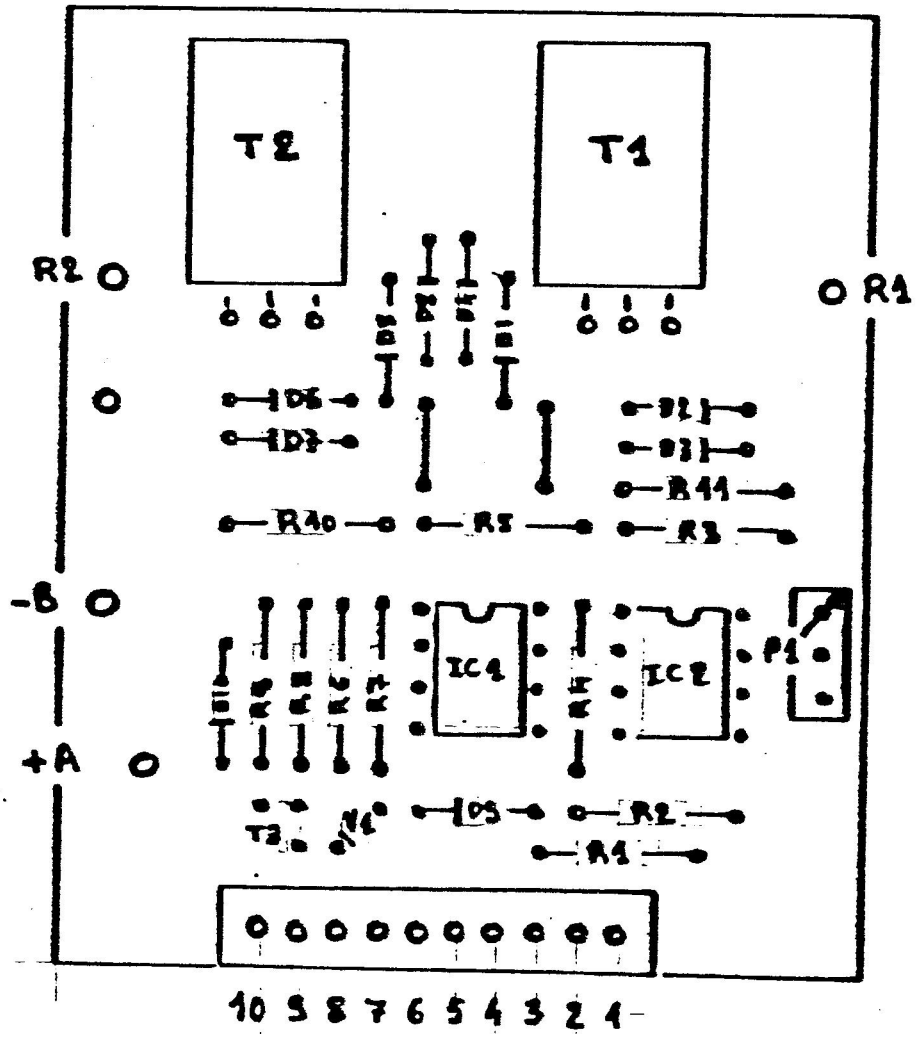
REPERES	DESCRIPTION				REFERENCES
	R E S I S T A N C E S				
R 1	1 KOhm	1%	1/8 W	50 ppm	RM 1001
R 2	1 MOhm	5%	1/4 W	200 ppm	RC 105
R 3	10 KOhm	1%	1/8 W	50 ppm	RM 1002
R 4	475 Ohm	1%	1/8 W	50 ppm	RM 4750
R 5	10 KOhm	1%	"	"	RM 1002
R 6	10 KOhm	"	"	"	RM 1002
R 7	1 MOhm	5%	1/4 W	200 ppm	RC 105
R 8	10 KOhm	1%	1/8 W	50 ppm	RM 1002
R 9	1 KOhm	"	"	"	RM 1001
R 10	10 KOhm	"	"	"	RM 1002
R 11	10 KOhm	"	"	"	RM 1002
	D I O D E S				
D 1	Signal 30 V - 4 ns				D IN 4148
D 2	" " "				D IN 4148
D 3	" " "				D IN 4148
D 4	" " "				D IN 4148
D 5	" " "				D IN 4148
D 6	" " "				D IN 4148
D 7	" " "				D IN 4148
D 8	" " "				D IN 4148
D 9	" " "				D IN 4148
D 10	" " "				D IN 4148
	T R A N S I S T O R S				
T 1	NPN	Darlington		TO 220	TIP 120
T 2	NPN	Darlington		TO 220	TIP 120
T 3	NPN	Ampli		TO 18	T 2N 2222
	CIRCUITS INTEGRES				
IC 1	Ampli operationnel mini dip				CI 741 N
IC 2	"	"	"		CI 741 N

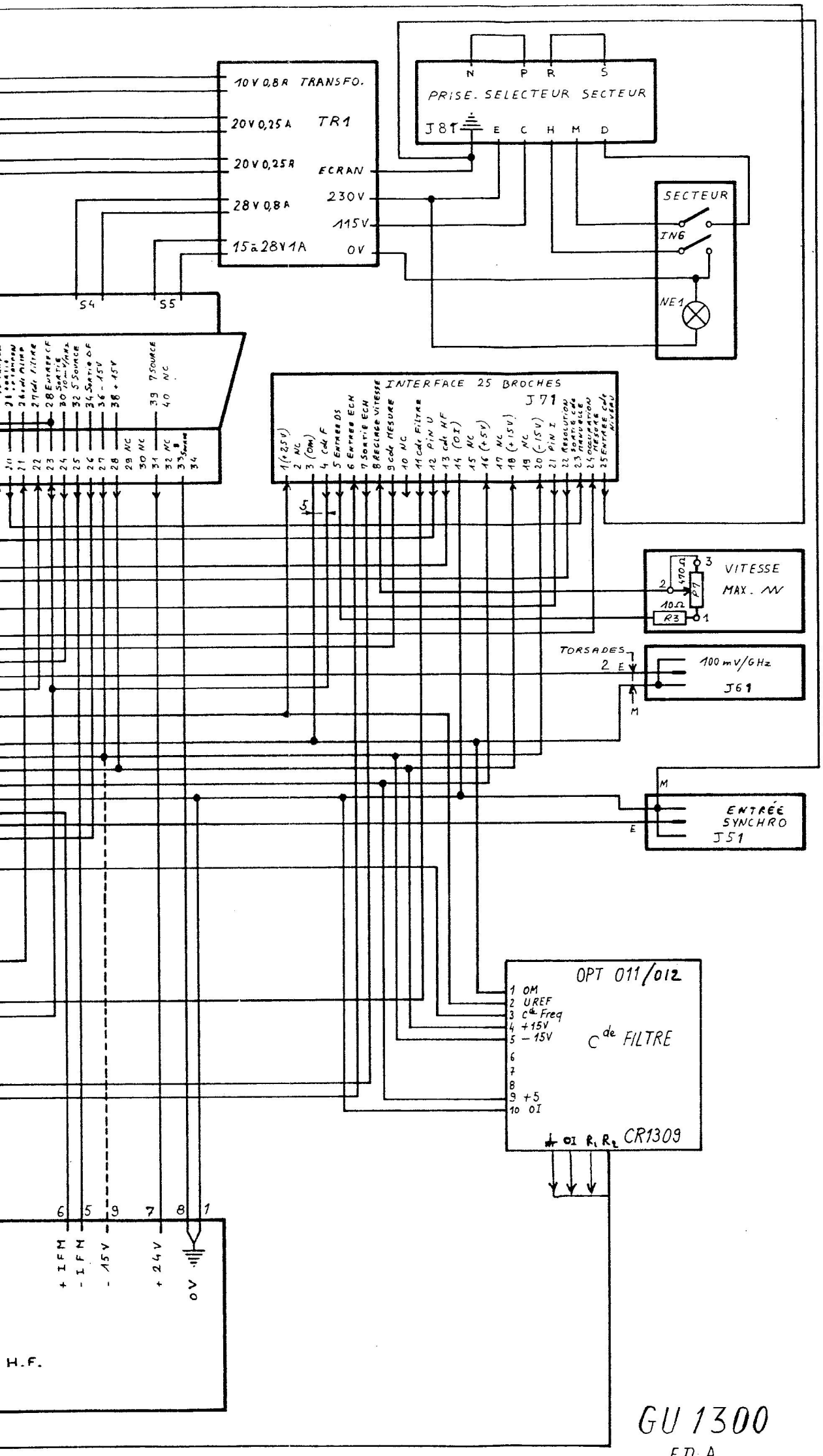
NOMENCLATURE : CR 1309

UTILISATION : GU 1300

REPERES	DESCRIPTION	REFERENCES
	P O T E N T I O M E T R E S	
P 1	10 KOhms 20 tours Cermet	PM 103
	V O Y A N T S	
V 1	Voyant LED	TIL 220 TEXAS
	P I C O T S	
	6 Picots	DF 929
	C O N N E C T E U R S	
	10 broches Mâles 90°	OEC
	10 broches Femelles à souder par fil	OEC
	CIRCUIT IMPRIME	
	Simple face	CR 1309
	VISSERIE	
	2 vis Ø 3 Long. 12	
	2 écrous M3	
	2 rondelles éventail Ø 3	
	R E L A I S	
RL 1	1 inverseur HF Commande 0 à + 5 V	
RL 2	1 inverseur HF Commande 0 à + 5 V	

CABLAGE CR 1309

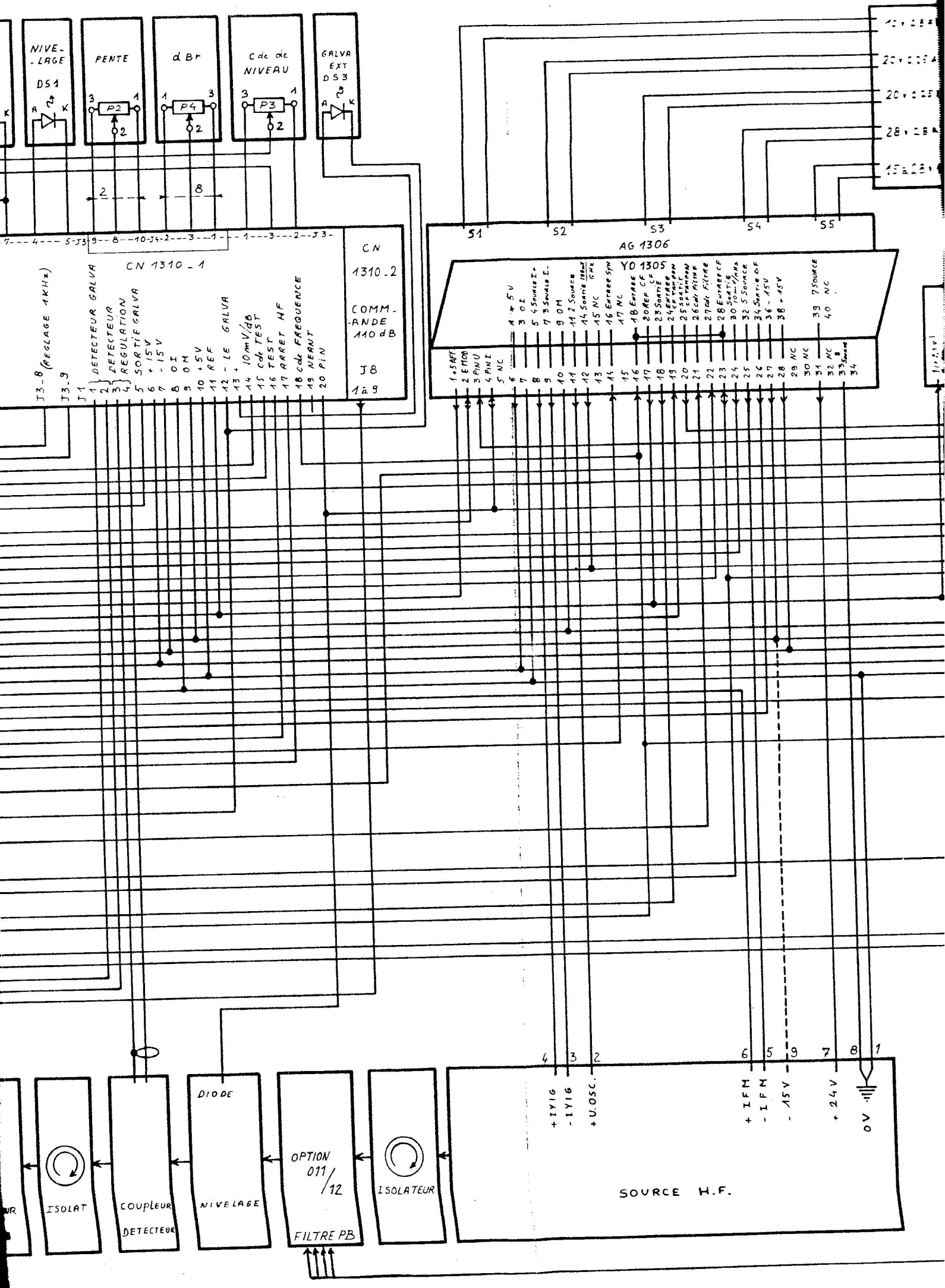


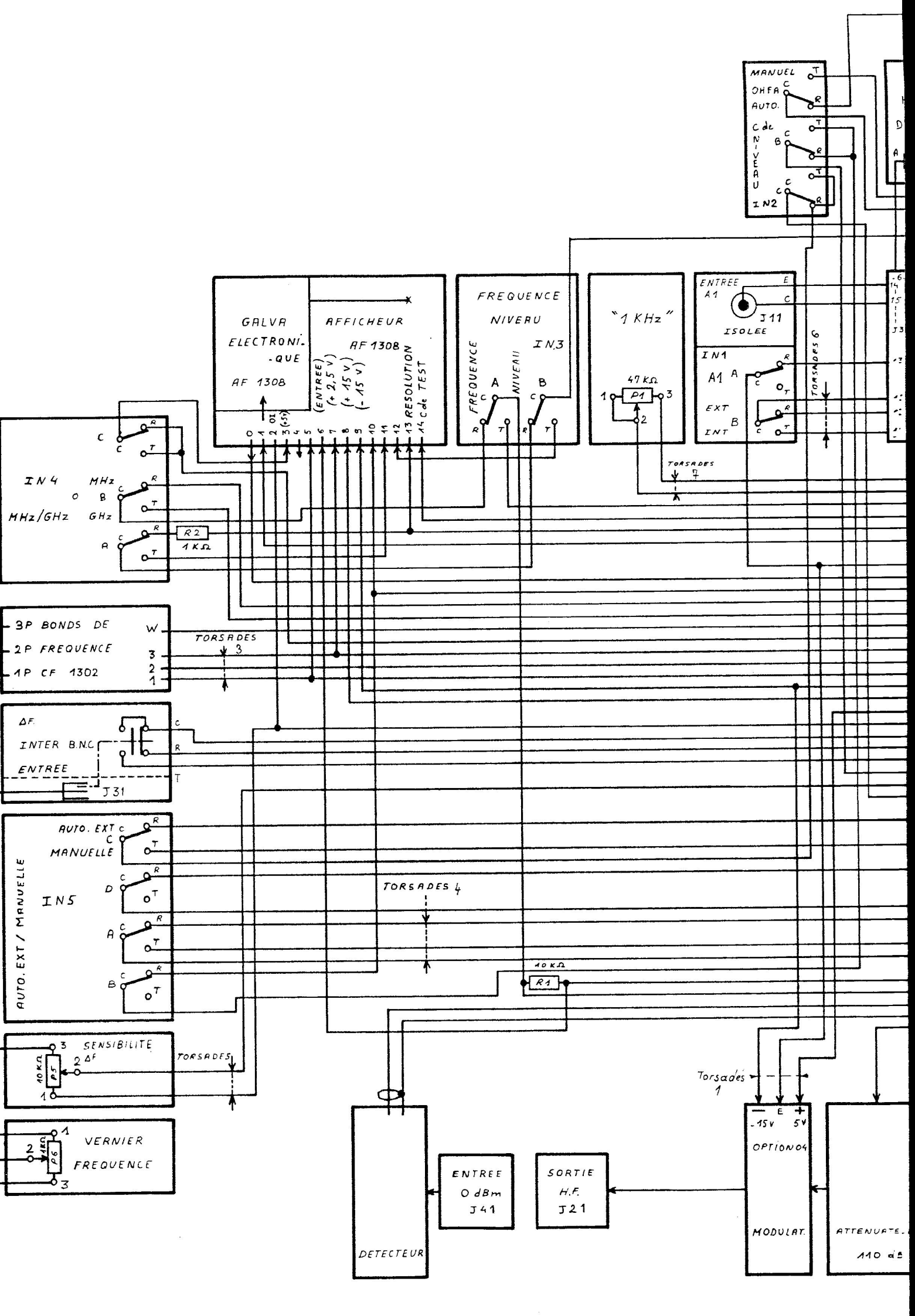


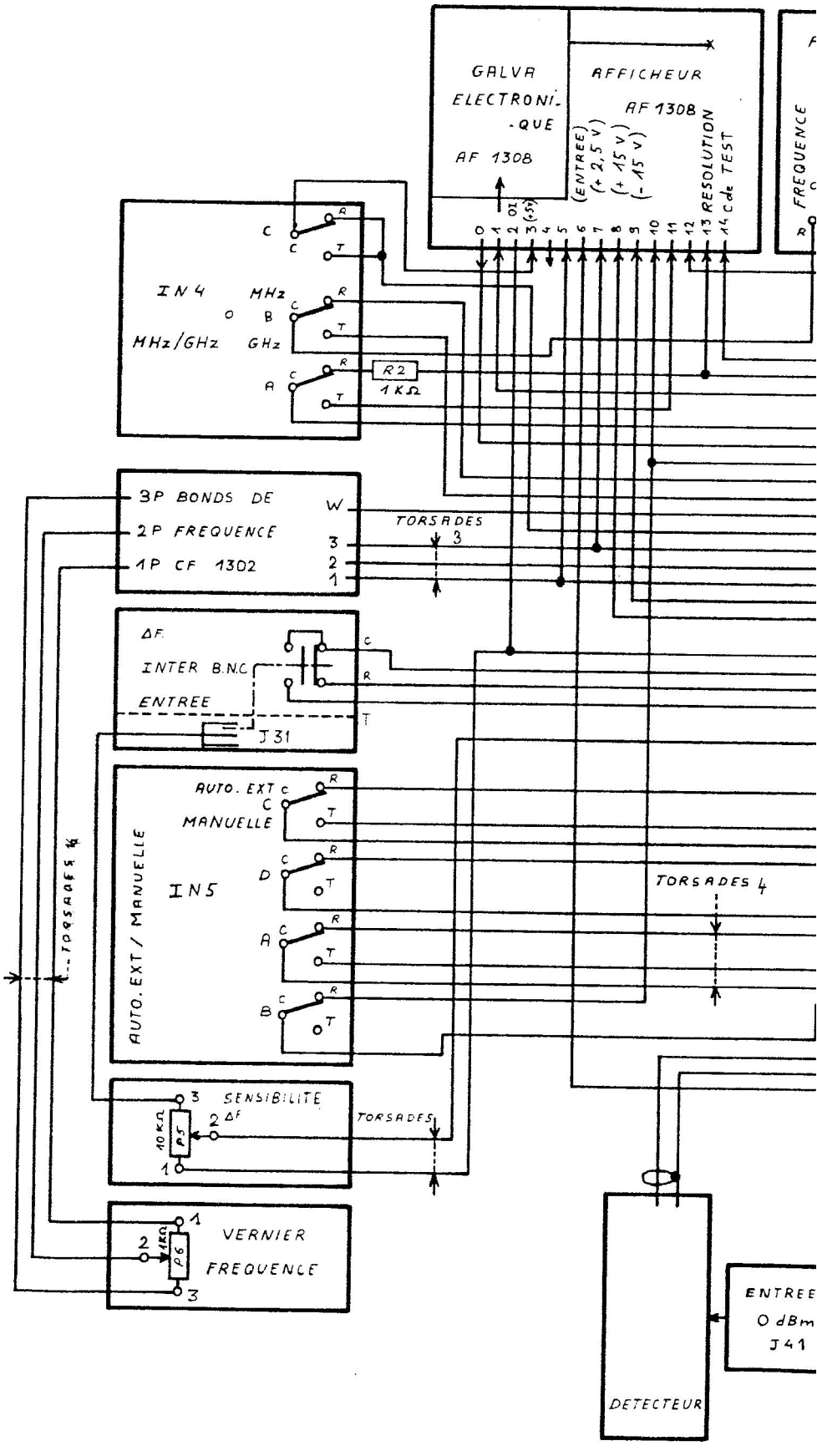
10 V 0,8 A TRANSFO.
20 V 0,25 A
TR1
20 V 0,25 A
ECRAN
28 V 0,8 A
230 V
115 V
15 à 28 V 1 A
0 V
PRISE. SELECTEUR SECTEUR
J81
N P R S
E C H M D
SECTEUR
IN6
NE1
S4
S5
INTERFACE 25 BROCHES
J71
VITESSE
MAX.
470 Ω
P7
10 Ω
R3
TORSADES
100 mV/GHz
J61
ENTRÉE
SYNCHRO
J51
OPT 011/012
1 OM
2 UREF
3 Cde Freq
4 +15V
5 −15V
9 +5
10 OI
Cde FILTRE
CR1309
OI R1 R2
+ IFM
- IFM
- 15 V
+ 24 V
0 V
H.F.

GU 1300

FD A


NIVE-LAGE
DS1
PENTE
P2
d Br
P4
C de dc NIVEAU
P3
GALVA EXT DS3
CN 1310-1
CN 1310-2
COMM-ANDE 110 dB
J8
AG 1306
YD 1305
S1
S2
S3
S4
S5
DETECTEUR GALVA
DETECTEUR
REGULATION
SORTIE GALVA
+ 15V
- 15V
0 I
0 M
+ 5V
REF
- LE GALVA
10mV/dB
cde TEST
ARRET HF
cde FREQUENCE
NEANT
PIN
(REGLAGE 1KHz)
DIODE
ISOLAT
COUPLEUR DETECTEUR
NIVELAGE
OPTION 011/12
FILTRE PB
ISOLATEUR
SOURCE H.F.
+ IYIG
- IYIG
+ U.OSC.
+ IFM
- IFM
- 15V
+ 24V
0V


MANUEL
OHFA
AUTO.
C de NIVEAU
IN2
GALVA ELECTRONI-QUE
AF 1308
AFFICHEUR
AF 1308
(ENTREE) (+ 2,5 V) (+ 15 V) (- 15 V)
RESOLUTION
C de TEST
FREQUENCE
NIVEAU
IN3
FREQUENCE
NIVEAU
"1 KHz"
47 kΩ
P1
ENTREE A1
J11
ISOLEE
IN1
A1
EXT
INT
TORSADES 6
TORSADES 7
IN4
MHz/GHz
MHz
GHz
R2
1 KΩ
3P BONDS DE
2P FREQUENCE
1P CF 1302
TORSADES 3
ΔF
INTER B.N.C
ENTREE
J31
AUTO. EXT / MANUELLE
IN5
TORSADES 4
10 KΩ
R1
SENSIBILITE
10 KΩ
P5
TORSADES 5
VERNIER FREQUENCE
10 KΩ
P6
Torsades 1
DETECTEUR
ENTREE 0 dBm J41
SORTIE H.F. J21
-15V
5V
OPTION 04
MODULAT.
ATTENUATE.
110 dB


GALVA ELECTRONI- QUE AF 1308
AFFICHEUR AF 1308
(ENTREE)
(+ 2,5 V)
(+ 15 V)
(- 15 V)
RESOLUTION
cde TEST
FREQUENCE
IN 4
MHz
B
GHz
MHz/GHz
A
R2
1 KΩ
3P BONDS DE
2P FREQUENCE
1P CF 1302
W
TORSADES 3
ΔF
INTER B.N.C
ENTREE
J 31
AUTO. EXT
MANUELLE
IN 5
AUTO. EXT / MANUELLE
TORSADES 4
SENSIBILITE
10 KΩ
P5
ΔF
TORSADES
VERNIER
FREQUENCE
1KΩ
P6
ENTREE
0 dBm
J 41
DETECTEUR