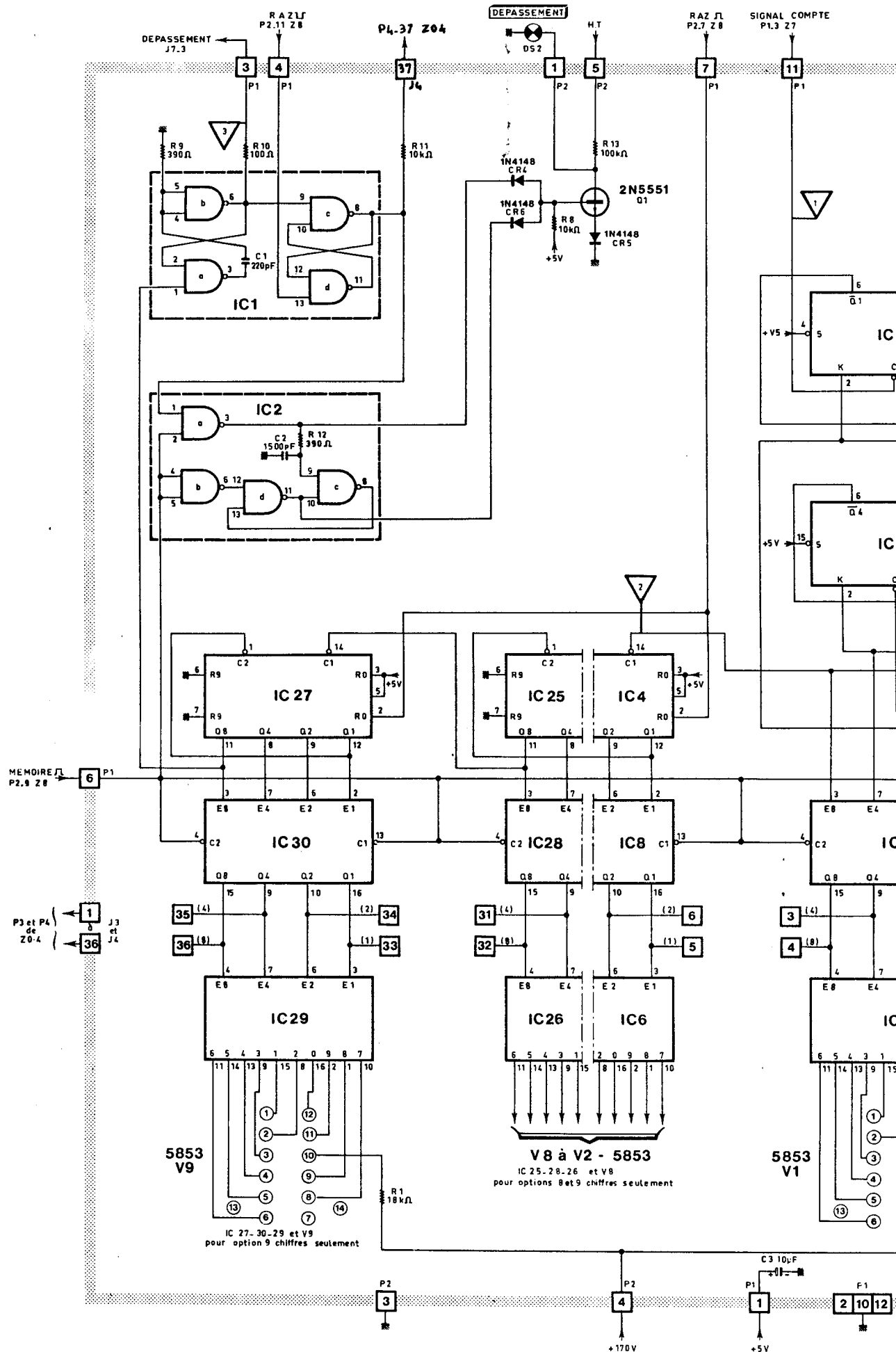
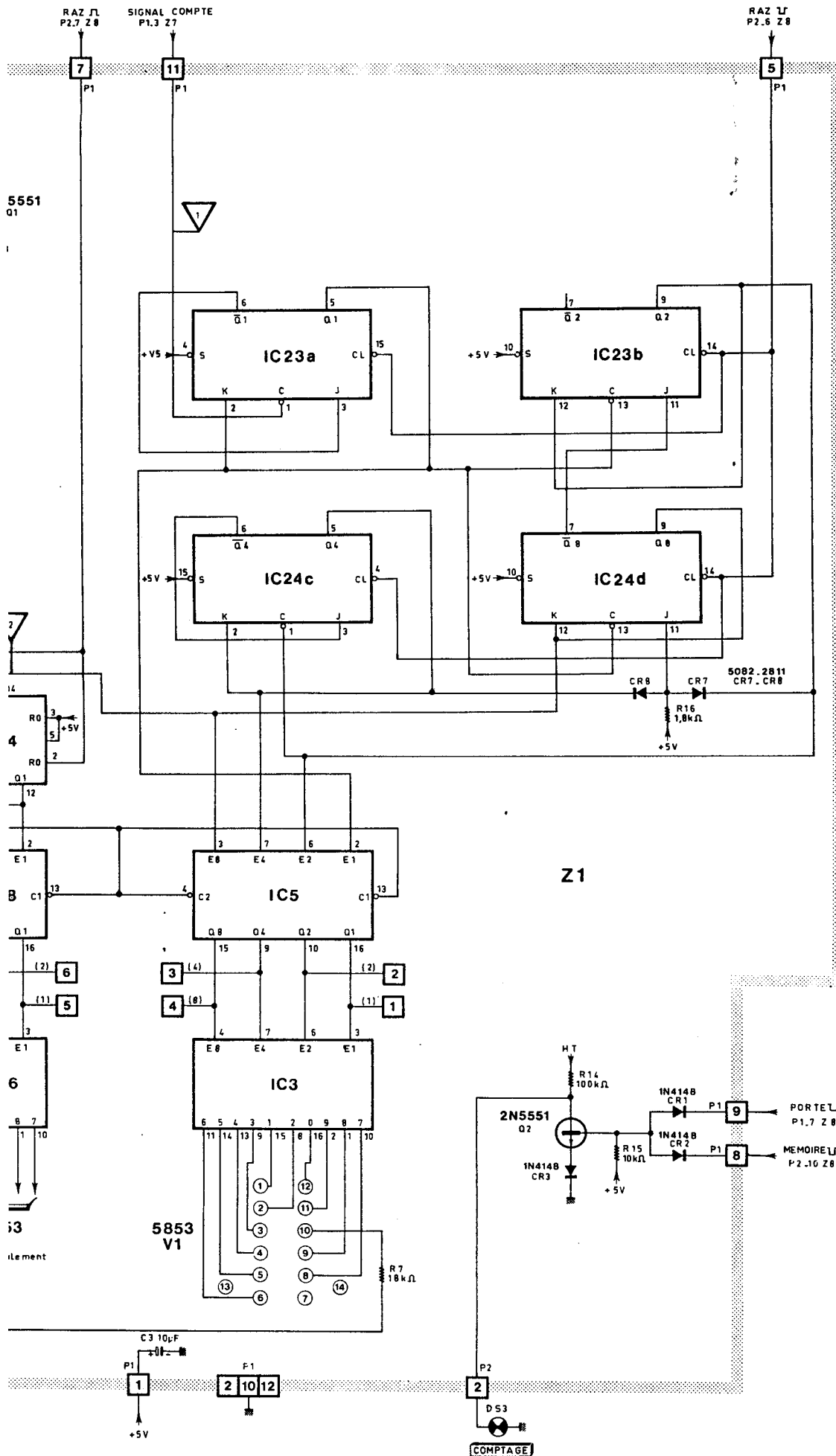




NOTA: RESISTANCES | PUISSANCES NON INDIQUEES 1/4W
TOLERANCES NON INDIQUEES ± 5%

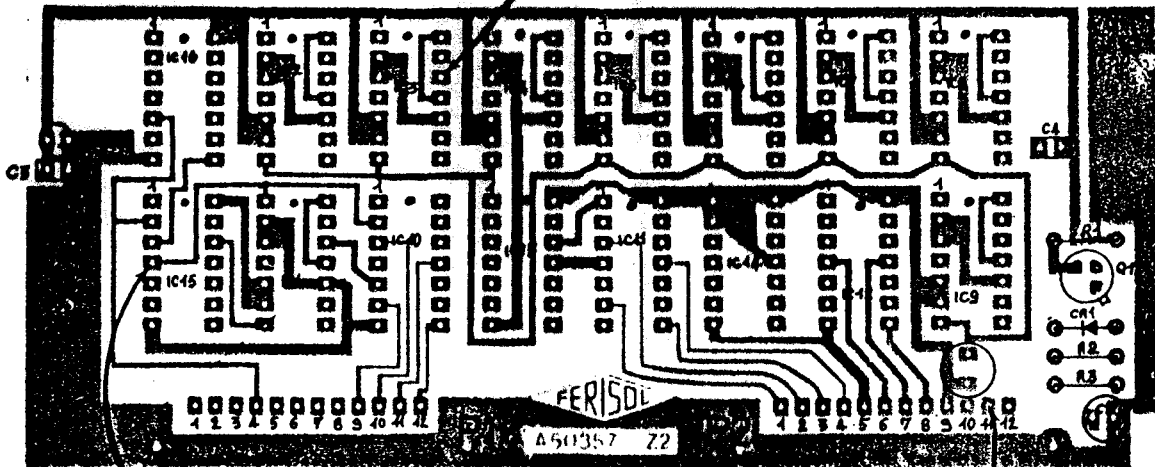


5

0 V -

2 V/c - 50 μ s/c

CONTROLE - 0,1 Hz - ∞

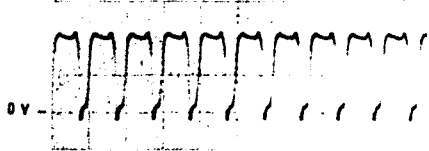


4

0 V -

2 V/c - 0,1 μ s/c

CONTROLE - 0,1 Hz - MIN.

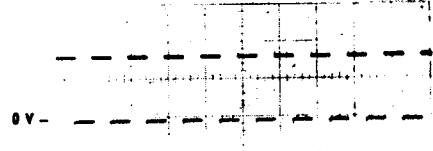


6

0 V -

1 V/c - 0,1 ms/c

CONTROLE - 10 kHz - ∞



IC	TYPE
1.2.3.4.5.6.7.8.9	SN7490N
15	SN7404N
16	SN7454N
10.11.12.13	SN7402N
14	SN7430N



FREQUENCEMETRE COMPTEUR

Type HB 221. HB 220 A

BASE DE TEMPS

Z2

602210801



PE
90N
04N
54N
02N
30N

COMMANDE 10MHz
1.52i

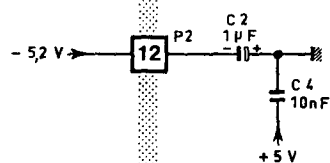
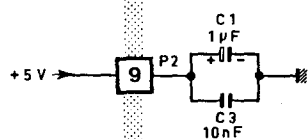
10 P1

IC10

IC2

IC3

IC15



P2
5

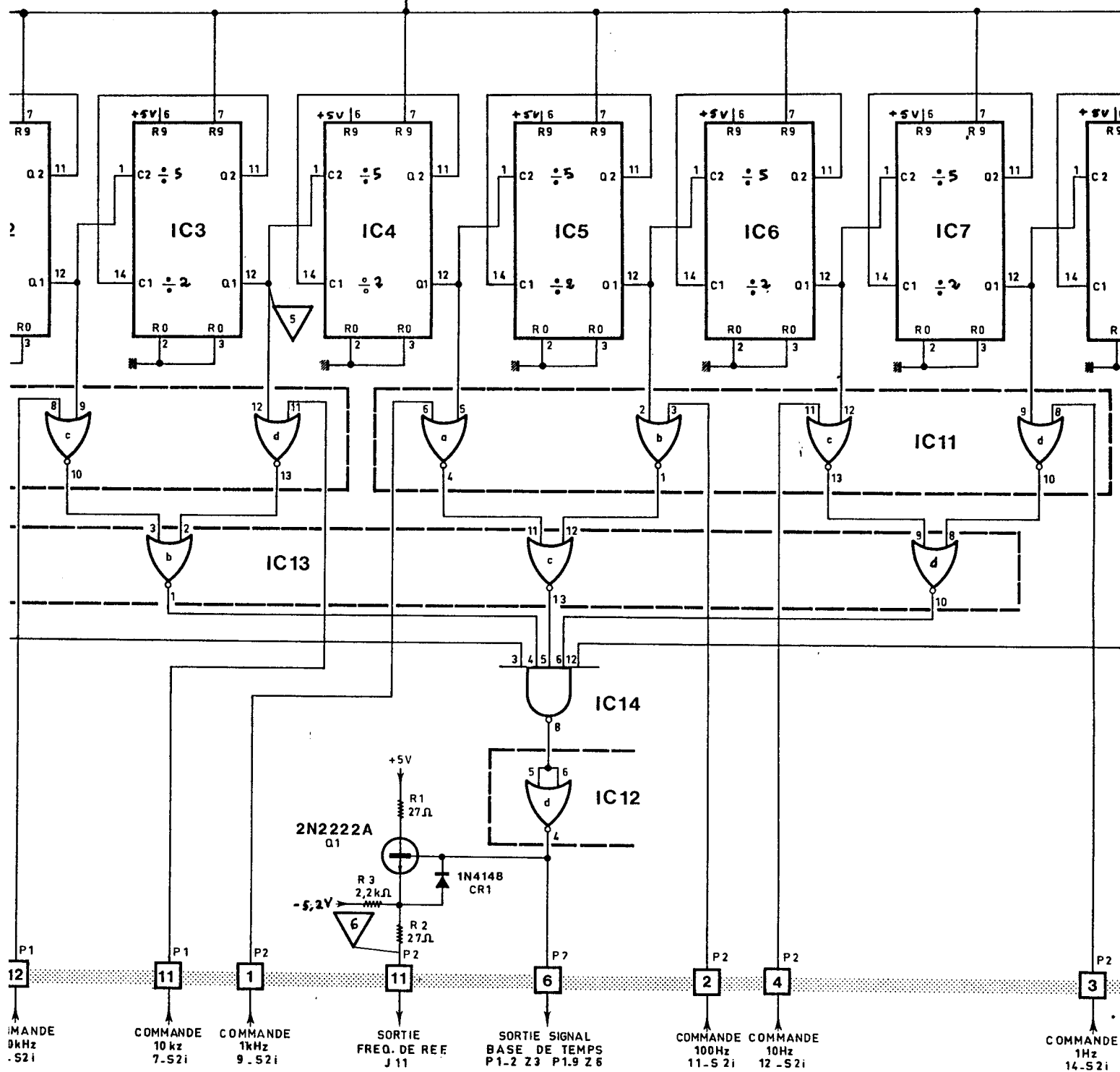
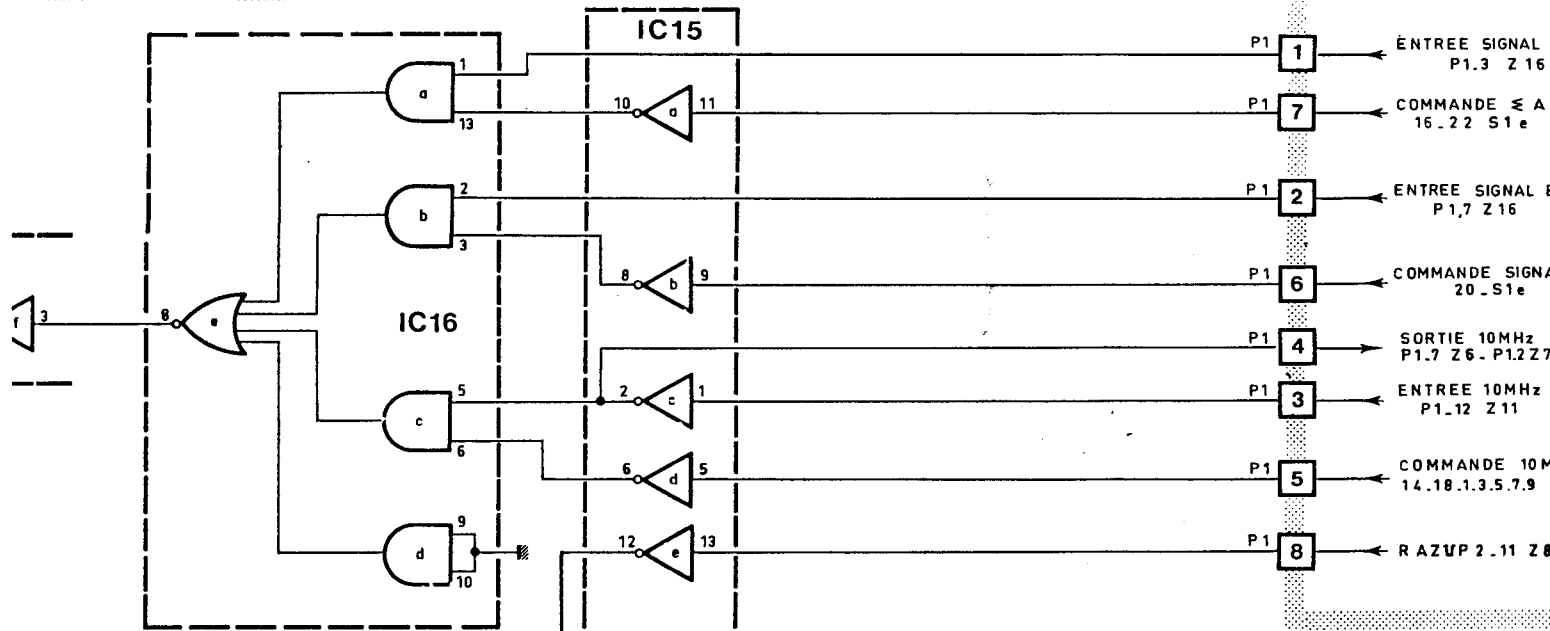
COMMANDE
1MHz
2.52i

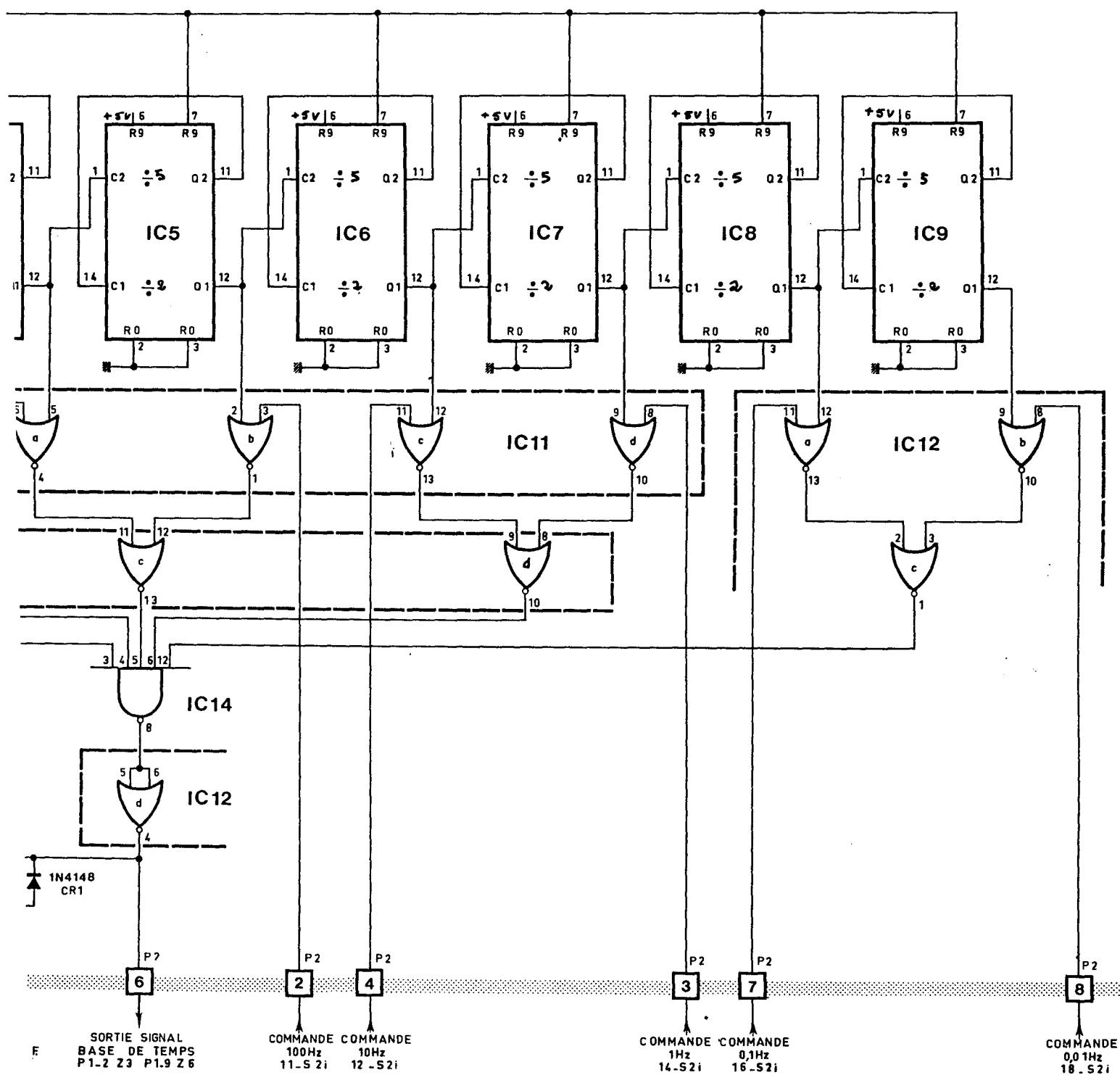
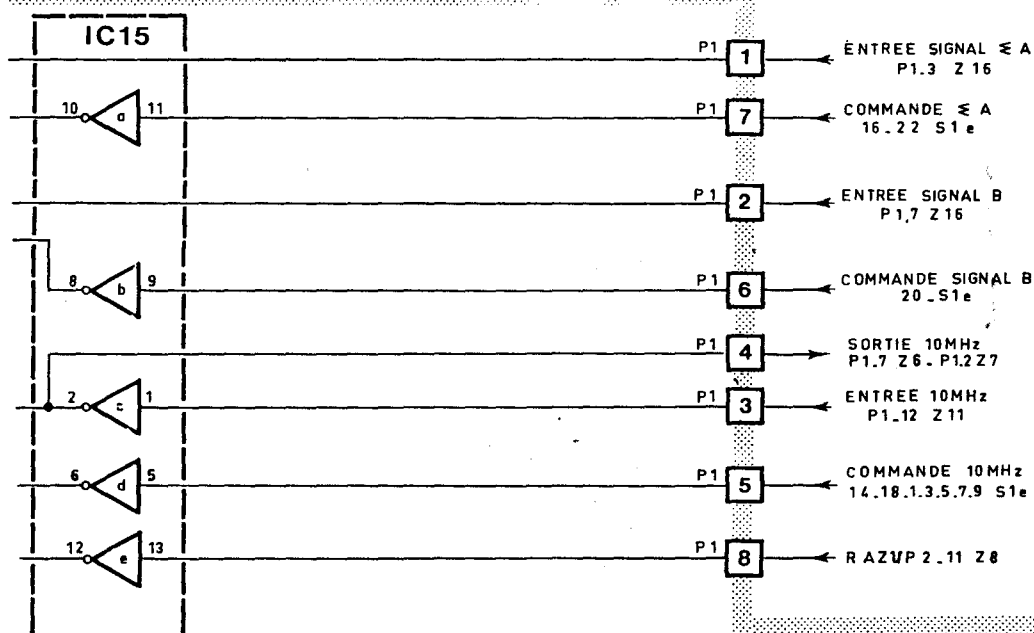
COMMANDE
100kHz
5.03i

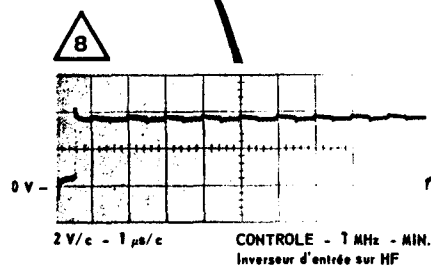
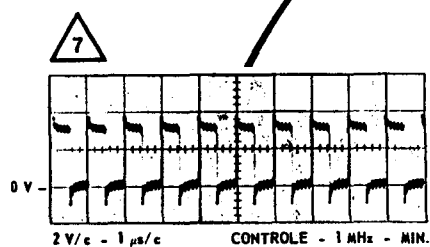
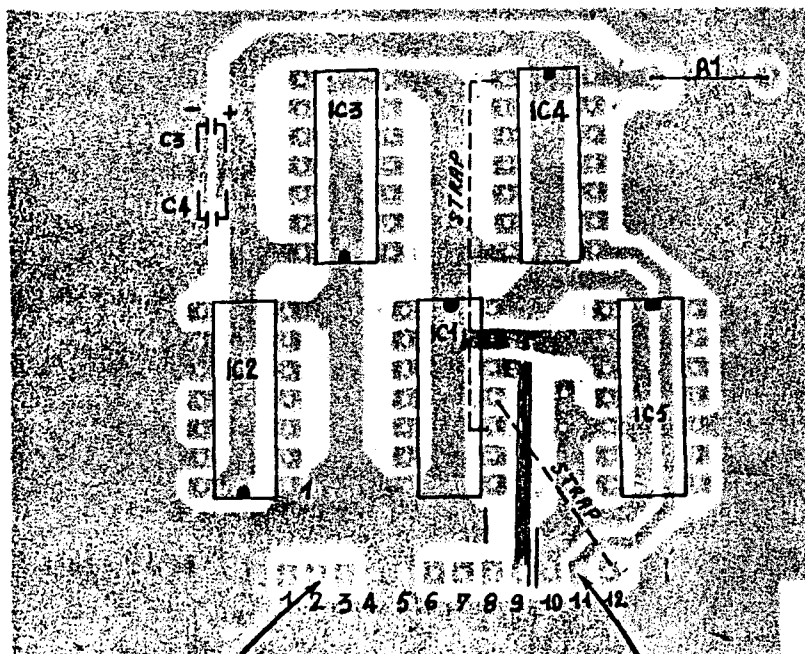
COMMANDE
10kHz
CO

2210801

PLANCHE N°4







IC	TYPE
2	SN 7454N
3.4	SN 7400N
1	SN 7404N
5	SN 7490N



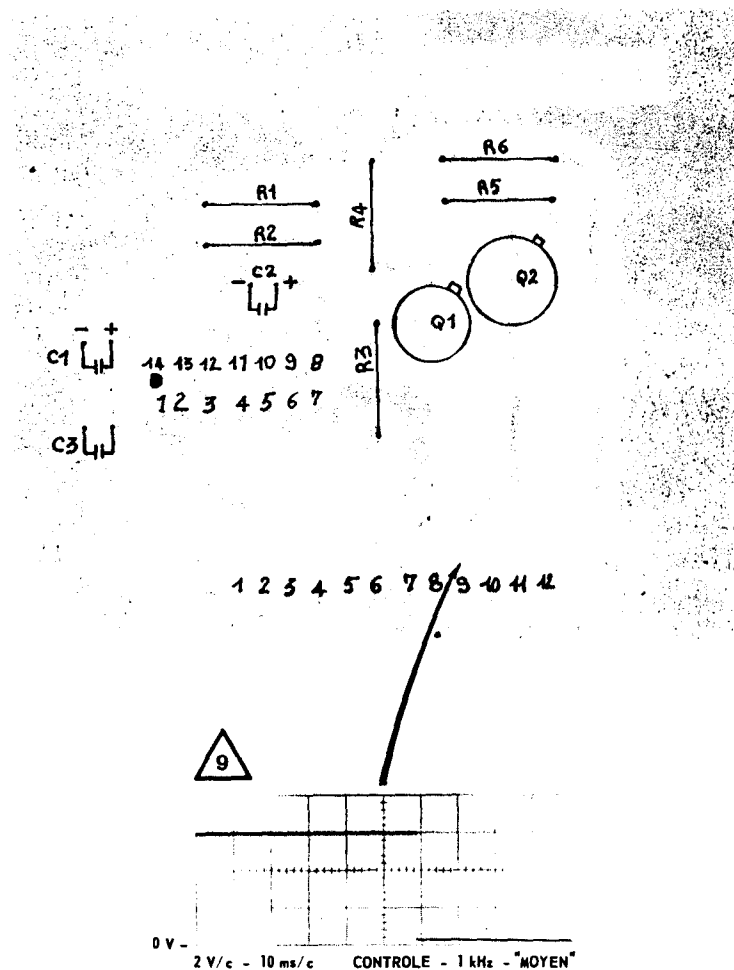
FREQUENCEMETRE COMPTEUR
Type HB 221 - HB 220A
SELECTEUR EXPANSEUR (par 10)

Z3

602210800



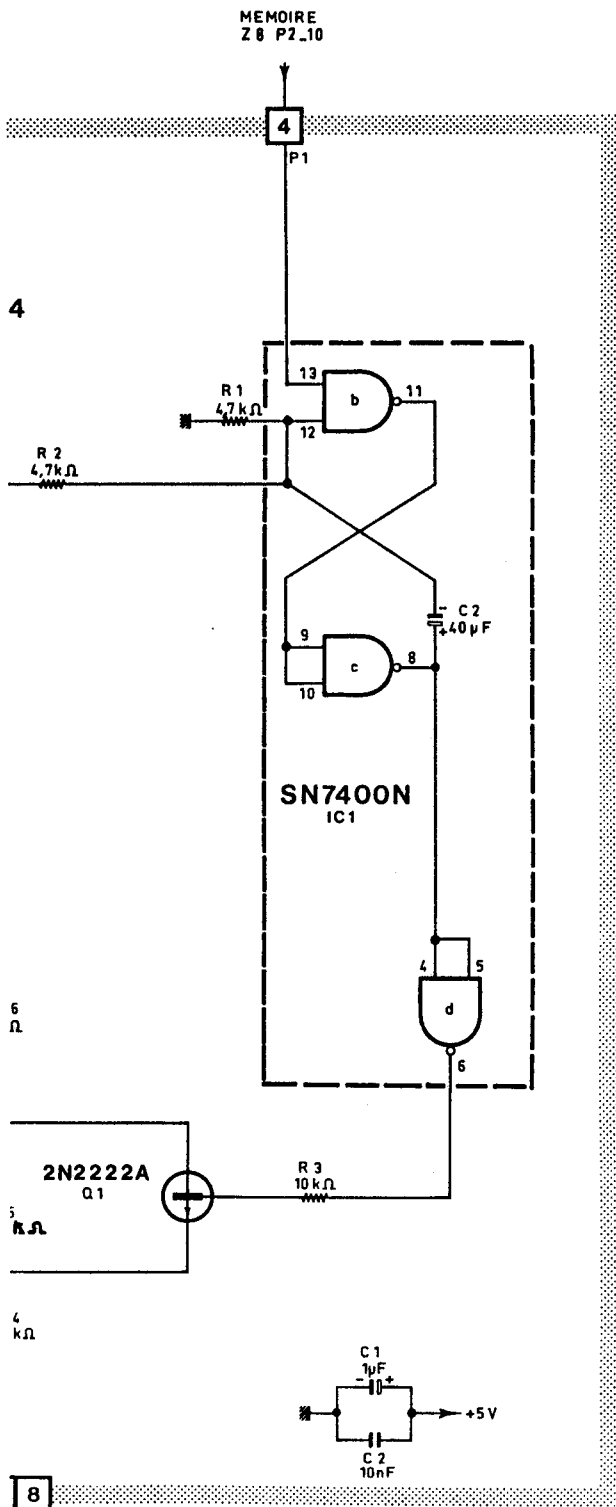
[illegible]



FREQUENCEMETRE COMPTEUR
Type HB221.HB220A*
COMMANDE ENREGISTREUR

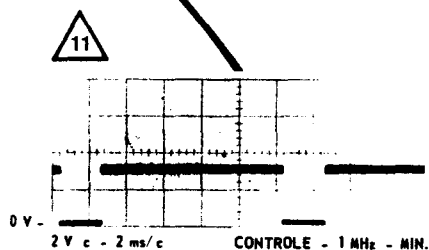
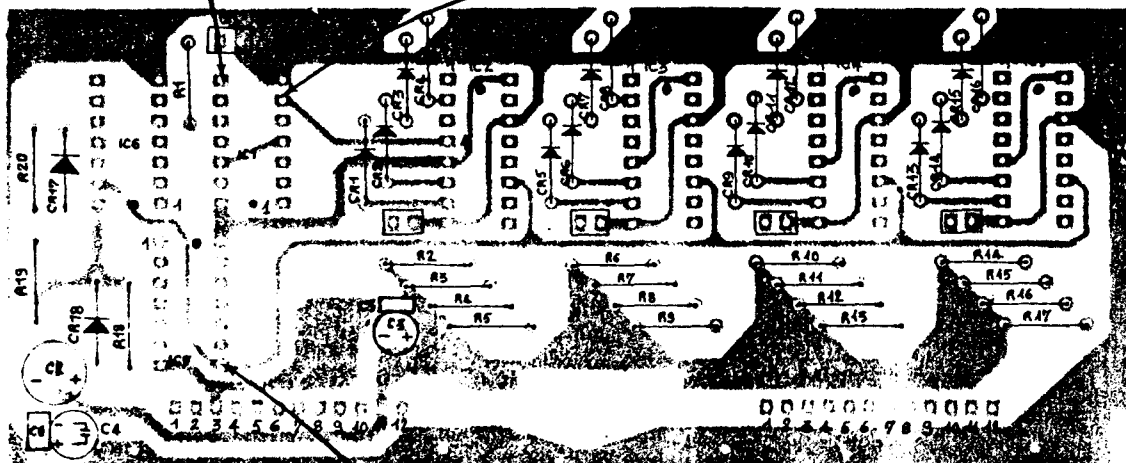
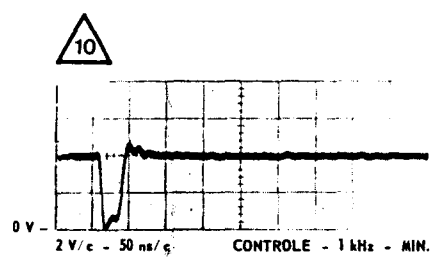
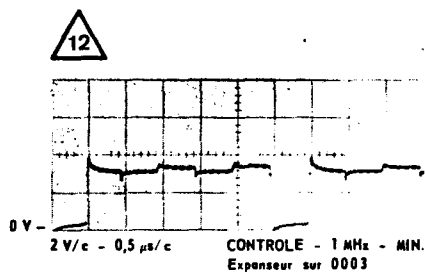
Z4

602210802



NDIQUEES 1/4W

NDIQUEES $\pm 2\%$



IC	TYPE
2.3.4.5	SN74192N
6	SN7472N
1	SN7400N
7	SN7408N



FREQUENCEMETRE COMPTEUR
Type HB221-HB220A*
EXPANSEUR

Z5

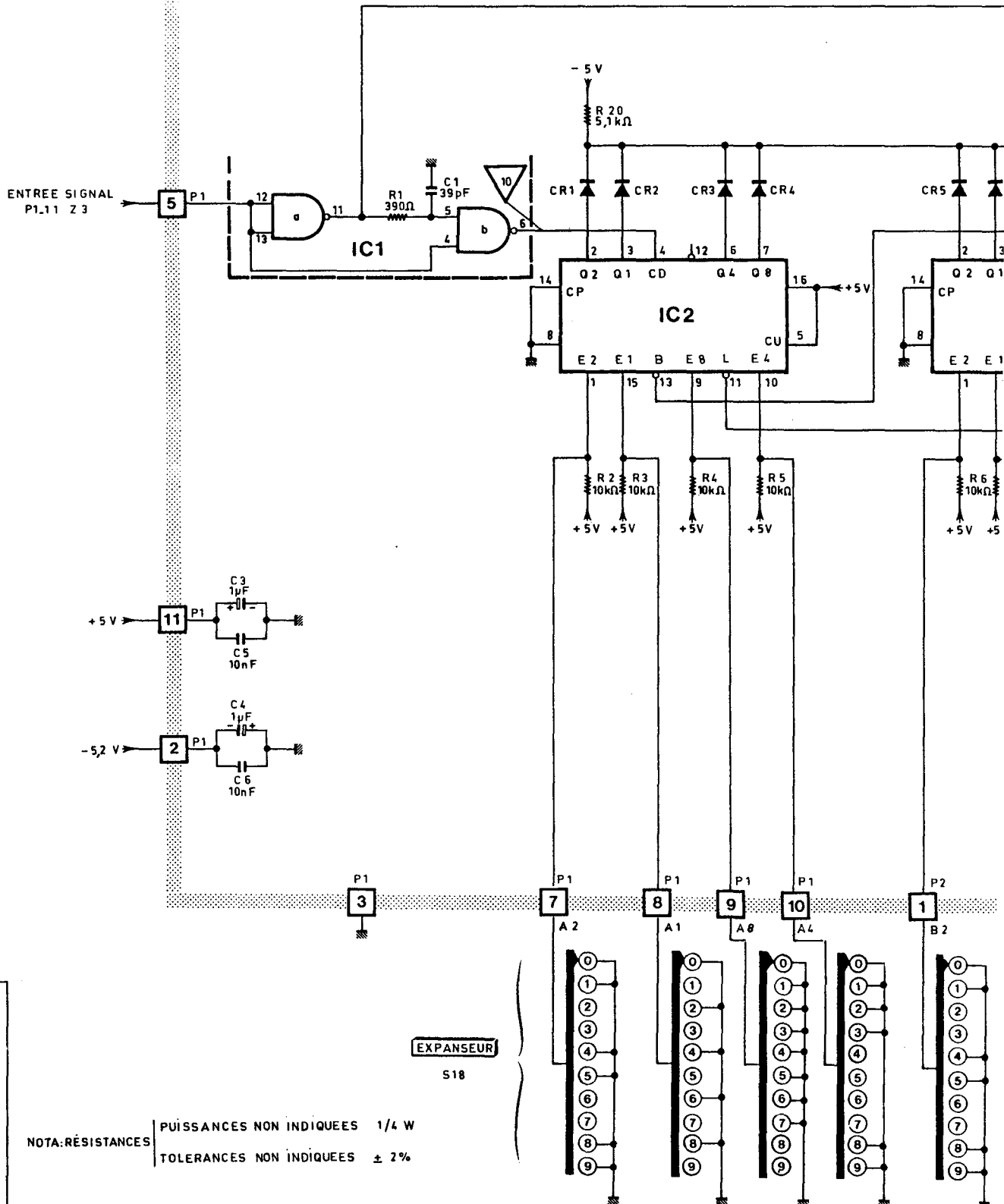
(* option)

60221080

PLANCHE N°

31-2-74

Z5



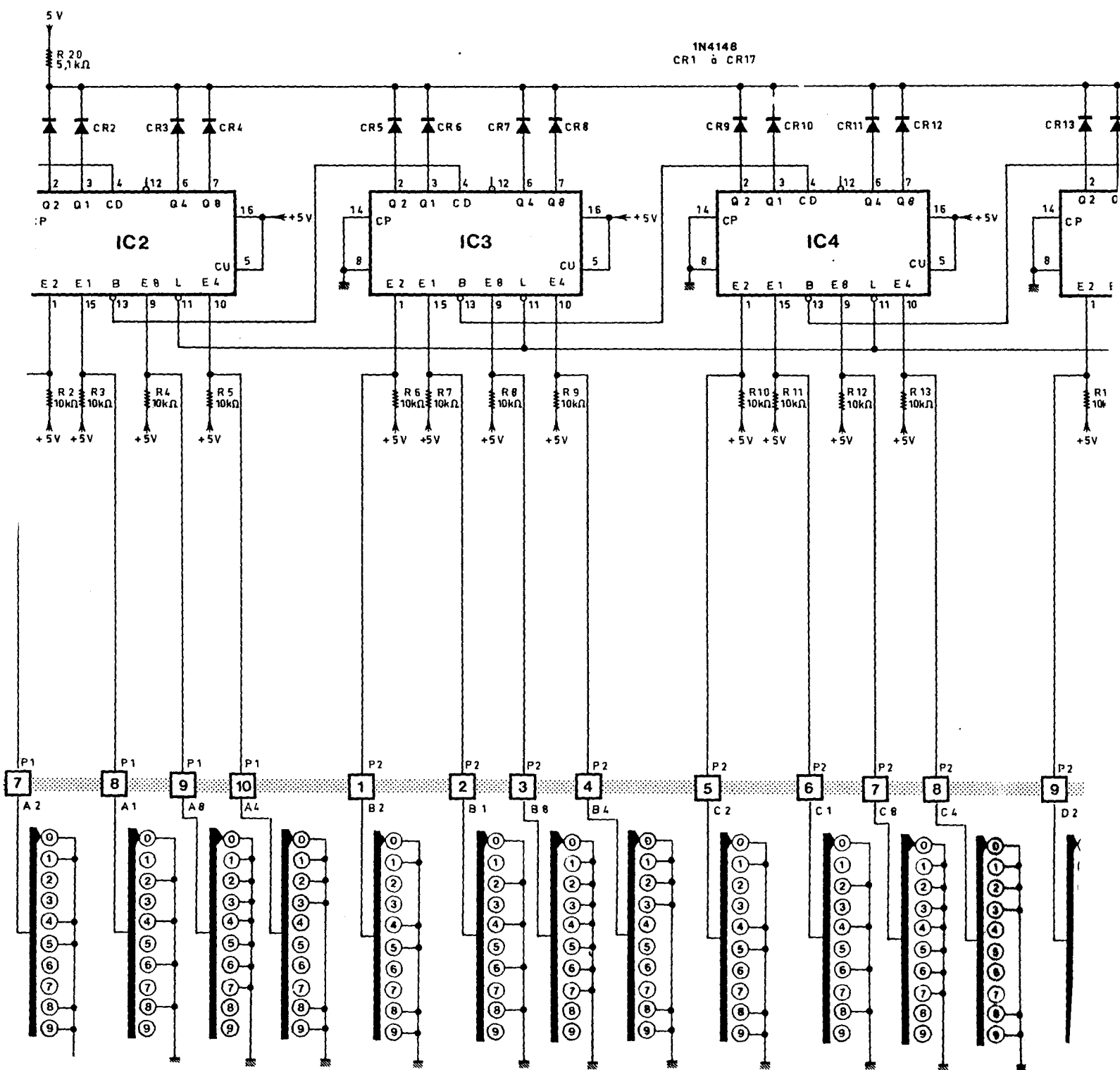
NOTA: RÉSISTANCES | PUISSANCES NON INDIQUEES 1/4 W
TOLERANCES NON INDIQUEES ± 2%

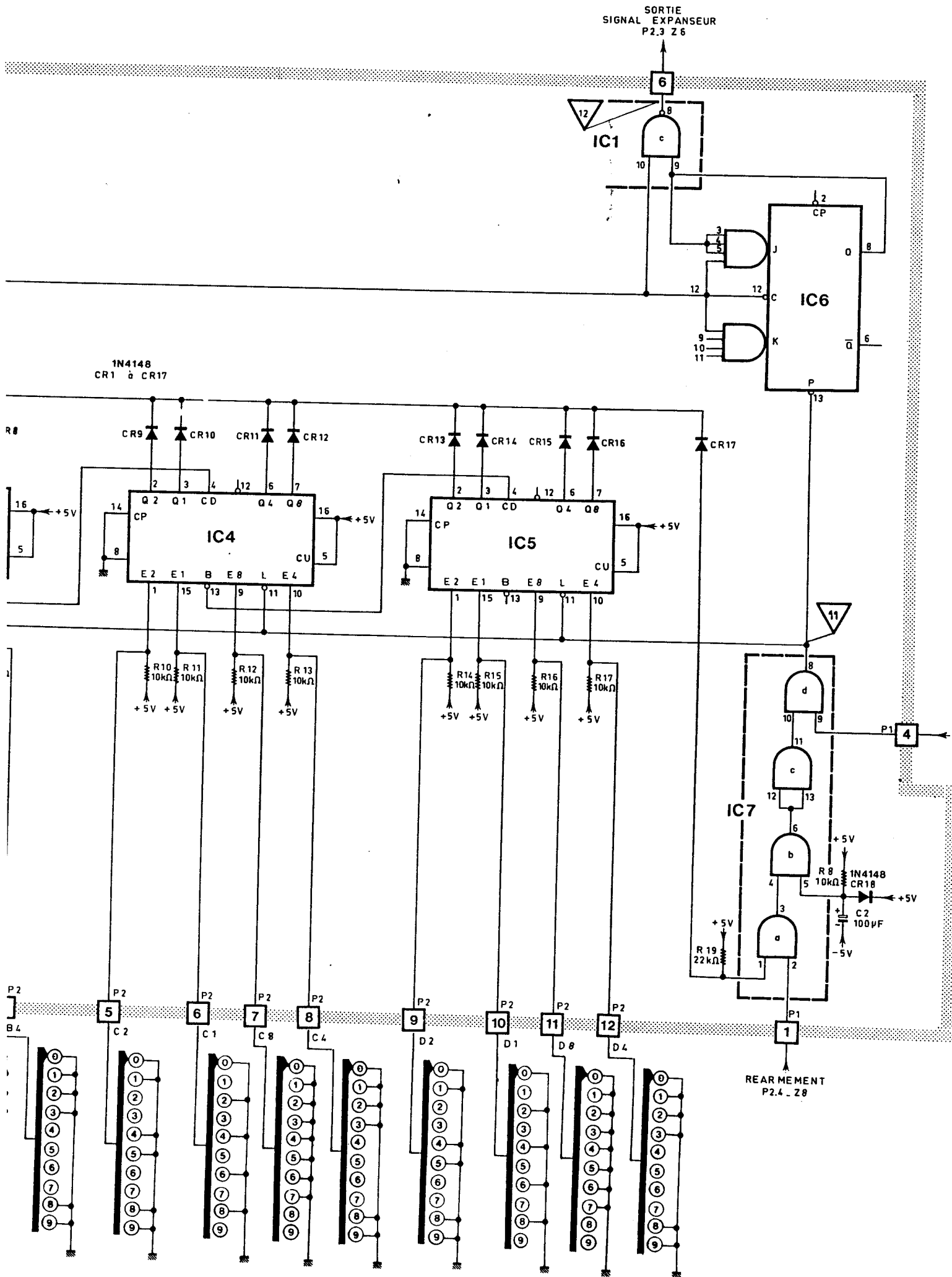
E
92N
72N
00N
08N

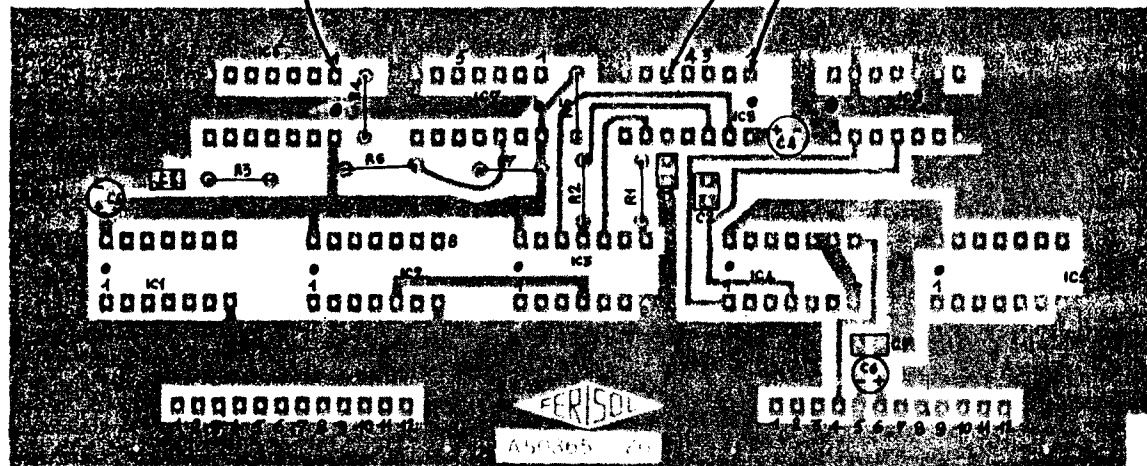
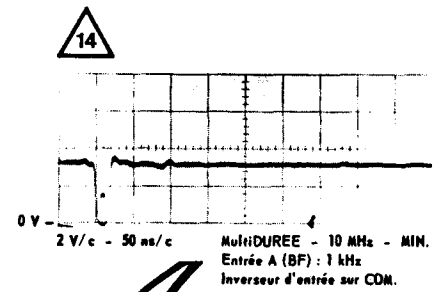
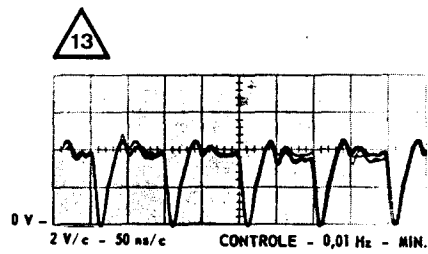
R
A*

0221 0803

PLANCHE N°7







IC	TYPE
2.4.9	SN74H54N
3.6.7.8	SN74H00N
5.1	SN7404N



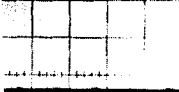
FREQUENCEMETRE COMPTEUR
Type HB221.HB220A
SELECTEUR DE VOIES

Z6

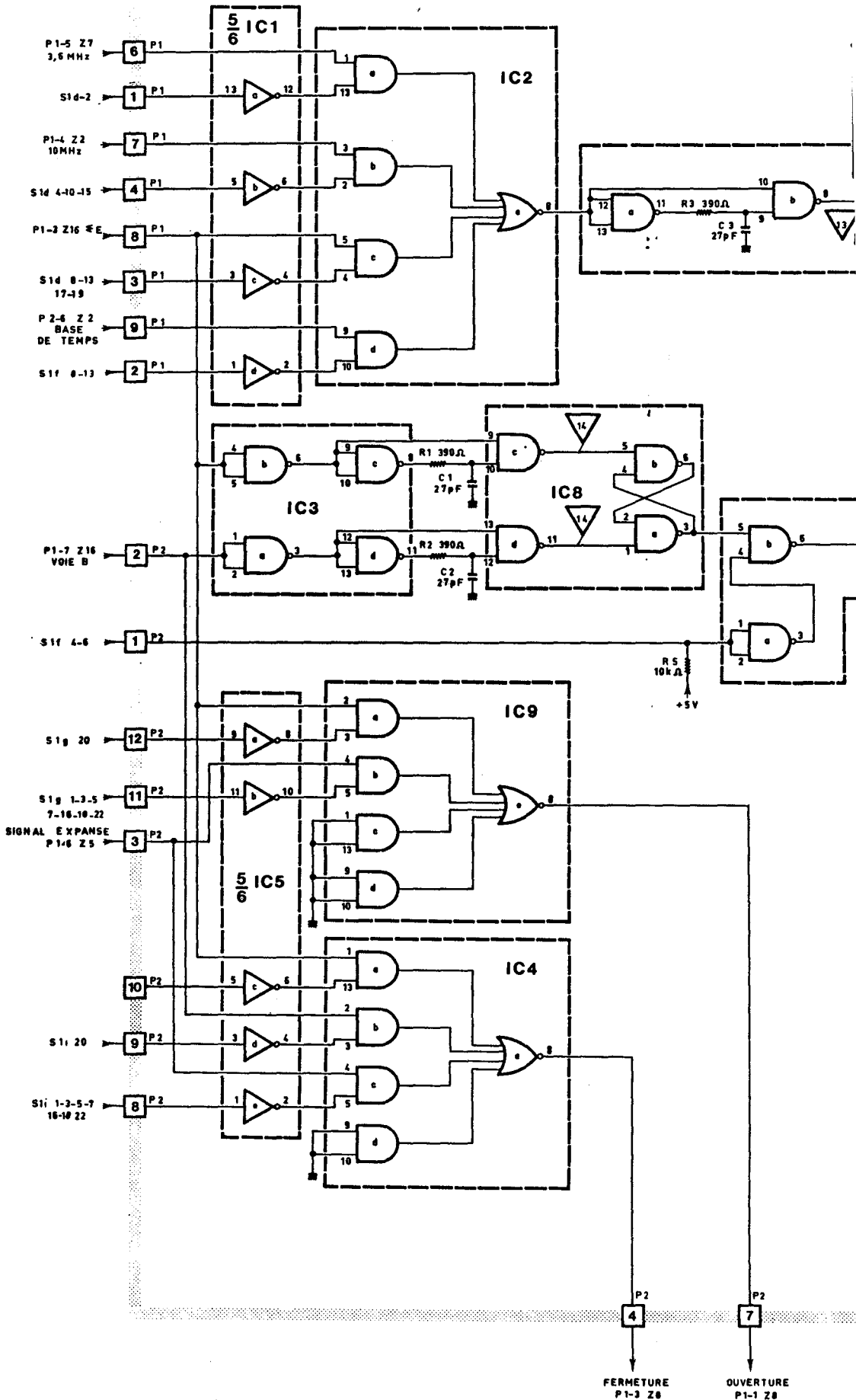
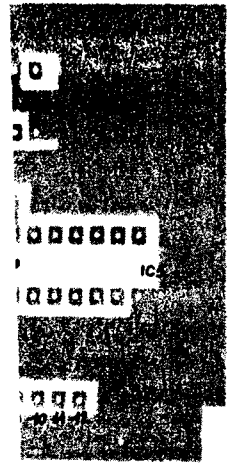
6022

14.1.74

PLA



DUREE - 10 MHz - MIN.
A (BF) : 1 kHz
seur d'entrée sur COM.



E
154N
100N
04N



COMPTEUR
HB220A
E VOIES

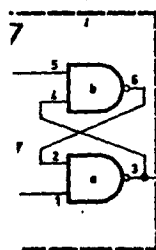
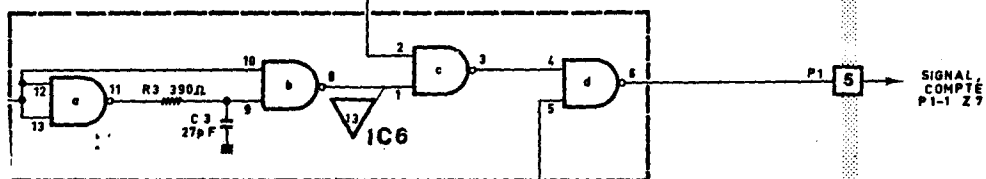
602210804

PLANCHE N° 8

SIGNAL A COMPTER
J7-5

P1

R4
10kΩ
+5V



R5
10kΩ
+5V

C4
10μF
C5
10μF
C6
1μF
C7
10nF

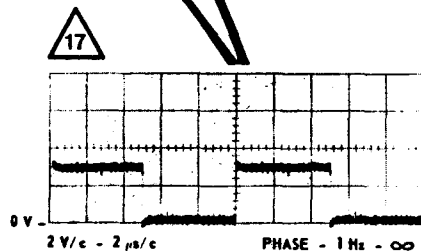
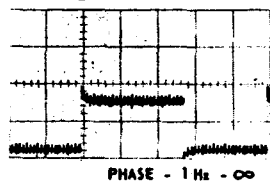
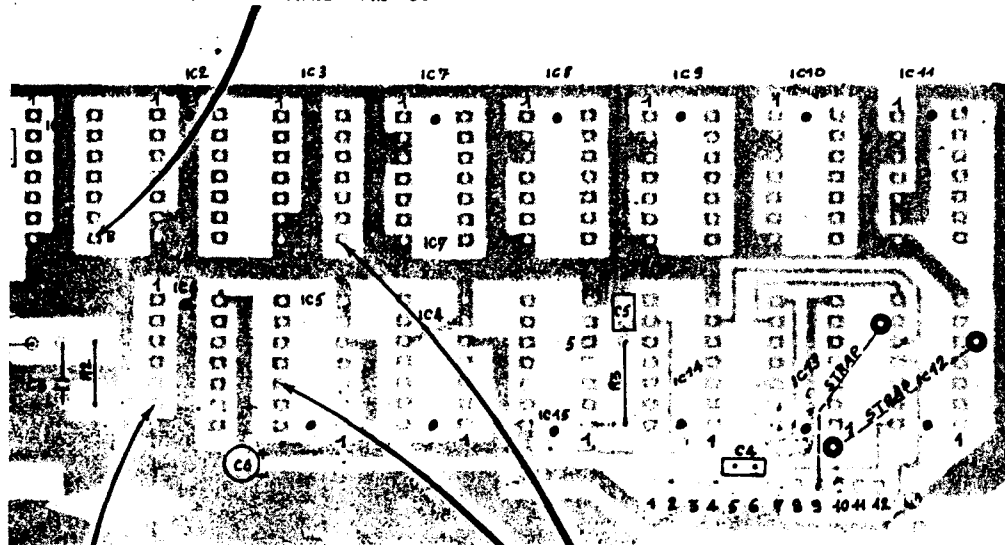
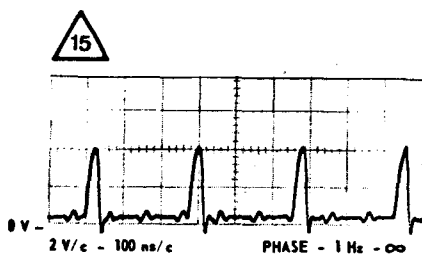
P1 11 PORTE EXT.
J7-5
P1 12 PORTE J7
P1-5 Z8

P2 6 +5V

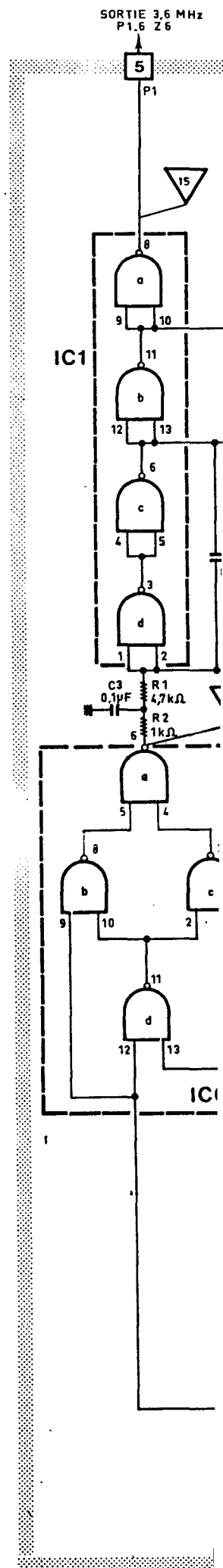
P2 5

Z6

P2
7
TURE Z8
OUVERTURE
P1-1 Z8



IC	TYPE
2.3	SN 7492N
1.6.	SN 7400N
4.5.7.8.9.10.11	SN 7490N
14	SN 7460N
12	SN 7404N
13	SN 74H53N
15	SN 74H00N



CONST. PARIS

FREQUENCEMETRE COMPTEUR

Type HB221.HB 220A*

PHASEMETRE

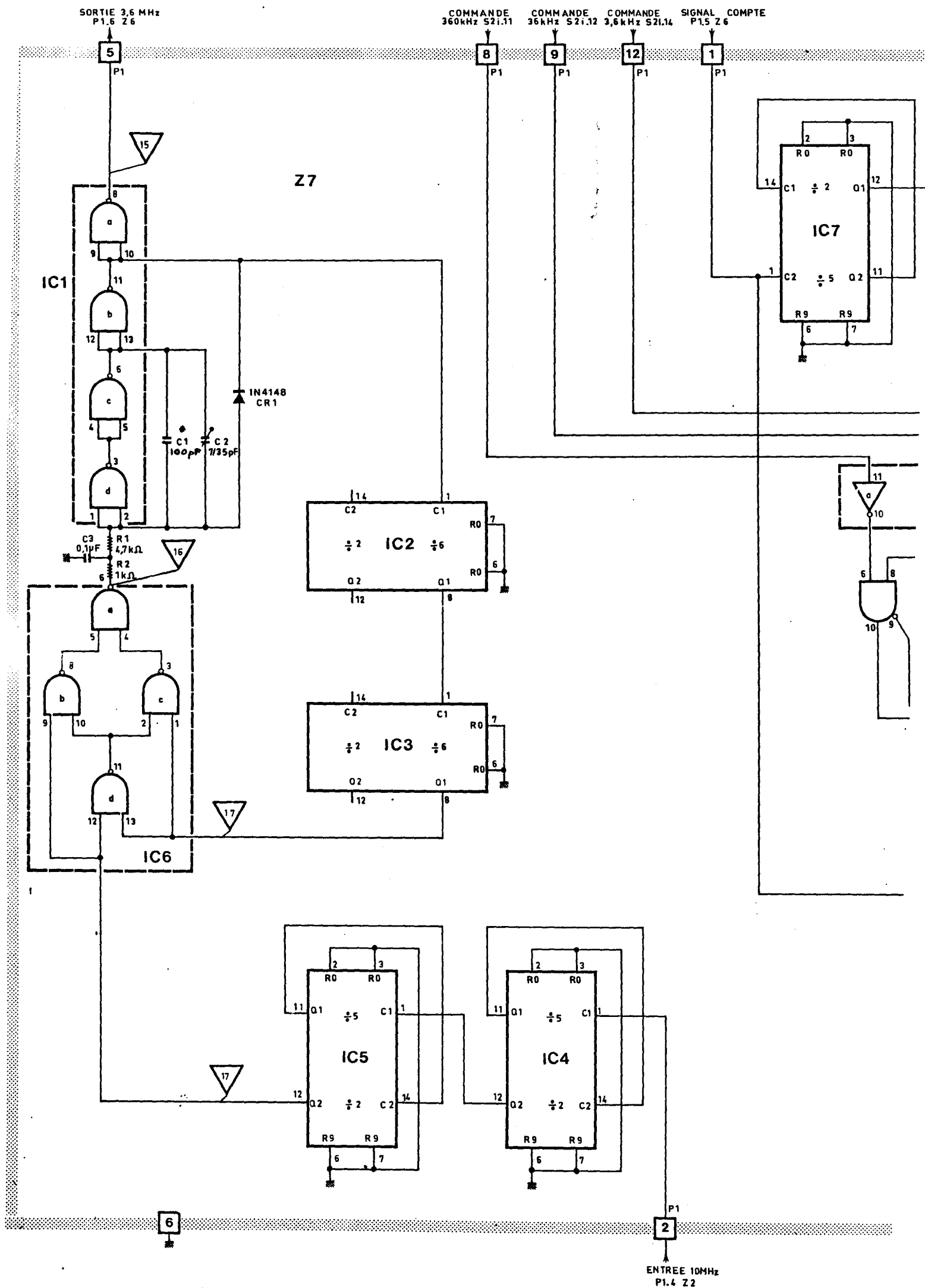
Z7

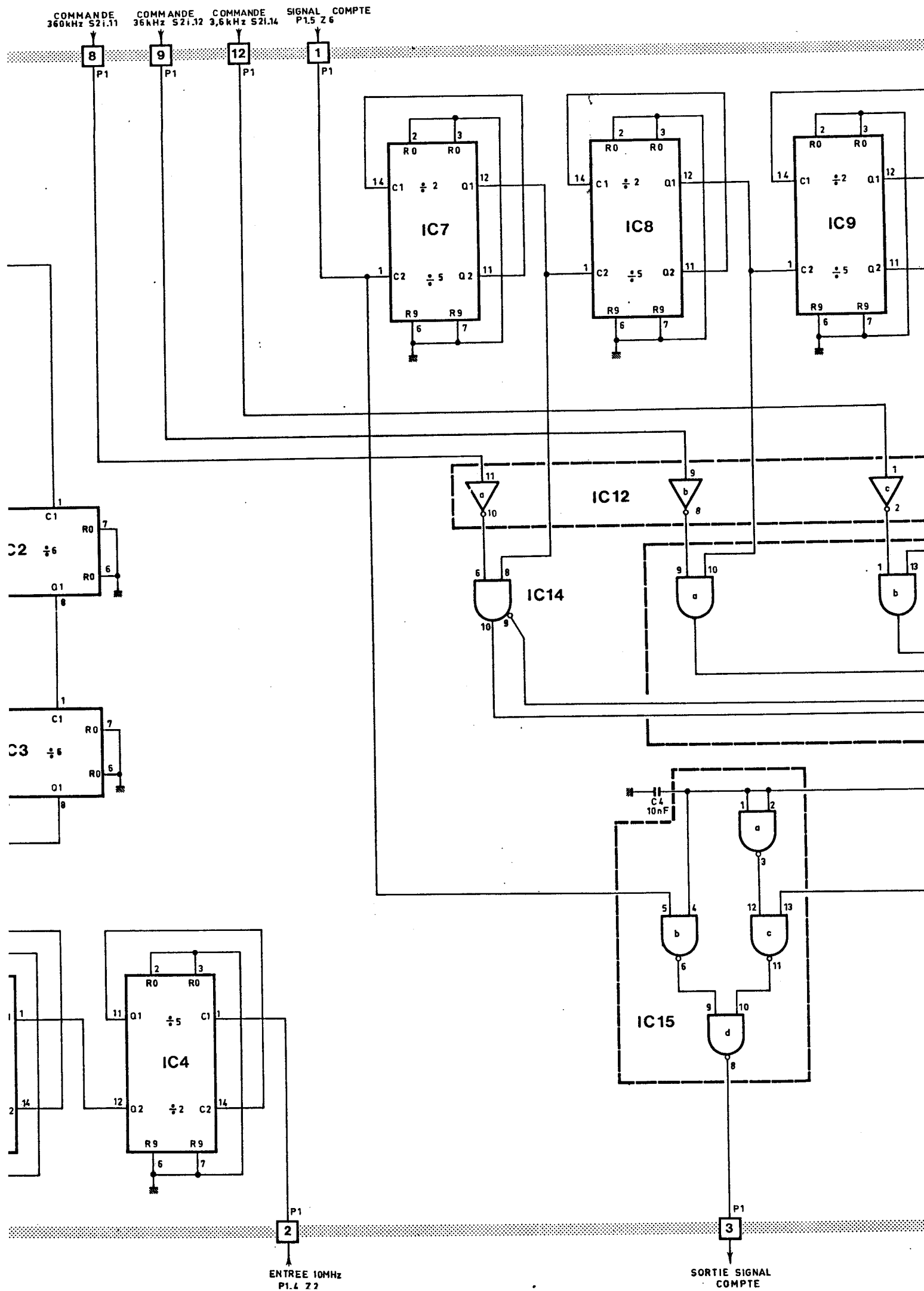
6 0221 0805

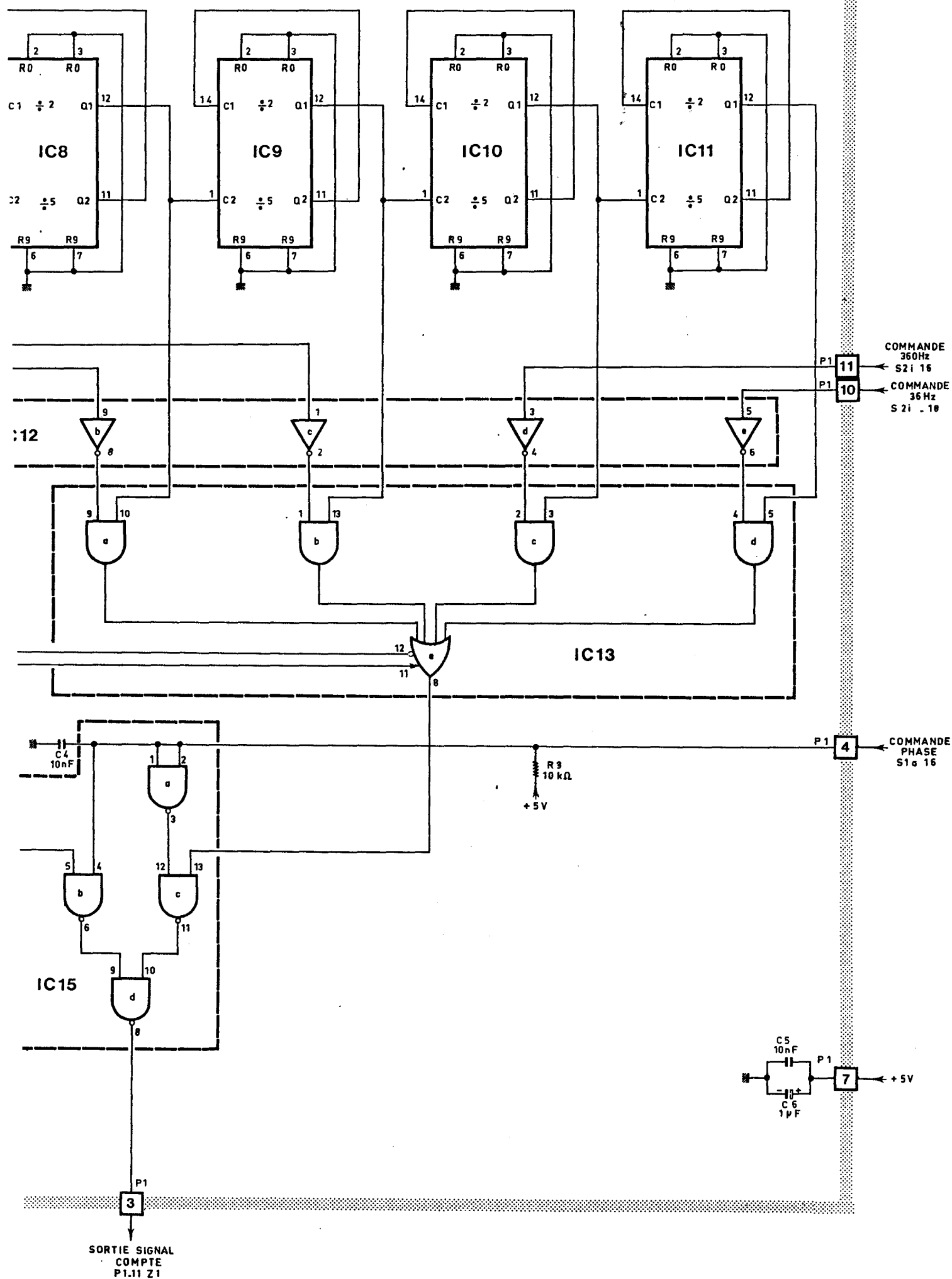
7-1-75

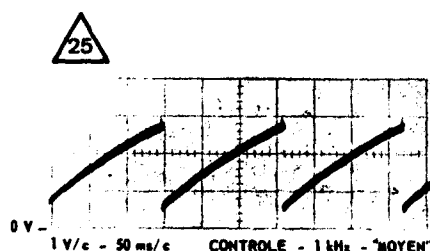
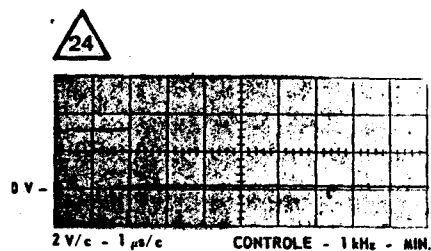
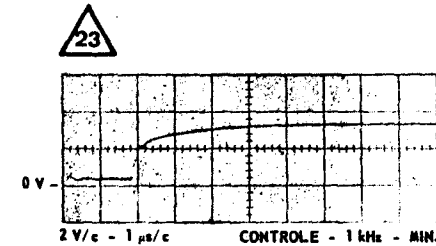
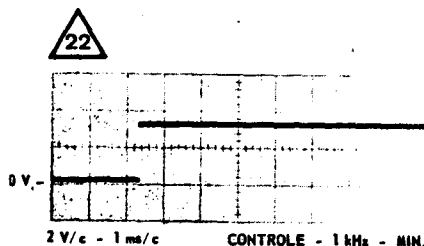
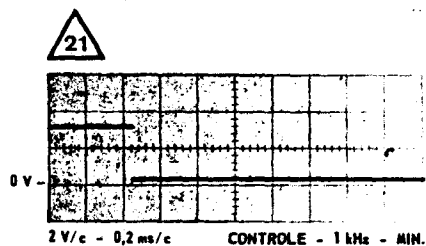
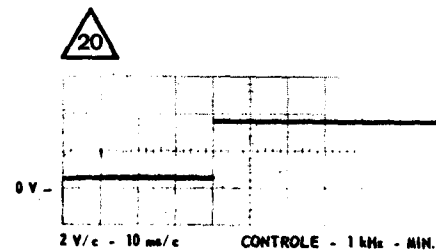
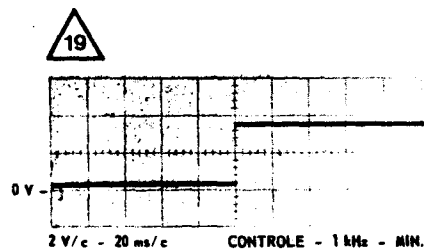
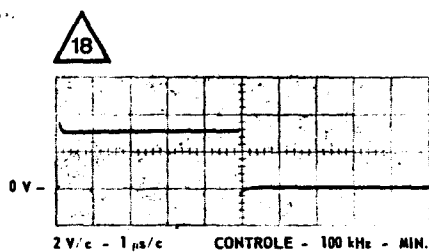
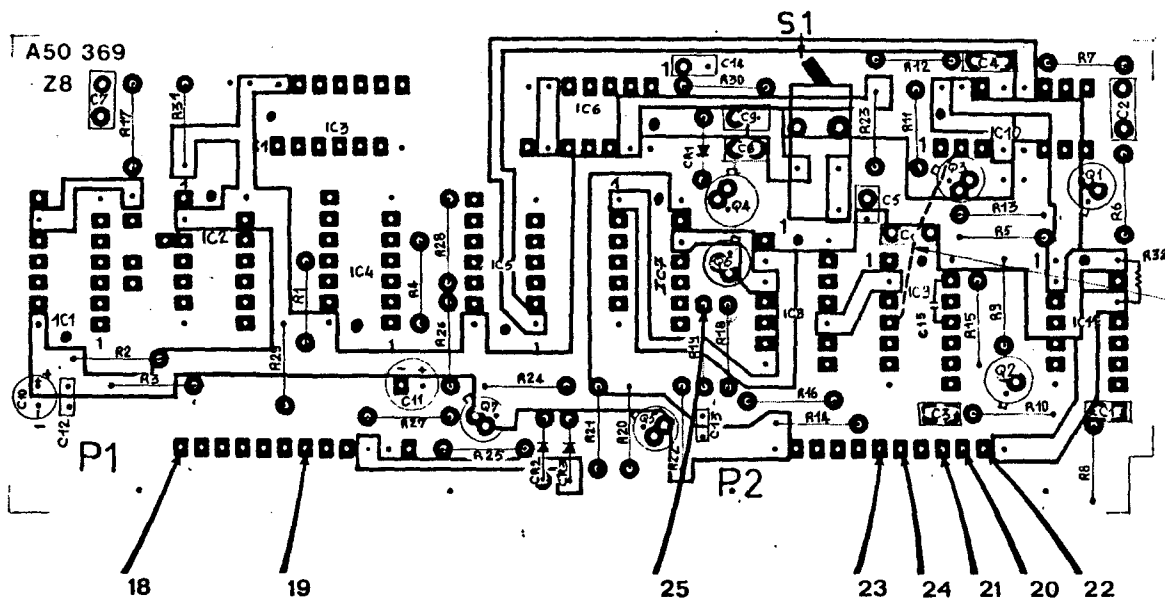
(* Option)

PLANCHE N° 9









IC	TYPE
1	SN7411N
2	SN7474N
3 - 7 - 8	SN7410N
4 - 5 - 6	SN7400N
9 - 11	SN7437N
10	SN7476N



FREQUENCEMETRE COMPTEUR

HB221.HB 220A

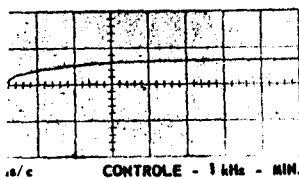
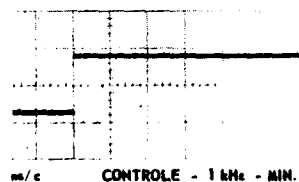
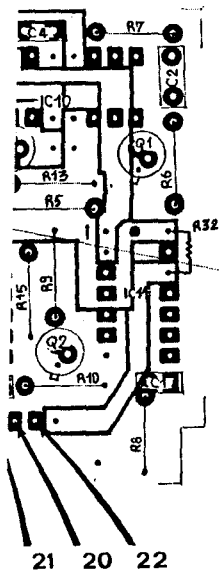
FONCTIONNEL

Z8

6022108

4-1-75

PLANCHE N



PE

411N
474N
410N
400N
437N
476N



ETRE COMPTEUR

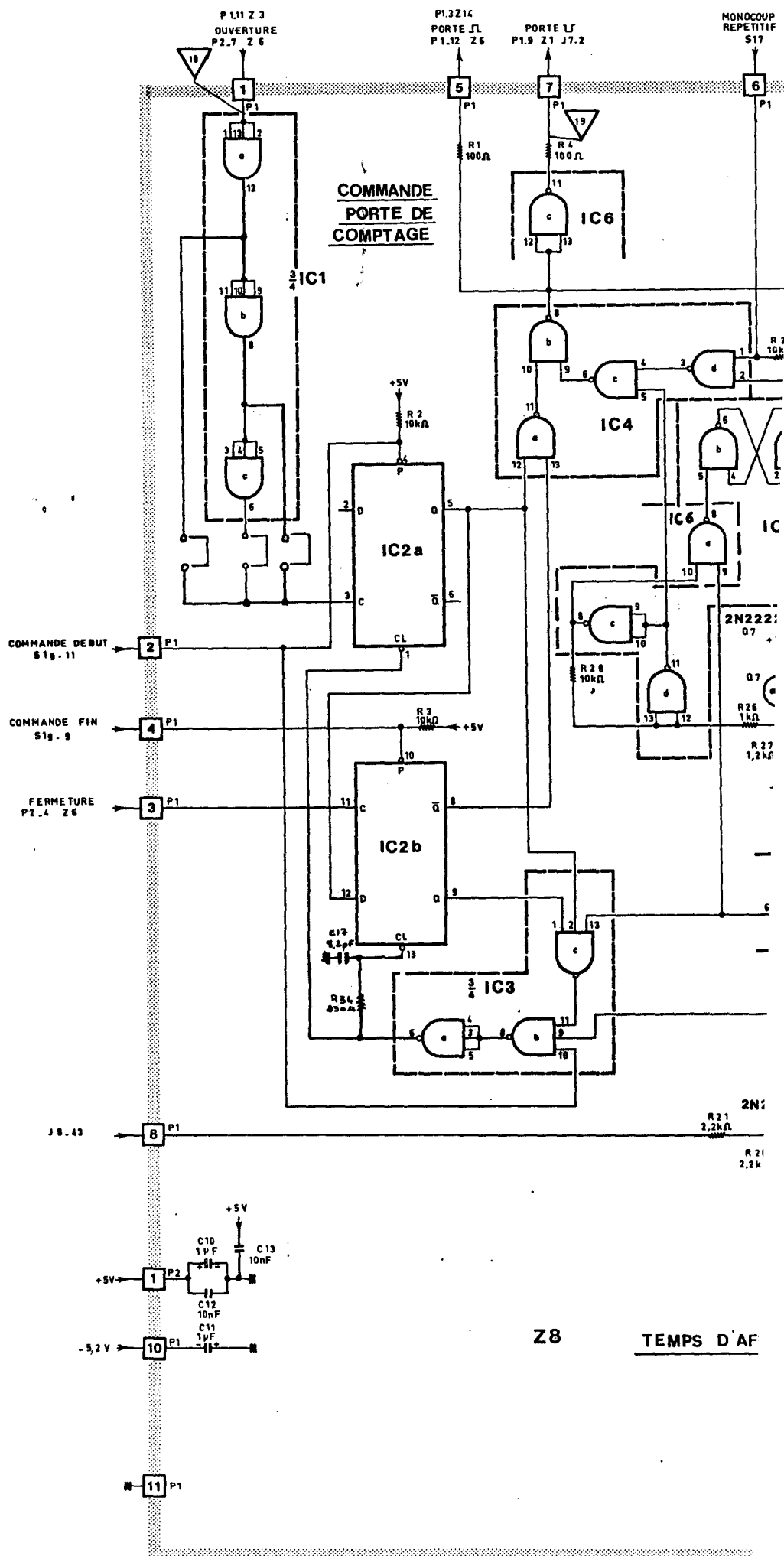
HB 220A

TIONNEL

Z8

602210806

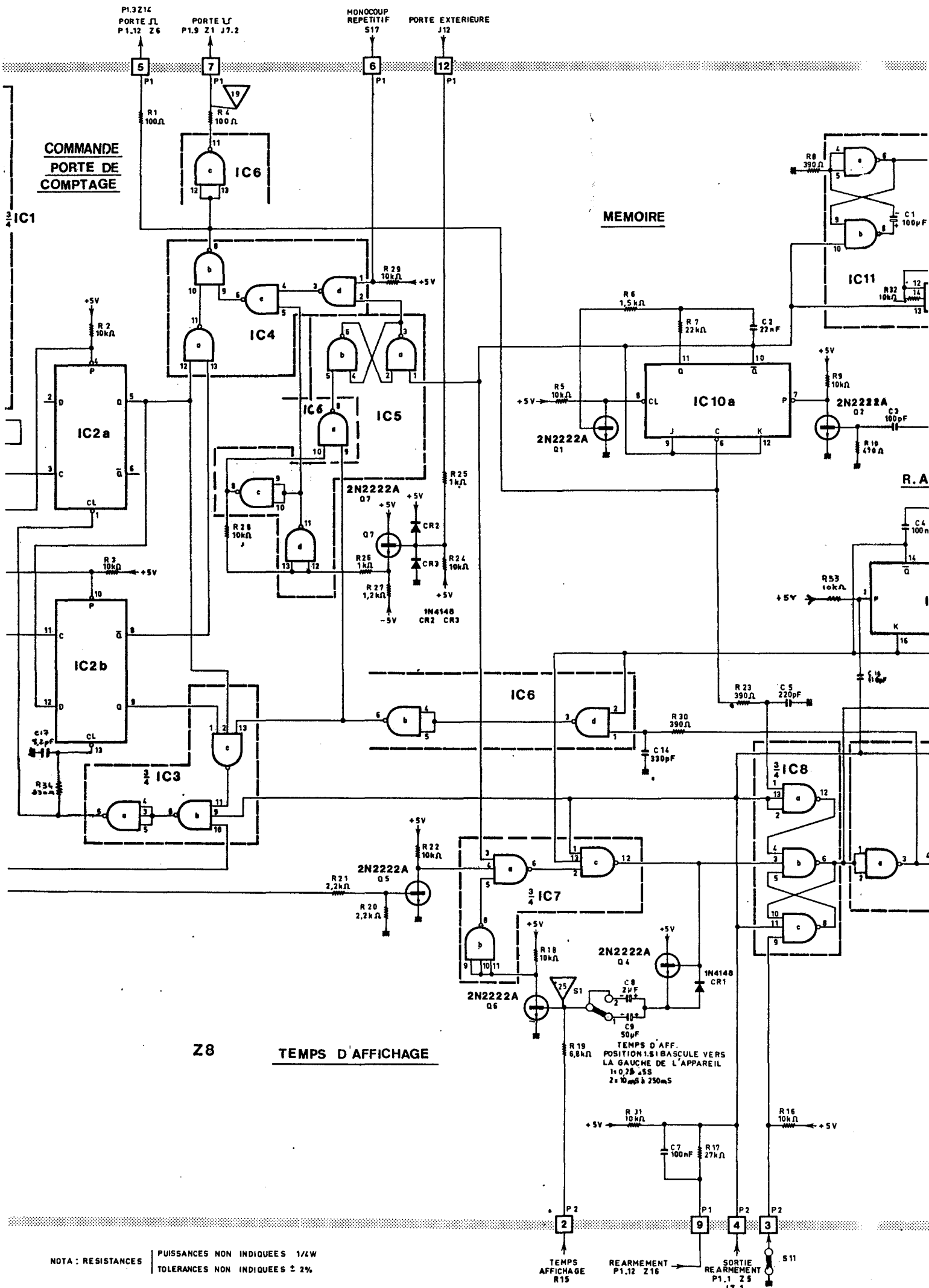
PLANCHE N°10

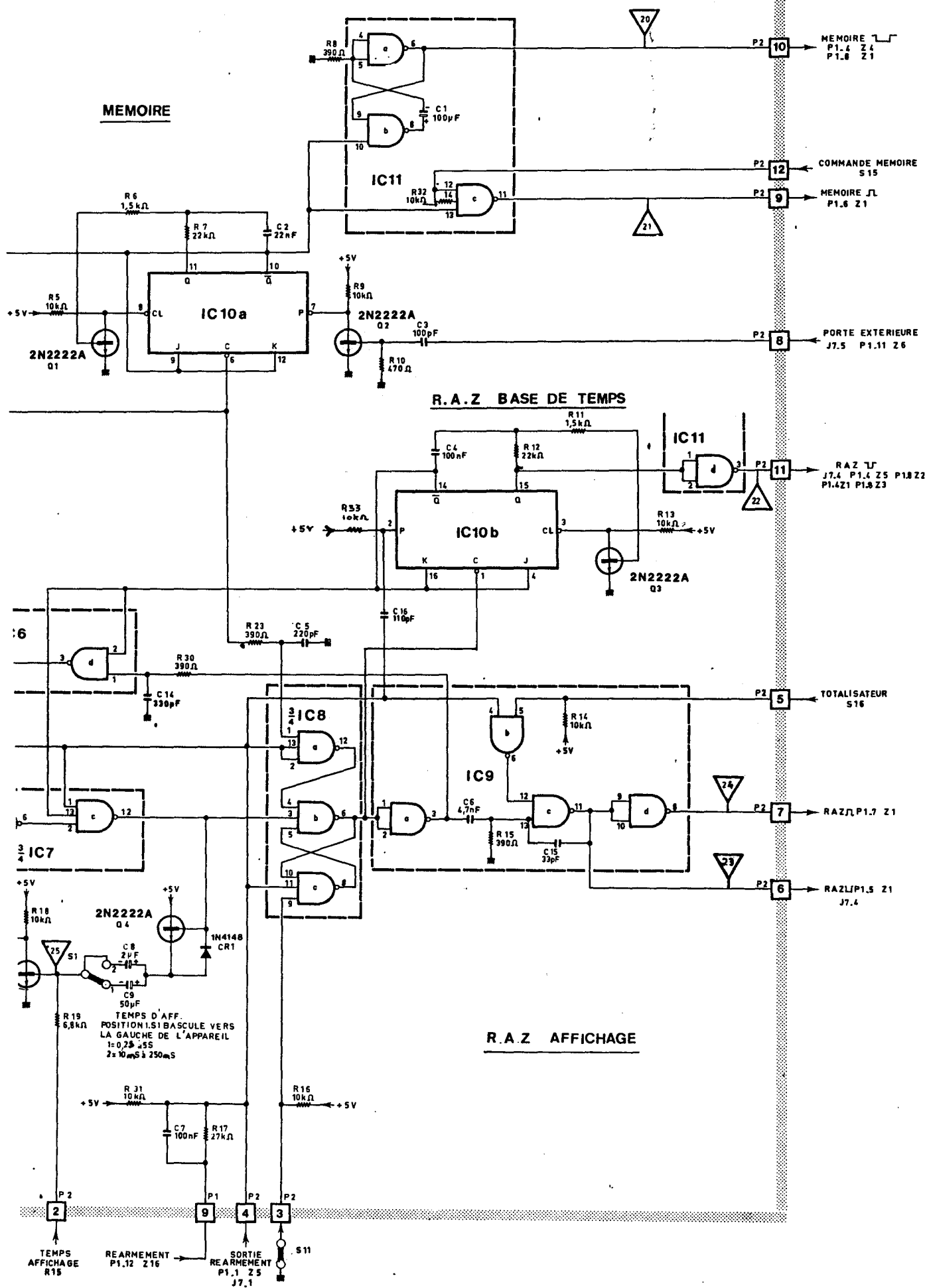


Z8

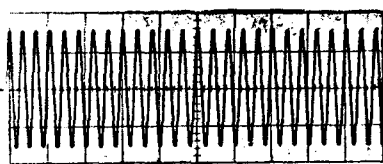
TEMPS D'AF

NOTA: RESISTANCES | PUISSANCES NON INDIQUEES 1/4W
TOLERANCES NON INDIQUEES ± 2%



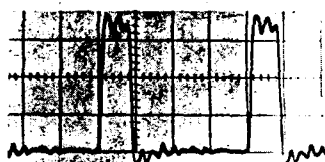
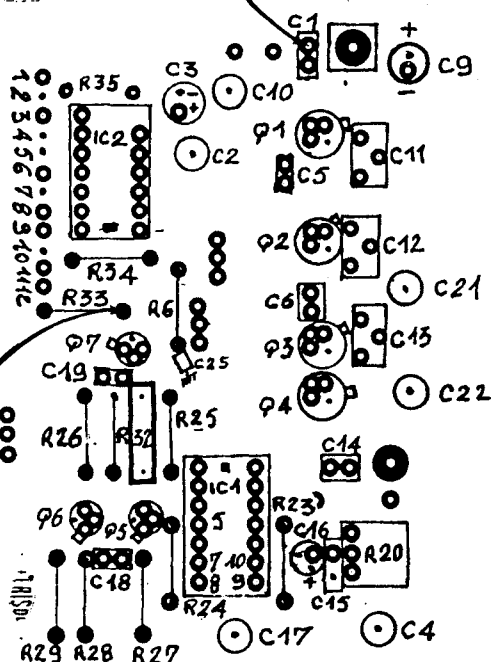


26



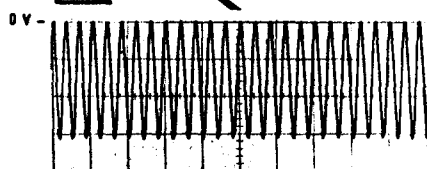
50 mV/c - 50 ns/c ENTREE A (HF) : 50 MHz

A50371 Z9

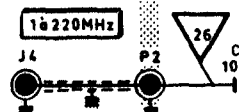
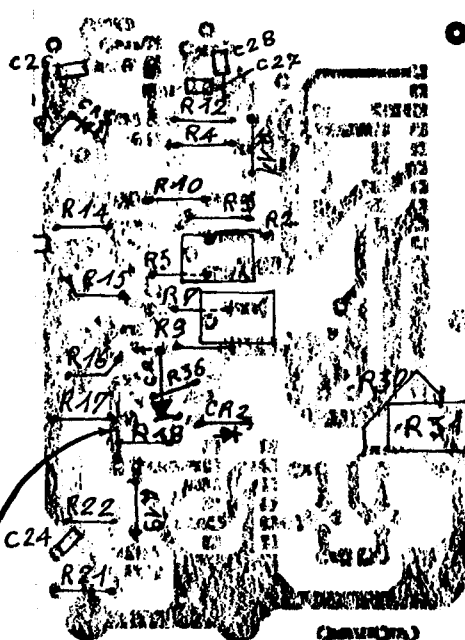


50 ns/c ENTREE A (HF) : 50 MHz

27



0,5 V/c - 50 ns/c ENTREE A (HF) : 50 MHz

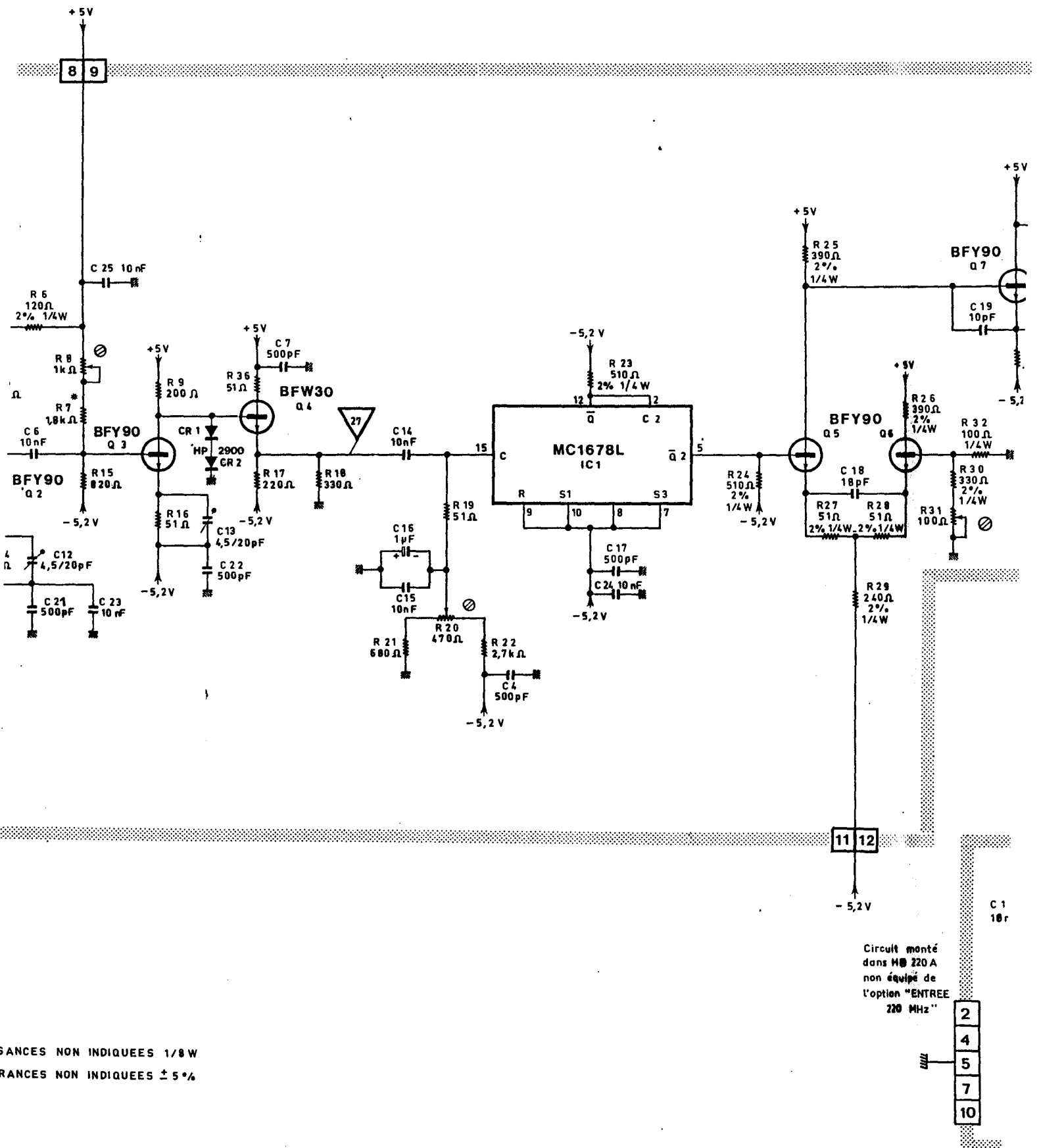


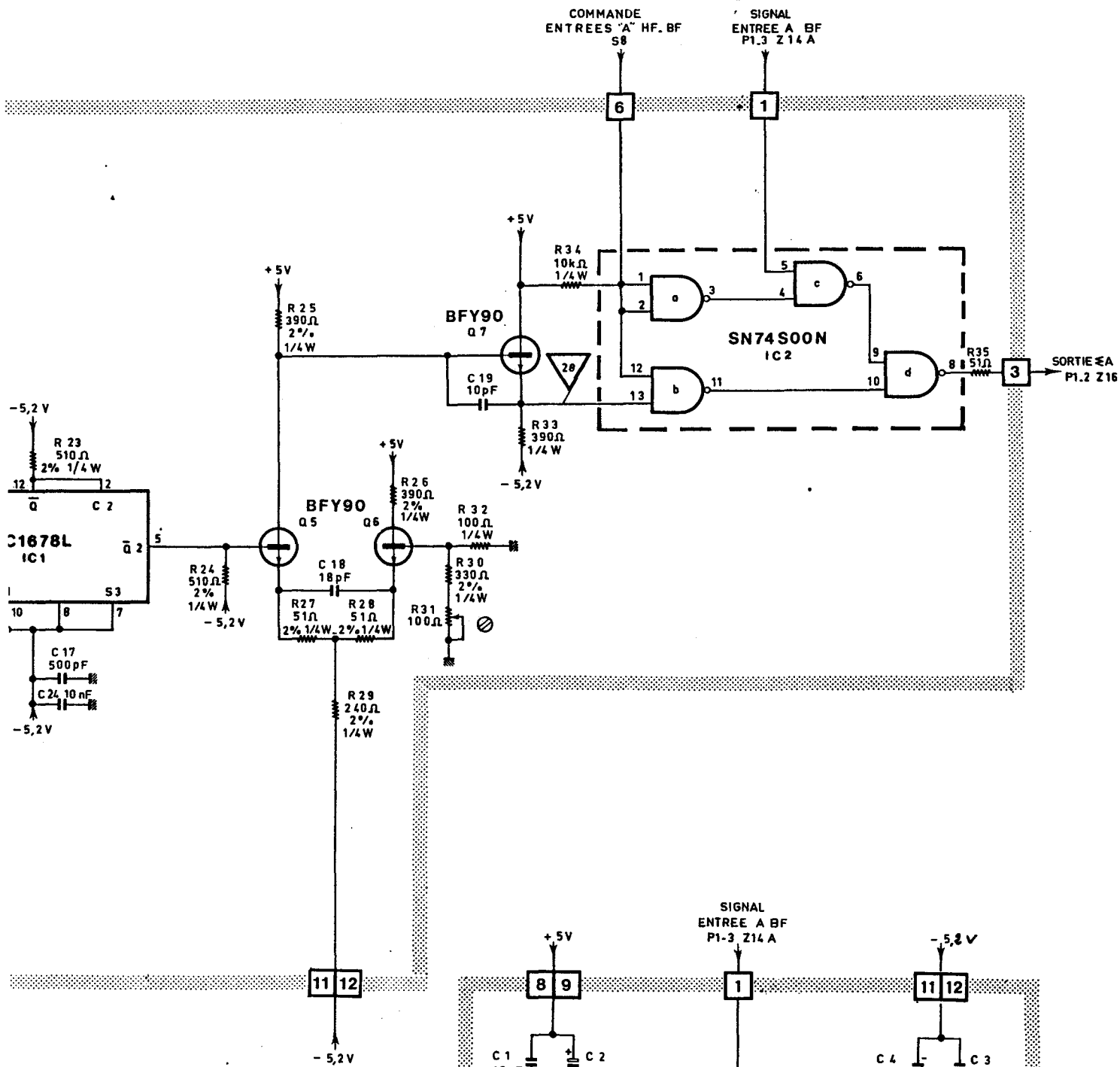
FREQUENCEMETRE COMPTEUR
Type HB221.HB220A*
AMPLIFICATEUR HF

Z9

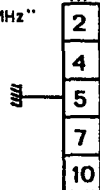
602210807

BLANCHE N° 11

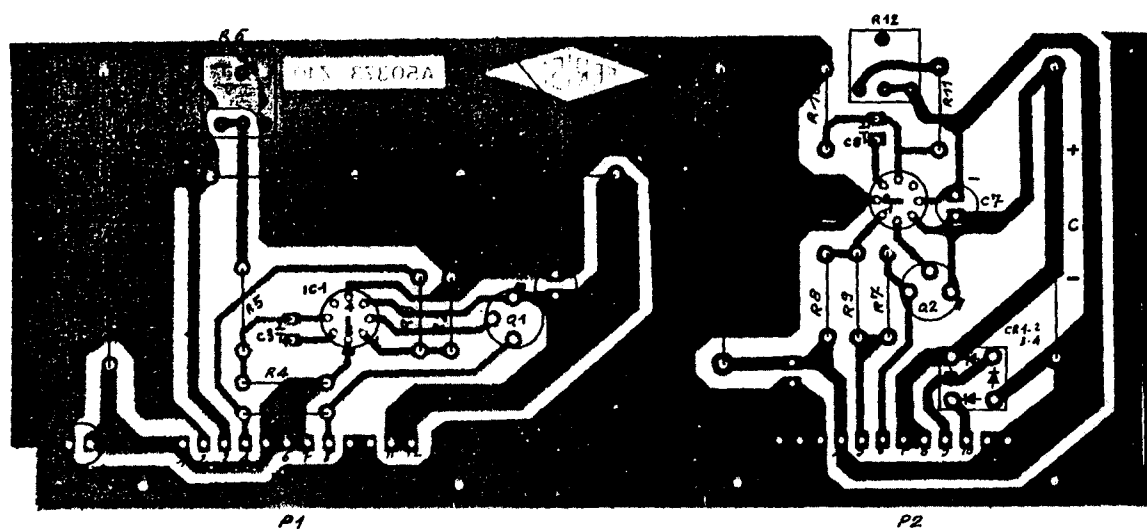




Circuit monté dans HB 220 A non équipé de l'option "ENTREE 220 MHz"



Z 9B



0V →

110V →

CV →

110V →

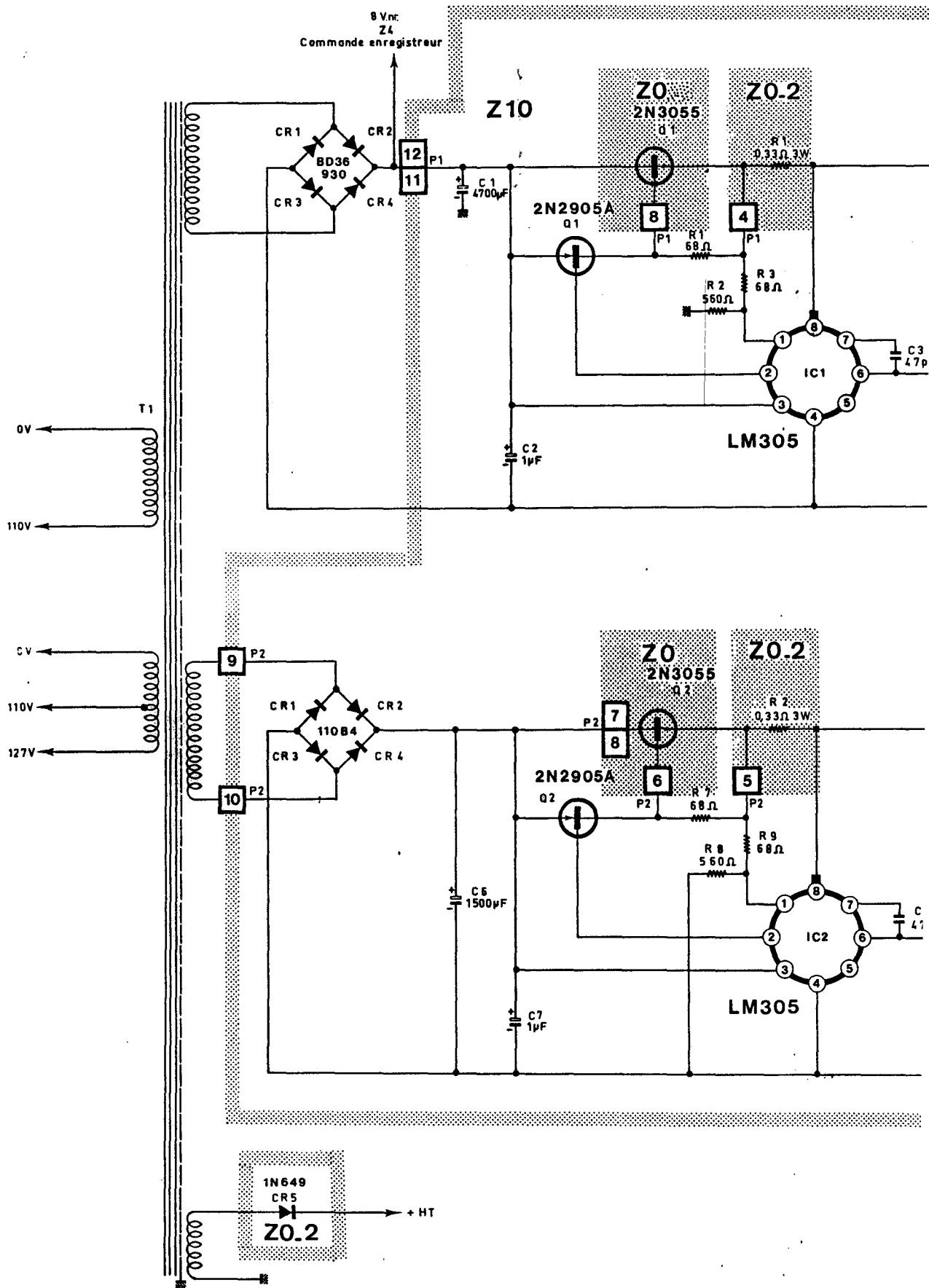
127V →



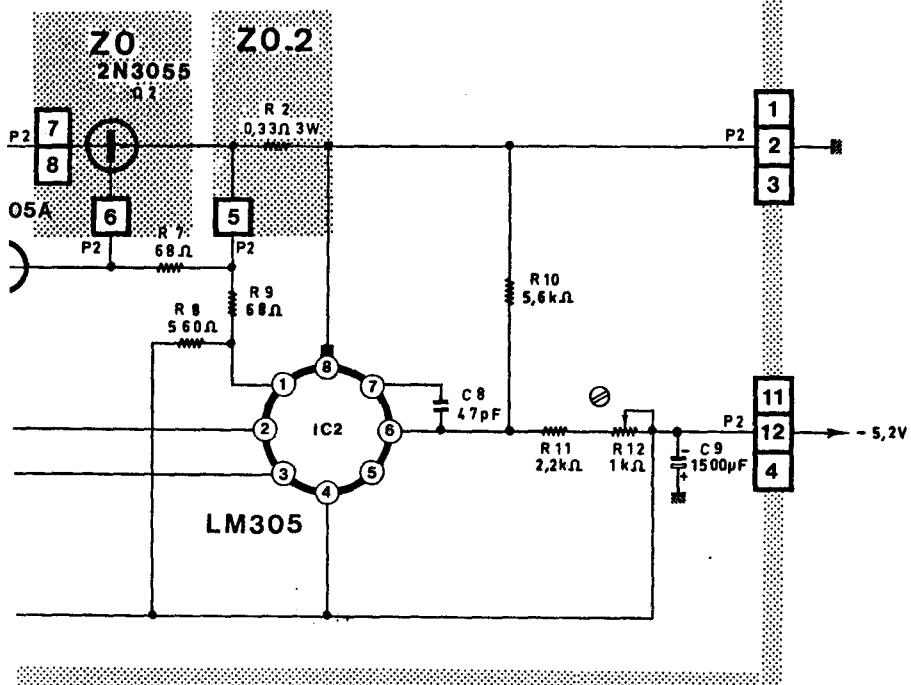
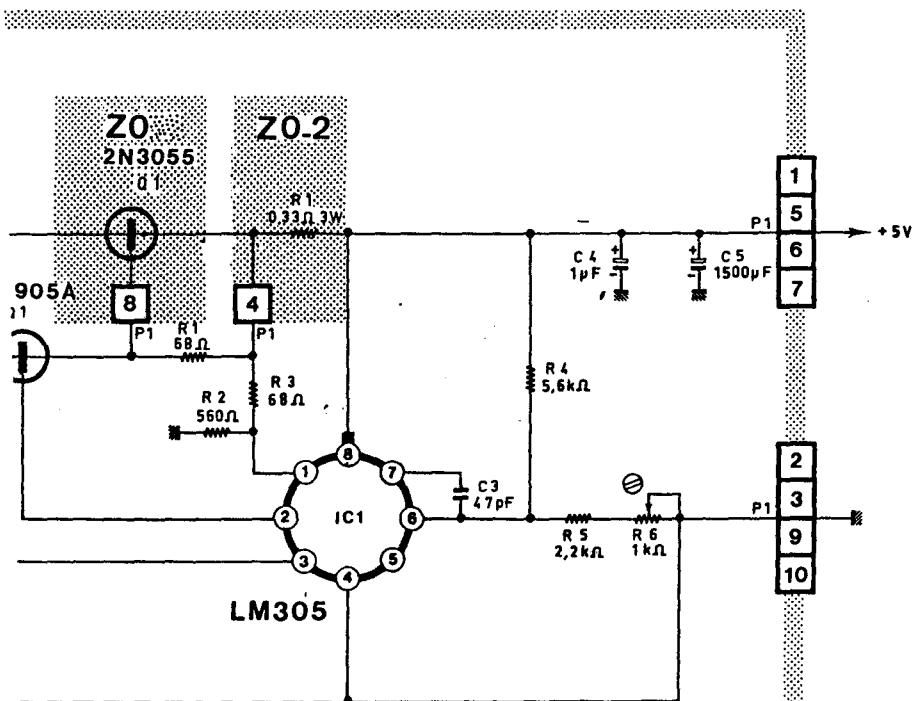
FREQUENCEMETRE COMPTEUR
Type HB221.HB220A
ALIMENTATIONS GENERALES

Z10 60221 0809

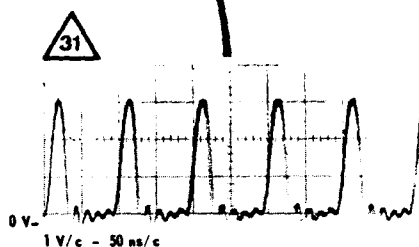
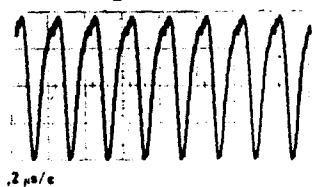
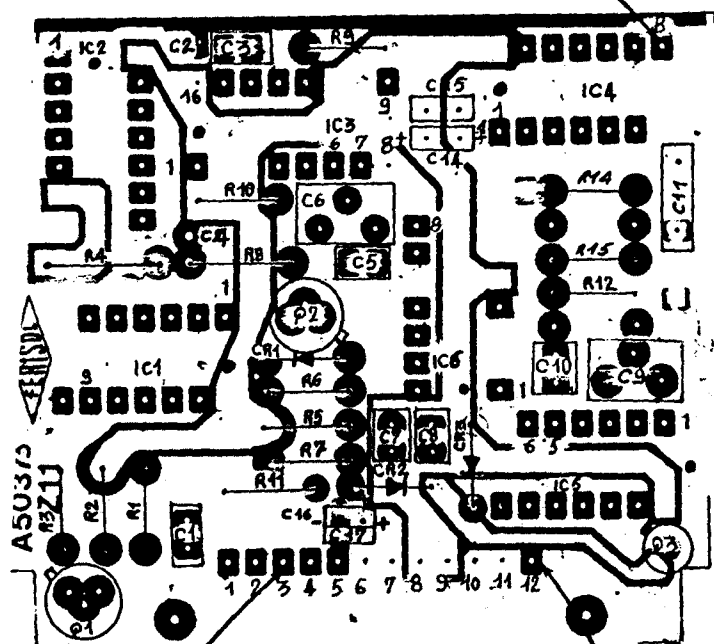
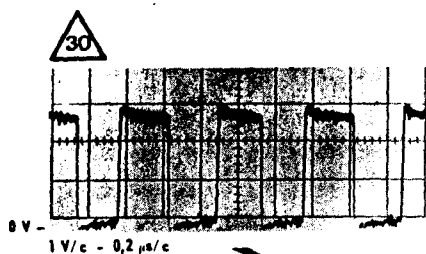
PLANCHE N°12



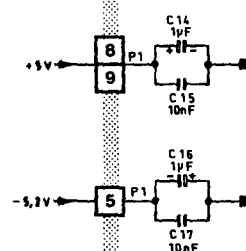
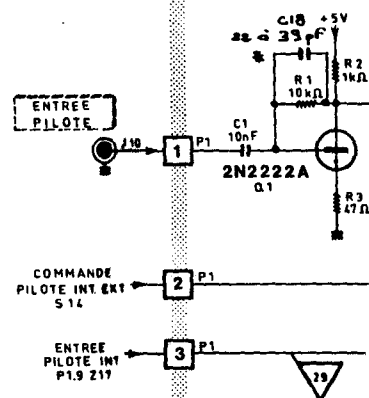
NOTA : RESISTANCES | PUISSANCES NON INDIQUEE
TOLERANCES NON INDIQUEE



RESISTANCES | PUISSANCES NON INDIQUEES 1/4W
TOLERANCES NON INDIQUEES $\pm 2\%$



IC	TYPE
5	SN7402N
1-4	SN7400N
2	SN7420N
3	SN74123N
6	SN7490N



FREQUENCEMETRE COMPTEUR

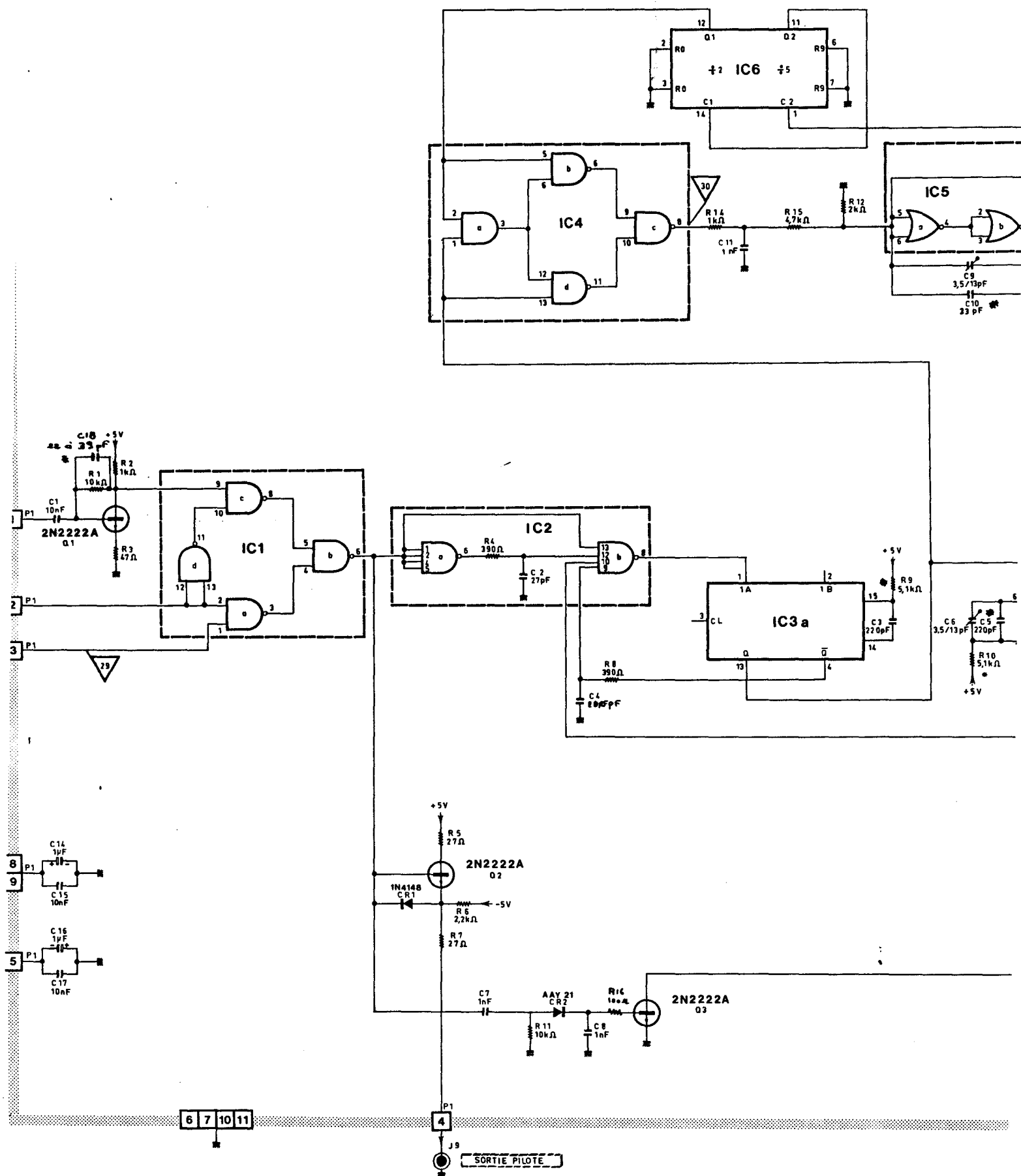
Type HB 221 - HB 220A

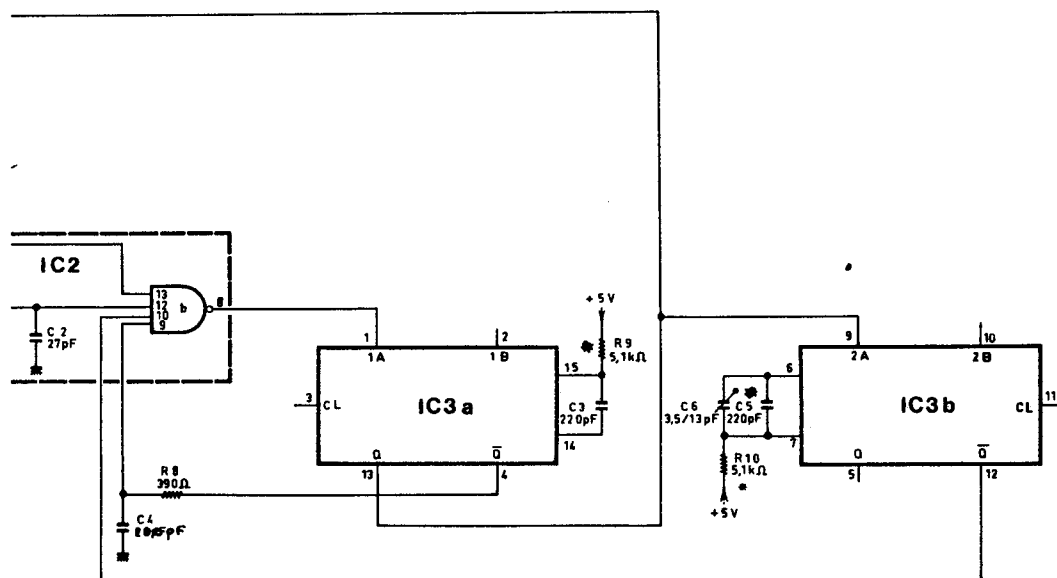
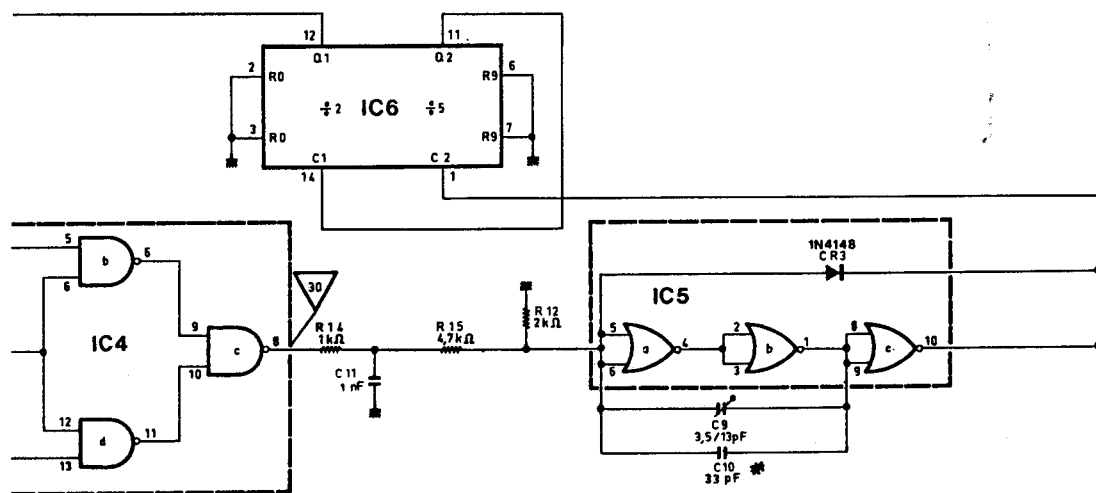
CIRCUIT 1.5.10

Z11

602210810

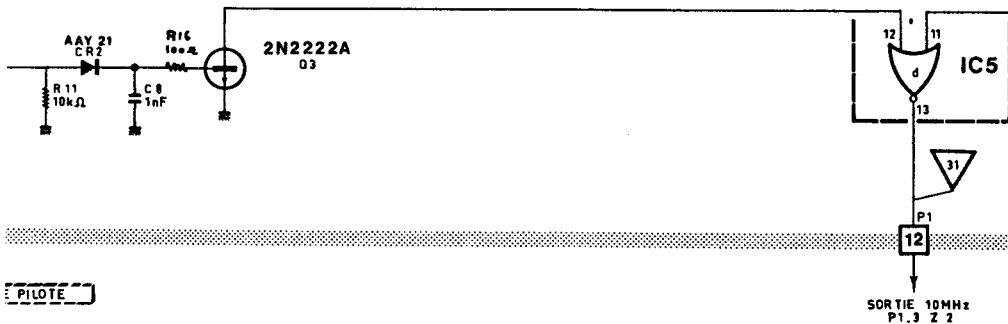
PLANCHE N° 13



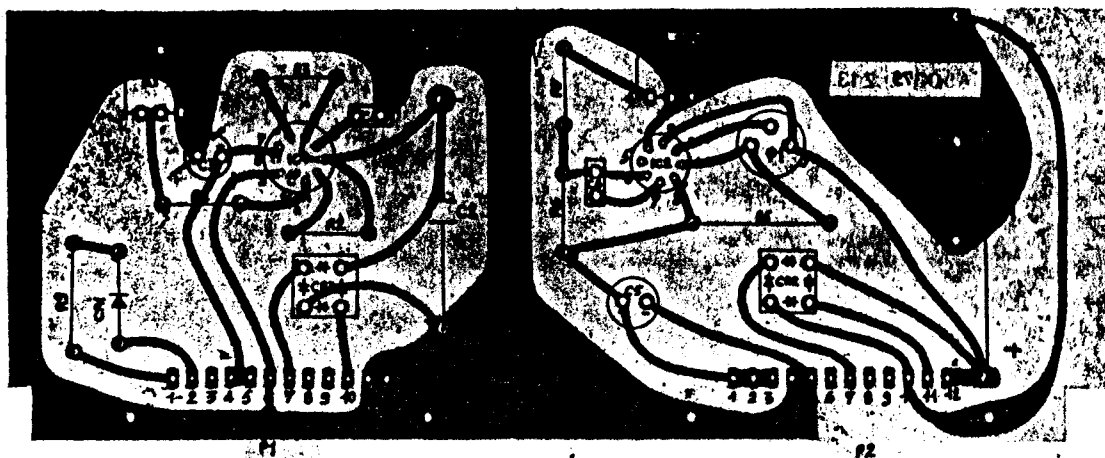


2A

V



PILOTE



0V →

110V →

0V →

110V →

127V →



FREQUENCEMETRE COMPTEUR

Type HB221.HB220A*

ALIMENTATION QUARTZ THERMOSTATE

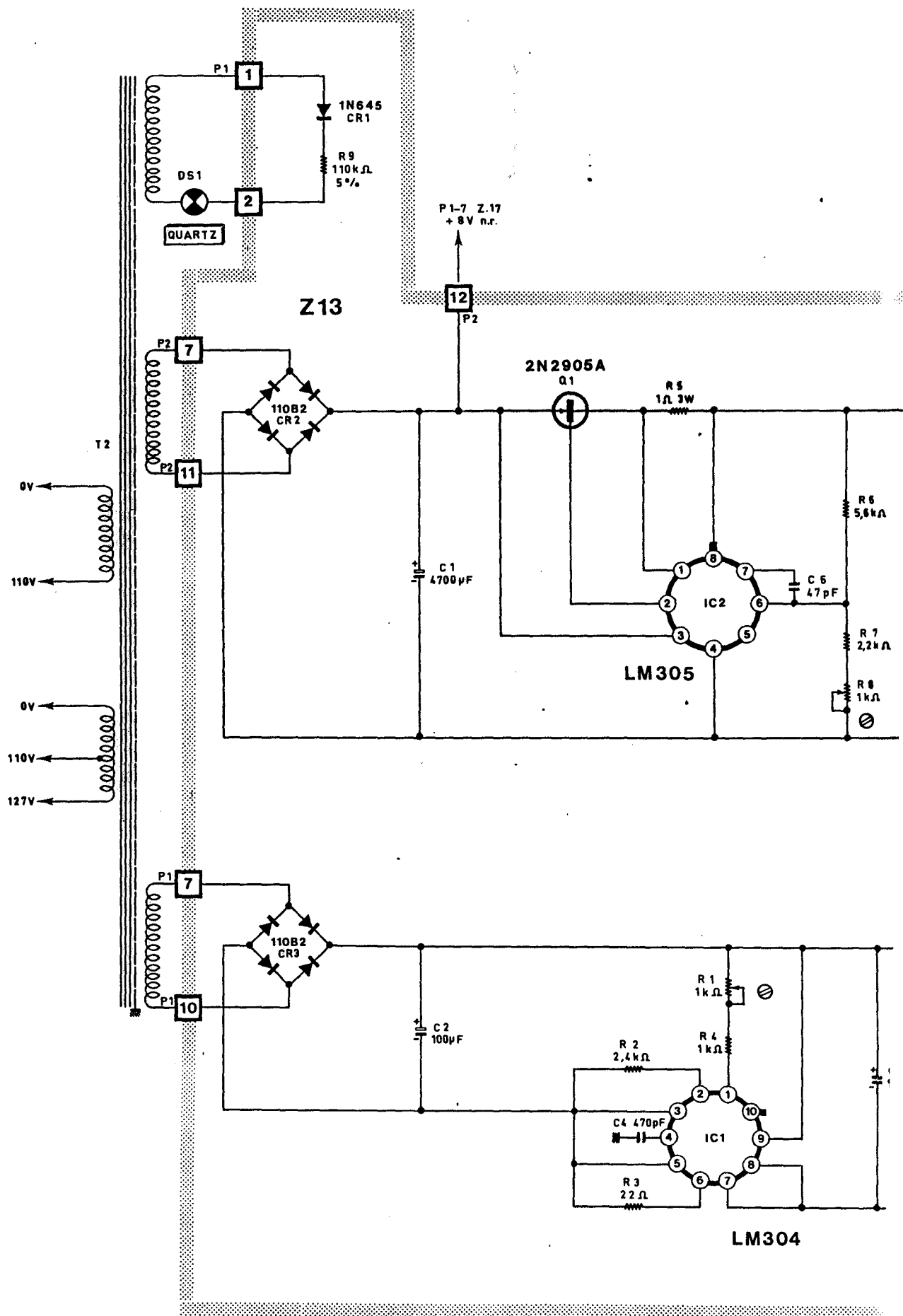
Z13

(* option)

602210811

14.1.74

PLANCHE N° 14



TE

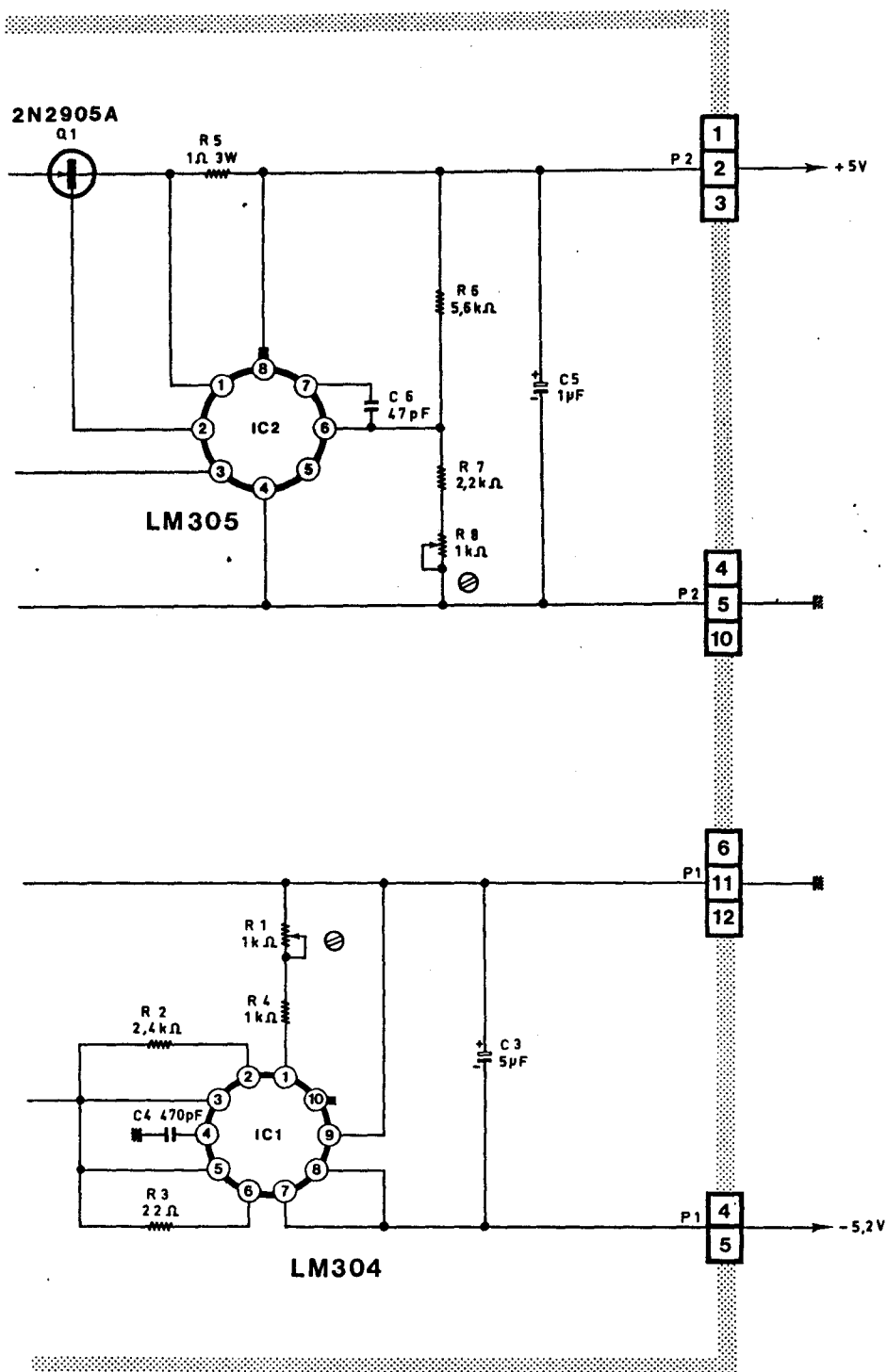
0811

ANCHE N° 14

NOTA : RESISTANCES

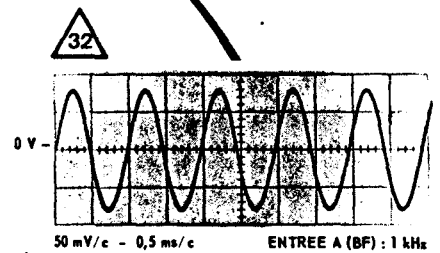
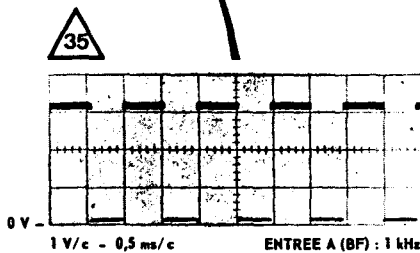
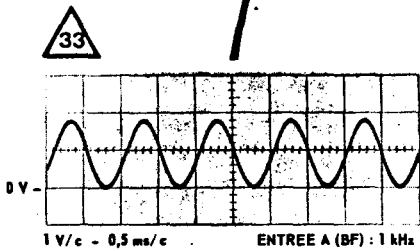
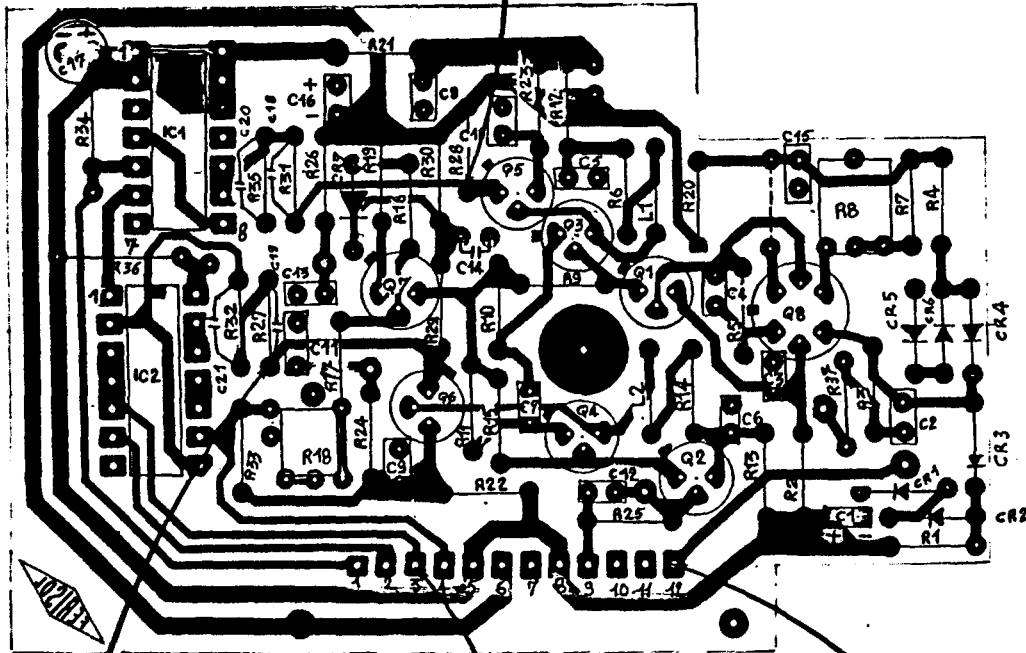
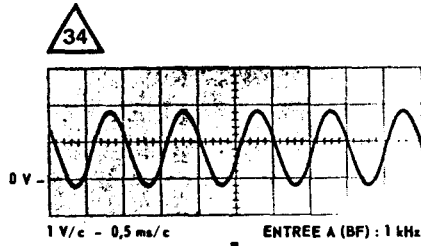
PUISSANCES NON INDIQUEES 1/4W

TOLERANCES NON INDIQUEES $\pm 2\%$



ANCES NON INDIQUEES 1/4W

ANCES NON INDIQUEES $\pm 2\%$

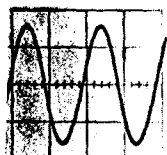
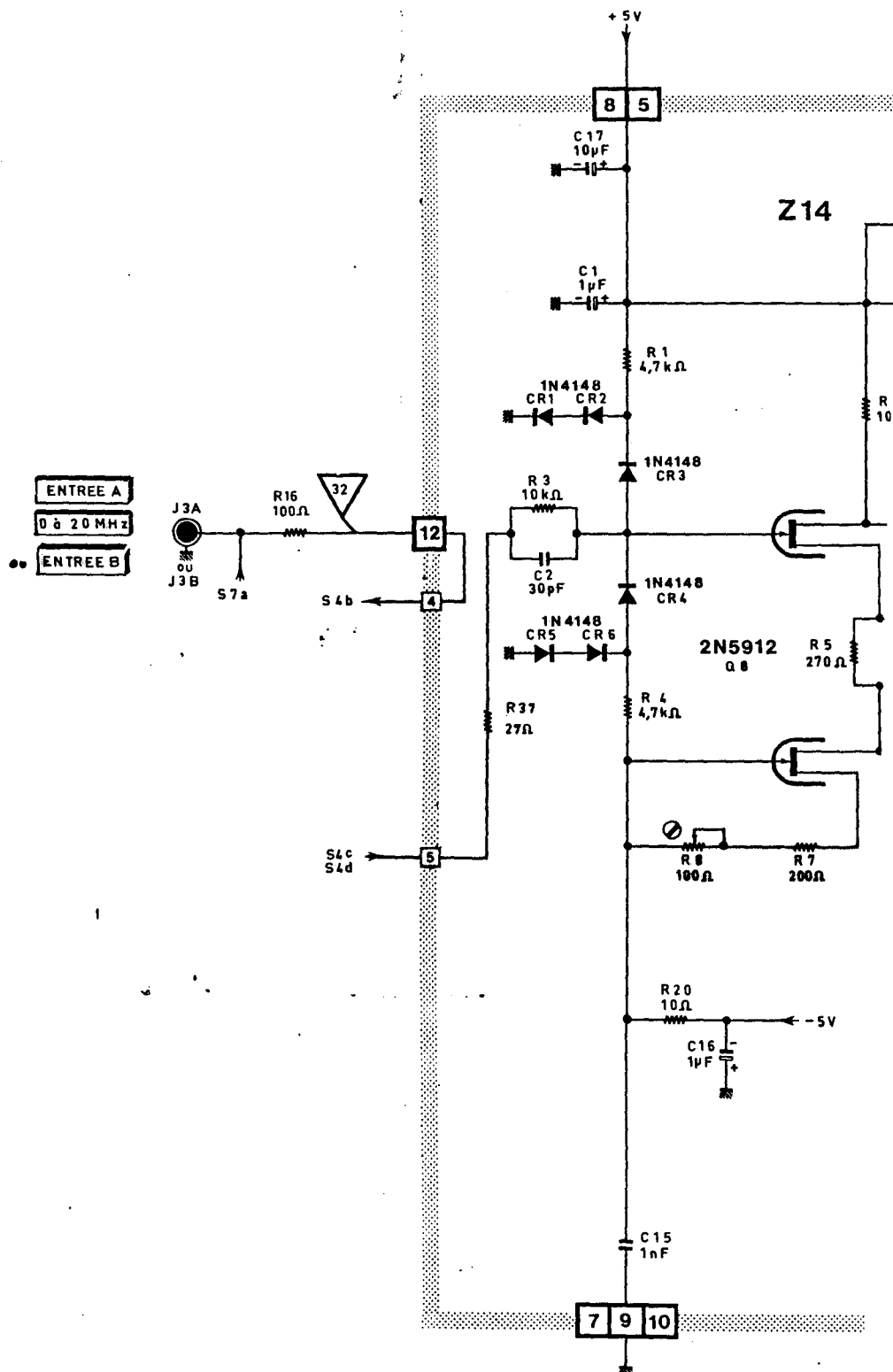


FREQUENCEMETRE COMPTEUR
Type HB221. HB 220A
AMPLIFICATEUR VOIE A ou B

Z14 A ou B

602210812

PLANCHE N° 15



TEUR

10A

1B

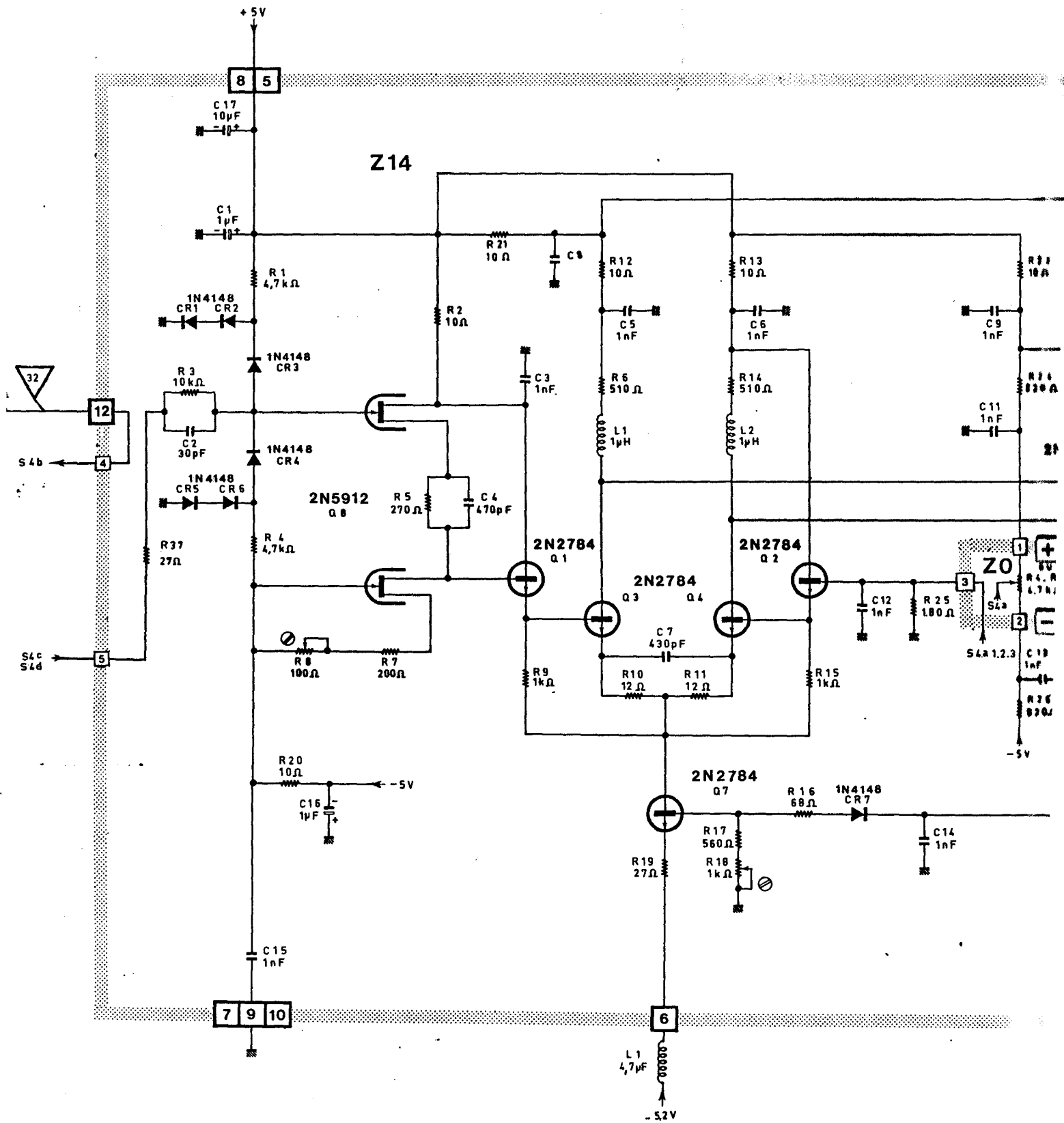
602210812

SI ANCHÉ N°15

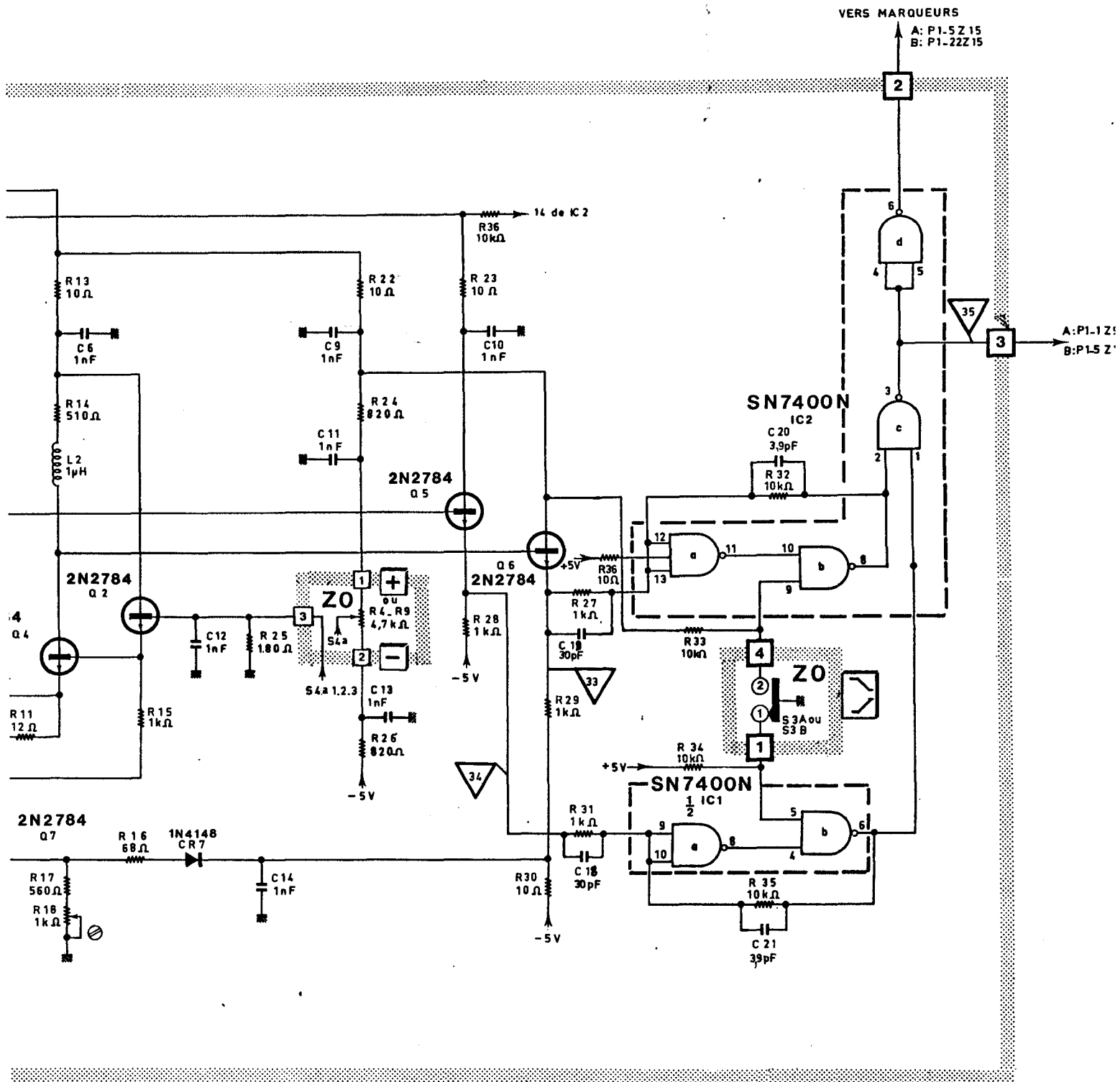
NOTA: RESISTANCES

PUISSANCES NON INDIQUEES 1/4W

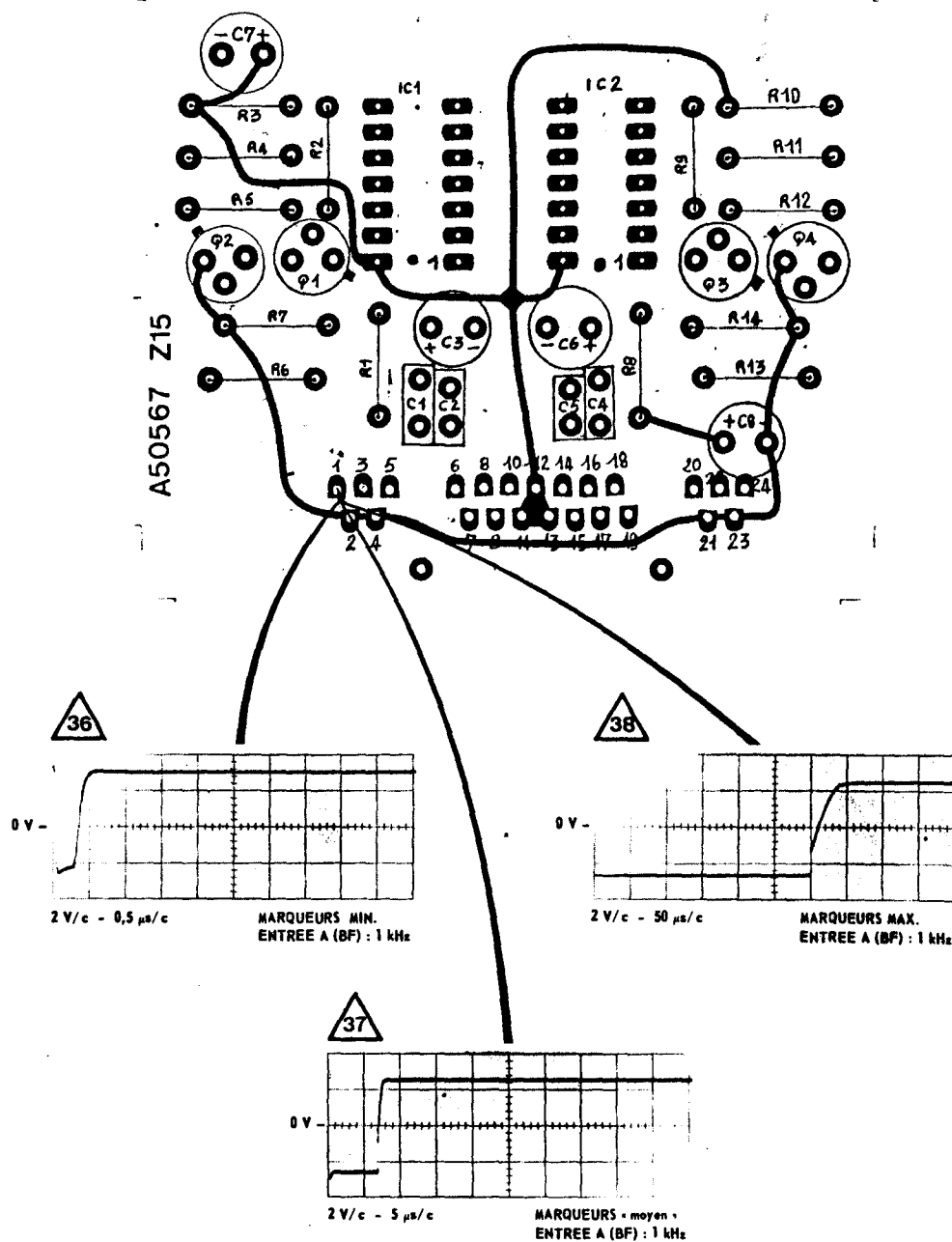
TOLERANCES NON INDIQUEES ±2%



ITANCES | PUISSANCES NON INDIQUEES 1/4W
TOLERANCES NON INDIQUEES $\pm 2\%$



Z 14 A P
AMPLI
VOIE A



Z 14B
AMPL
VOIE

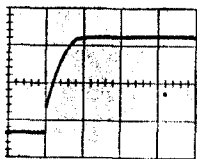


FREQUENCEMETRE COMPTEUR
Type HB221.HB220A
MARQUEURS

Z15 602210813

14.1.74

PLANCHE N° 16



MARQUEURS MAX.
ENTREE A (BF) : 1 kHz



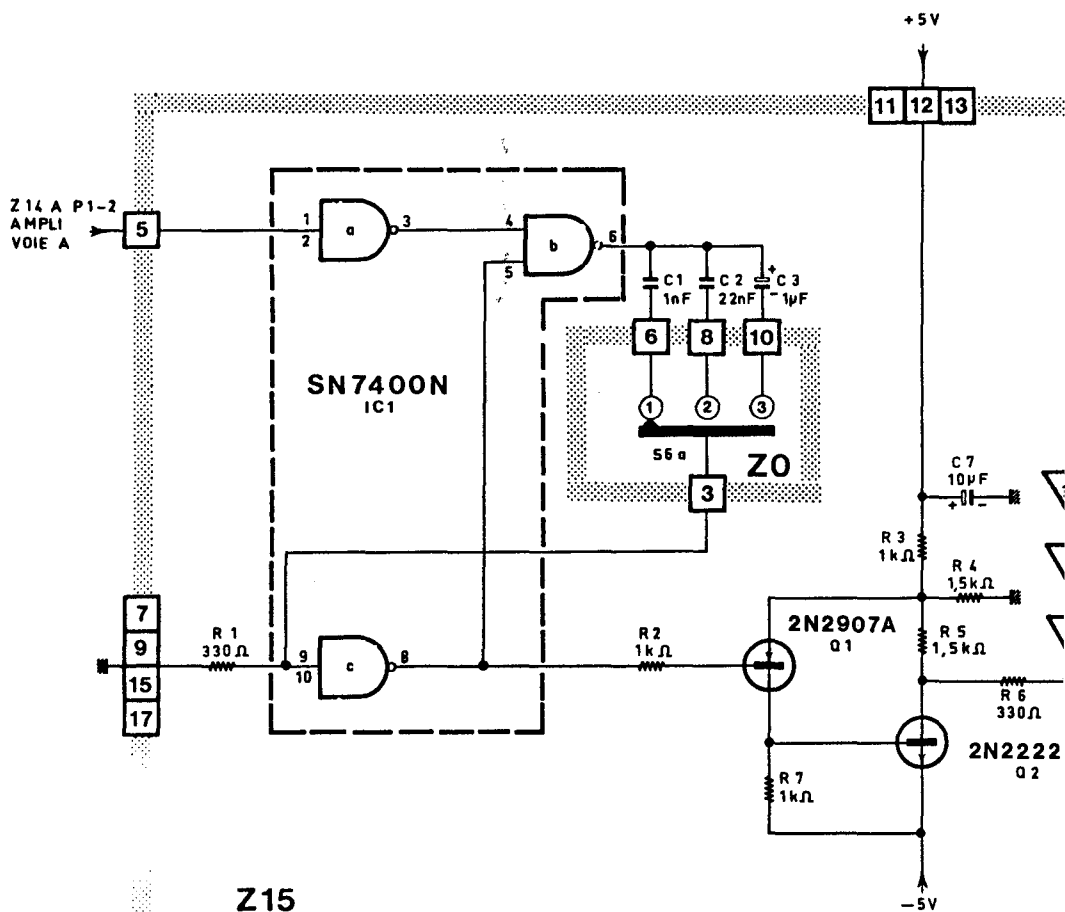
METRE COMPTEUR

221. HB 220A

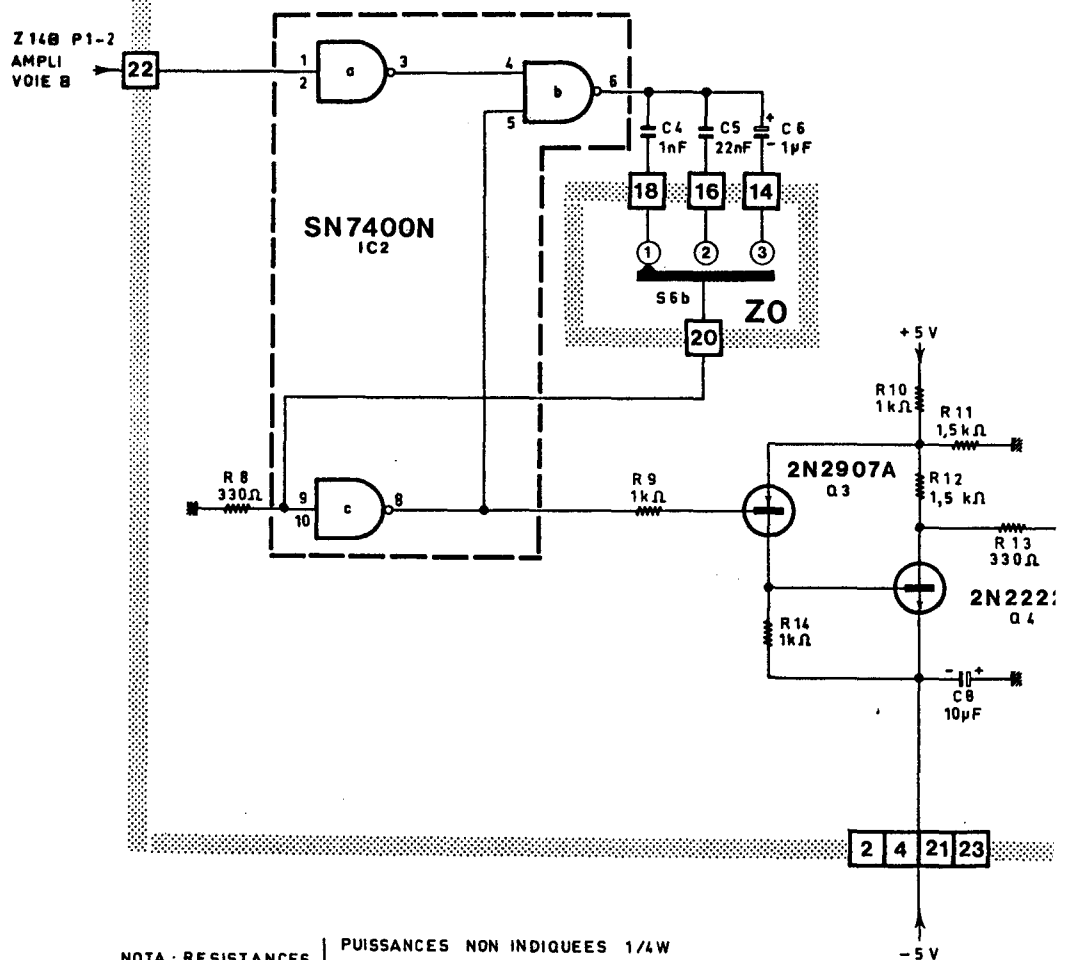
ARQUEURS

Z15 602210813

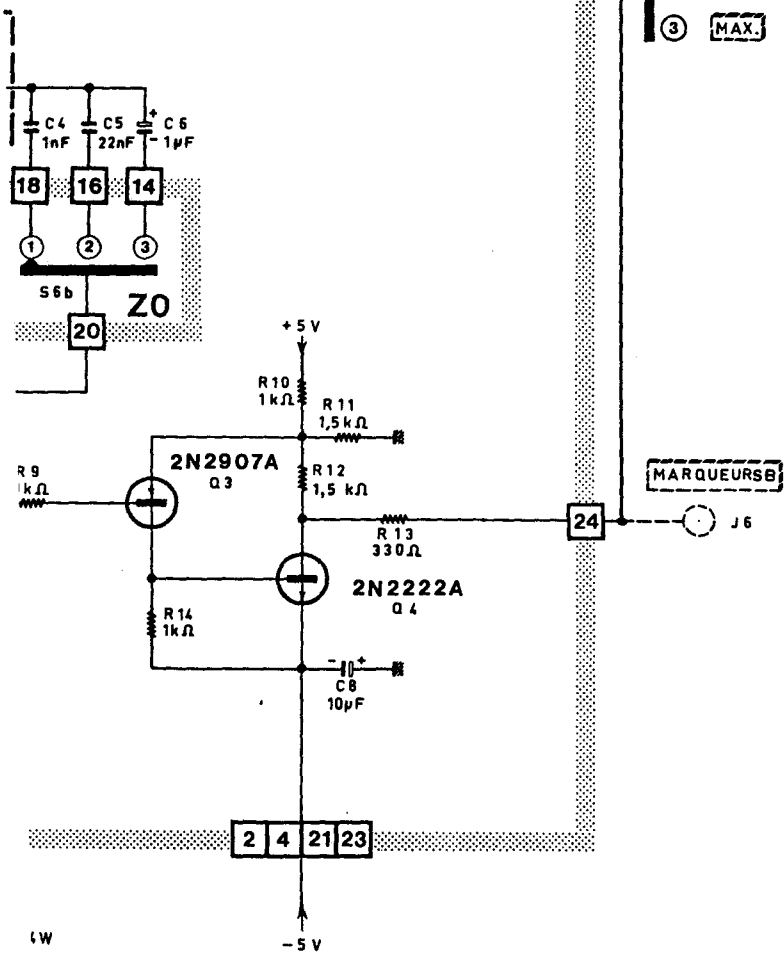
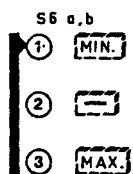
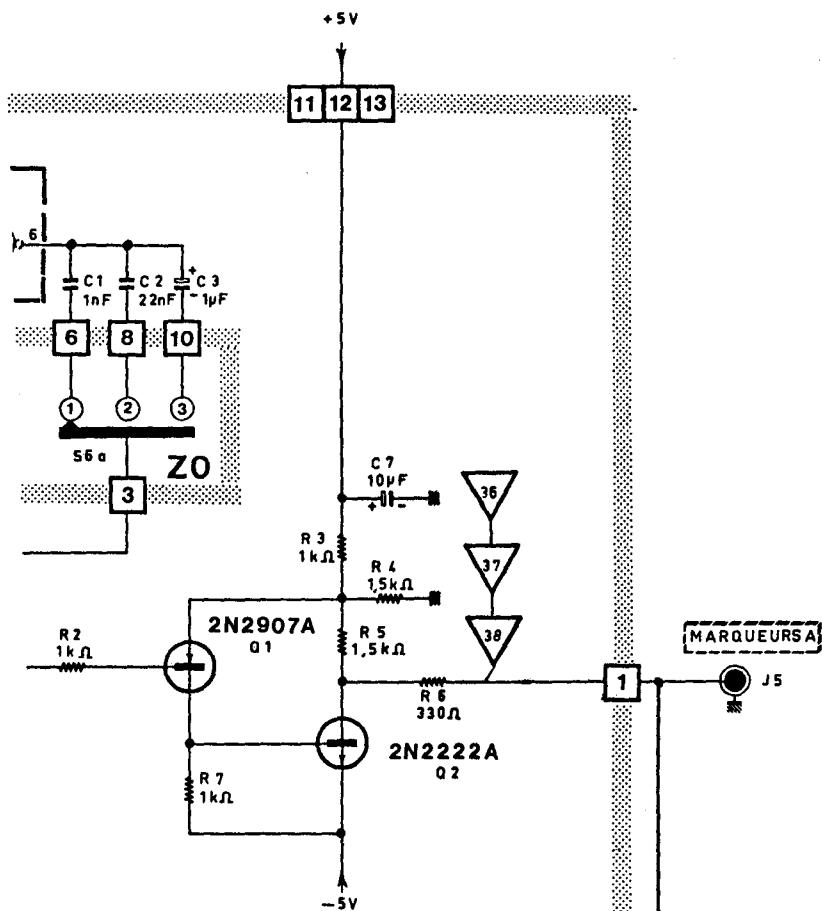
PLANCHE N° 16

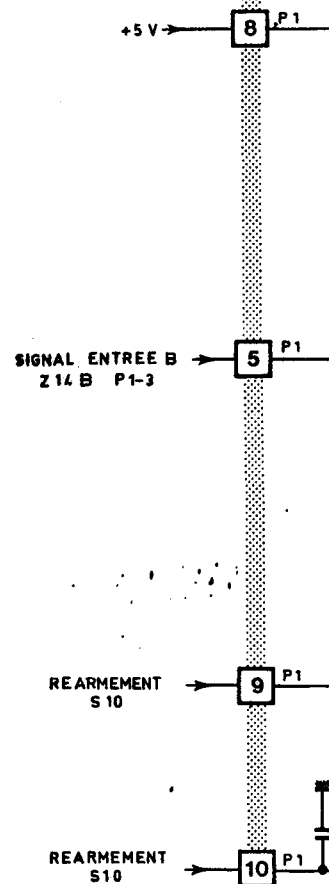
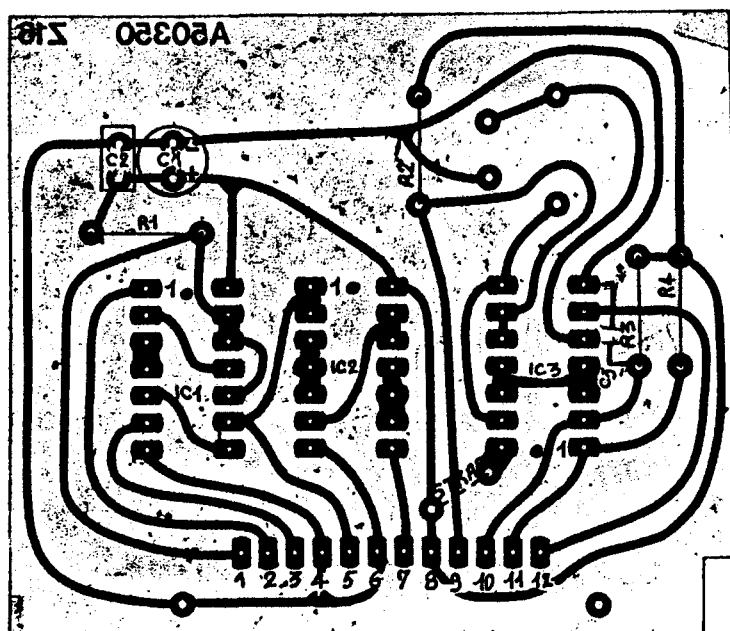


Z15



NOTA : RESISTANCES | PUISSANCES NON INDIQUEES 1/4W
TOLERANCES NON INDIQUEES $\pm 2\%$

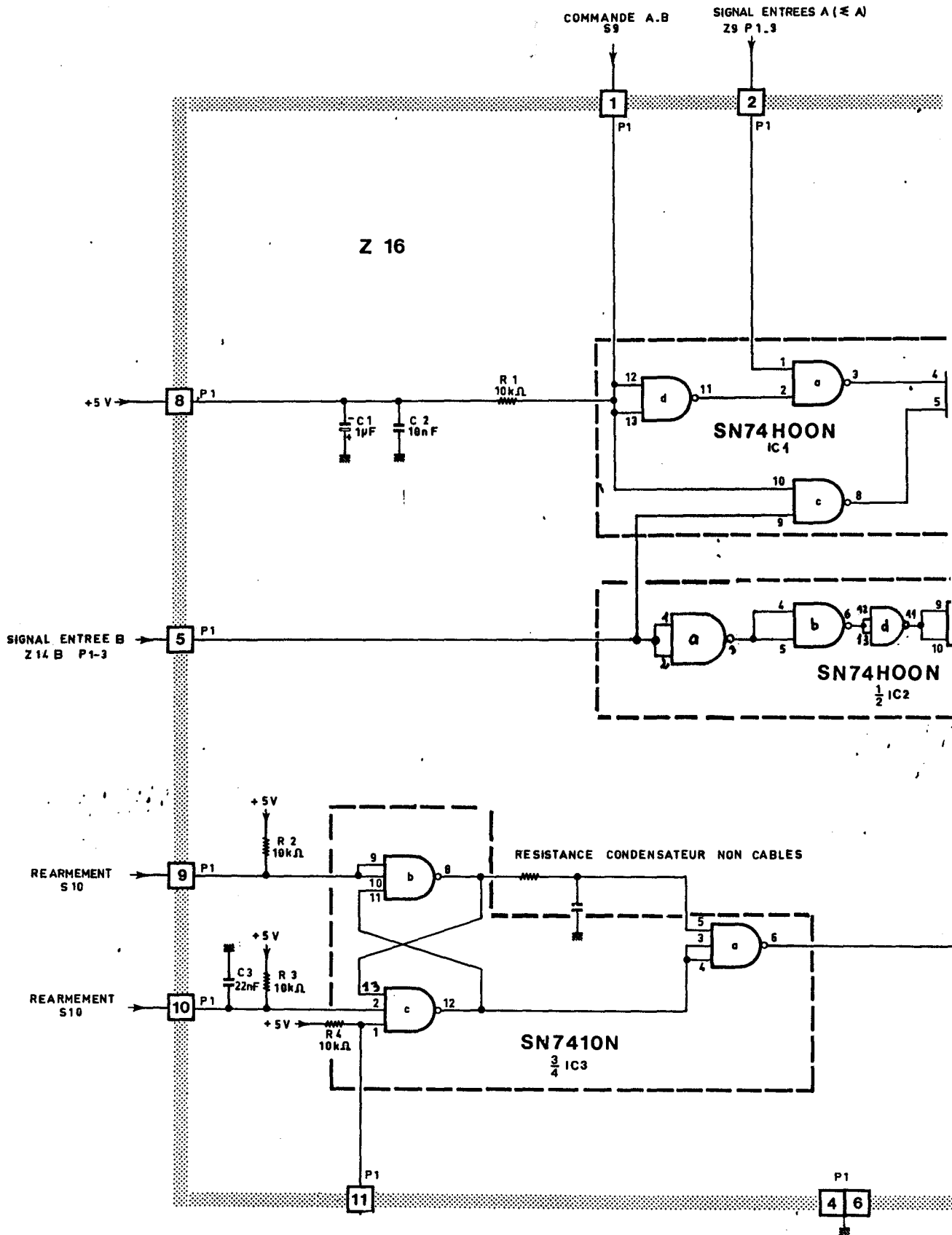




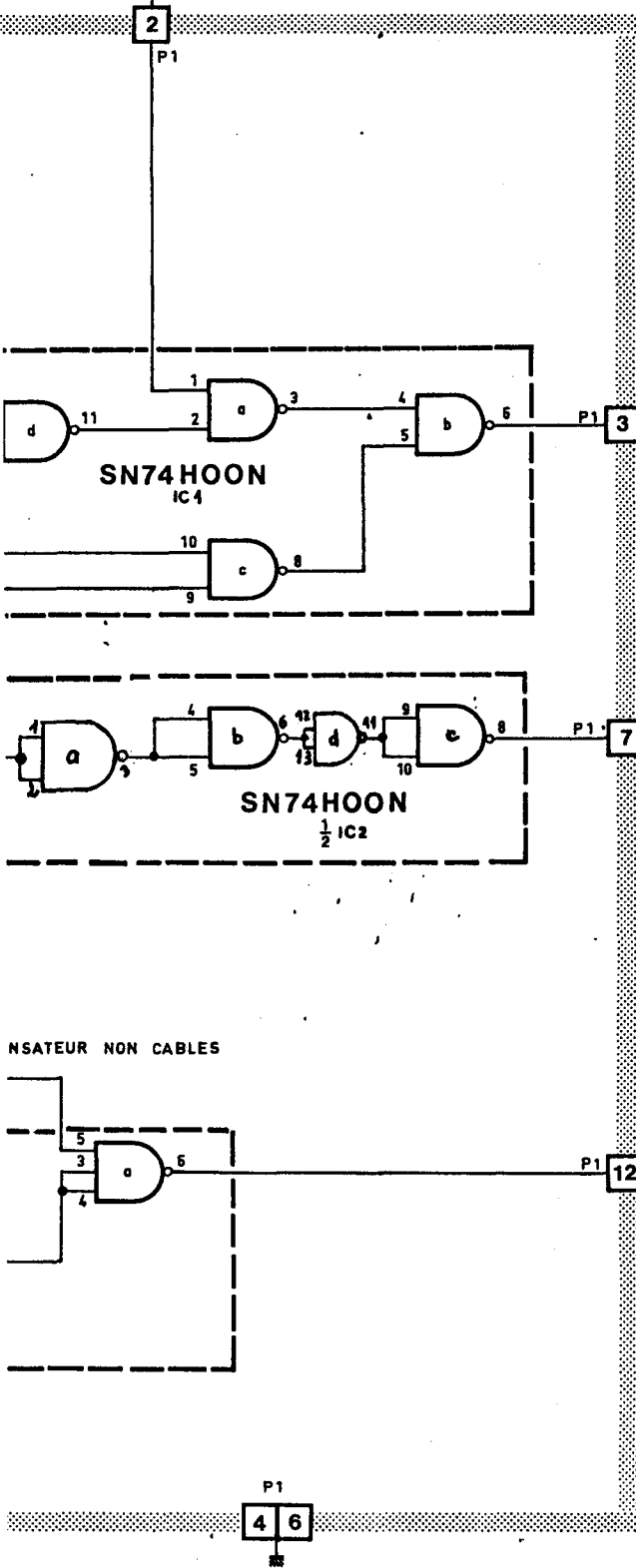
FREQUENCOMETRE COMPTEUR
 Type HB221.HB220A
 CIRCUIT INVERSEUR A-B

Z16 602210814

PLANCHE N° 17



A.B
SIGNAL ENTREES A (≤ 3)
Z9 P1.9



3
SORTIE A ou B (≤ 5)
Z3 P1.1 Z2 P1.1
Z6 P1.8

7
SORTIE B
Z2 P1.2
Z6 P2.2

12
SORTIE
REARMEMENT
Z8 P1.9