

Ex 1 Partie 1

Protocole I

TD 2

①

1/ 192 \rightarrow 11 00 0000
 168 \rightarrow 1010 1000
 10 \rightarrow 0000 1010
 255 \rightarrow 1111 1111
 2 \rightarrow 0000 0010

2/ 192.168.10.10 \rightarrow
 209.165.200.223 \rightarrow 1101 0001.1010 0101.1100 1000
 .1110 0101
 172.16.18.183 \rightarrow 1010 1100.0001 0000.0001 0010
 .1011 0111
 10.86.252.17 \rightarrow 0000 1010.0101 0110.1111 1100
 .0001 0001
 255.255.255.128 \rightarrow 1111 1111.1111 1111.1111 1111.1000
 0000
 255.255.192.0 \rightarrow 1111 1111.1111 1111.1100 0000.0000
 0000

Ex 2

1/ IP	172.16.145.129	1010 1100.0001 0000.1001 0001.
Masque	255.255.0.0	1111 1111.1111 1111.0000 0000.1000 0001
N	172.16.0.0	1010 1100.0001 0000.0

Protocol I ②

2/
 IP | 192.168.10.10 | 1100 0000.1010 1000.0000 1010.0000 1010
 Masq | 255.255.0.0 | 1111 1111.1111 1111.0000 0000.0000 0000
 N | 192.168. | 1100 0000.1010 1000.

3/
 IP | 192.168.68.10 | 1100 0000.1010 1000.0100 0100.1101 0010
 M | 255.255.255.128 | 1111 1111.1111 1111.1111 1111.1000 0000
 N | 192.168.68.128 | 1100 0000.1010 1000.0100 0100.1000 0000

4/
 172.16.188.15 | 1010 1100.0001 0000.1011 1100.0000 1111
 255.255.240.0 | 1111 1111.1111 1111.1111 0000.0000 0000
 172.16.176.0 | 1010 1100.0001 0000.1011 0000.0000 0000

5/
 10.172.2.8 | 0000 1010.1010 1100.0000 0010.0000 1000
 255.224.0.0 | 1111 1111.1110 0000.0000 0000.0000 0000
 10.160.0.0 | 0000 1010.1010 0000.0000 0000.0000 0000

IP Portie 2 N/M Masq N
 208.165.206.227/27 N.N.N.mmmh hhhh 255.255.255.224 208.165.206.224
 172.31.45.252/24 N.N.N.H 255.255.255.0 172.31.45.0
 10.1.8.200/26 N.N.N.mmmh hhhh 255.255.255.192 10.1.8.192
 172.16.117.77/20 N.N.mmmm hhhh.H 255.255.240.0 172.16.112.0

10.1.1.101/25 N.N.N. mhhh hhhh 2ss.2ss.2ss.128 10.1.1.0
 209.165.202.140/27 N.N.N. mmmh hhhh 2ss.2ss.2ss.
 224
 10.1.1.128

xx555 Precision Timers

1 Features

- Timing From Microseconds to Hours
- Astable or Monostable Operation
- Adjustable Duty Cycle
- TTL-Compatible Output Can Sink or Source Up to 200 mA
- On Products Compliant to MIL-PRF-38535, All Parameters Are Tested Unless Otherwise Noted. On All Other Products, Production Processing Does Not Necessarily Include Testing of All Parameters

2 Applications

- Fingerprint Biometrics
- Iris Biometrics
- RFID Reader

3 Description

These devices are precision timing circuits capable of producing accurate time delays or oscillation. In the time-delay or mono-stable mode of operation, the timed interval is controlled by a single external resistor and capacitor network. In the a-stable mode of operation, the frequency and duty cycle can be controlled independently with two external resistors and a single external capacitor.

The threshold and trigger levels normally are two-thirds and one-third, respectively, of V_{CC} . These levels can be altered by use of the control-voltage terminal. When the trigger input falls below the trigger level, the flip-flop is set, and the output goes high. If the trigger input is above the trigger level and the threshold input is above the threshold level, the flip-flop is reset and the output is low. The reset (RESET) input can override all other inputs and can be used to initiate a new timing cycle. When RESET goes low, the flip-flop is reset, and the output goes low. When the output is low, a low-impedance path is provided between discharge (DISCH) and ground.

The output circuit is capable of sinking or sourcing current up to 200 mA. Operation is specified for supplies of 5 V to 15 V. With a 5-V supply, output levels are compatible with TTL inputs.

Device Information⁽¹⁾

PART NUMBER	PACKAGE	BODY SIZE (NOM)
xx555	PDIP (8)	9.81 mm × 6.35 mm
	SOP (8)	6.20 mm × 5.30 mm
	TSSOP (8)	3.00 mm × 4.40 mm
	SOIC (8)	4.90 mm × 3.91 mm

(1) For all available packages, see the orderable addendum at

IP
2/ 10.101.99.17/23

1st @ H³ d⁴ Protocol N³ Broad
I TD2
10.101.98.1 ③ 10.101.98.0
10.101.99.254 10.101.99.255

10.1.8.200/26

10.1.8.193
10.1.8.254

10.1.8.192
10.1.8.255

172.16.117.17/20

172.16.112.1
172.16.112.127

172.16.112.0
172.16.112.128

10.1.1.101/25

10.1.1.1
10.1.1.126

10.1.1.0
10.1.1.127

209.165.202.140/27

209.165.202.129
209.165.202.158

209.165.202.128
209.165.202.159

192.168.28.45/28

192.168.28.33
192.168.28.46

192.168.28.32
192.168.28.47

Ex 2

1/ Broadcast

2/ host

3/ host

4/ host

5/ host

6/ N

7/ broadcast

8/ host

9/ multi

2/ 1/

2/

3/ Privée

4/ Privée

5/ Public

6/ Privée

7/ Public

8/ n

9/ n

Privée; Protocol I

10. x x x

TD2
1/8 (u)

172.16.x x → 172.31.x x / 16

192.168.x x / 24

3/ 1/ oui

2/ oui

3/ oui

4/ oui (dernière IP)

5/ mon : Broadcast

6/ oui (regarde 102 : pain)

7/ mon (multidif)

8/ oui

9/

Ex 2

1/1 N PCA:

192.168.1.16 / 28

2/ N PCB:

192.168.1.32 / 28

3/ mom

4/ 192.168.1.30 / 28

2/ 1/ PCA: 10.0.0.16; M: 255.254.0.0

N PCA: 10.0.0.0 / 15

2/ N PCB: 10.0.0.0 / 15

3/ oui

2/ 10.0.0.1 / 15

Ex 2

1/ 1440: 10001100

152: 11000006

N: 172.16.128.0 / 18

2/ pass: 172.16.128.1 / 18

2/ 227: 11100011

248: 11111006

N: 192.168.184.224 / 29

2/ pass:

192.168.184.225

Partie 3

Protocole I

TD2 (5)



Exercice 1;

Parkiel

240 : 1111 0000

↳ 172.16.64.0 /20

1. 4

2. $2^4 = 16$ (sur les 4 bits, 0 ou 1)

3. 12 (8+4)

4. $2^{12} - 2$

5. 172.16.64.0 /20

6. 172.16.64.1 /20

7. 172.16.79.254 /20

8. 172.16.79.255 /20

Exercice 2 :

139 : 1000 1011

224 : 1110 0000

ssN : 192.168.200.128 /27

1. 3

2. 2^3

3. 5

4. $2^5 - 2$

5. 192.168.200.128 /27

6. 192.168.200.129 /27

7. 192.168.200.158 /27

8. 192.168.200.159 /27

Ex3

Protocol I
TD2 ⑥

1. 9 2. 2^9 3. 15 4. $2^{15} - 2$

5. 10.101.0.0/17 6. 10.101.0.1/17

7. 10.101.127.254/17 8. 10.101.127.255/17

Ex4

1/ 180.20.30.64/26

2/ 180.20.30.65/26

3/ 180.20.30.126/26

4/ 180.20.30.127/26

5/ $2^6 - 2$

6/ 4 bits \Rightarrow 8 machines (14 maxi)

reste: 2 bits pour SSN

Soit 4 SSN

7/ 180.20.30.64/28

80

96

112

01 - - - - -

0100

0101

0110

0111

Ex 1:

Pankie S

1/ Rescan etoile

2/ 192.168.10.0

3/ $2^8 - 2 = 254$

4/ 192.168.10.255

5/ mv msg: 255.255.255.192 → 126

192.168.10.0 / 26

192.168.10.64 / 26

192.168.10.128 / 26

192.168.10.192 / 26

SE555	4.5	18
CONT, RESET, THRES, and TRIG	V _{CC}	V
NA555	±200	mA
NE555	-40	105
SA555	0	70
SE555	-40	85
	-55	125
°C		

Ex 1

1/ 255.255.255.0 124

2/ 126 192.168.1.0 125

123 → 190 192.168.1.10 126

183 → 222 192.168.1.1 127

5 → 223 192.168.1.1 128

192.168.1.1 129

130

Pankie 6

254

126 → ventes

62 → achats

30 → compres

14

6 → adm

2

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Protocole I
TD 2 (7)

Ex 2

N : 214.123.115.0

$$1/ 2^4 = 16 \text{ ss } N$$

$$2/ 2^4 - 2 = 14 \text{ hotes par ss } N$$

$$3/ 214.123.115. \underbrace{01011111}_{95}$$

$$4/ 14 \cdot 16 = 224$$

Ex 3

$$1/ 4 \hat{a} 25-30 \text{ hô} \Rightarrow 5 \text{ b pour hô} \Rightarrow / 27$$

$$6 \hat{a} 10 \text{ hô} \Rightarrow 4 \text{ b pour hô} \Rightarrow / 28$$

$$2/ 214.123.115. \begin{array}{l} 0000 \\ 0001 \\ 0010 \\ 0011 \\ 1000 \\ 1001 \\ 1010 \\ 1011 \\ 1100 \\ 1101 \end{array} \begin{array}{l} \dots\dots\dots = 214.123.115.0/27 \\ \dots\dots\dots = 214.123.115.32/27 \\ \dots\dots\dots = 214.123.115.64/27 \\ \dots\dots\dots = 214.123.115.96/27 \\ \dots\dots\dots = 214.123.115.128/28 \\ \dots\dots\dots = 214.123.115.144/28 \\ \dots\dots\dots = 214.123.115.160/28 \\ \dots\dots\dots = 214.123.115.176/28 \\ \dots\dots\dots = 214.123.115.192/28 \\ \dots\dots\dots = 214.123.115.208/28 \end{array}$$

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$$3/4 (2^5 - 2) + 6 (2^4 - 2) = 204 \text{ h}^2$$

4/ plus d'ad. sauvées