	ASCII	Binary							Morse			
		A6	A5	A4	A3	A2	A1	A0	V	W	X	Y
A 1 →65	65	1	0	0	0	0	0	1	•	—	×	×
B 2→66	66	1	0	0	0	0	1	0	—	•	•	•
C 3	67	1	0	0	0	0	1	1	—	•	—	•
D 4	68	1	0	0	0	1	0	0	—	•	•	×
E 5	69	1	0	0	0	1	0	1	•	×	×	×
F 6	70	1	0	0	0	1	1	0	•	•	—	•
G 7	71	1	0	0	0	1	1	1	—	—	•	×
H 8	72	1	0	0	1	0	0	0	•	•	•	•
I 9	73	1	0	0	1	0	0	1	•	•	×	×
J 10	74	1	0	0	1	0	1	0	•	—	—	—
K 11	75	1	0	0	1	0	1	1	—	•	—	×
L 12	76	1	0	0	1	1	0	0	•	—	•	•
M 13	77	1	0	0	1	1	0	1	—	—	×	×
N 14	78	1	0	0	1	1	1	0	—	•	×	×
O 15	79	1	0	0	1	1	1	1	—	—	—	×
P 16	80	1	0	1	0	0	0	0	•	—	—	•
Q 17	81	1	0	1	0	0	0	1	—	—	•	—
R 18	82	1	0	1	0	0	1	0	•	—	•	×
S 19	83	1	0	1	0	0	1	1	•	•	•	×
T 20	84	1	0	1	0	1	0	0	—	×	×	×
U 21	85	1	0	1	0	1	0	1	•	•	—	×
V 22	86	1	0	1	0	1	1	0	•	•	•	—
W 23	87	1	0	1	0	1	1	1	•	—	—	×
X 24	88	1	0	1	1	0	0	0	—	•	•	—
Y 25	89	1	0	1	1	0	0	1	—	•	—	—
Z 26	90	1	0	1	1	0	1	0	—	—	•	•

• & — represents morse code } MORSE

× represents no output

(Morse output)
For X (Not displaying)

This Means Ⓧ of

$$X = A_4 A_2 A_1' A_0' + A_4' A_3' A_2 A_1' A_0$$

$$Y = A_4' A_1' A_0 + A_4 A_2 A_1' A_0' + A_3 A_2 A_1 A_0'$$

$$Z = A_2 A_0 + A_4' A_3 A_0 + A_3 A_2 A_1' + A_3 A_2 A_1 + A_3' A_1' A_0$$
$$+ A_3 A_3' A_2' A_1$$

ROM → Ⓐ
1 for •
0 for —

for X ⟹ 0
but we use
$\overline{ROM}$
— ⟹ X̄ . A

We take
• ⟹ 1
— ⟹ 0
X ⟹ dont care

	Hexa	
enter	0D	→ AND gate
•	2E	
—	2D	
space	20	→ AND gate
↳	0100000	

for input

CP → 5 tick
$\overline{\quad}$
tk

•—• — — (space)

No input

No input	
—	4×1
•	MUX
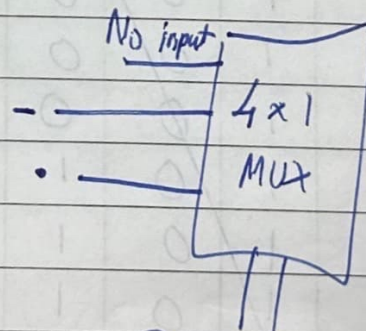
Counter
0, 1, 2, 3, 4

& CP
tick

NUMBER TO MORSE CODE

Numbers	ASCII	A_6	A_5	A_4	A_3	A_2	A_1	A_0	U	W	X	Y	Z
0	48	0	1	1	0	0	0	0	-	-	-	-	-
1	49	0	1	1	0	0	0	1	.	-	-	-	-
2	50	0	1	1	0	0	1	0	.	.	-	-	-
3	51	0	1	1	0	0	1	1	.	.	.	-	-
4	52	0	1	1	0	1	0	0	.	.	.	.	-
5	53	0	1	1	0	1	0	1	.	.	.	.	.
6	54	0	1	1	0	1	1	0	-	.	.	.	.
7	55	0	1	1	0	1	1	1	-	-	.	.	.
8	56	0	1	1	1	0	0	0	-	-	-	.	.
9	57	0	1	1	1	0	0	1	-	-	-	-	.