

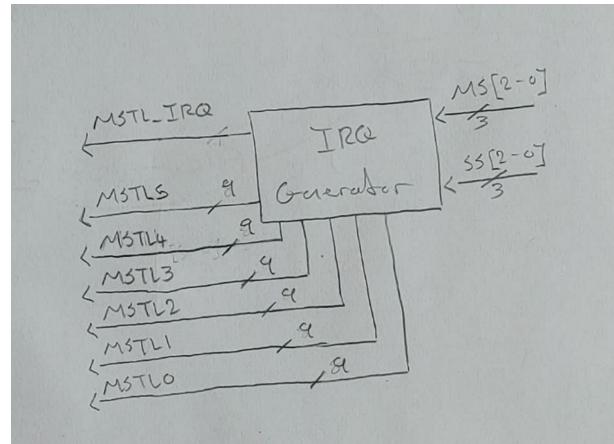
IRQ_Generator

November 23, 2020 3:20 PM

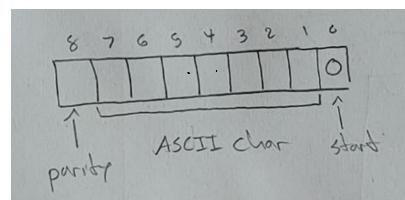
in: MS[2-0]
 SS[2-0]
 Out: MSTL-IRQ
 MSTL(S down to 0)

+ R Q Generator

100 = Red
 010 = yellow
 001 = green
 000 = Reset



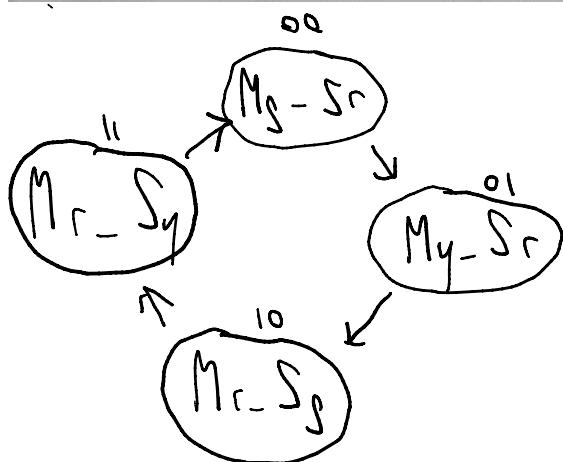
$$\begin{array}{l}
 \text{Carriage Return} = (6D)_{16} \\
 \text{MSF1} = \begin{array}{r|rrrrr}
 0 & 1 & 2 & 3 & 4 & 5 \\
 \hline
 CR & 40 & 67 & SF & 53 & 72
 \end{array} \\
 \text{Mg-Sr} = \begin{array}{r|rrrrr}
 0D & 40 & 67 & SF & 53 & 72 \\
 \hline
 M & 40 & 67 & SF & 53 & 72
 \end{array} \\
 \text{My-Sr} = \begin{array}{r|rrrrr}
 0D & 40 & 74 & SP & 53 & 72 \\
 \hline
 CR & 40 & 74 & SP & 53 & 72
 \end{array} \\
 \text{Mr-Sg} = \begin{array}{r|rrrrr}
 0D & 40 & 72 & SP & 53 & 67 \\
 \hline
 CR & 40 & 72 & SP & 53 & 67
 \end{array} \\
 \text{Mr-Sy} = \begin{array}{r|rrrrr}
 0D & 40 & 72 & SP & 53 & 74 \\
 \hline
 CR & 40 & 72 & SP & 53 & 74
 \end{array}
 \end{array}$$



Parity = * of bits
 even = 0 Mod 2
 odd = 1

parity table

	0	1	2	3	4	5
Mg-Sr	0	0	1	0	0	0
My-Sr	1	0	0	0	0	0
Mr-Sy	1	0	0	0	0	0
Mr-Sg	0	0	0	0	0	0

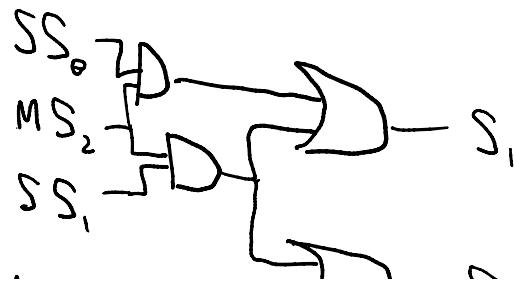


MSLT Hex table

S ₀	S ₀	0	1	2	3	4	5
0	0	00	4D	67	5F	53	72
0	-	0D	4D	74	5F	53	72
-	0	0D	4D	72	5F	53	C7
1	1	0D	4D	72	5F	53	74

See truth tables in excel

MS ₂	MS ₁	MS ₀	SS ₂	SS ₁	SS ₀	S ₁	S ₀
0	0	1	1	0	0	0	0
1	1	0	1	0	0	0	1



$$\begin{array}{cc|cc|cc} 0 & 0 & 1 & 1 & 0 & 0 \\ 0 & 1 & 0 & 1 & 0 & 0 \\ 1 & 0 & 0 & 0 & 0 & 1 \\ 1 & 0 & 0 & 0 & 1 & 0 \end{array} \quad \begin{array}{cc} 0 & 0 \\ 0 & 1 \\ 1 & 0 \\ 1 & 1 \end{array} \quad \begin{array}{l} SS_1 \rightarrow 1 \\ MS_1 \\ SS_2 \end{array} \quad S_o$$

$$S_1 = MS_2 SS_o + MS_2 SS_1$$

$$S_o = MS_1 SS_2 + MS_2 SS_1$$

MSTL 0:

$$\begin{aligned} M_0 &= M_1 = M_2 = M_3 = M_6 = 0 \\ M_4 &= M_5 = M_7 = M_8 = 1 \end{aligned}$$

MSTL 1:

$$\begin{aligned} M_0 &= M_2 = M_3 = M_6 = M_8 = 0 \\ M_1 &= M_4 = M_5 = M_7 = 1 \end{aligned}$$

MSTL 2:

$$M_0 = M_4 = 0$$

$$M_1 = M_2 = 1$$

$$M_3 = S_o + S_1$$

$$M_5 = \overline{S_1}$$

$$M_6 = S_1 + \overline{S_o}$$

$$M_7 = M_8 = \overline{S_1} \overline{S_o}$$

MSTL 3:

$$M_0 = M_2 = M_8 = 0$$

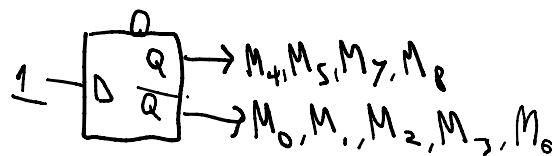
$$M_1 = M_3 = M_4 = M_5 = M_6 = M_7 = 1$$

MSTL 4:

$$M_0 = M_2 = M_4 = M_5 = M_8 = 0$$

$$M_1 = M_3 = M_6 = M_7 = 1$$

MSTL 0:



MSTL 5:

$$M_0 = M_4 = 0$$

$$M_1 = M_2 = 1$$

$$M_3 = \overline{S_1} * S_o$$

MSTL 1:

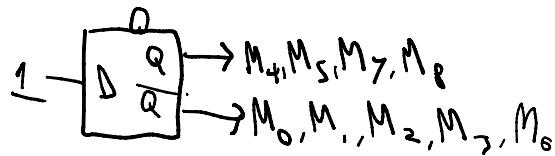
$$M_3 = S_1 + S_0$$

$$M_5 = S_1$$

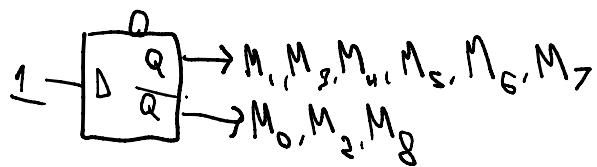
$$M_6 = \overline{S_1} + \overline{S_0}$$

$$M_7 = M_8 = S_1 \overline{S_0}$$

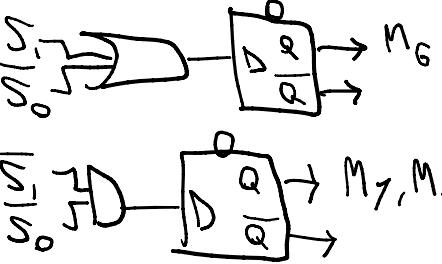
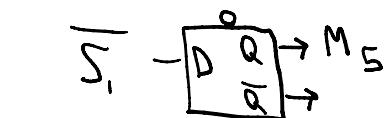
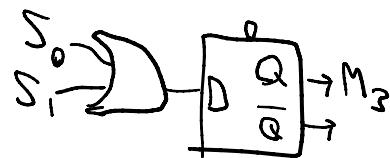
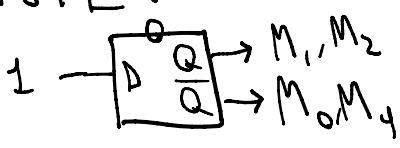
MSTL 1:



MSTL 3:



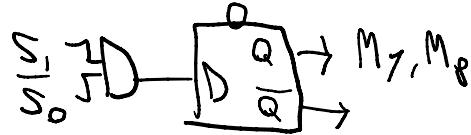
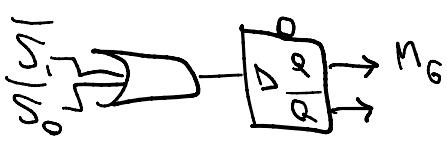
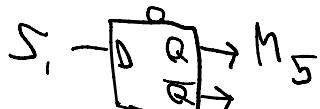
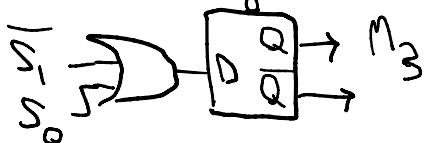
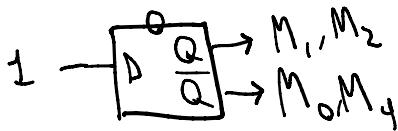
MSTL 2:



MSTL 4:



MSTL 5:



MSTL IRQ:

