

December 12, 2000

Testing Lab:

The model TD312 transmits 4 bytes whenever the "Store" key is pressed. Before the bytes are transmitted, they are inverted. A high level into the transmitter initiates a burst. A low level keeps the transmitter off. Therefore, the worst-case "on" time corresponds to the maximum number of zeros contained in the transmitted bytes.

The first two bytes are "id" bytes: hex 48 followed by hex 85. The third byte is the high byte of the data. The worst-case format of this byte is hex 80. The fourth byte is the low byte of the data. Worst-case for this byte is hex 00.

The bytes are transmitted at 4800 Baud, which is 208us / bit. There are four low "start" bits, which are transmitted as highs. Therefore, the worst-case number of zeroes is 30. This gives a duty cycle of 6.24%. These calculations are outlined below.

Byte	Hex	Binary	Number of 0's
First id byte:	48	0100 1000	6
Second id byte	85	1000 0101	5
First data byte	80	1000 0000	7
Second data byte	00	0000 0000	8
Start bits			4
		Total	30

$$(30 \times 0.208\text{ms} \times 100) / 100\text{ms} = 6.24\%$$

Thank you,

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