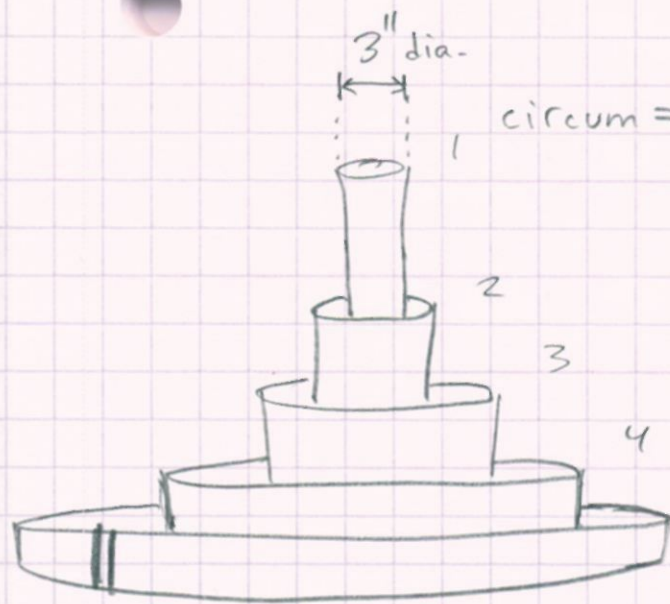


39.3701 inches per meter



$$\text{circum} = \frac{3\pi}{39.3701} = \frac{9.42478}{39.3701} =$$

$$\text{circum}_1 = 0.239389 \text{ m}$$

$$f = \frac{c}{\lambda} = \frac{3 \times 10^8}{\lambda}$$

#	Circumference (m)	Frequency @ $\text{circum} = \lambda$
1	0.239389	1.253 GHz
2	0.38734	774.531 MHz
3	0.626729	478.676 MHz
4	1.01407	295.838 MHz
5	1.6408	182.838 MHz
* 6	2.65487	113 MHz *
"NEXT ONE"	4.29567	69.838 MHz
7		

$$113 \text{ MHz} \approx 56 \times 2$$

Looking into ring 5, the DUT resonates at approx. 56 MHz.

4.4 (35) $H = \text{Span} \{ \bar{v}_1, \bar{v}_2 \}$ $B = \{ \bar{v}_1, \bar{v}_2 \}$

$\bar{v}_1 = \begin{bmatrix} 11 \\ -5 \\ 10 \\ 7 \end{bmatrix}$ $\bar{v}_2 = \begin{bmatrix} 14 \\ -8 \\ 13 \\ 10 \end{bmatrix}$ $\bar{x} = \begin{bmatrix} 19 \\ -13 \\ 18 \\ 15 \end{bmatrix}$

$\begin{bmatrix} 11 & 14 \\ -5 & -8 \\ 10 & 13 \\ 7 & 10 \end{bmatrix} [x]_B = \begin{bmatrix} 19 \\ -13 \\ 18 \\ 15 \end{bmatrix}$ $\begin{bmatrix} 11 & 14 & | & 19 \\ -5 & -8 & | & -13 \\ 10 & 13 & | & 18 \\ 7 & 10 & | & 15 \end{bmatrix} \sim$

$B [x]_B = \bar{x}$

$[x]_B = \begin{bmatrix} -5/3 \\ 8/3 \end{bmatrix}$

$\begin{bmatrix} 1 & 0 & | & -5/3 \\ 0 & 1 & | & 8/3 \\ 0 & 0 & | & 0 \\ 0 & 0 & | & 0 \end{bmatrix}$

\bar{x} is in H because \bar{x} is a linear combination of $\{ \bar{v}_1, \bar{v}_2 \}$.

$\lambda = \frac{c}{f} = \frac{3 \times 10^8}{56 \times 10^6} = 5.35714 \text{ m}$

$= 210.911 \text{ inch} = 17' 6.911''$

$17' 6 \frac{7}{8}'' = \lambda \text{ at } 56 \text{ MHz}$

START OSCILLATOR WITHOUT LOAD ON SPLIT RING. LET IT WARM UP. THEN CONNECT 50 Ω LOAD.

$$\text{circum}_4 + \text{circum}_5 = \text{circum}_6$$

$$\text{freq}_4 - \text{freq}_5 = \text{freq}_6$$

$$\lambda_{56\text{MHz}} \approx 2 \cdot \text{circum}_6$$

$$56 \text{ MHz} \approx \text{freq}_6 / 2$$