

$$f = 40.06 \text{ MHz} = 40.06 \cdot (\alpha \cdot 3.21 \text{ A}) = 16.8905 \text{ MHz}$$

$$f_0 = 42.58 \text{ MHz} = 42.58 \cdot \alpha \cdot I$$

$$= 42.58 \cdot \alpha \cdot I = 16.8905 \text{ MHz}$$

$$\rightarrow 0.357 \text{ mT}$$

$$\rightarrow 2.97 \text{ mA}$$

$$\text{scanning } 3.10 \text{ A} \rightarrow 2.70$$

### Lock in

Frequency: We used the oscilloscope to obtain the resonance frequency  
16.8500 MHz

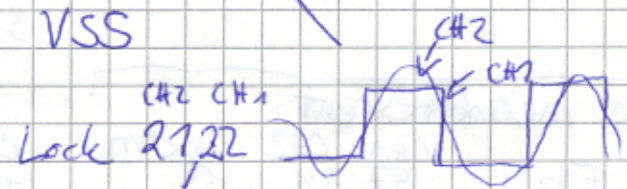
$$\Rightarrow f = 3.33 \pm 0.03 \text{ (unit on rotational regulator)}$$

Amplitude:  $\sim \frac{1}{4}$  of (2) = 1.68  
I = 2.94 3.01 A 2.98 A  
3.00 A

Lock 19 channel 1  
Lock 20 channel 2

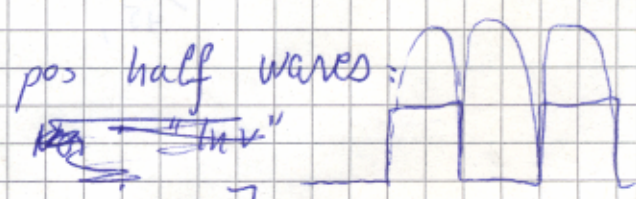
$$\text{Amplitude} = 1.68 \text{ VSS}$$

### 3. Calibration:



• Sine, unmodulated  
• Rectified

$$[\Delta T, \text{Mode}, T_0] = [2.5 \text{ ms}, \text{Norm}, \text{Norm}]$$



$$[\Delta T, \text{Mode}, T_0] = [2.5 \text{ ms}, \text{Inv}, \text{Norm}]$$

Time Const = 0

$$\text{Delay Delay: } 0.00 \pm 0.03 \text{ (regulator)}$$

Files: Lock 28 29

$$\Rightarrow \text{For } \Delta T = 0 \Rightarrow \phi \neq 0!$$