

RIGHT CHANNEL FILTER

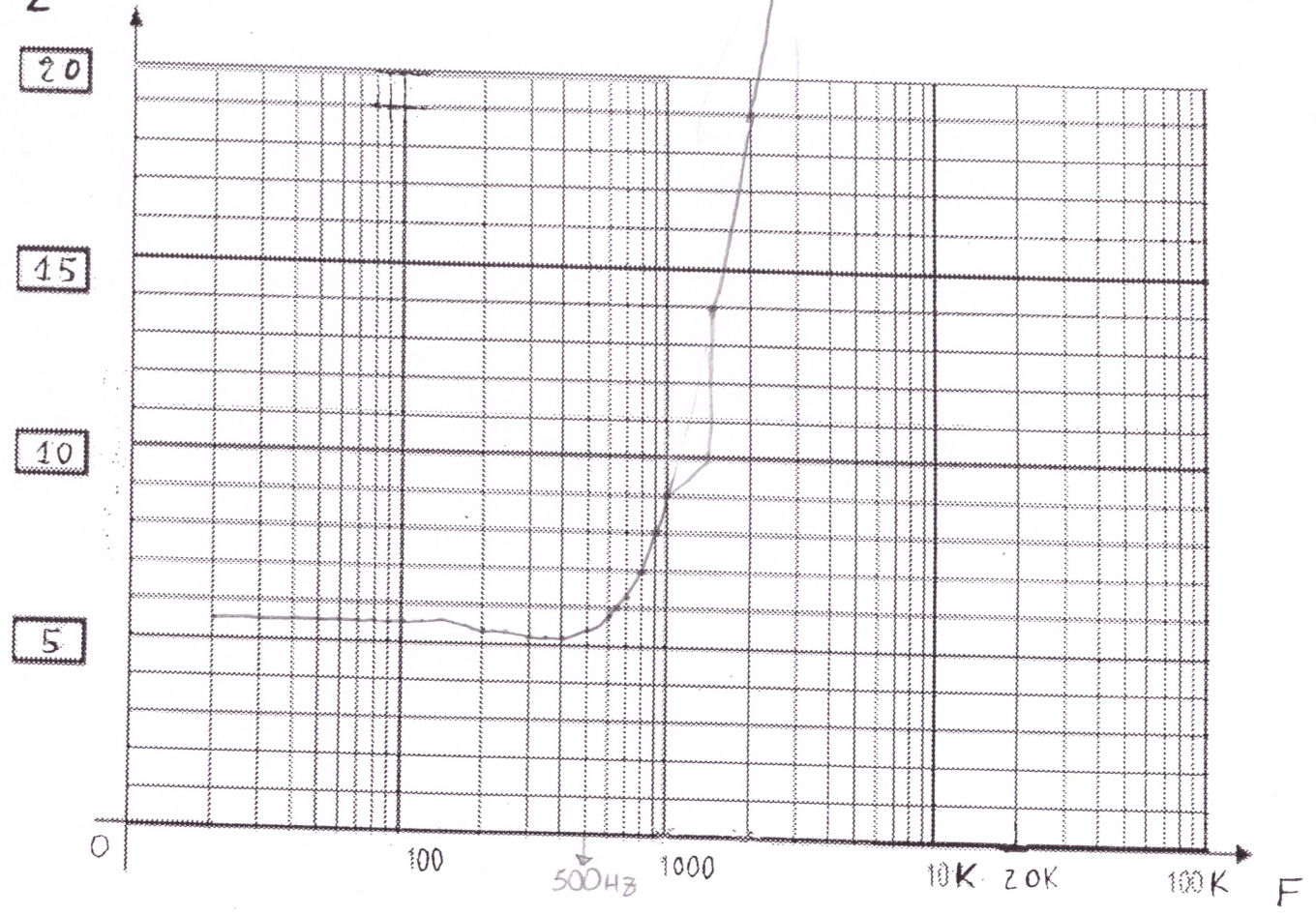
LOW PASS BASS 12dB PER OCTAVE

11/07/2014

Z 4Ω SPEAKER

7KHZ Z = 78Ω

20KHZ Z = 214Ω



LEFT CHANNEL FILTER

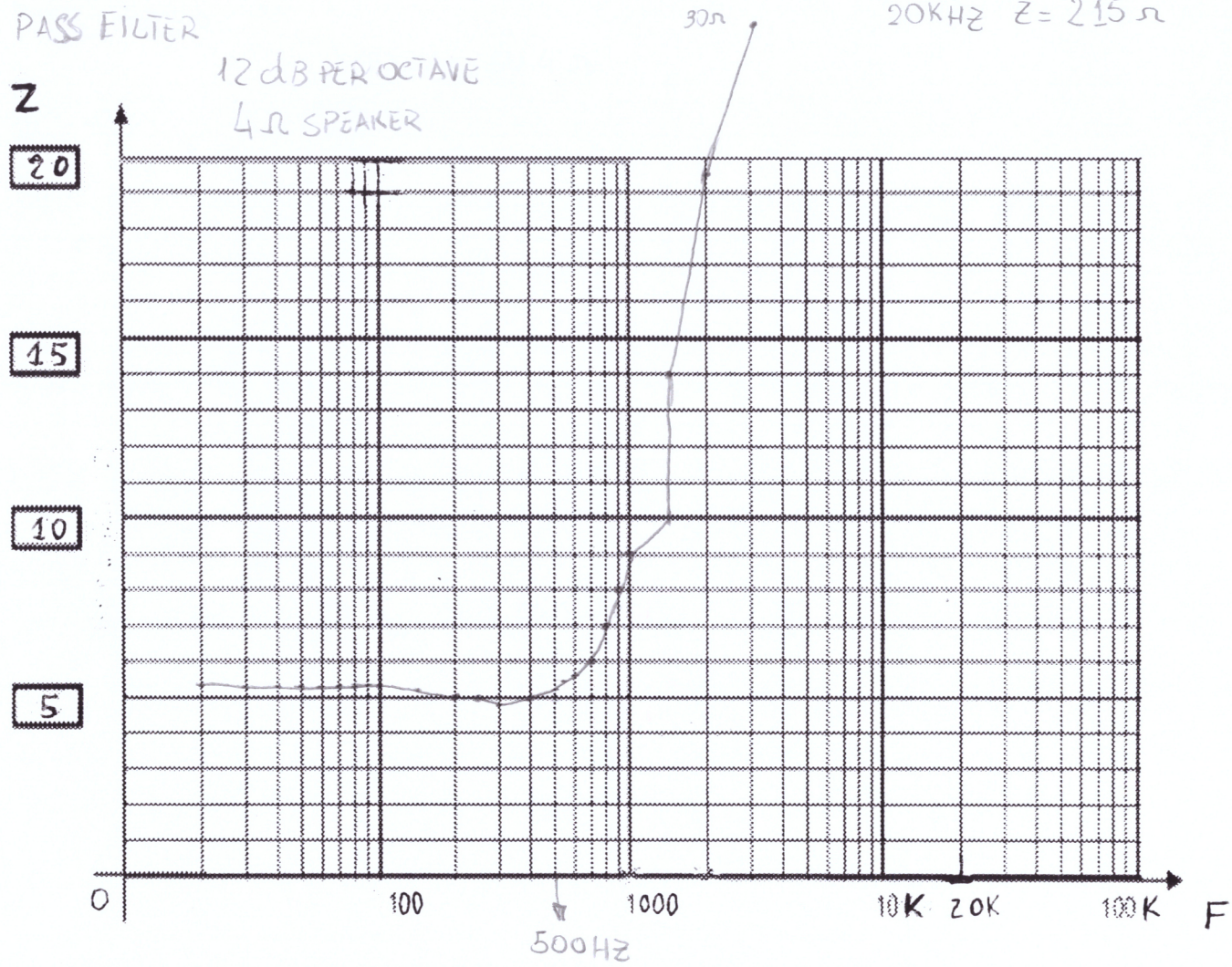
7KHZ Z = 79Ω

20KHZ Z = 215Ω

LOW PASS FILTER

12dB PER OCTAVE
4Ω SPEAKER

11/07/2014

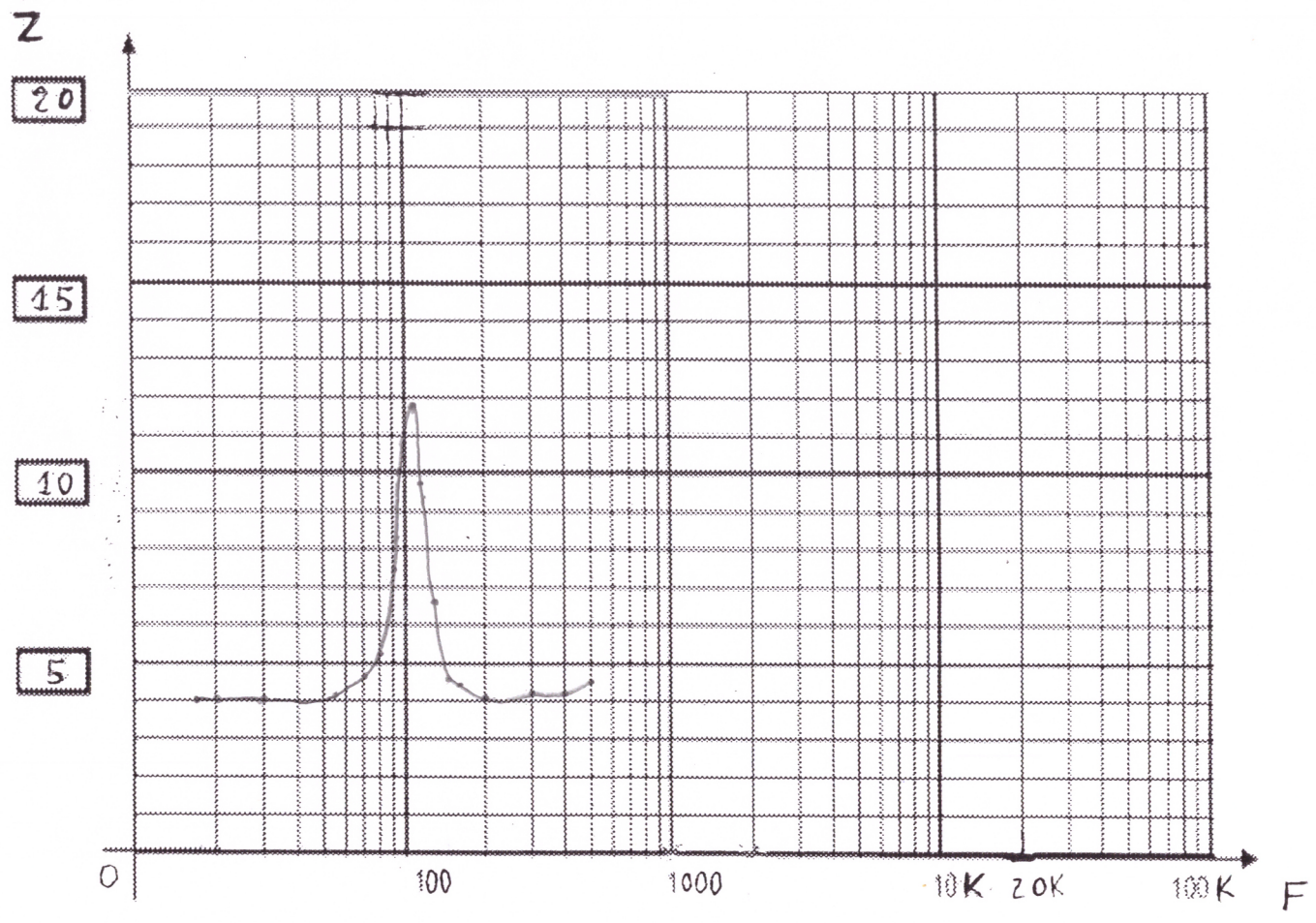


$f_s = 105 \text{ Hz}$

$Z_{FS} = 11,9 \Omega$

WOOFER / FREE
LEFT / AIR

11/07/2014



12/07/2014
WOOFER
LEFT
CLOSED BOX

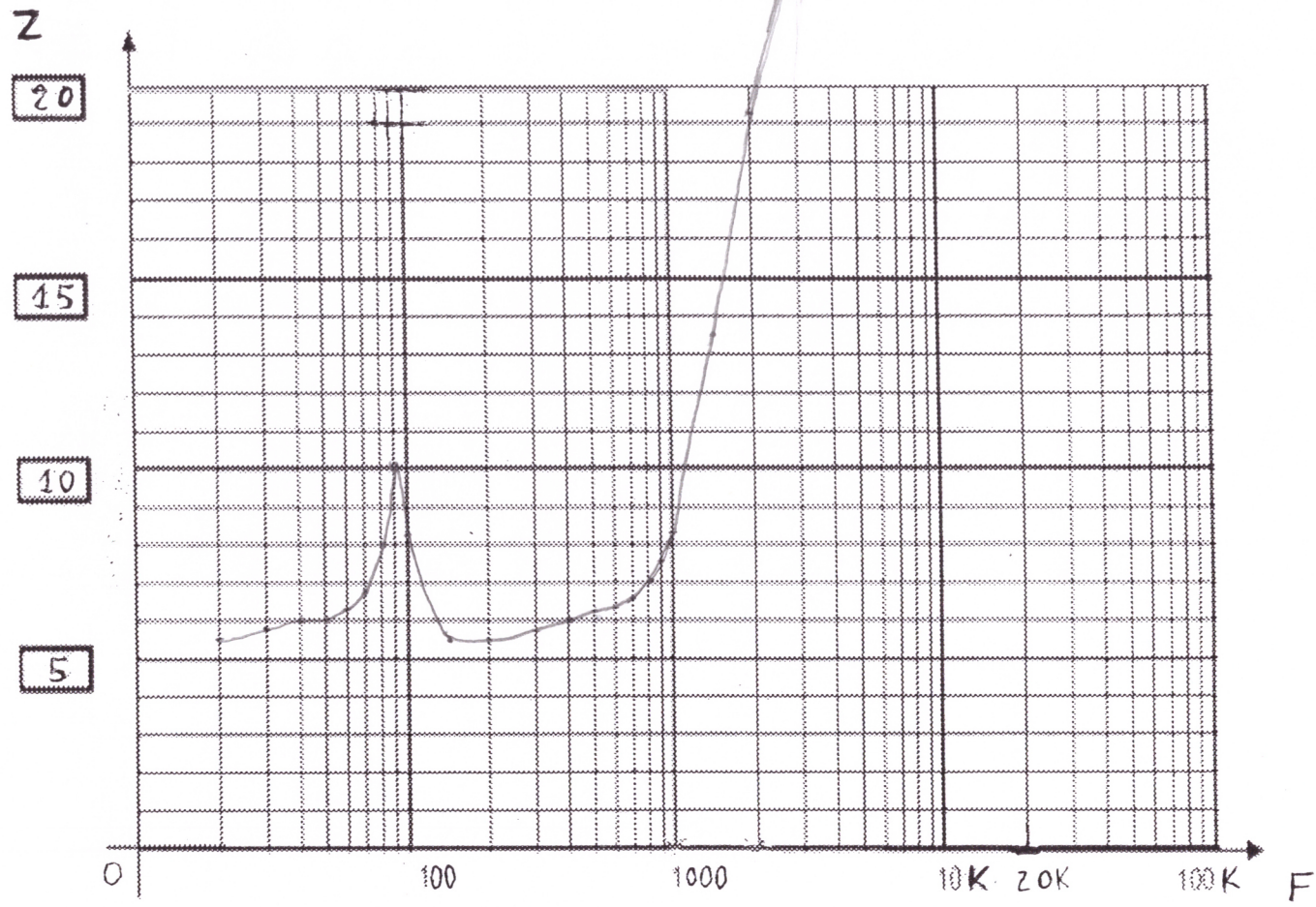
$F_S = 90 \text{ Hz}$

$Z_{FS} = 10 \Omega$

$7 \text{ KHz } Z = 80 \Omega$

$20 \text{ KHz } Z = 218 \Omega$

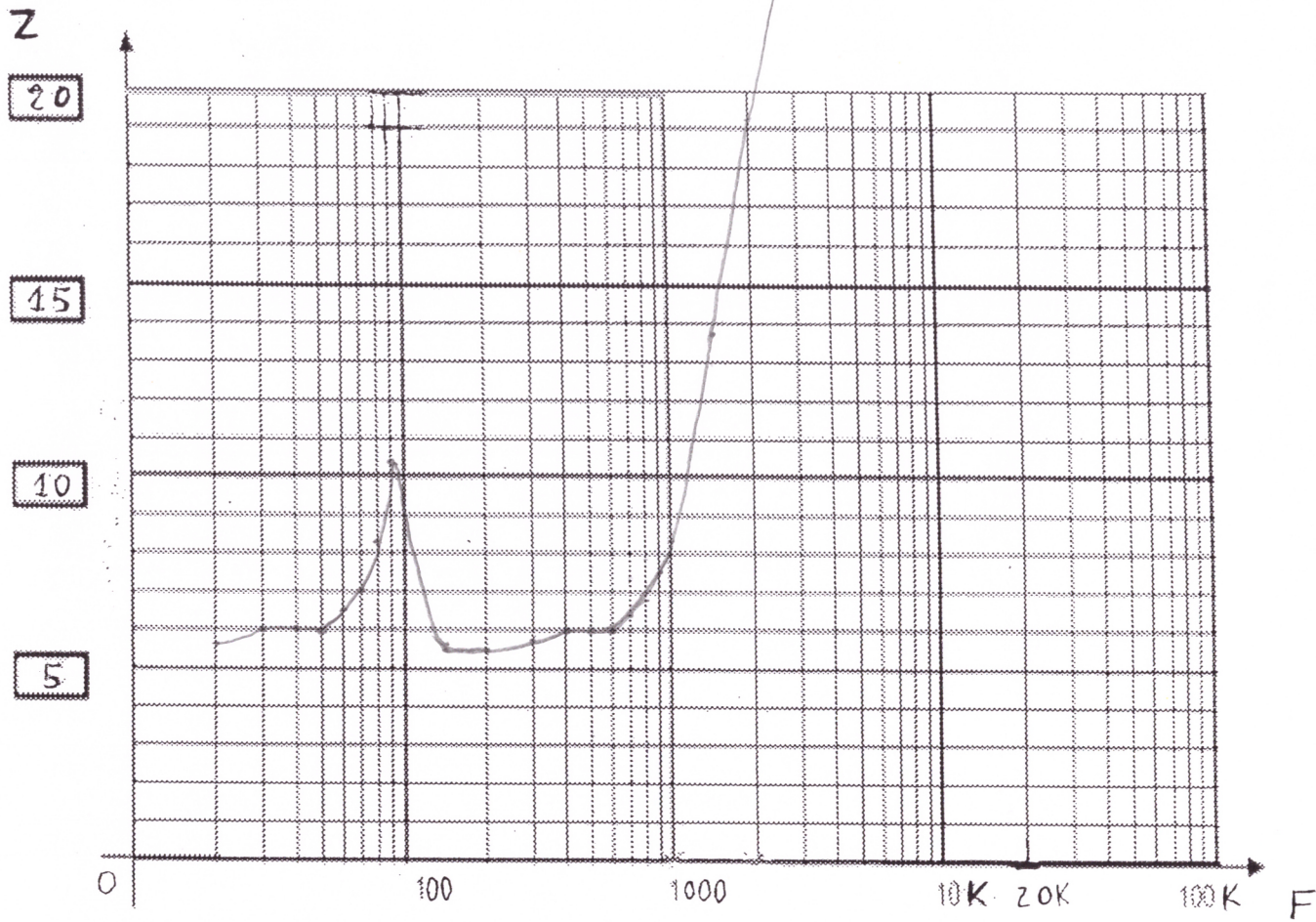
$30,5 \Omega \quad 3 \text{ KHz}$



1210Z12014
 WOOFER RIGHT
 CLOSED BOX

$F_S = 90\text{Hz}$
 $Z_{FS} = 10,4\Omega$

$7\text{KHz } Z = 80,9\Omega$
 $20\text{KHz } Z = 218\Omega$



$f_s = 100\text{Hz}$

$Z_{FS} = 12,8 \Omega$

WOOFER

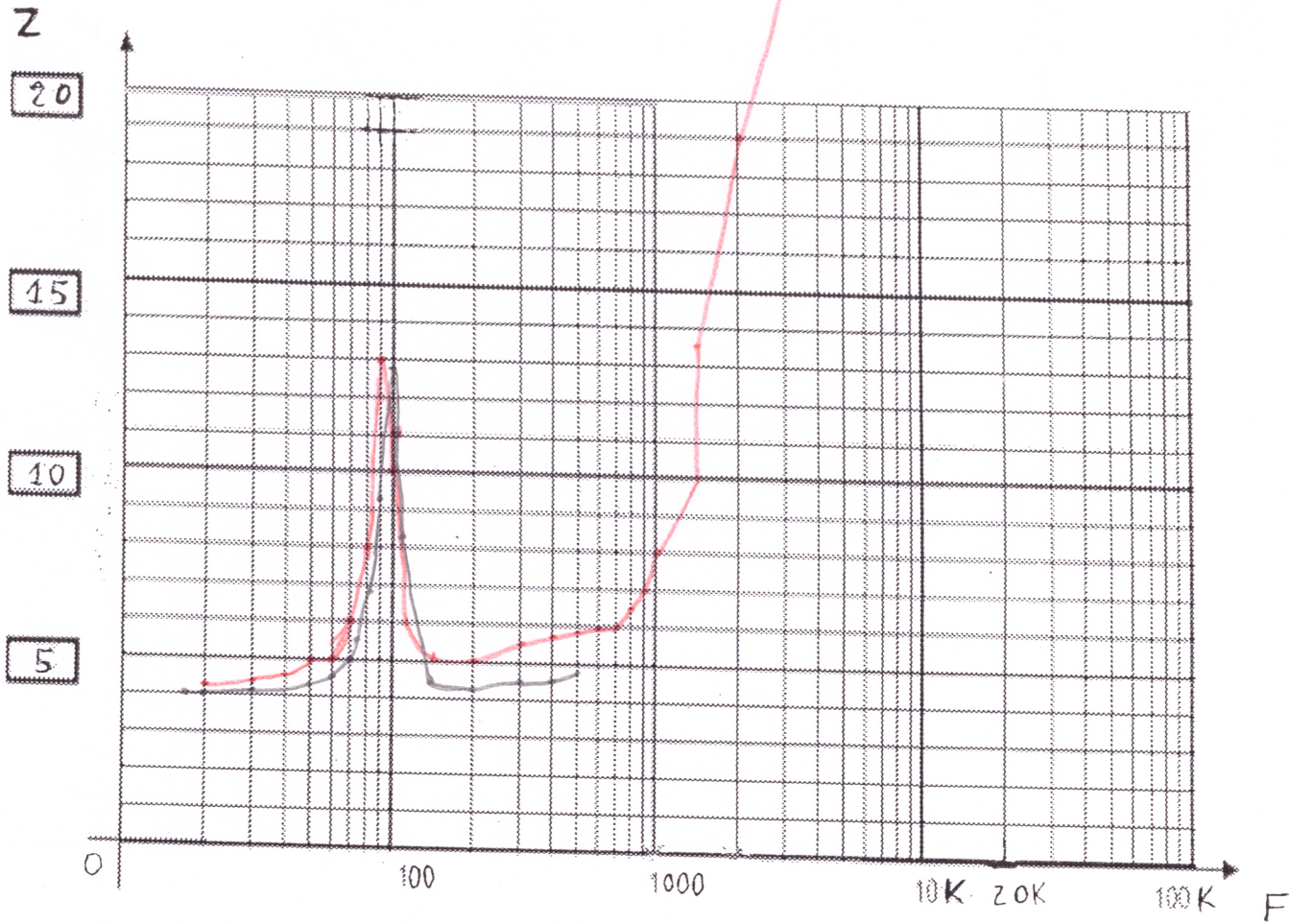
RIGHT

FREE

AIR

11/07/2014

20KHz $Z = 214 \Omega$



$f_s = 92 \text{ Hz}$

$Z_{FS} = 13,1 \Omega$

WITH FILTER

FREE AIR

$$f_m = 75 \text{ Hz} \quad Q = 10 \quad R = 1$$

$$f_m = 75 \text{ Hz} \quad Q = 20 \quad R = 1$$

$$L = \frac{Q \cdot R}{2\pi f_m} = \frac{10 \cdot 1}{6,28 \cdot 75} = \frac{10}{471} = \begin{pmatrix} 0,022 \text{ H} = 22 \text{ mH} \\ 0,047 \end{pmatrix} \begin{matrix} Q=10 \\ Q=20 \end{matrix}$$

$$e = \frac{1}{L \cdot (2\pi f_m)^2} = \frac{1}{0,022 \cdot (6,28 \cdot 75)^2} = \frac{1}{0,022 \cdot 221841} = \frac{1}{4880502} = \frac{1}{4,88 \cdot 10^6} = 2,05 \cdot 10^{-7} \text{ V}$$

$$f_1 = 75 - 7,5 = 67,5$$

$$f_2 = 75 + 7,5 = 82,5$$

$$B = 7,5 \text{ Hz} \quad (Q=10)$$

$$B = \frac{75}{20} = 3,75 \text{ Hz} / 2 = 1,875 \text{ Hz} \quad (Q=20)$$

