


Progetto di base con MWO di un oscillatore Ceramico

Infineon_LNA_BFP520.pdf - Adobe Acrobat Pro

File Modifica Vista Documento Commenti Moduli Strumenti Avanzate Finestra ?

Crea Combina Collabora Protezione Firma Moduli Multimedia Commento

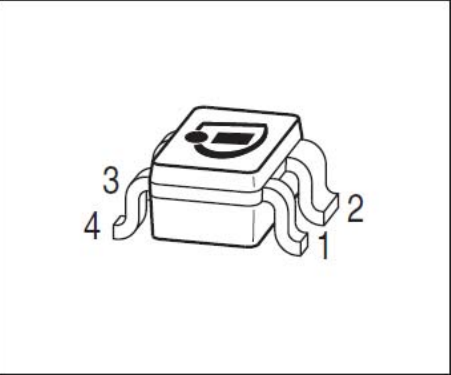
1 / 9 133% Trova



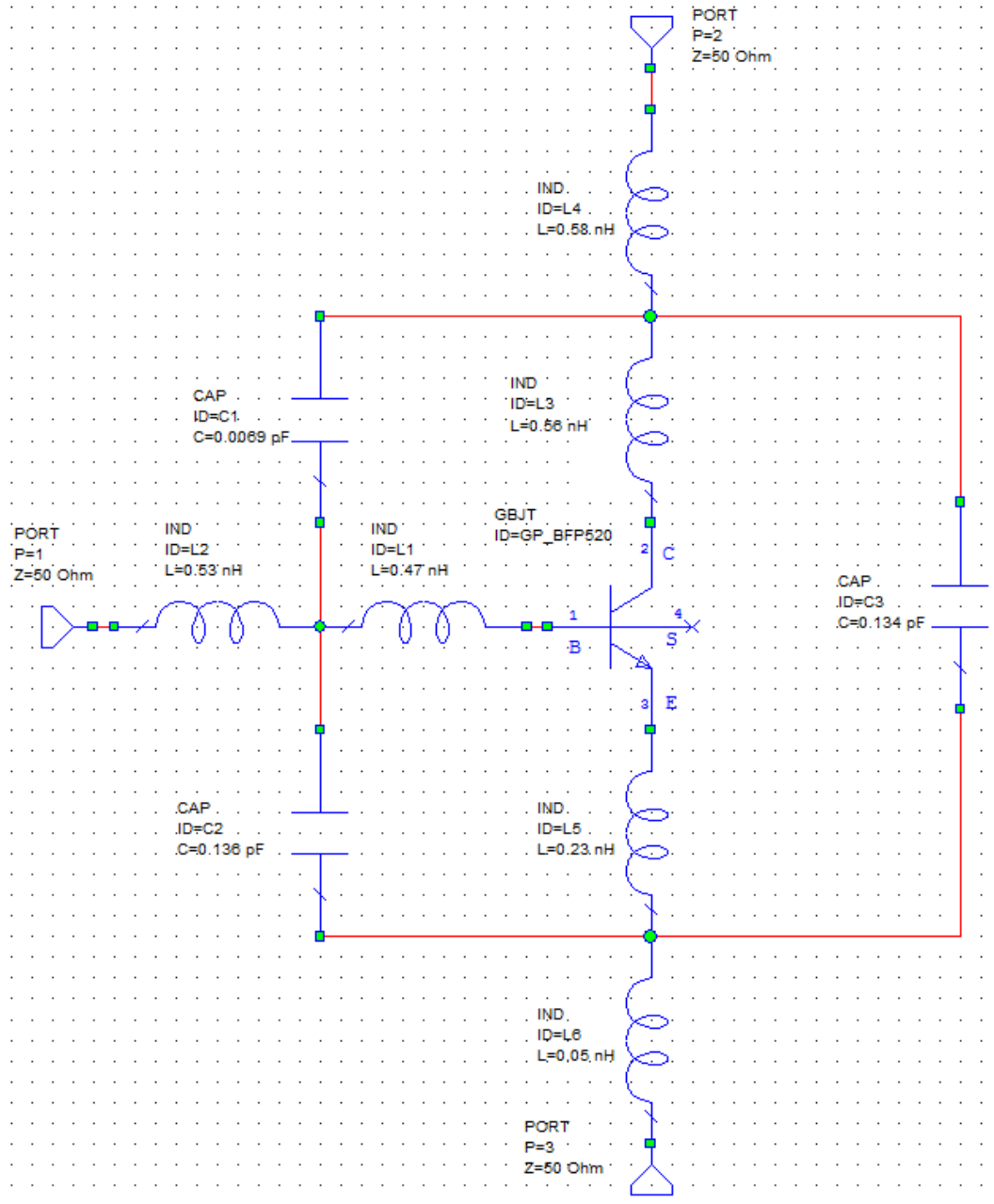
BFP520

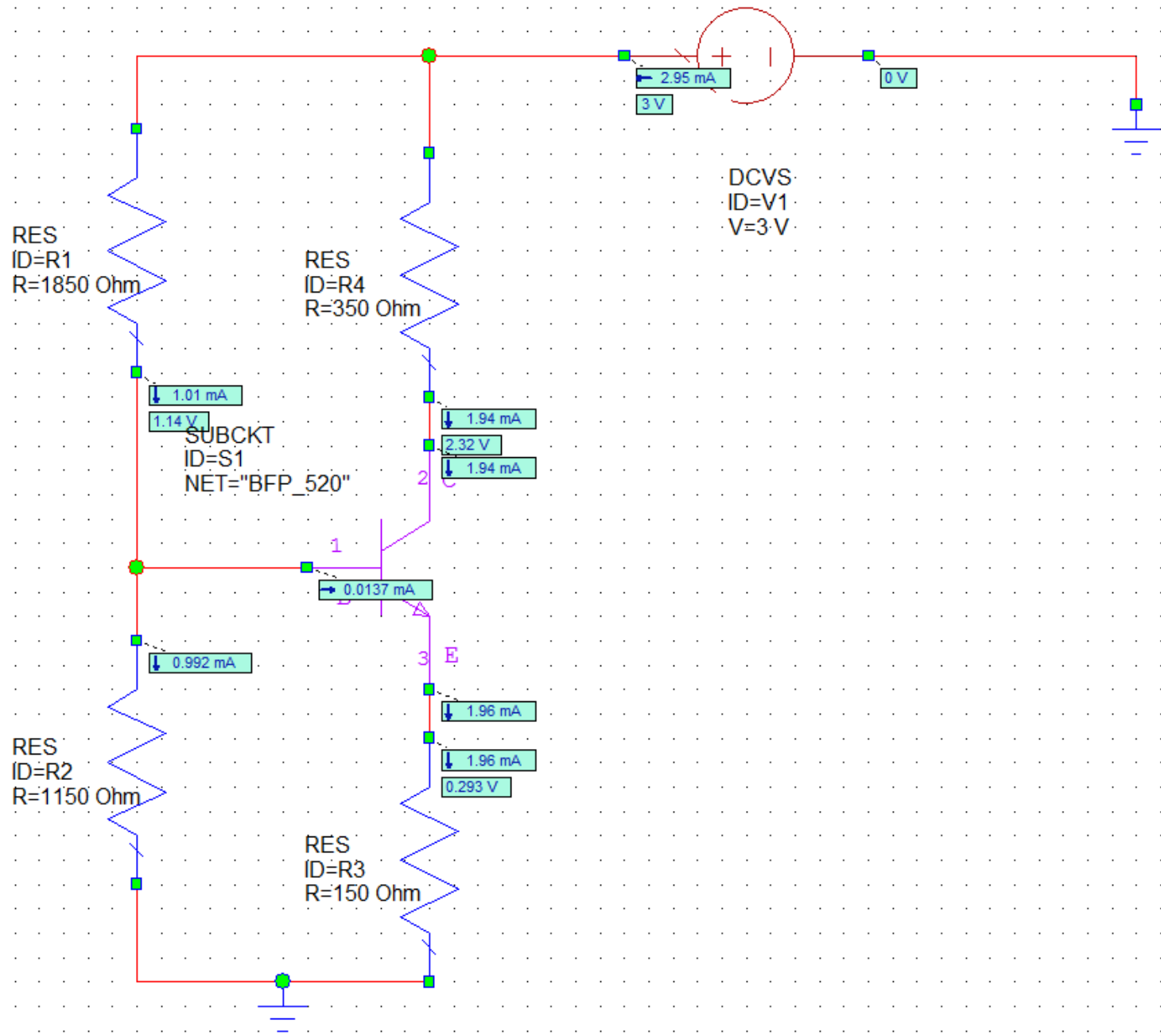
Low Noise Silicon Bipolar RF Transistor

- Low noise amplifier designed for low voltage applications, ideal for 1.2 V or 1.8 V supply voltage. Supports $V_{CC} = 2.9$ V with enough external collector resistance.
- High gain and low noise at high frequencies due to high transit frequency $f_T = 45$ GHz
- Common e.g. in cordless phones and satellite receivers
- Easy to use Pb-free (RoHS compliant) and halogen free industry standard package with visible leads

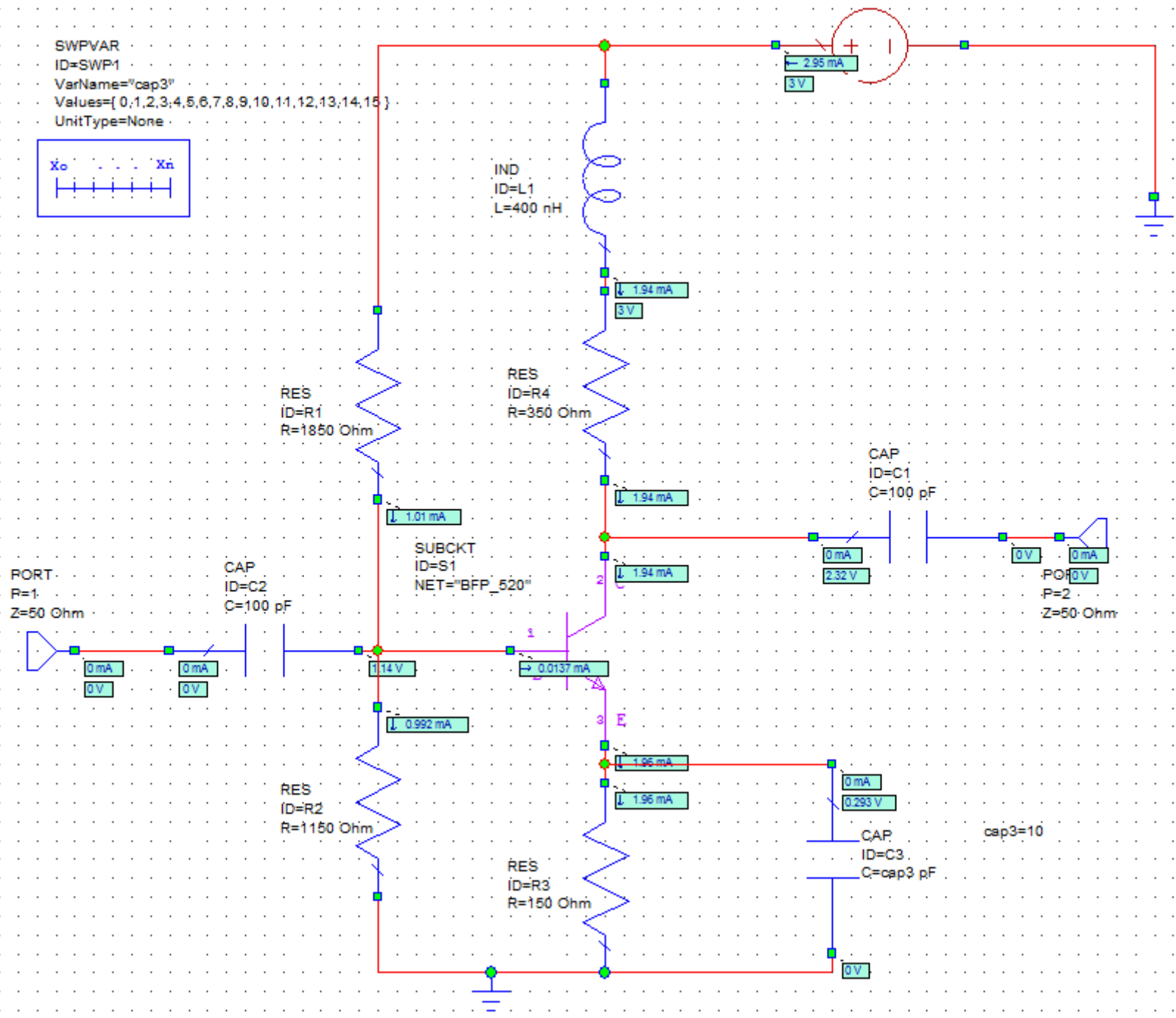


<p>Minimum noise figure</p> <p>$I_C = 2$ mA, $V_{CE} = 2$ V, $Z_S = Z_{Sopt}$,</p> <p>$f = 1.8$ GHz</p>	NF_{min}	-	0.95	-	dB
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SWPVAR
 ID=SWP1
 VarName="cap3"
 Values={ 0,1,2,3,4,5,6,7,8,9,10,11,12,13,14,15 }
 UnitType=None



Modify Measurement

Measurements

Measurement Type: Linear

Measurement: **S**

Data Source Name: Schematic 2

To Port Index: 1

From Port Index: 1

Sweep Freq (FDOC): Freq = 1000 MHz

SWPVAR.SWP1: Use for x-axis

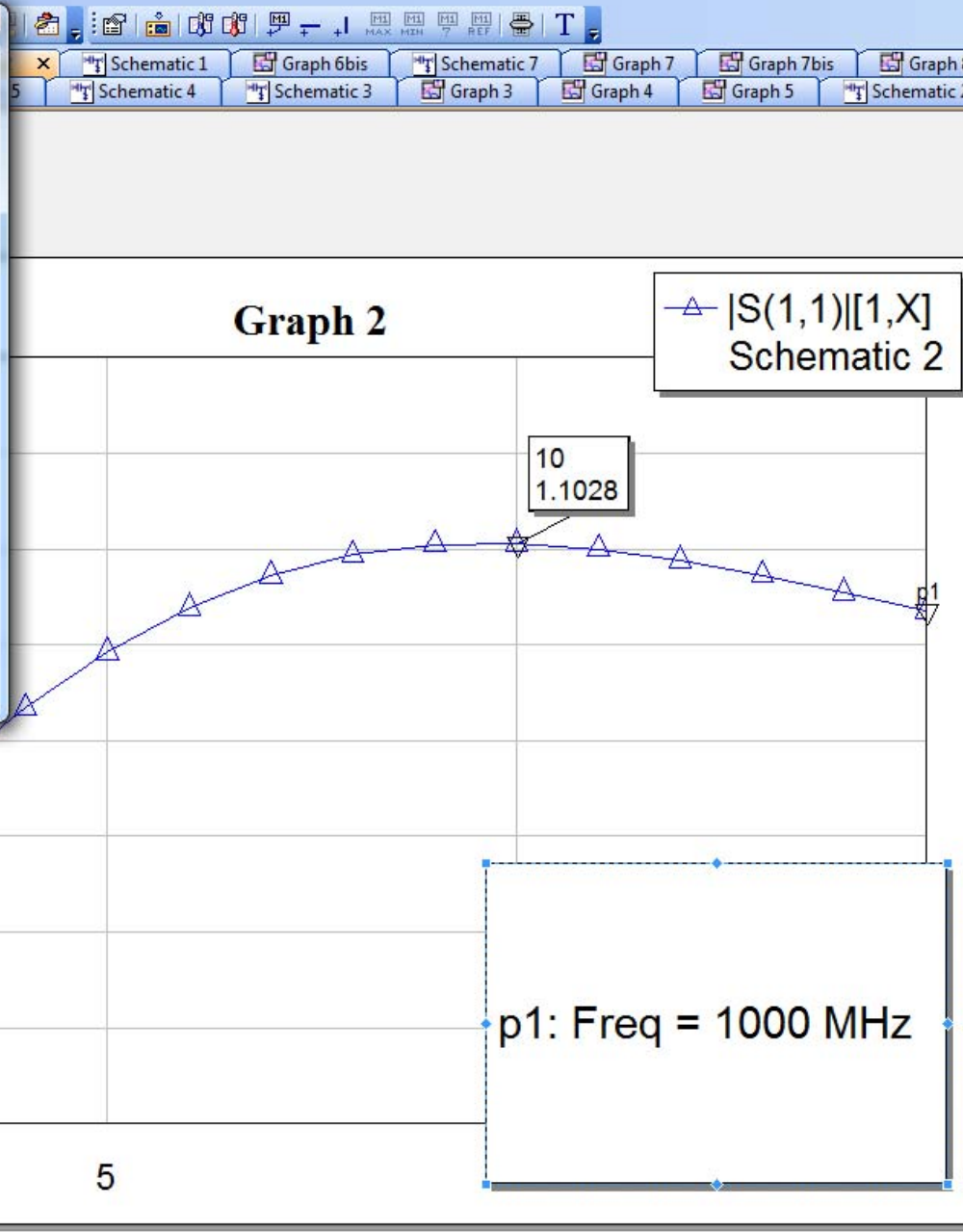
Scattering Coefficients (S Parameters)

Simulator: Default Linear

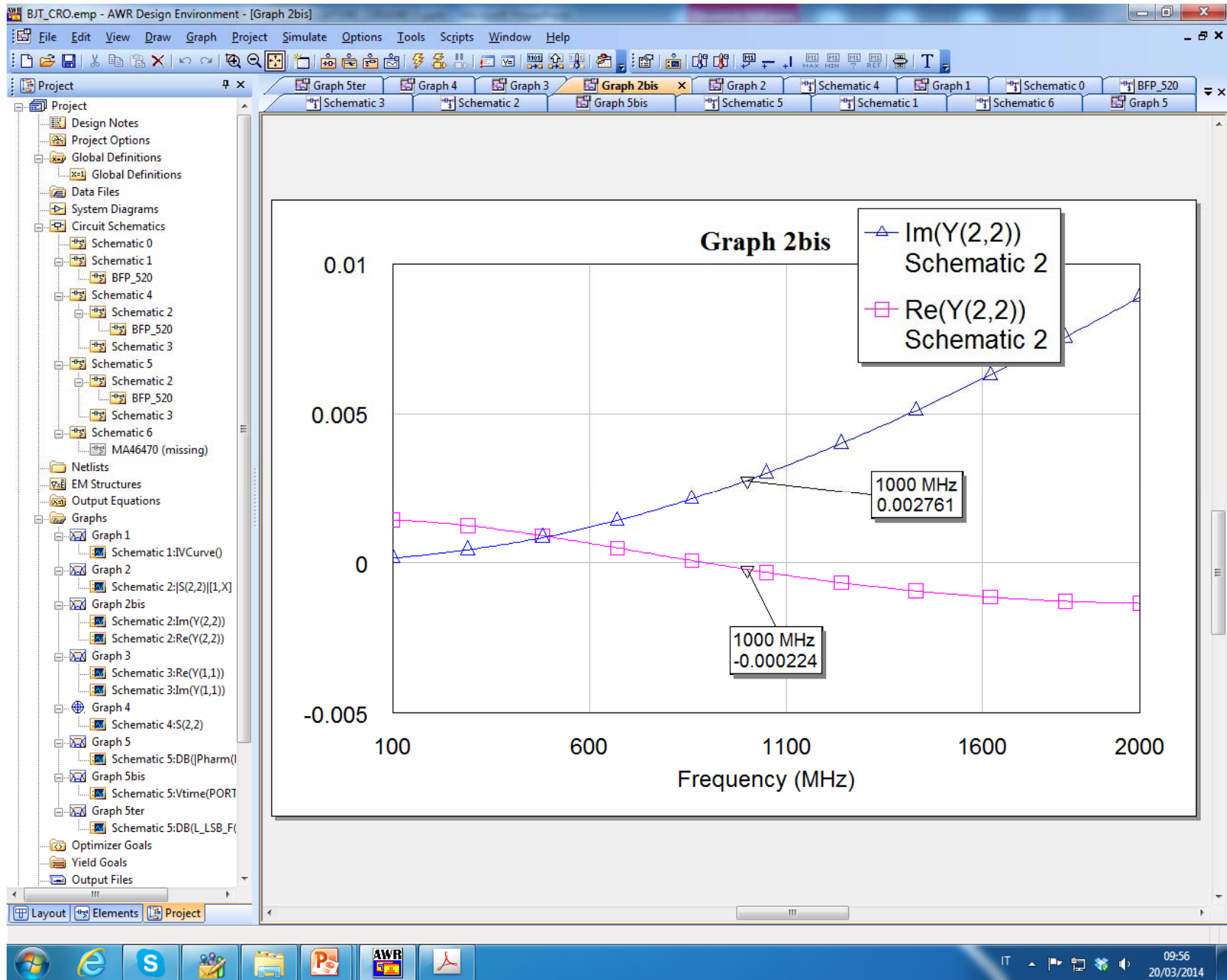
Configuration: Default

Complex Modifier: Mag.

Buttons: OK, Annulla, ?, Meas Help



- Schematic 4
- Schematic 7
- Schematic 3
- Schematic 4
- Netlists
- EM Structures
- Output Equations
- Graphs
 - Graph 2
 - Schematic 2: $|S(1,1)[1,X]$
 - Graph 3
 - Schematic 3: $\text{Re}(Y(1,1))$
 - Schematic 3: $\text{Im}(Y(1,1))$
 - Graph 4
 - Schematic 4: $\text{Im}(Y(1,1))$
 - Graph 5
 - Schematic 5: $S(2,2)$
 - Graph 6
 - Schematic 6: $|\text{V}_{\text{tharm}}(\text{PORT}_1)$



Coaxial Resonator Design (COAX)

File Coaxial Element Configuration Units Graph Trans-Tech Help

Resonator Electrical Parameters

Resonant Frequency MHz

Quarter-Wave L

mm

Half-Wave L

mm

Dielectric Options

- 1000 Material
Q>461 $\epsilon_r=10.3$
- 2000 Material
Q>720 $\epsilon_r=20.5$
- 8800 Material
Q>692 $\epsilon_r=39.0$
- 9000 Material
Q>576 $\epsilon_r=90.0$

Profile Options

- HP (12 mm sq)
- EP (8 mm sq)
- SP (6 mm sq)
- LS (4 mm sq)
- LP (4 mm sq)
- MP (3 mm sq)
- SM (2 mm sq)

Trans-Tech Part Number

$\lambda/4$ Short SR8800EPQ1100BY

Resonator Calculated Results

Q = 692
Z_o = 11.6 Ohms

Transmission Line Model (A in dB/inch)

TLPS n1 n2 Z=11.6 L=0.430 K=39.0 A=.023 F=1100

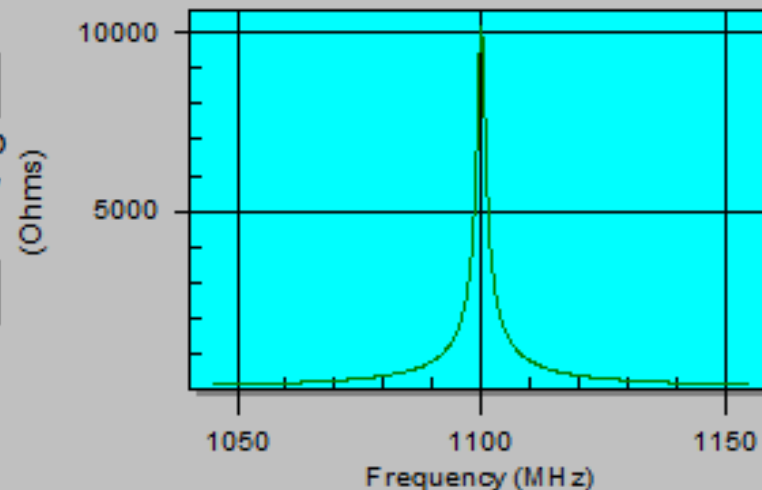
Use PASTE function in your simulation software.
Replace n1 and n2 with valid node numbers.

Graph Start
Frequency
(MHz)

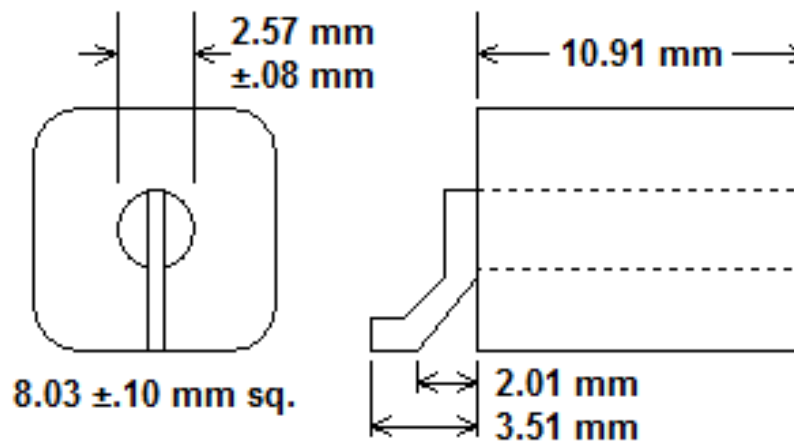
Graph Stop
Frequency
(MHz)

Coaxial Resonator Impedance (Magnitude)

SR8800EPQ1100BY



Double Click on Graph for Options



AWR BJT_CRO.emp - AWR Design Environment - [Schematic 3]

File Edit View Draw Schematic Project Simulate Options Tools Scripts Window Help

Project

- Design Notes
- Project Options
- Global Definitions
 - Global Definitions
- Data Files
- System Diagrams
- Circuit Schematics
 - Schematic 0
 - Schematic 1
 - BFP_520
 - Schematic 4
 - Schematic 2
 - BFP_520
 - Schematic 3
 - Schematic 5
 - Schematic 2
 - BFP_520
 - Schematic 3
 - Schematic 6

- Netlists
- EM Structures
- Output Equations
- Graphs
- Graph 1
 - Schematic 1:IVCurve0
- Graph 2
 - Schematic 2:|S(2,2)|(1,X)
- Graph 2bis
 - Schematic 2:Im(Y(2,2))
 - Schematic 2:Re(Y(2,2))
- Graph 3
 - Schematic 3:Re(Y(1,1))
 - Schematic 3:Im(Y(1,1))
- Graph 4
 - Schematic 4:S(2,2)
- Graph 5
 - Schematic 5:DB(|Pharm(|
- Graph 5bis
 - Schematic 5:Vtime(PORT
- Graph 5ter
 - Schematic 5:DB(L_LSB_F
- Optimizer Goals
- Yield Goals
- Output Files

Graph 5ter Schematic 3 x Schematic 2 Graph 5bis Schematic 5 Schematic 1 Schematic 6 Graph 5

COAXI2
ID=CX1
Z=11.6
L=10.91 mm
K=39
A=0.9
F=1100 MHz

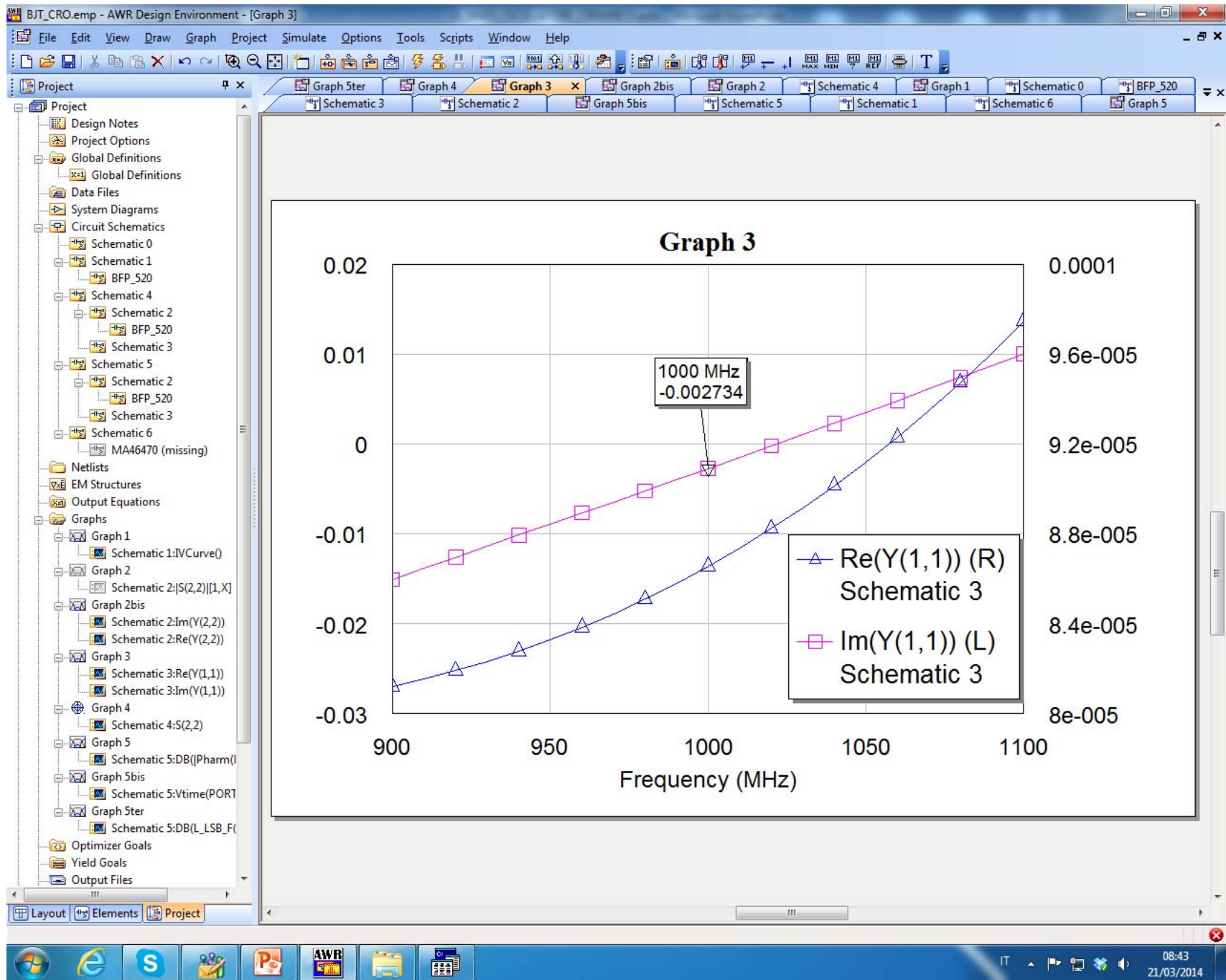
IND
ID=L1
L=0.6 nH

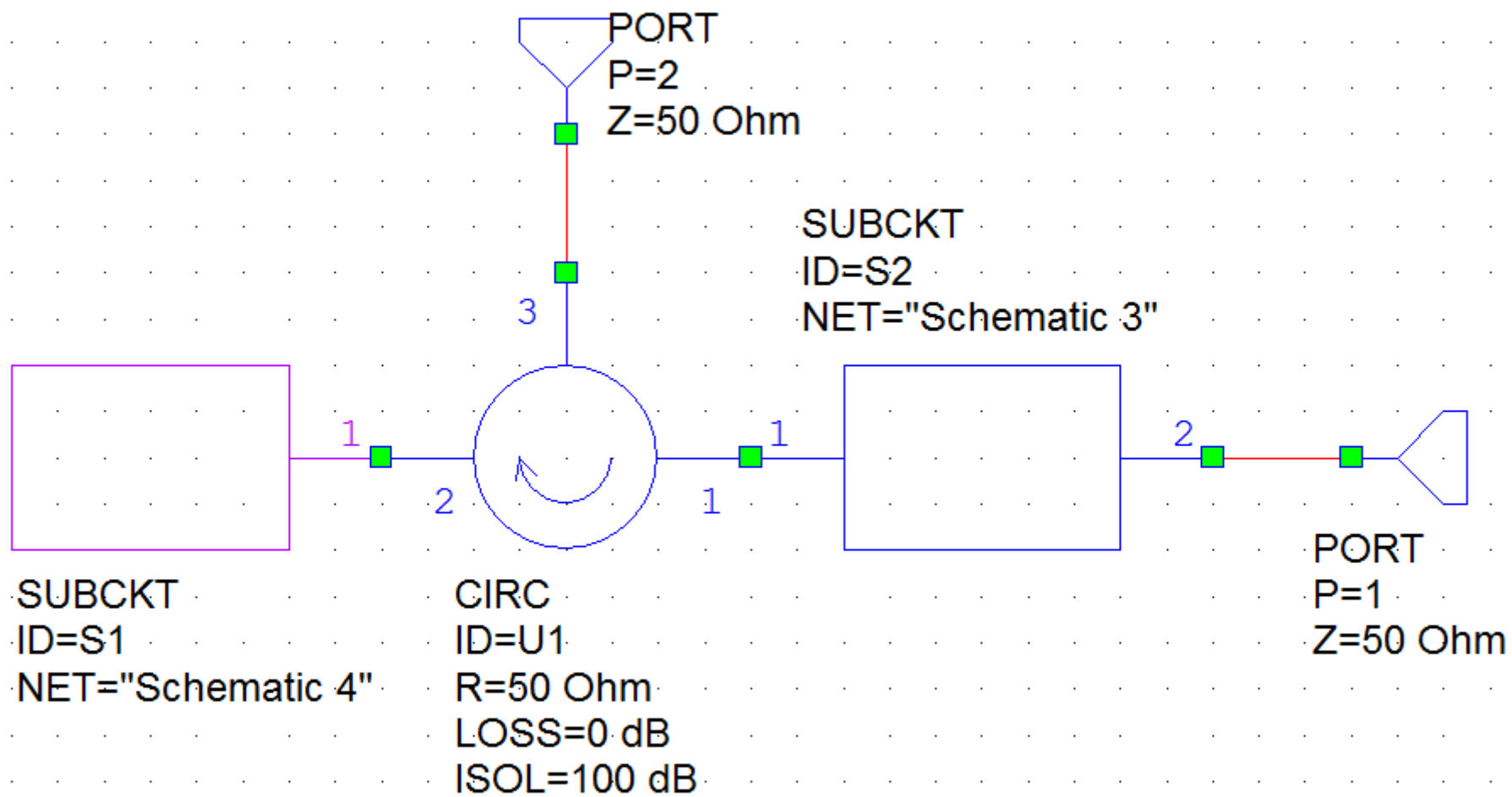
CAP
ID=C1
C=1.45 pF

PORT
P=1
Z=50 Ohm

Layout Elements Project

08:42
21/03/2014

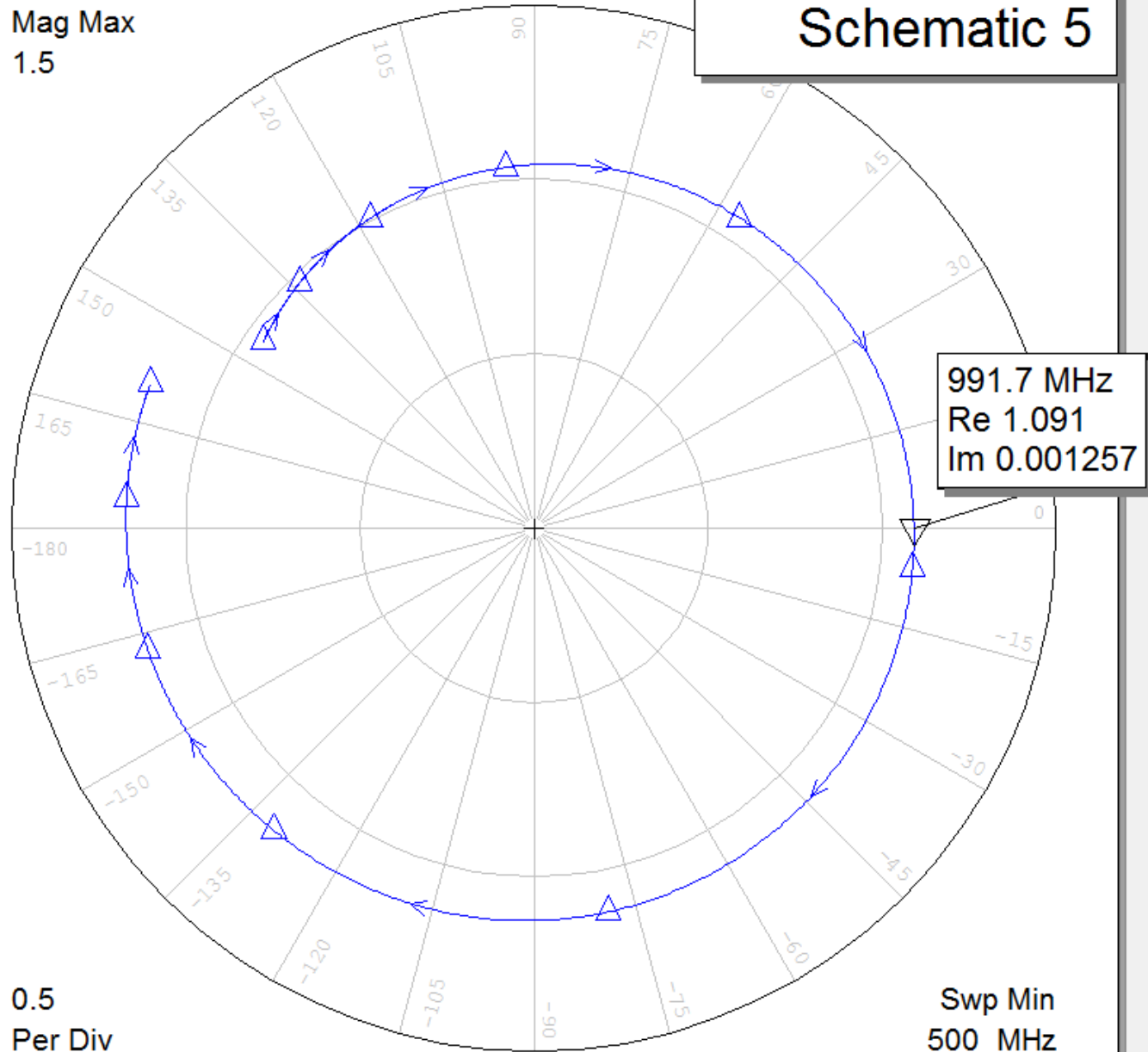




Graph 5

—△— S(2,2)
Schematic 5

Mag Max
1.5



Graph 5

—△— S(2,2)
Schematic 5

Mag Max
1.5

Variable Tu... ✕

Tune	C1:C
Nom->	1.25
Max->	2

Close

Save

Reset

Revert

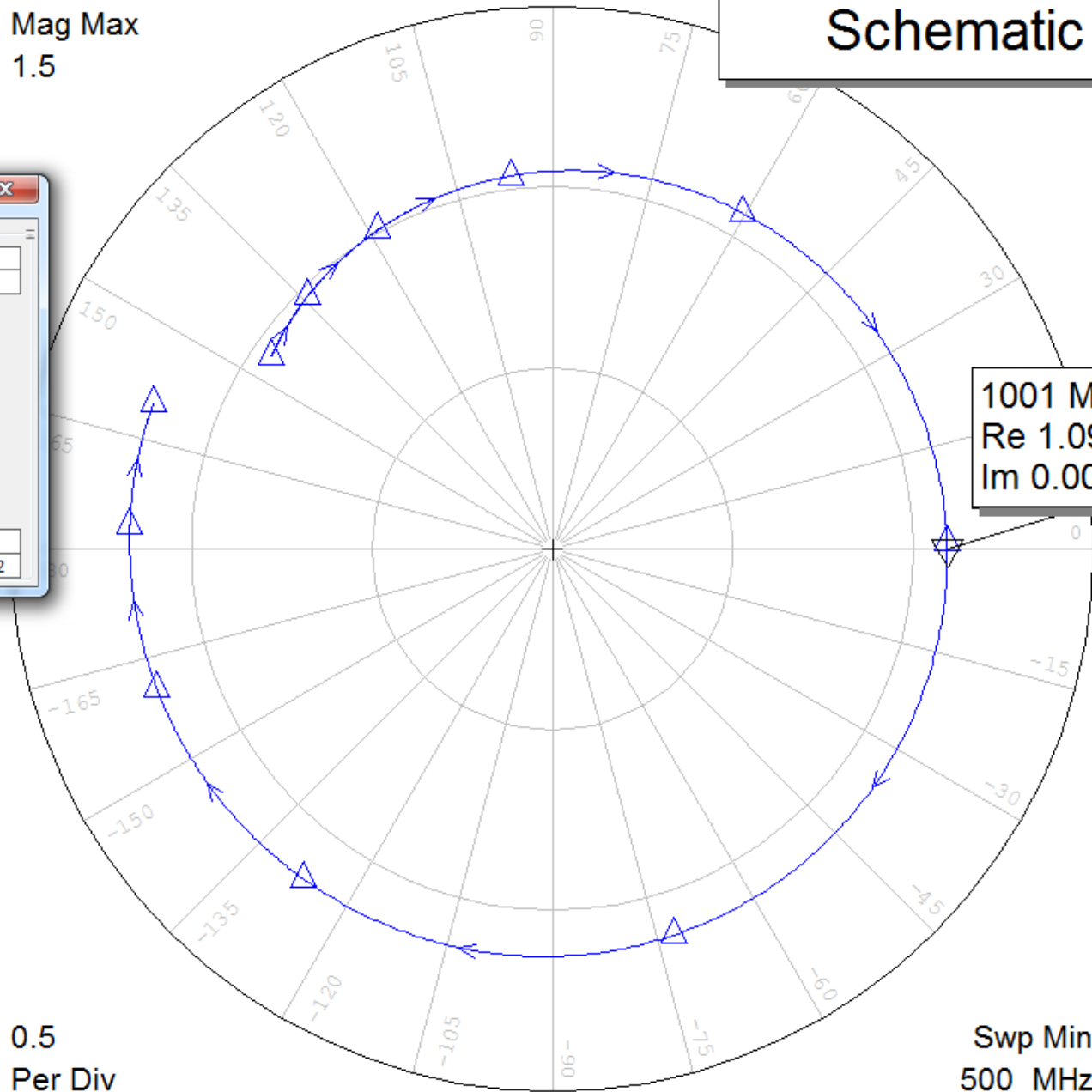
Sweep

Freeze

Clear

Help

Min->	0
Step->	0.002



1001 MHz
Re 1.094
Im 0.001682

0.5
Per Div

Swp Min
500 MHz

BJT_CRO.emp - AWR Design Environment - [Schematic 5]

File Edit View Draw Schematic Project Simulate Options Tools Scripts Window Help

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- Circuit Schematics
 - Schematic 0
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 - BFP_520
 - Schematic 4
 - Schematic 2
 - BFP_520
 - Schematic 3
 - Schematic 5
 - Schematic 2
 - BFP_520
 - Schematic 3
 - Schematic 6
 - MA46470 (missing)
- Netlists
- EM Structures
- Output Equations
- Graphs
 - Graph 1
 - Schematic 1:IVCurve()
 - Graph 2
 - Schematic 2:|S(2,2)|[1,X]
 - Graph 2bis
 - Schematic 2:Im(Y(2,2))
 - Schematic 2:Re(Y(2,2))
 - Graph 3
 - Schematic 3:Re(Y(1,1))
 - Schematic 3:Im(Y(1,1))
 - Graph 4
 - Schematic 4:S(2,2)
 - Graph 5
 - Schematic 5:DB(|Phasor|)
 - Graph 5bis
 - Schematic 5:vtime(PORT)
 - Graph 5ter
 - Schematic 5:DB(L_LSB_F)
- Optimizer Goals
- Yield Goals
- Output Files

Graph 5ter Graph 4 Graph 3 Graph 2bis Graph 2 Schematic 4 Graph 1 Schematic 0 BFP_520 Schematic 3 Schematic 2 Schematic 5 Schematic 6

OSCAPROBE
ID=X1
Fstart=500 MHz
Fend=2000 MHz
Fsteps=200
Vsteps=40

SUBCKT
ID=S1
NET="Schematic 3"

SUBCKT
ID=S2
NET="Schematic 2"

OSCNOISE
ID=NS1
OFstart=0.001 MHz
OFend=1 MHz
OFsteps=5
SwpType=LOG
Harm={ 1,2 }
NoiseContribs=Disabled

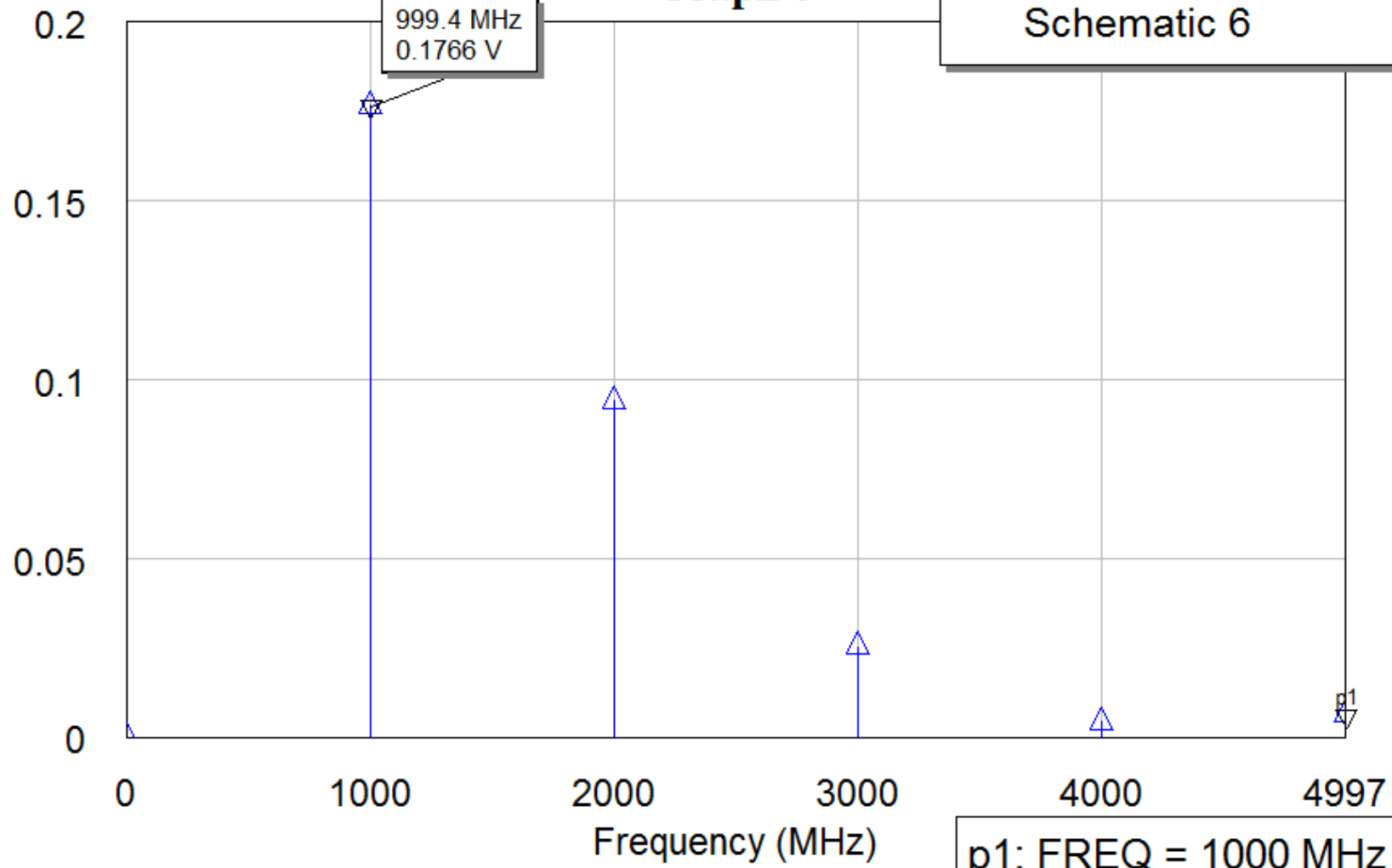
PORT
P=1
Z=50 Ohm

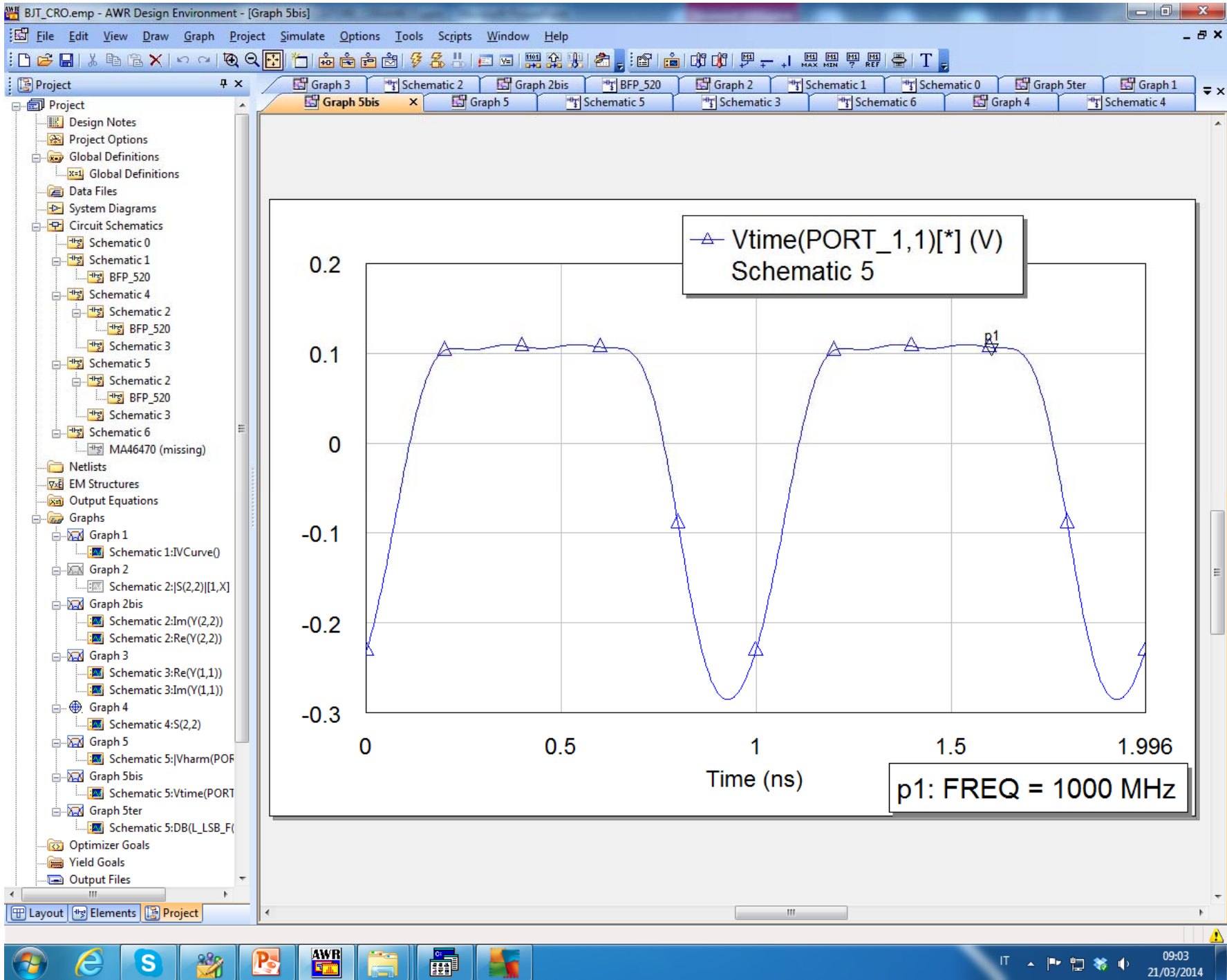
AWR

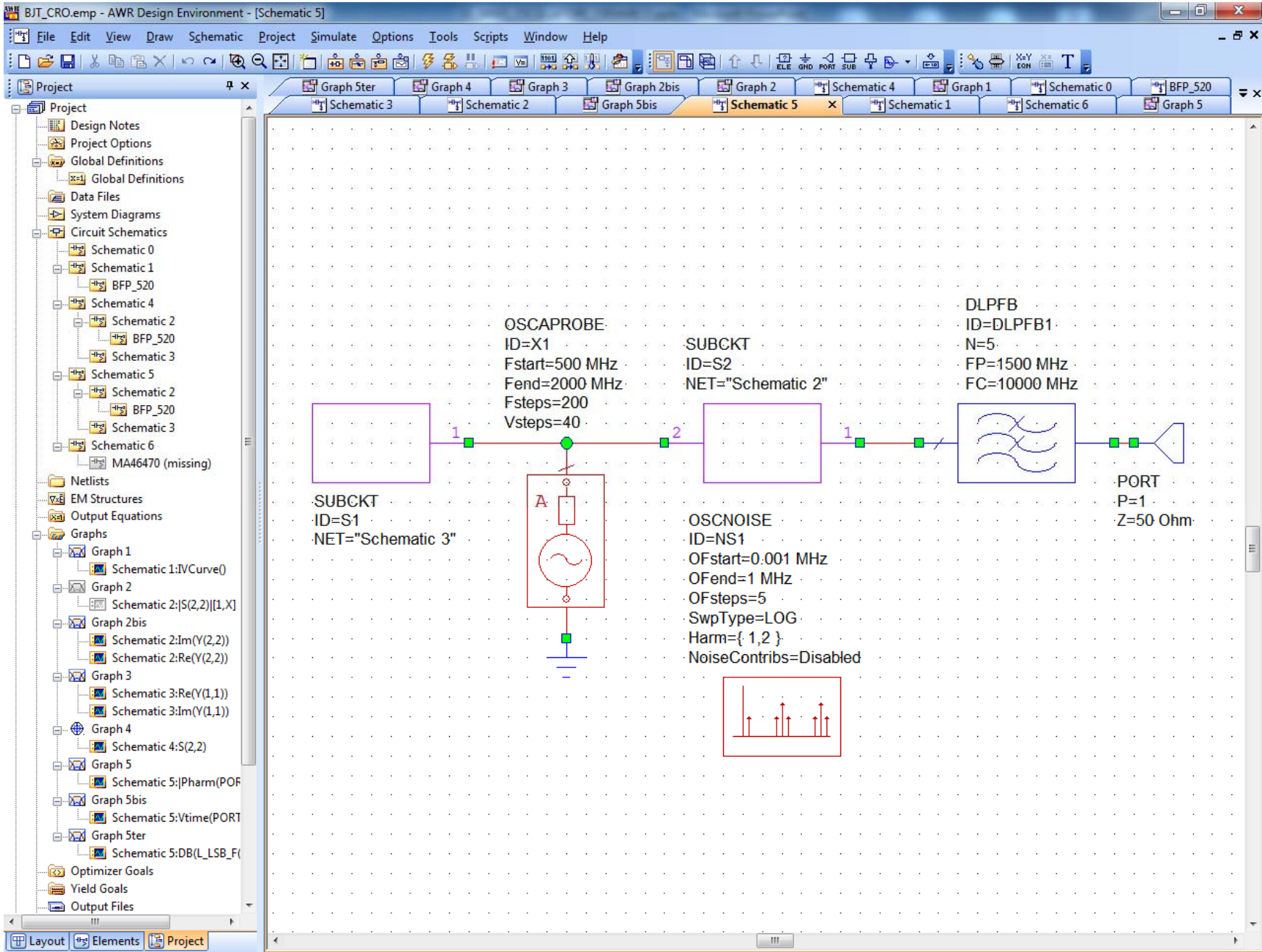
08:45
21/03/2014

Graph 6

—△— |Vharm(PORT_1)|[*] (V)
Schematic 6

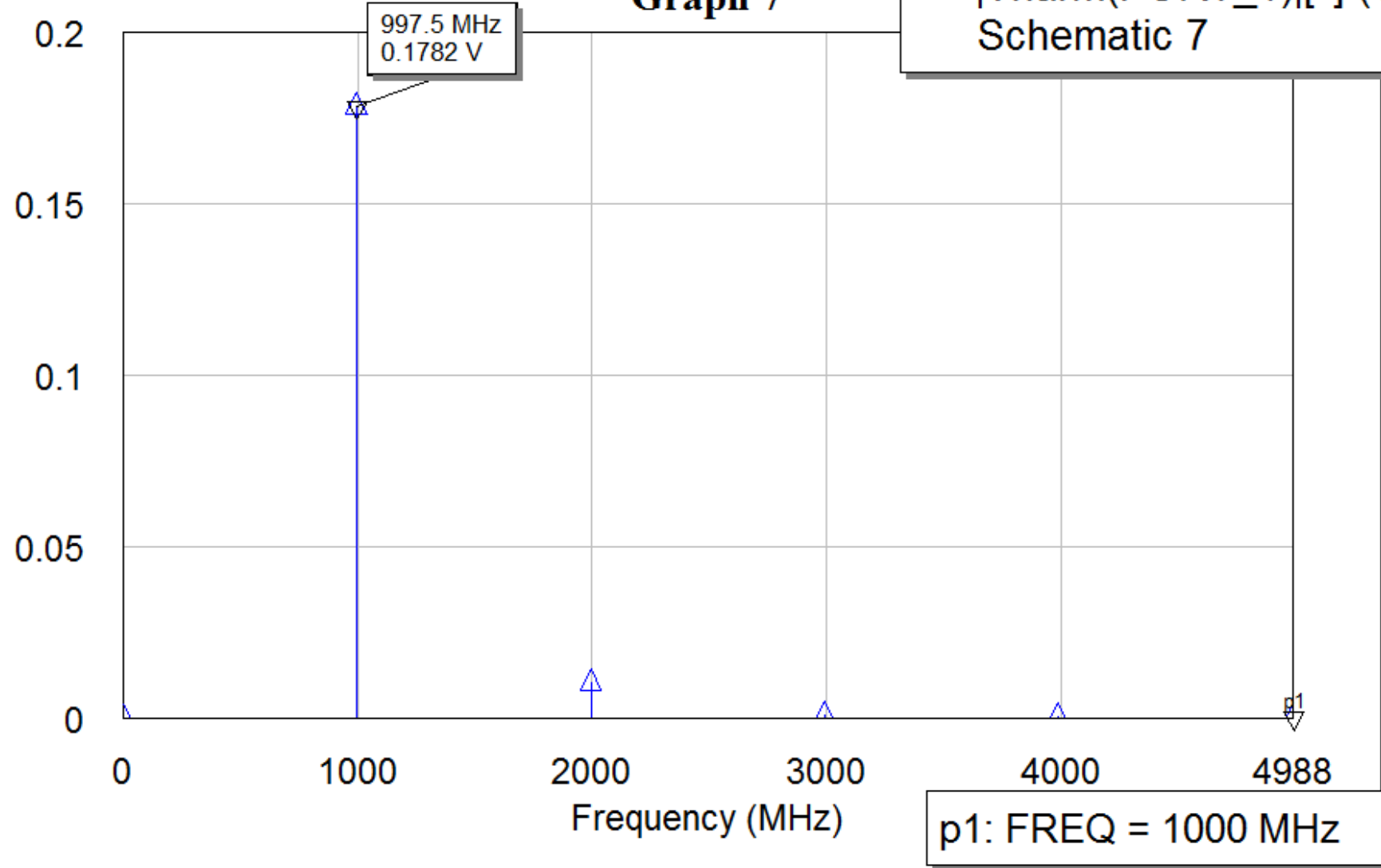






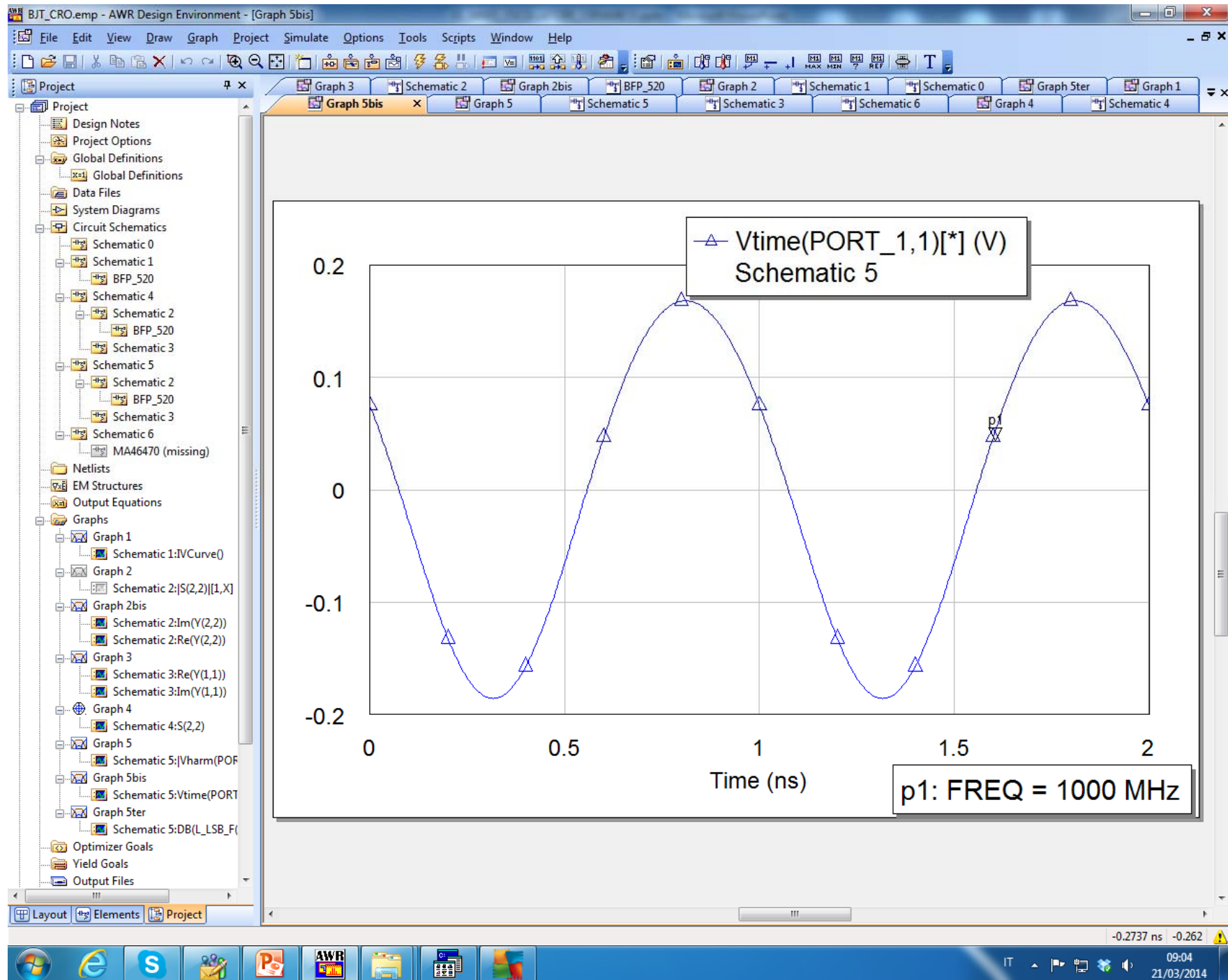
Graph 7

—△ |Vharm(PORT_1)[*] (V)
Schematic 7



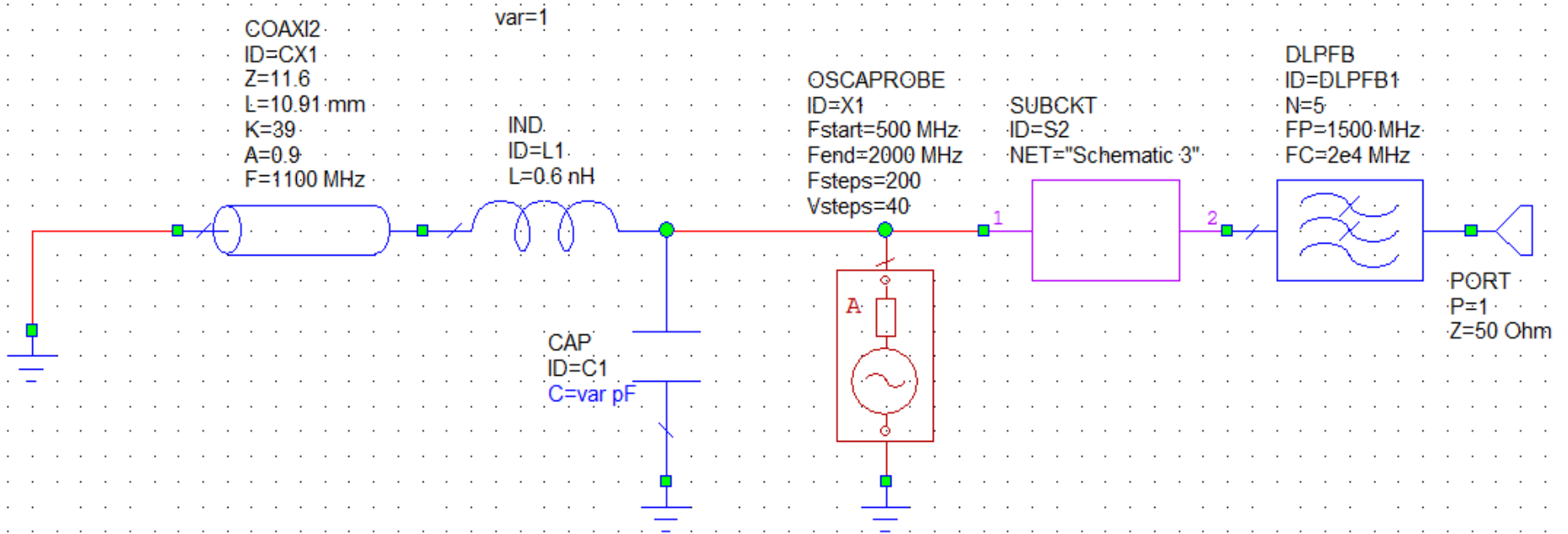
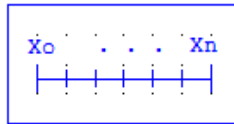
997.5 MHz
0.1782 V

p1: FREQ = 1000 MHz

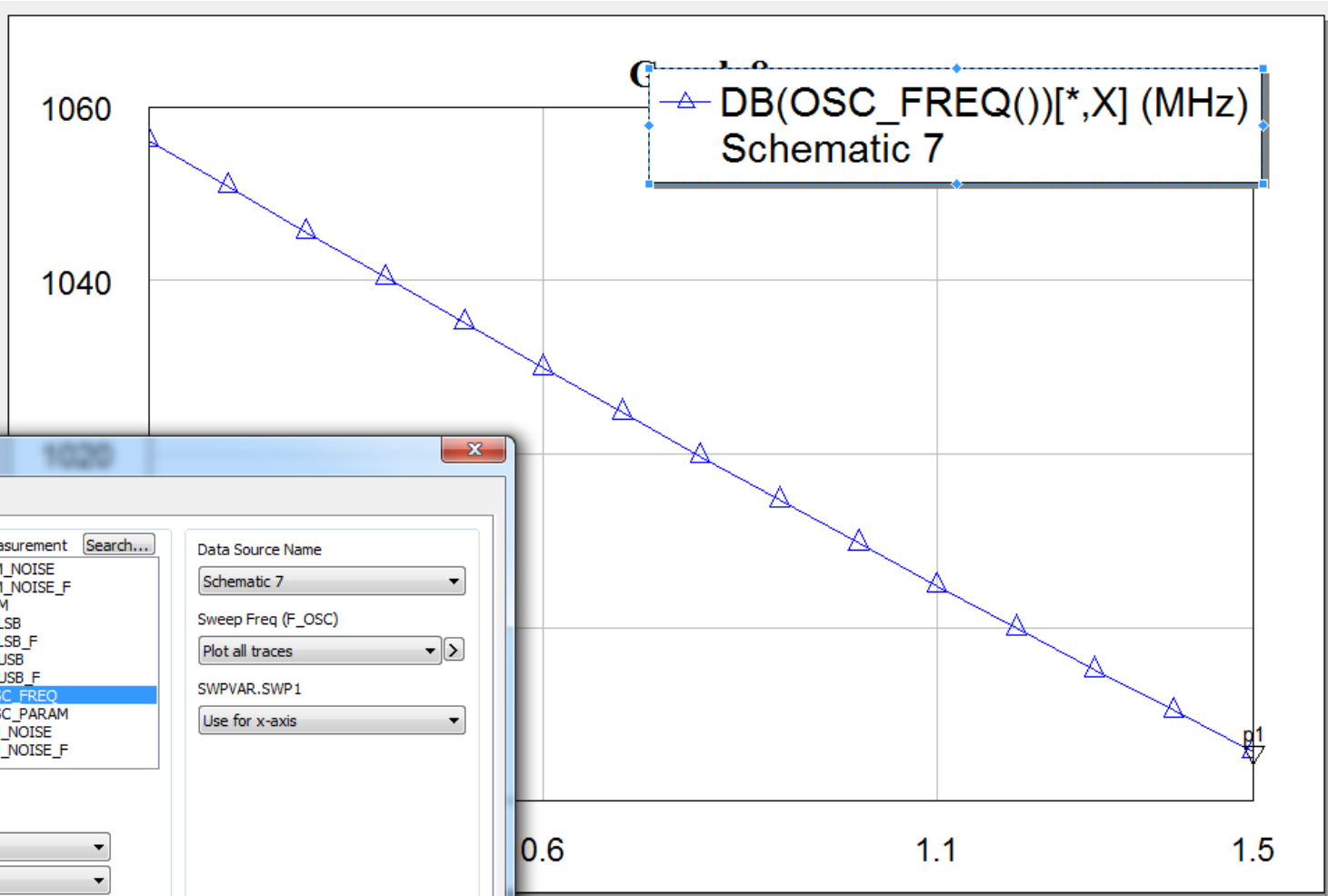


-0.2737 ns -0.262

SWPVAR
 ID=SWP1
 VarName="var"
 Values={ 0.1,0.2,0.3,0.4,0.5,0.6,0.7,0.8,0.9,1,1.1,1.2,1.3,1.4,1.5 }
 UnitType=None



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- Schematic 2:|S(1,1)|
- Graph 3
- Schematic 3:Re(Y(1,



Modify Measurement

Measurements

Measurement Type: Nonlinear

Measurement: OSC_FREQ

Data Source Name: Schematic 7

Sweep Freq (F_OSC): Plot all traces

SWPVAR.SWP1: Use for x-axis

Oscillation Frequency

Simulator: Harmonic Balance

Configuration: Default

Complex Modifier: dB

Buttons: OK, Annulla, ?, Meas Help

p1: FREQ = 1000 MHz