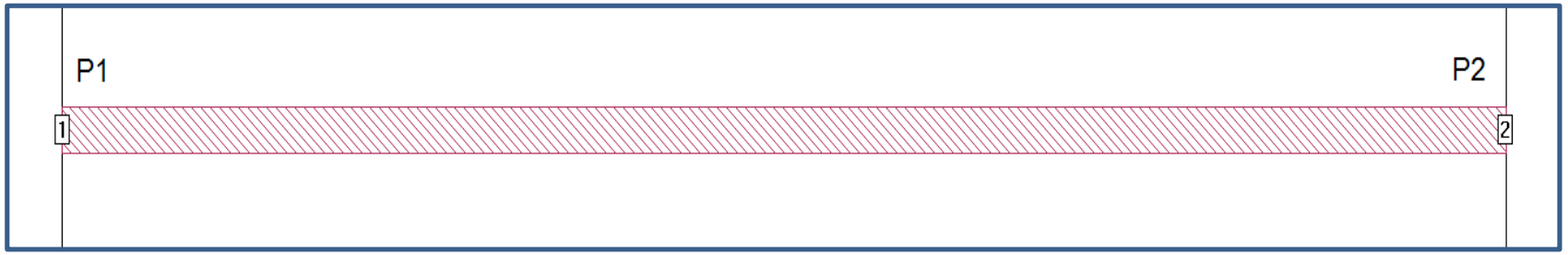
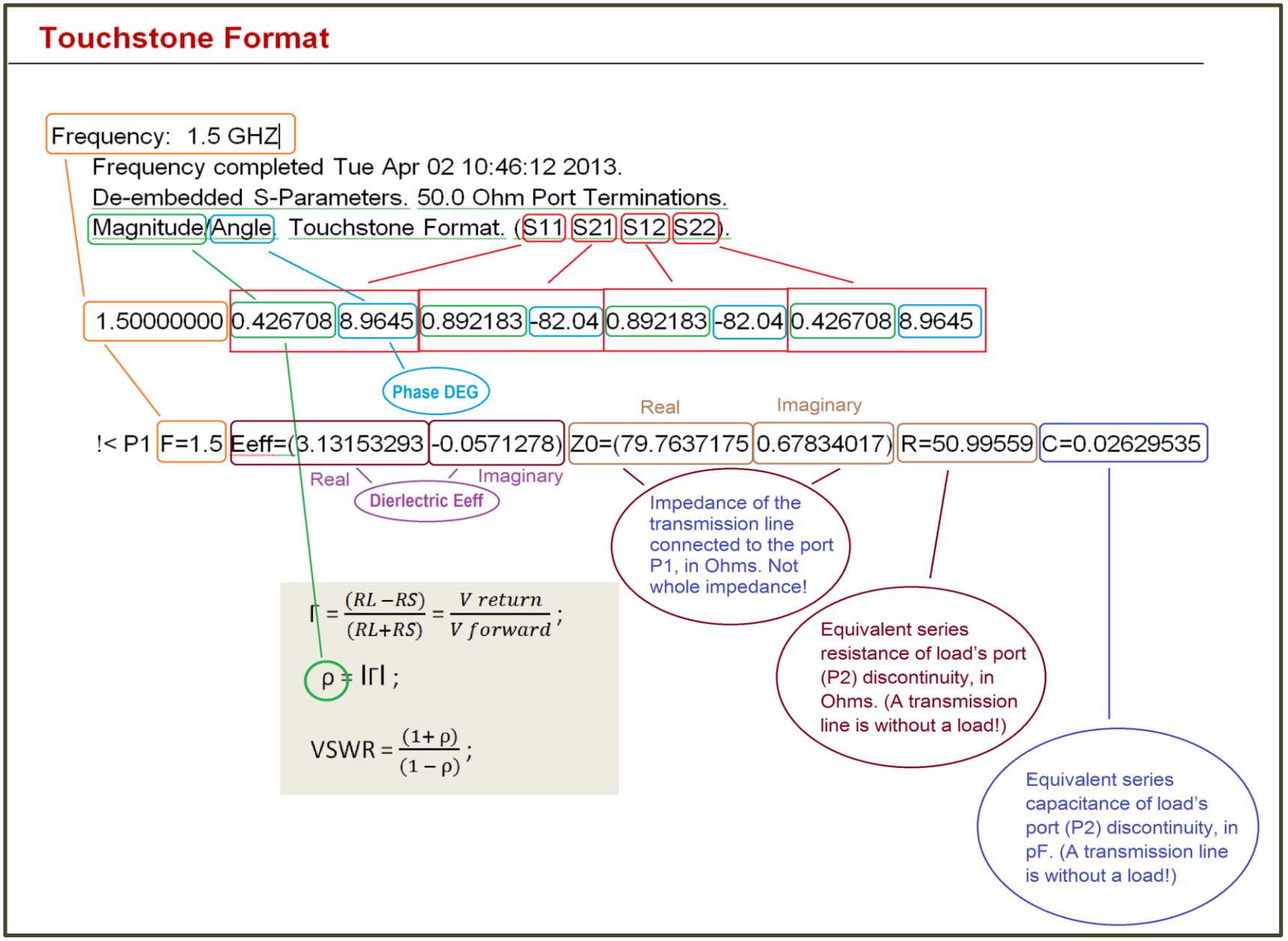
An example: a microstrip transmission line. Two ports: P1 and P2. S11=S22 and S12=S21.

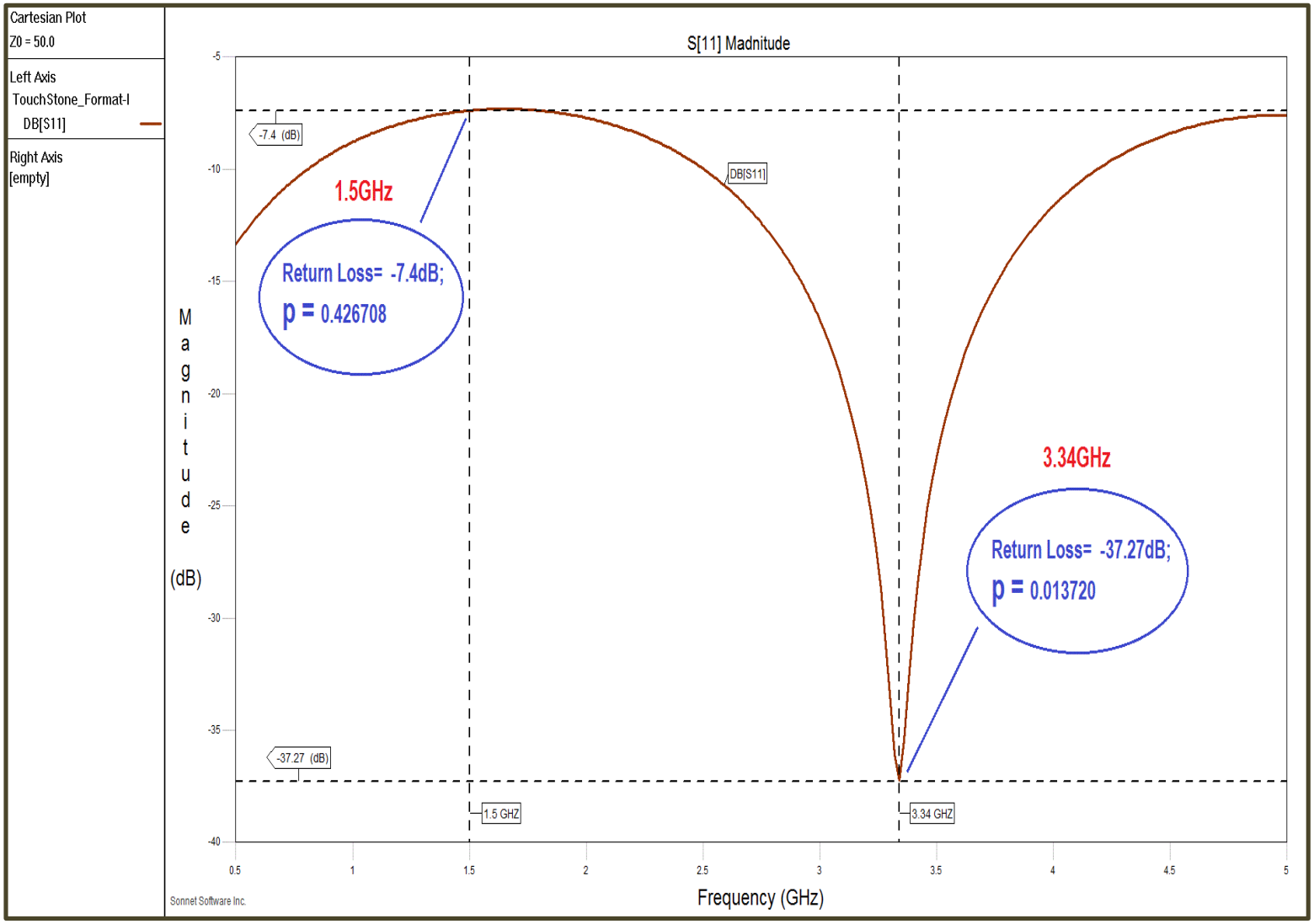


Frequency: 1.5 GHZ
Frequency completed Tue Apr 02 10:46:12 2013.
De-embedded S-Parameters. 50.0 Ohm Port Terminations.
Magnitude/Angle. Touchstone Format. (S11 S21 S12 S22).
1.50000000 0.426708 8.9645 0.892183 -82.04 0.892183 -82.04 0.426708 8.9645
!< P1 F=1.5 Eeff=(3.13153293 -0.0571278) Z0=(79.7637175 0.67834017) R=50.99559 C=0.02629535
!< P2 F=1.5 Eeff=(3.13153293 -0.0571278) Z0=(79.7637175 0.67834017) R=50.99559 C=0.02629535

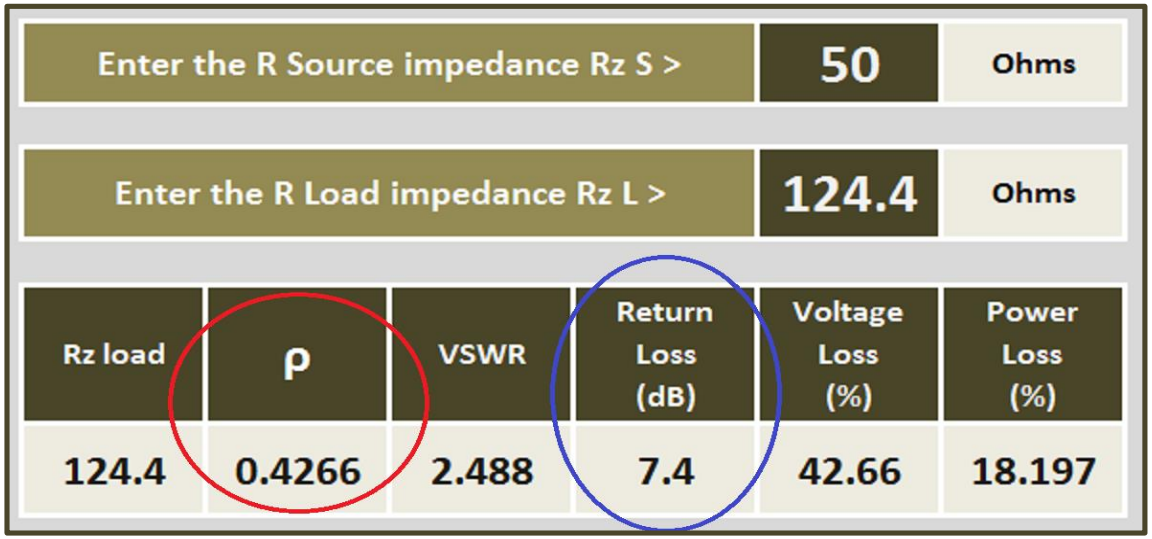
Frequency: 3.34 GHZ
Frequency completed Tue Apr 02 10:46:26 2013.
De-embedded S-Parameters. 50.0 Ohm Port Terminations.
Magnitude/Angle. Touchstone Format. (S11 S21 S12 S22).
3.34000000 0.013720 5.2011 0.968176 179.90 0.968176 179.90 0.013720 5.2011
!< P1 F=3.34 Eeff=(3.12603085 -0.0581439) Z0=(79.702263 0.64097293) R=31.9423719 C=0.02642551
!< P2 F=3.34 Eeff=(3.12603085 -0.0581439) Z0=(79.702263 0.64097293) R=31.9423719 C=0.02642551



Picture 1. SONNET TouthStone Format



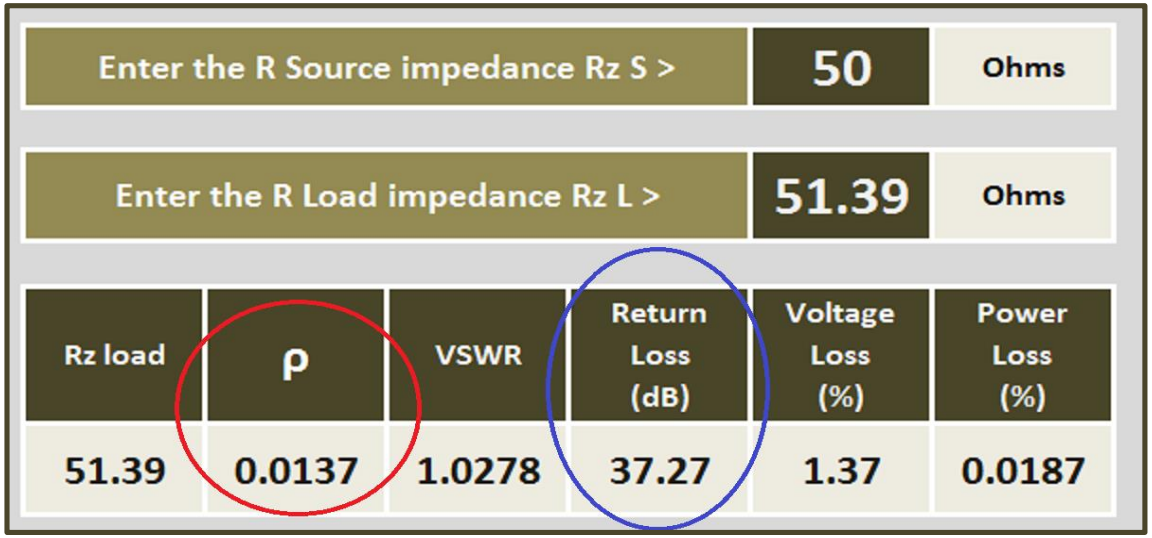
Picture 2. TouthStone Format: S11 Return Loss Magnitude (dB)



Enter the R Source impedance Rz S >	50	Ohms
Enter the R Load impedance Rz L >	124.4	Ohms

Rz load	ρ	VSWR	Return Loss (dB)	Voltage Loss (%)	Power Loss (%)
124.4	0.4266	2.488	7.4	42.66	18.197

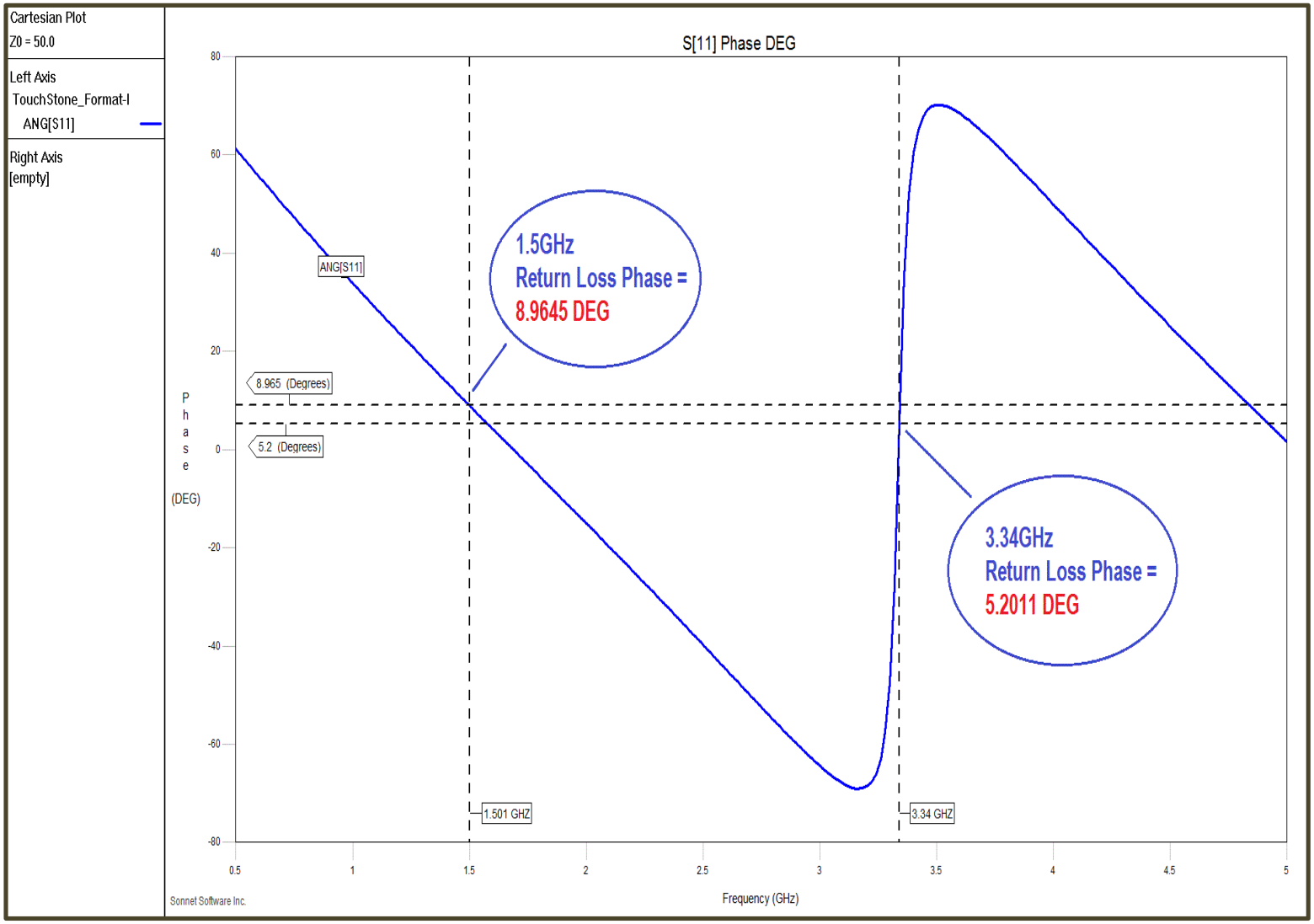
Picture 3. TouthStone Format: Return Loss parameters. 1.5 GHz



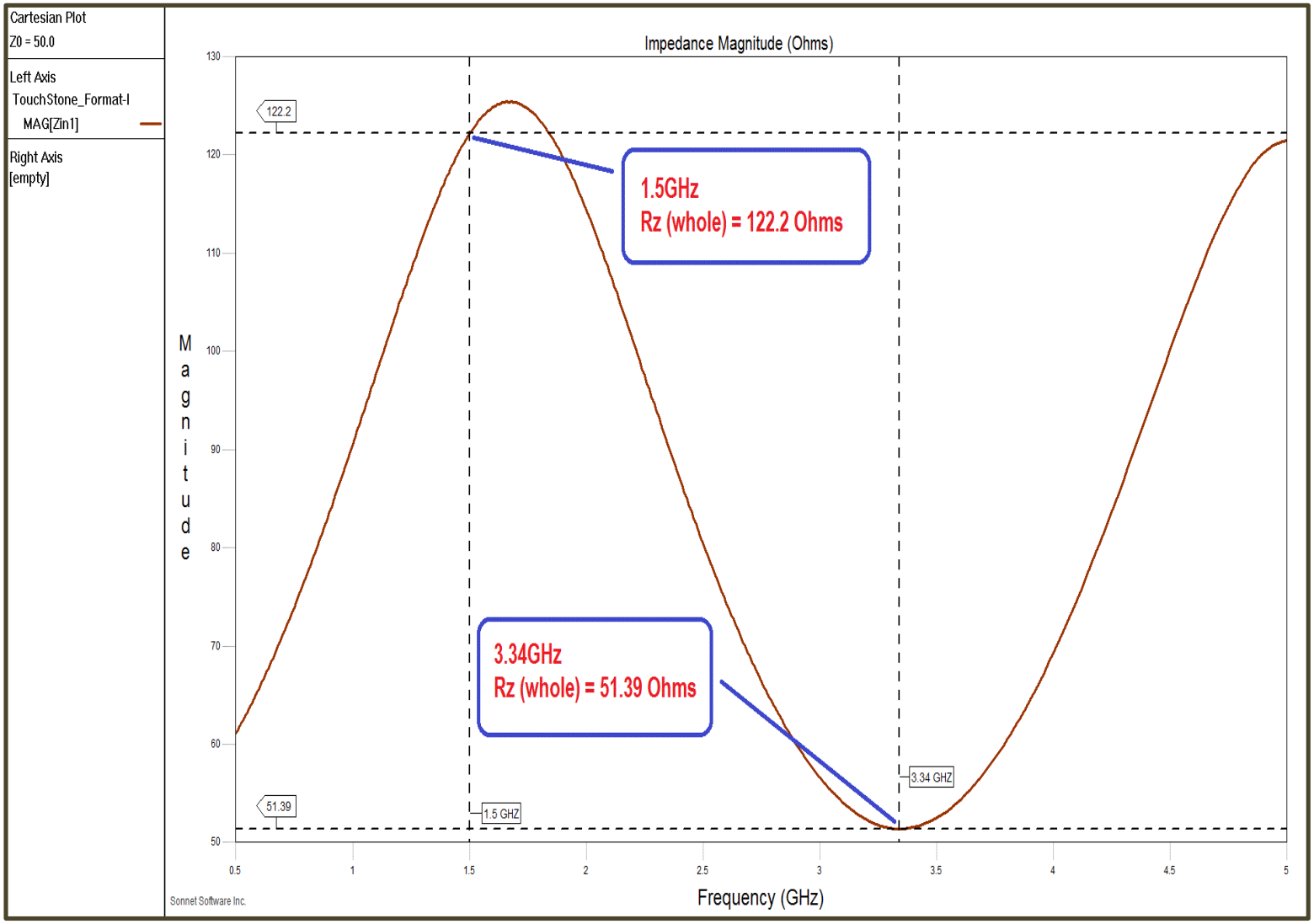
Enter the R Source impedance Rz S >	50	Ohms
Enter the R Load impedance Rz L >	51.39	Ohms

Rz load	ρ	VSWR	Return Loss (dB)	Voltage Loss (%)	Power Loss (%)
51.39	0.0137	1.0278	37.27	1.37	0.0187

Picture 4. TouthStone Format: Return Loss parameters. 3.34 GHz



Picture 5. TouthStone Format: S11 Return Loss Phase (DEG)



Picture 6. TouthStone Format: Impedance Magnitude – whole (Ohms).

<u>Interesting to compare with pictures 3 and 4: “Enter the R Load impedance Rz L” parameters.</u>