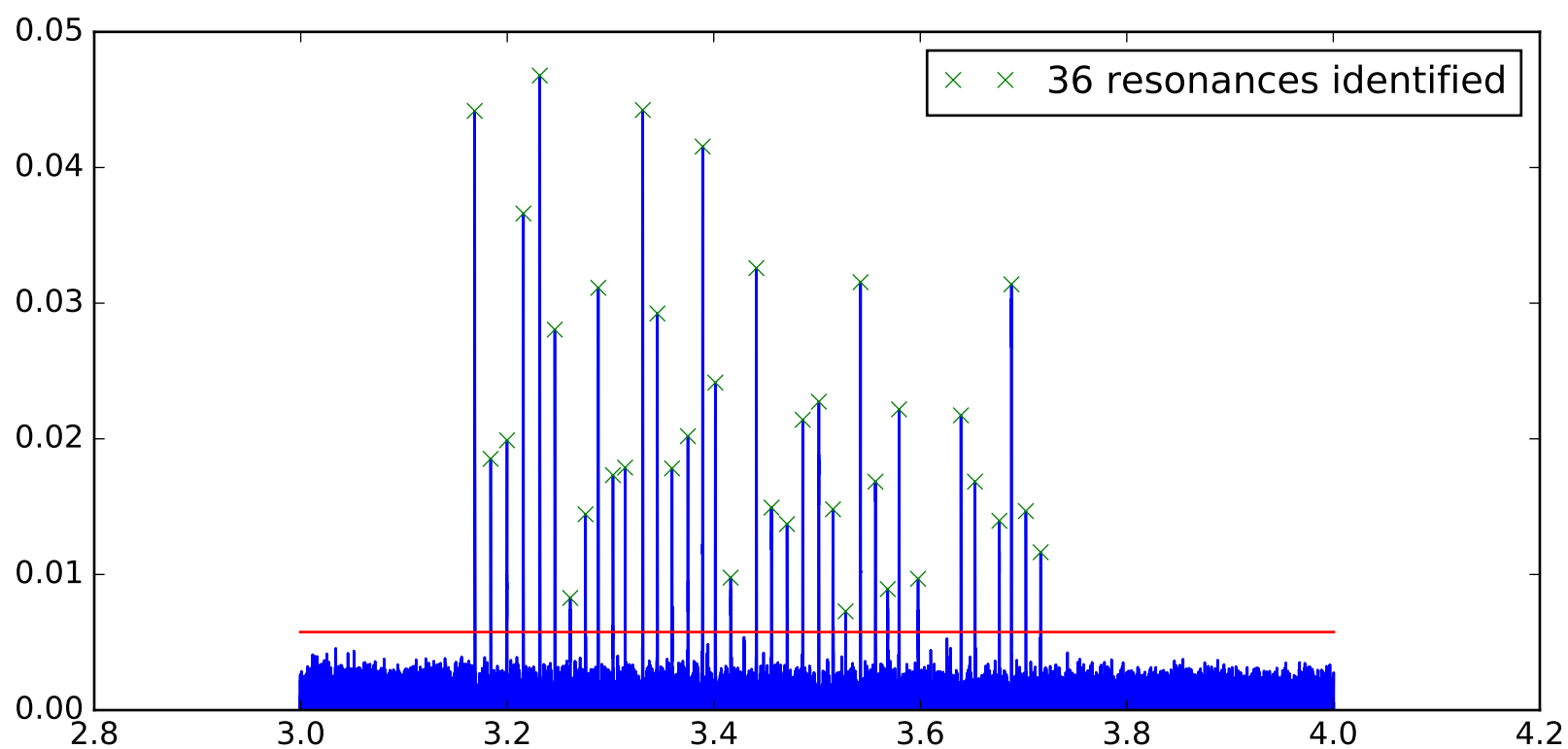
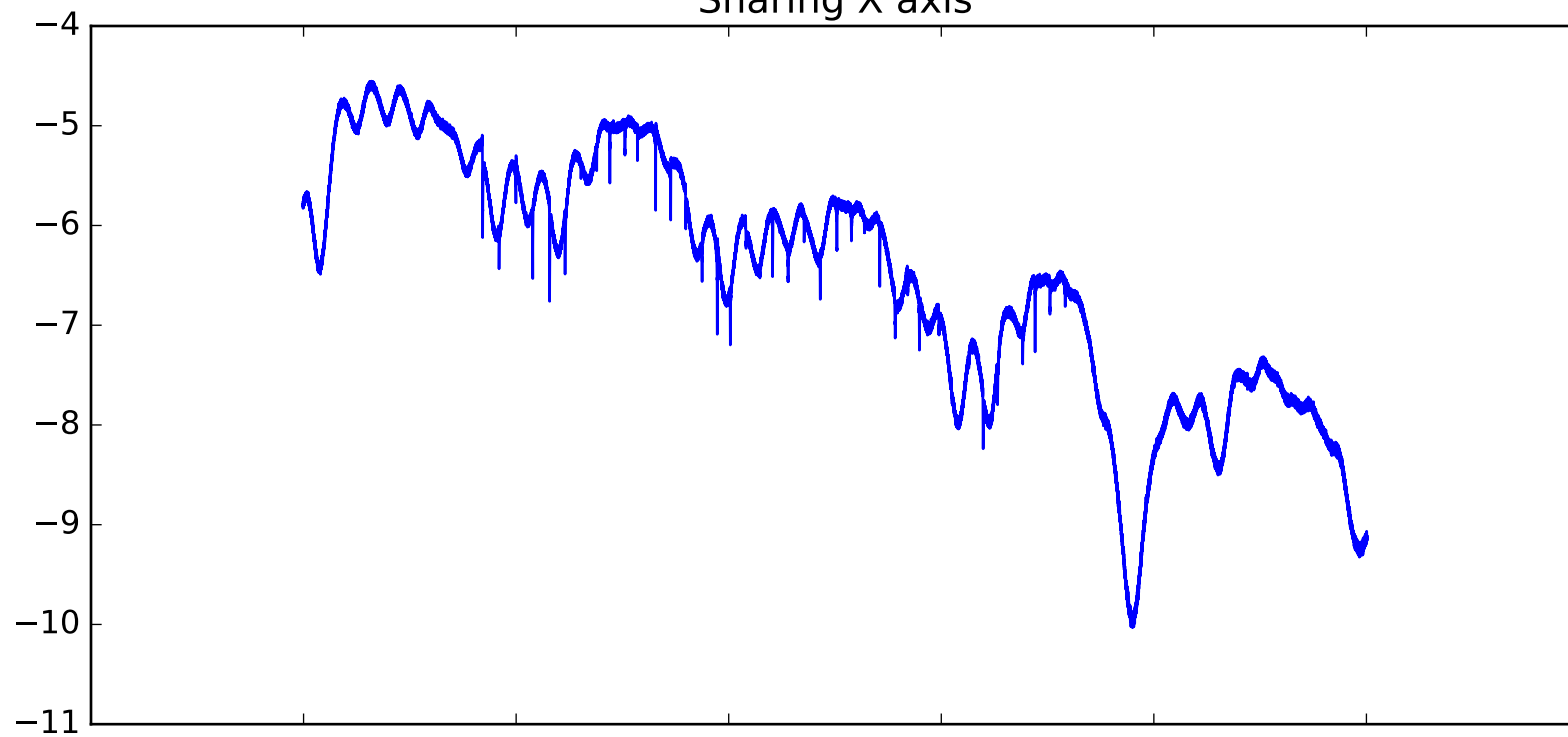
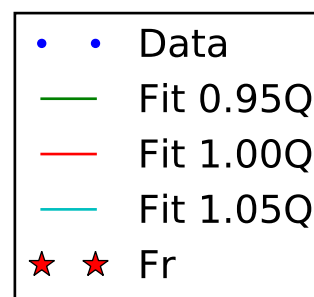
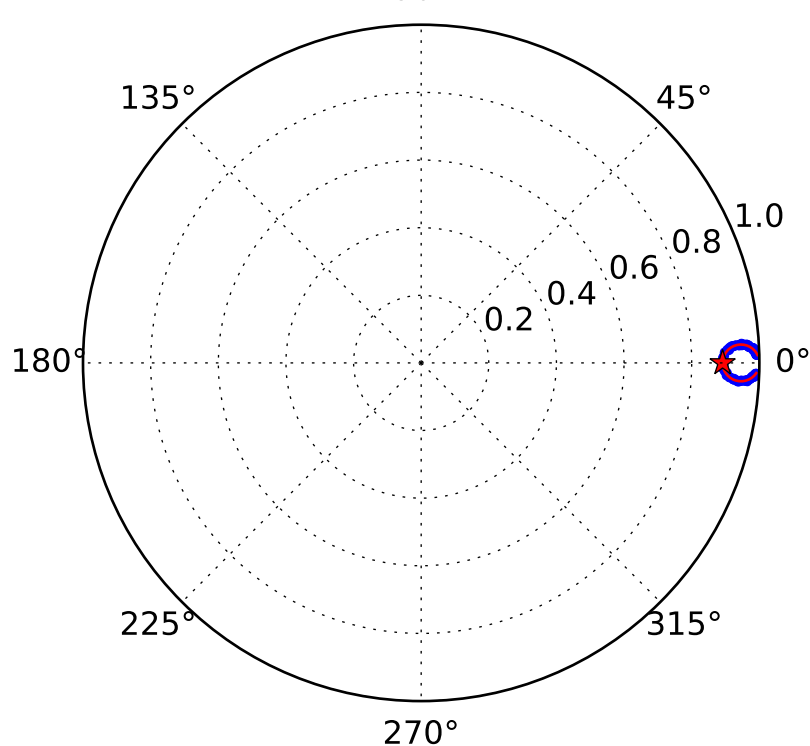
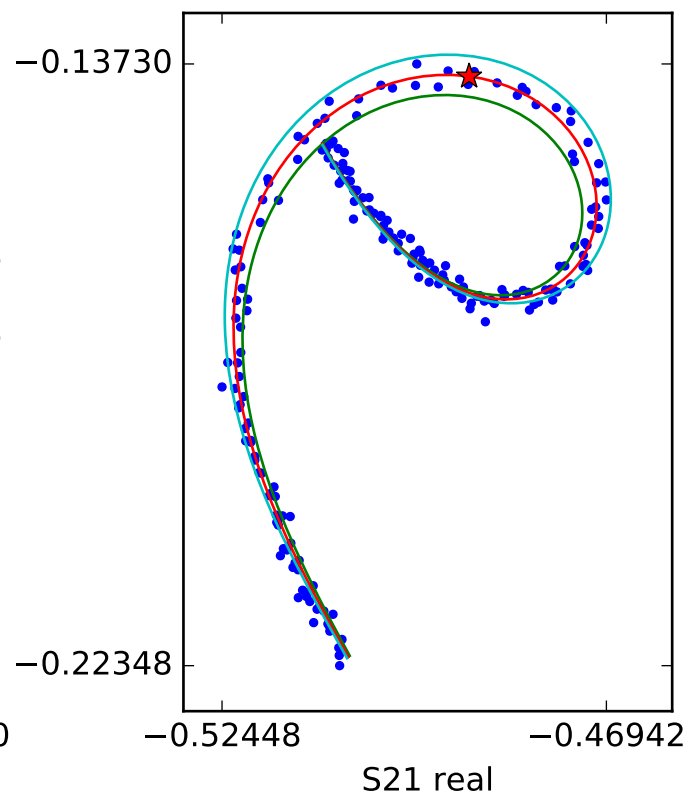
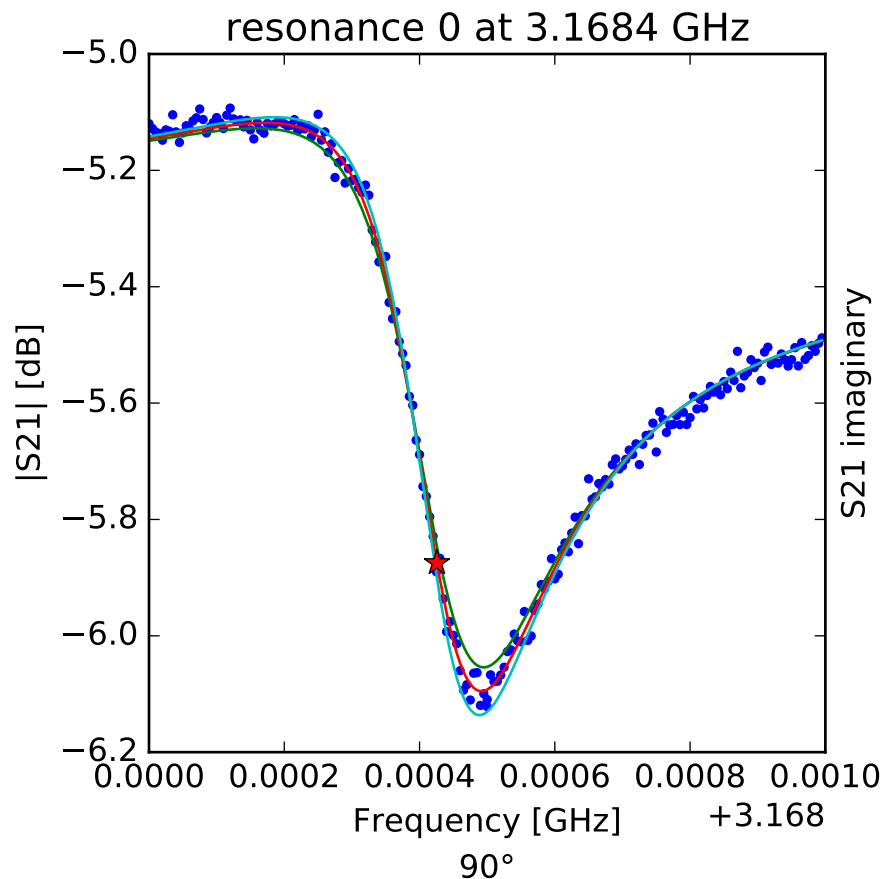


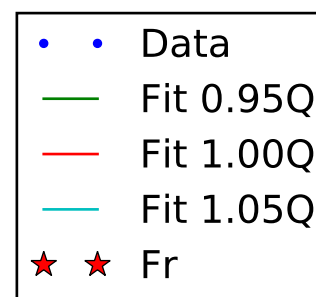
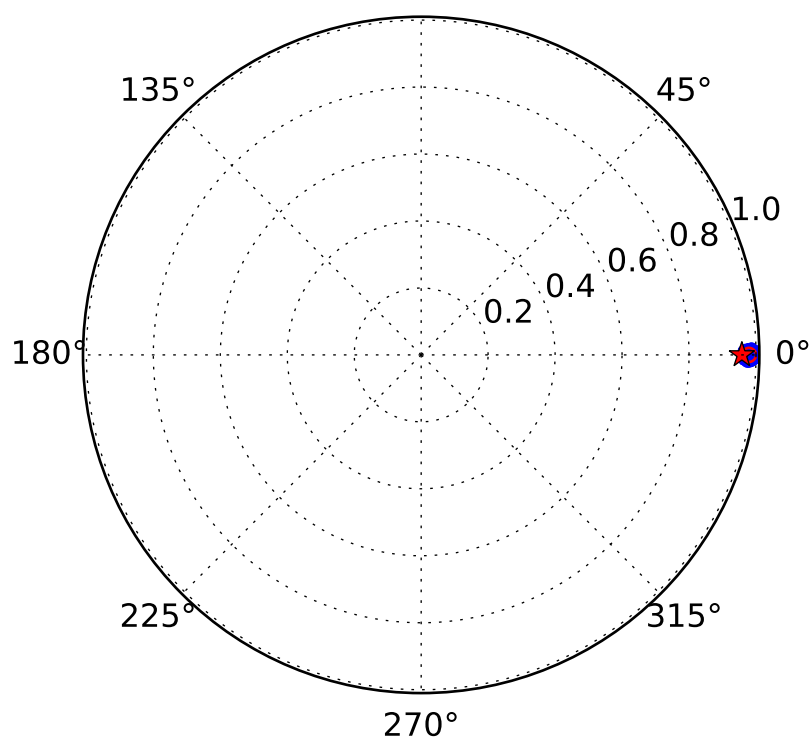
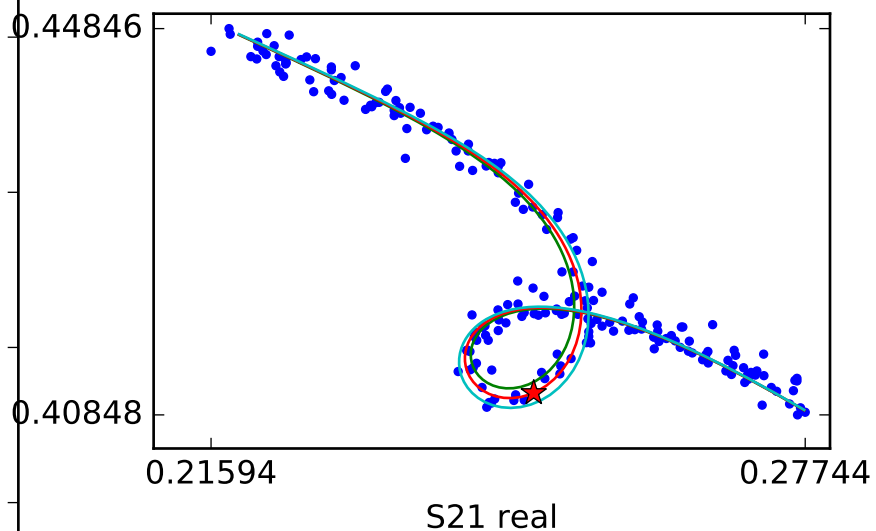
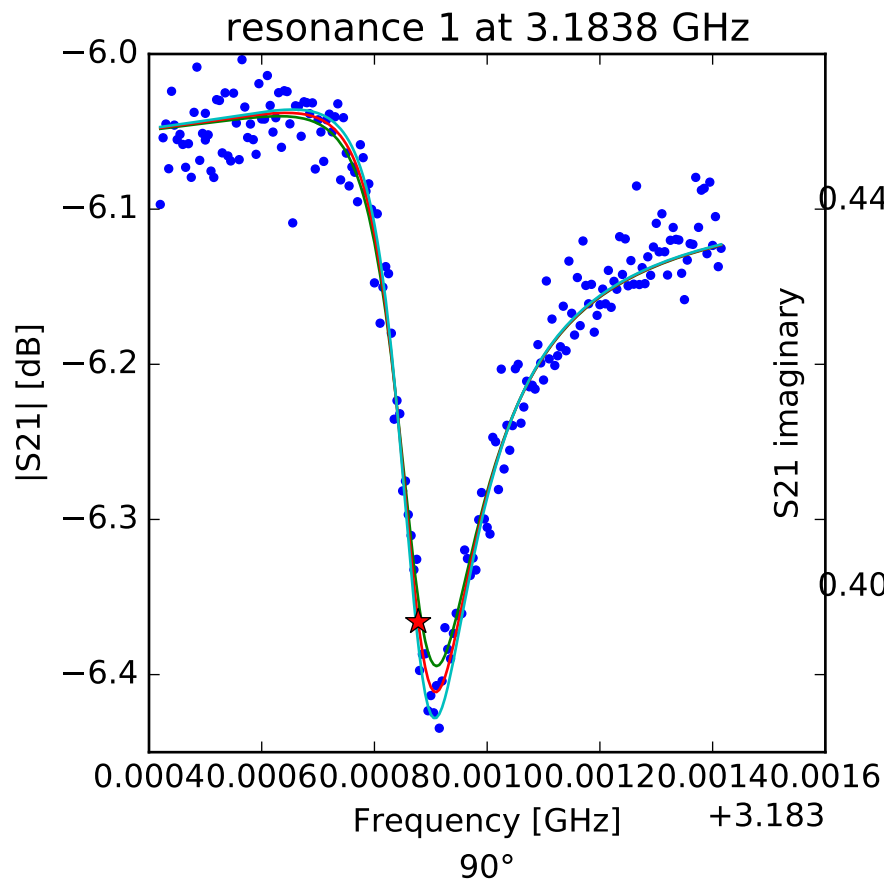
Sharing X axis





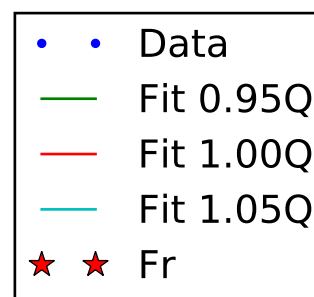
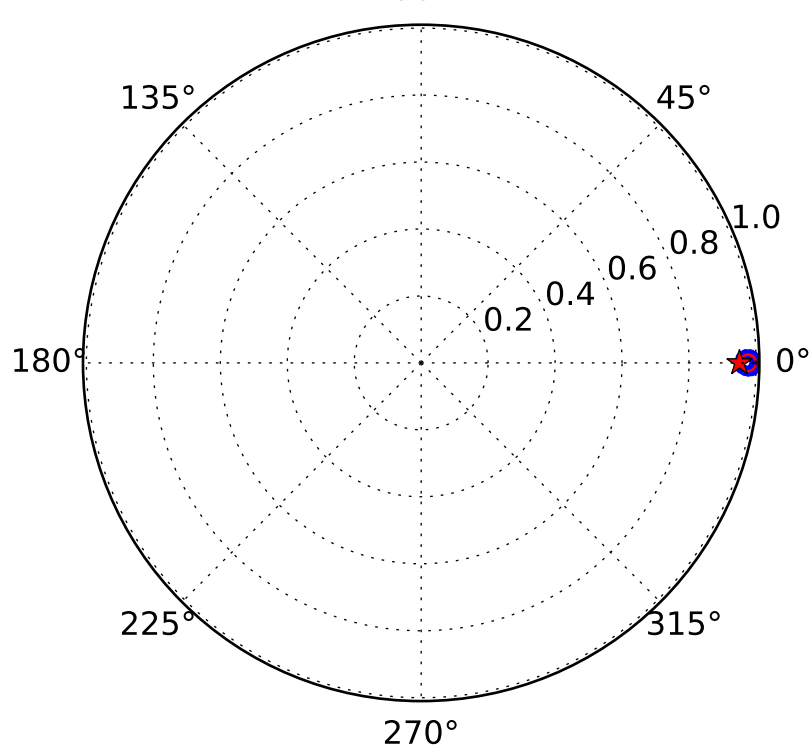
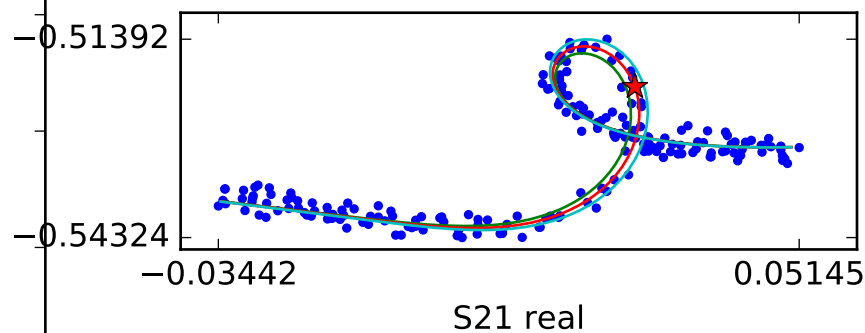
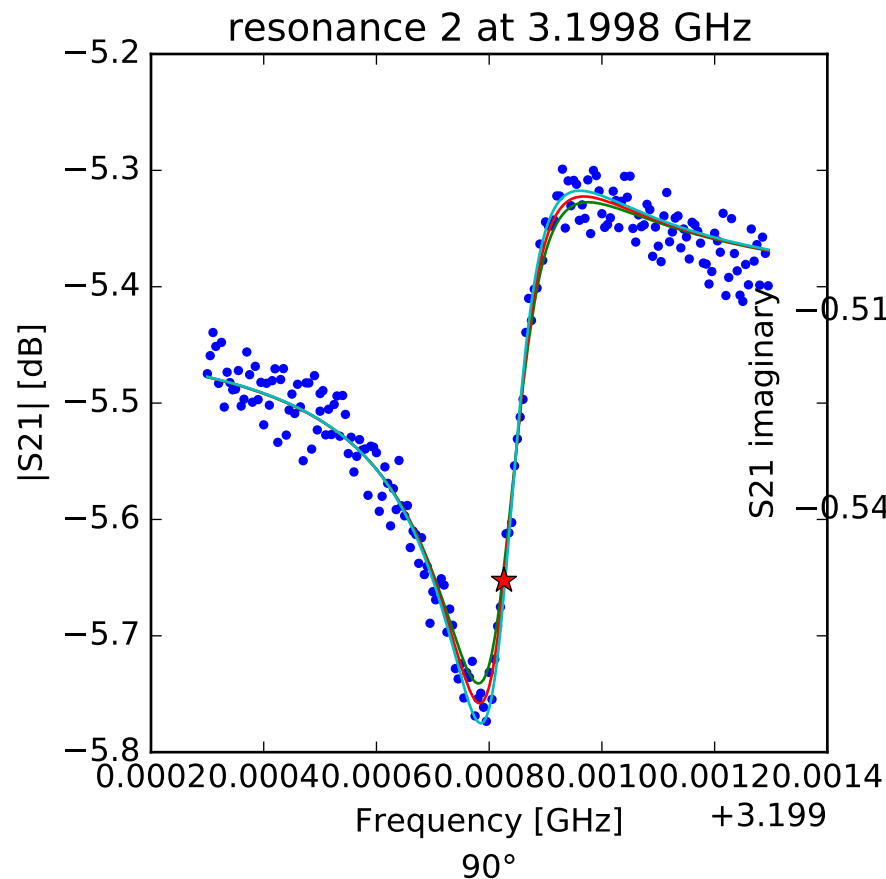
$$t_{21}(f) = ae^{-2\pi jf\tau} \left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r \left(\frac{f-f_r}{f_r} \right)} \right]$$

$f_r = 3.16842567119$
 $Q_r = 12263.4170809$
 $Q_c = 112831.278928$
 $a = (-0.24181559352 - 0.486273495128j)$
 $\phi = 0.899470863546$
 $\tau = 26.5488241252$



$$t_{21}(f) = ae^{-2\pi jf\tau} \left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r \left(\frac{f-f_r}{f_r} \right)} \right]$$

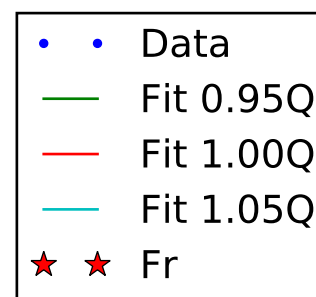
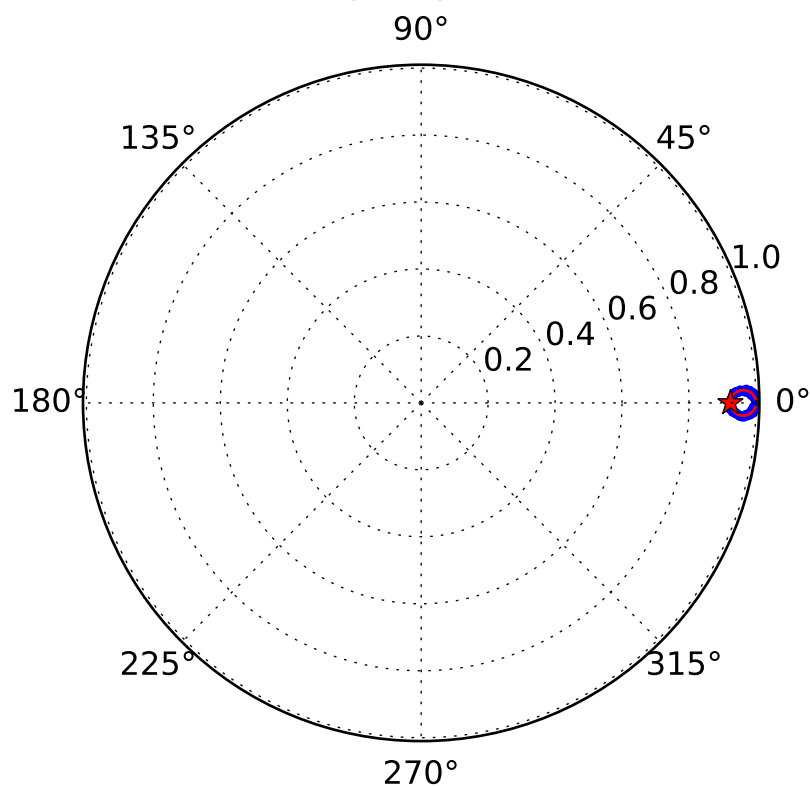
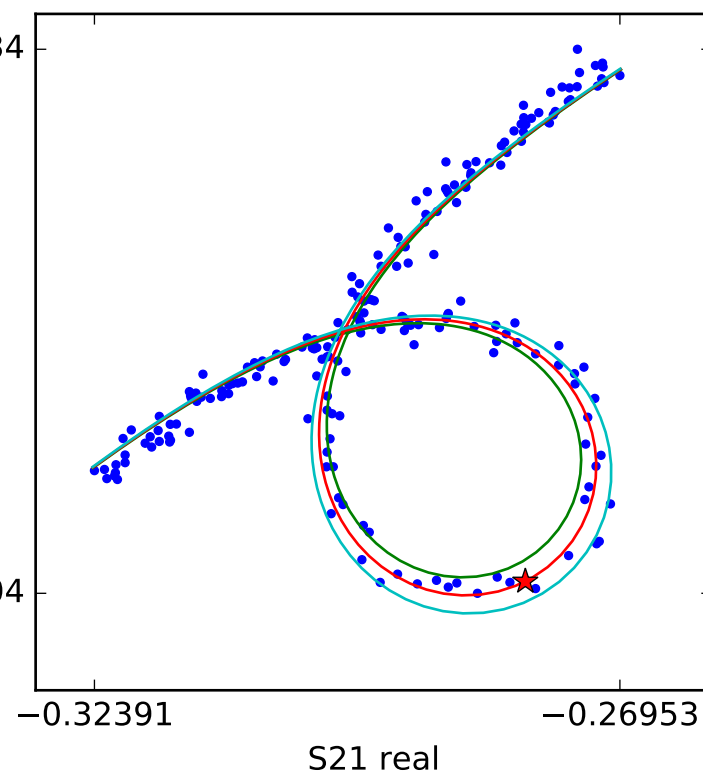
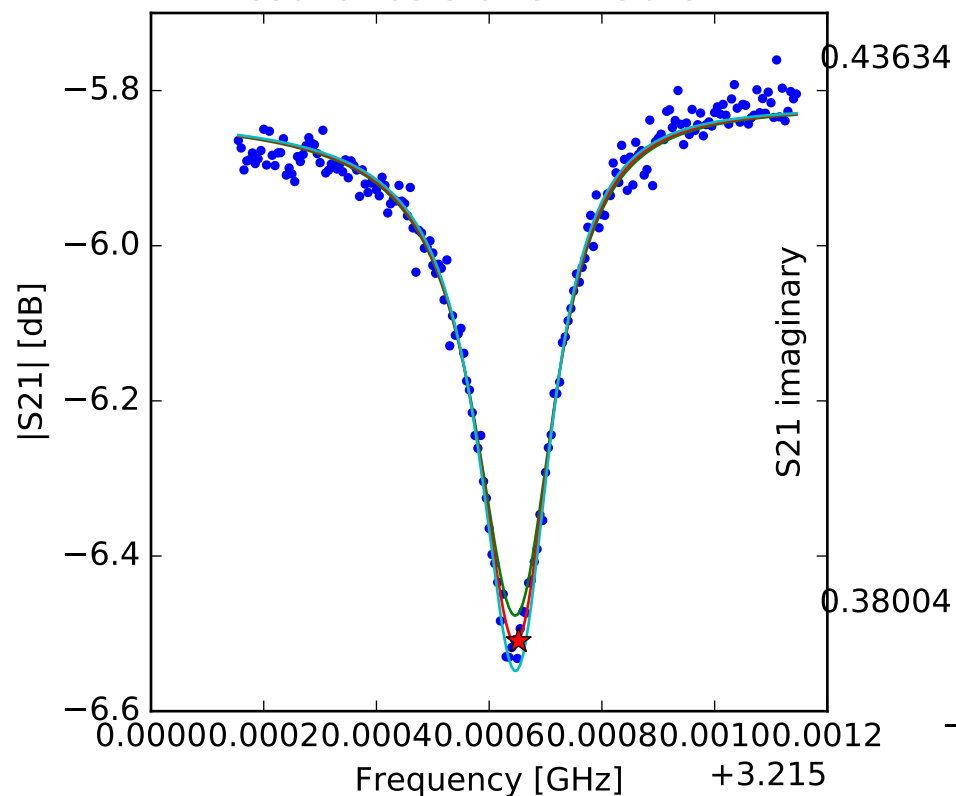
$f_r = 3.1838776328$
 $Q_r = 18676.1221809$
 $Q_c = 441639.5287$
 $a = (0.326142185651 - 0.374477727571j)$
 $\phi = 0.684762666939$
 $\tau = 24.4030946496$



$$t_{21}(f) = ae^{-2\pi jf\tau} \left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r \left(\frac{f-f_r}{f_r} \right)} \right]$$

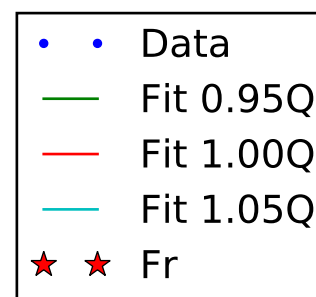
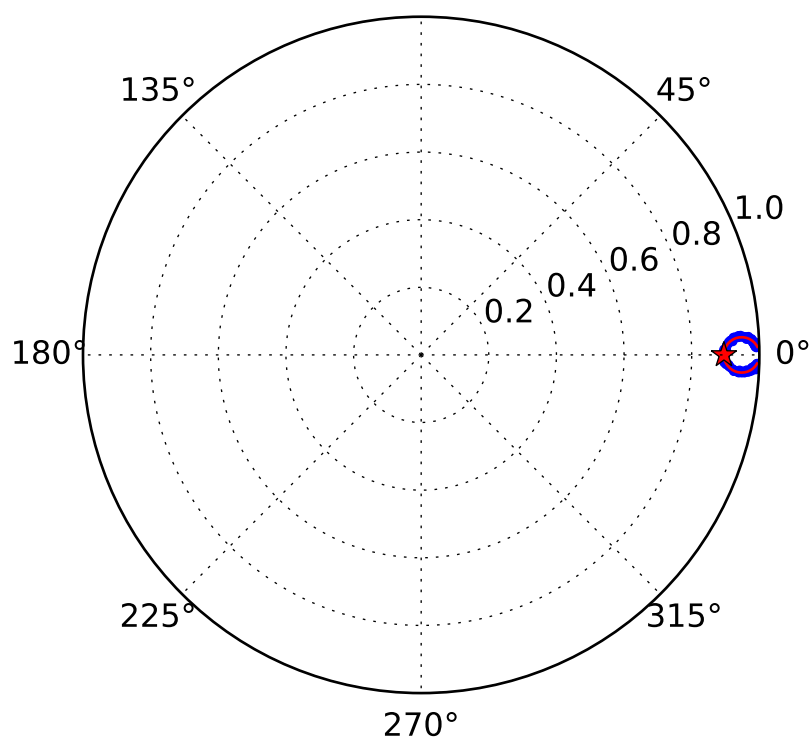
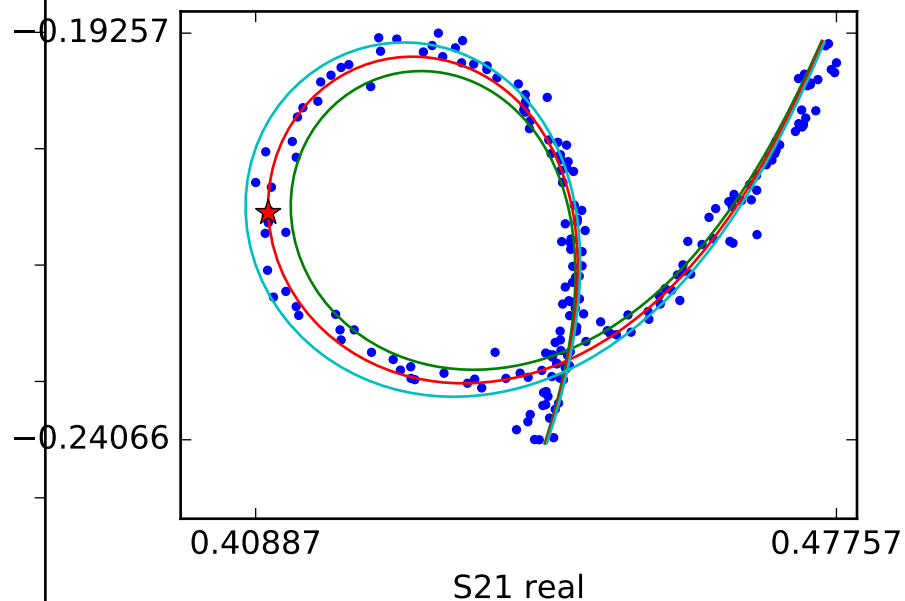
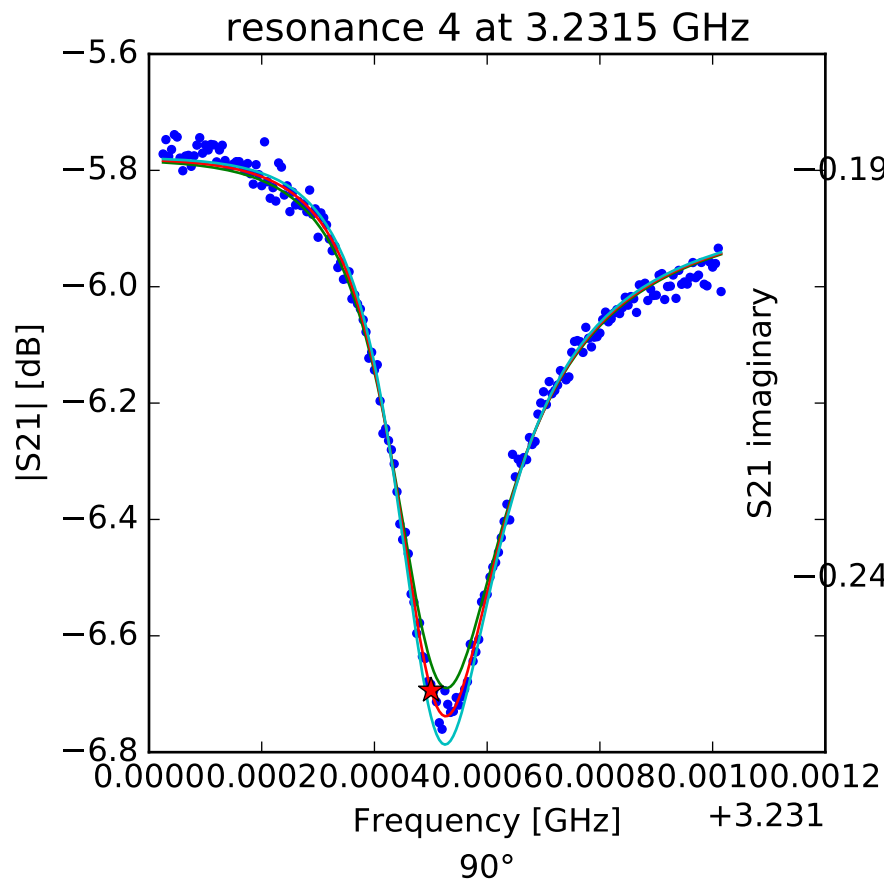
$f_r = 3.1998262808$
 $Q_r = 20509.5245377$
 $Q_c = 414475.691432$
 $a = (0.484552887152 - 0.22862605844j)$
 $\phi = -0.987397133689$
 $\tau = 26.6196632464$

resonance 3 at 3.2156 GHz



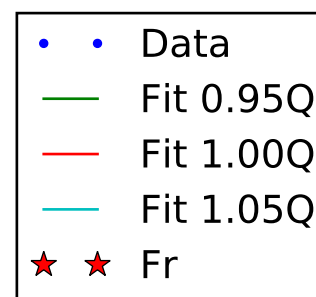
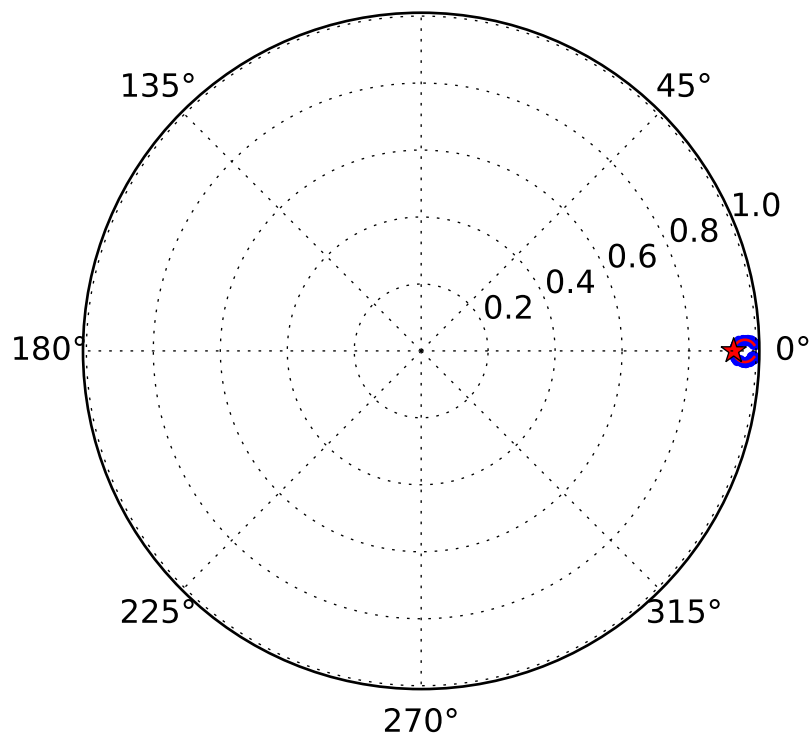
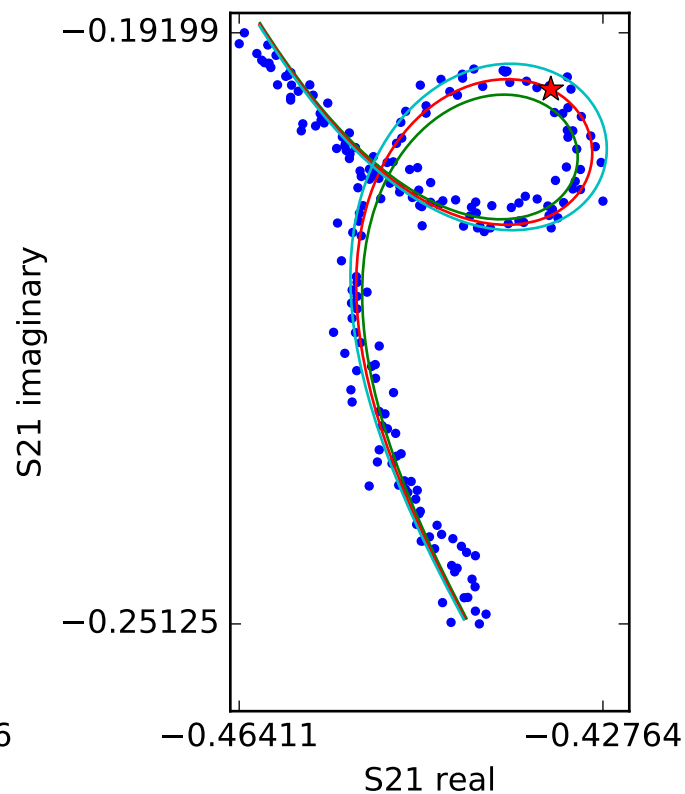
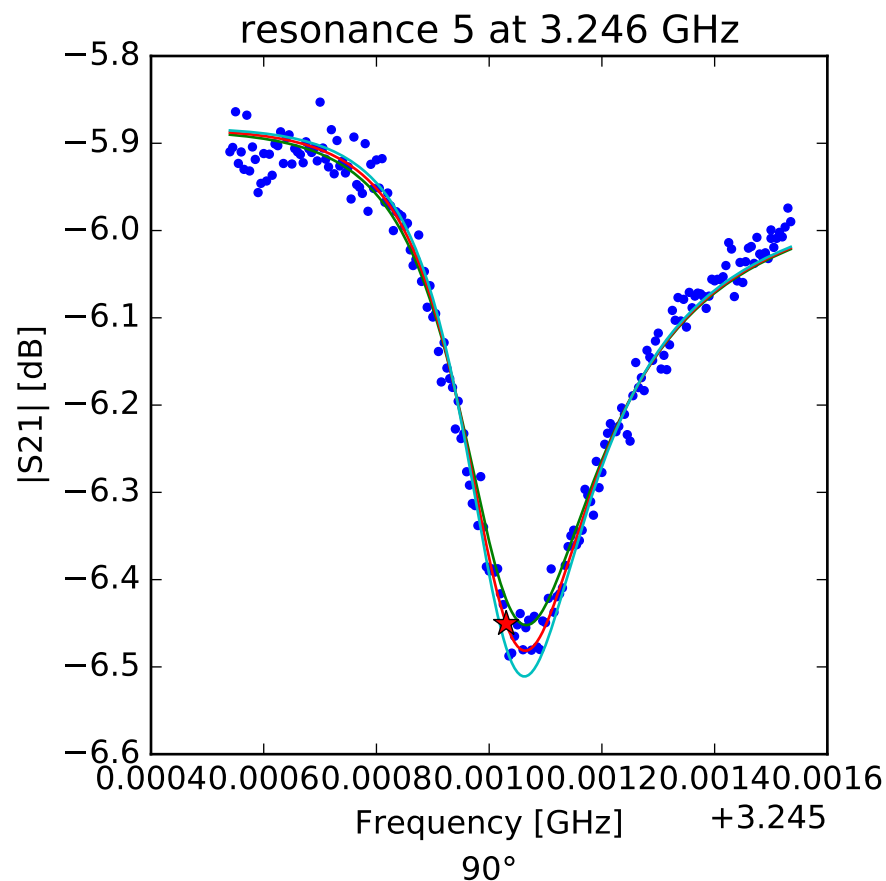
$$t_{21}(f) = ae^{-2\pi jf\tau} \left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r \left(\frac{f-f_r}{f_r} \right)} \right]$$

$f_r = 3.2156521706$
 $Q_r = 18895.8569426$
 $Q_c = 247506.928923$
 $a = (0.226288506306 - 0.458533819943j)$
 $\phi = -0.127455056636$
 $\tau = 25.6476758404$



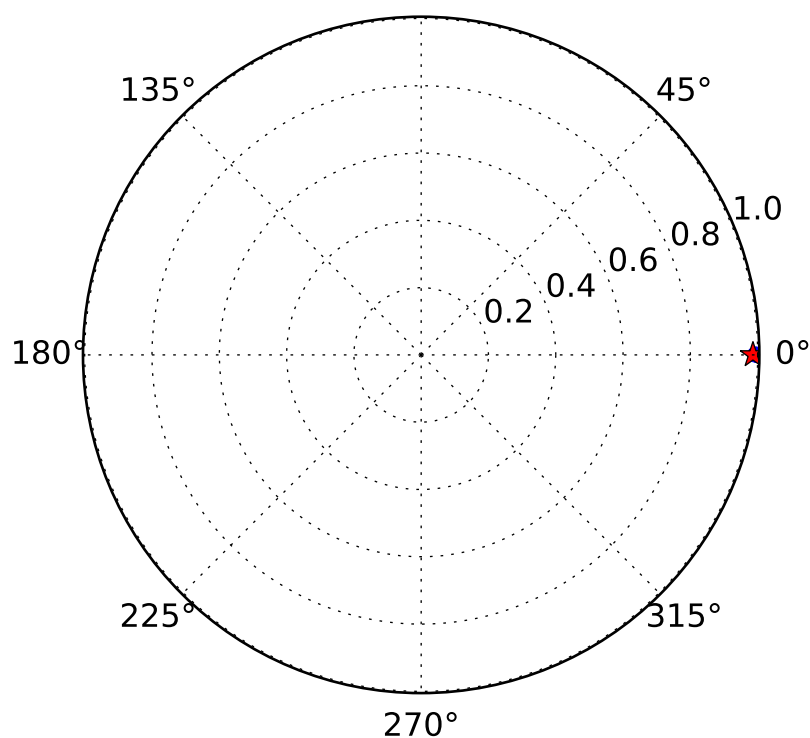
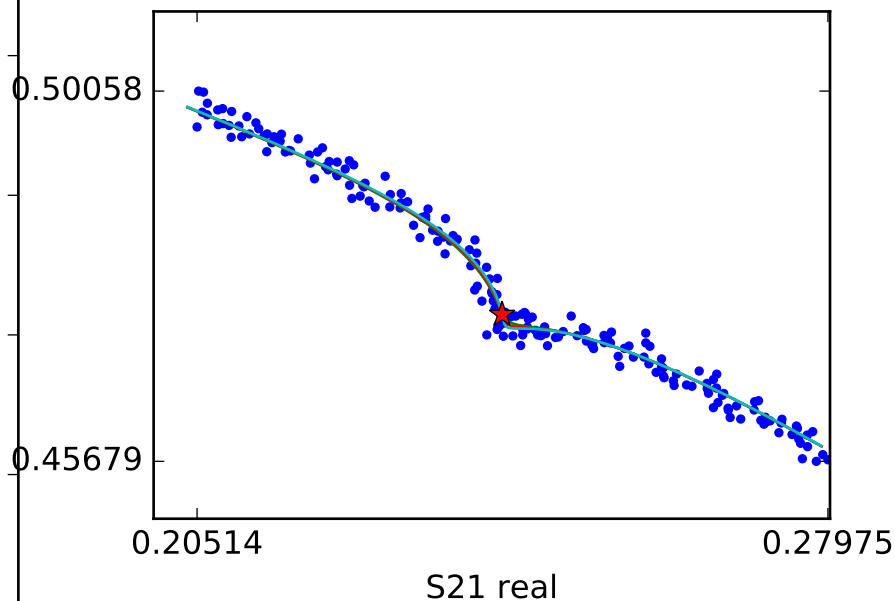
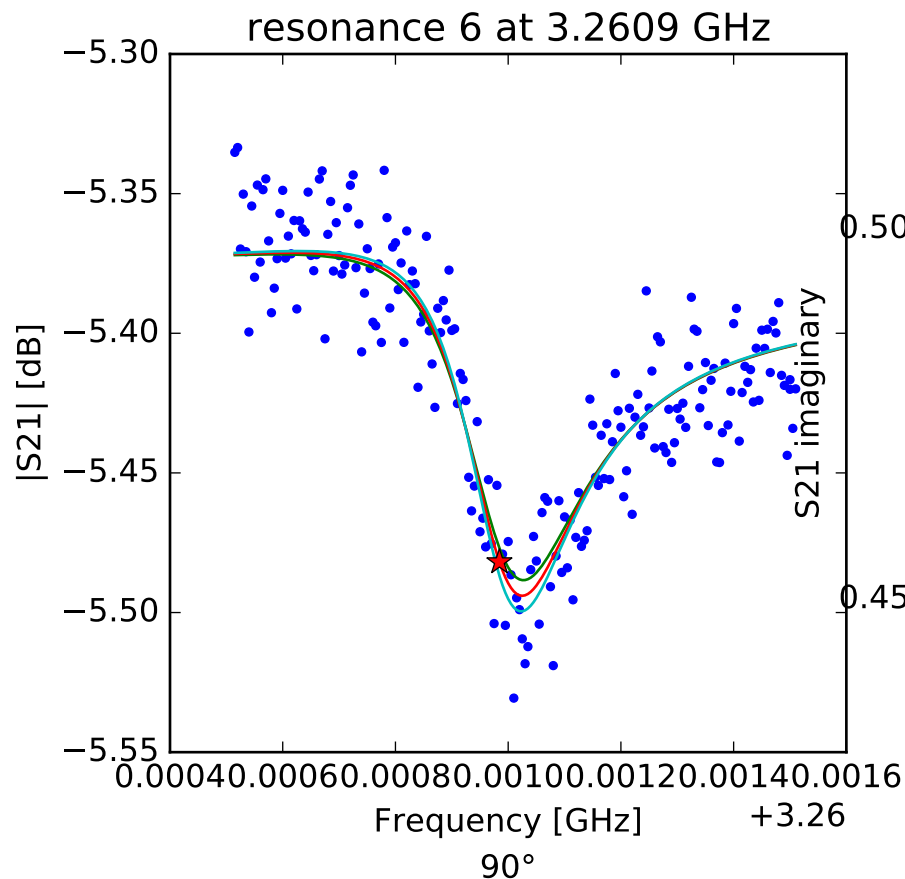
$$t_{21}(f) = ae^{-2\pi jf\tau} \left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r \left(\frac{f-f_r}{f_r} \right)} \right]$$

$f_r = 3.2315004602$
 $Q_r = 12976.5564678$
 $Q_c = 123843.617378$
 $a = (0.228017198433 + 0.458238755802j)$
 $\phi = 0.391626151183$
 $\tau = 25.4513086795$



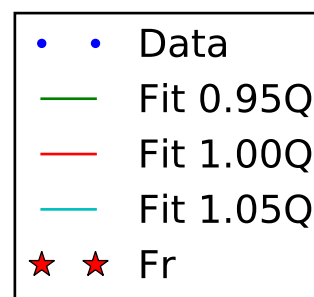
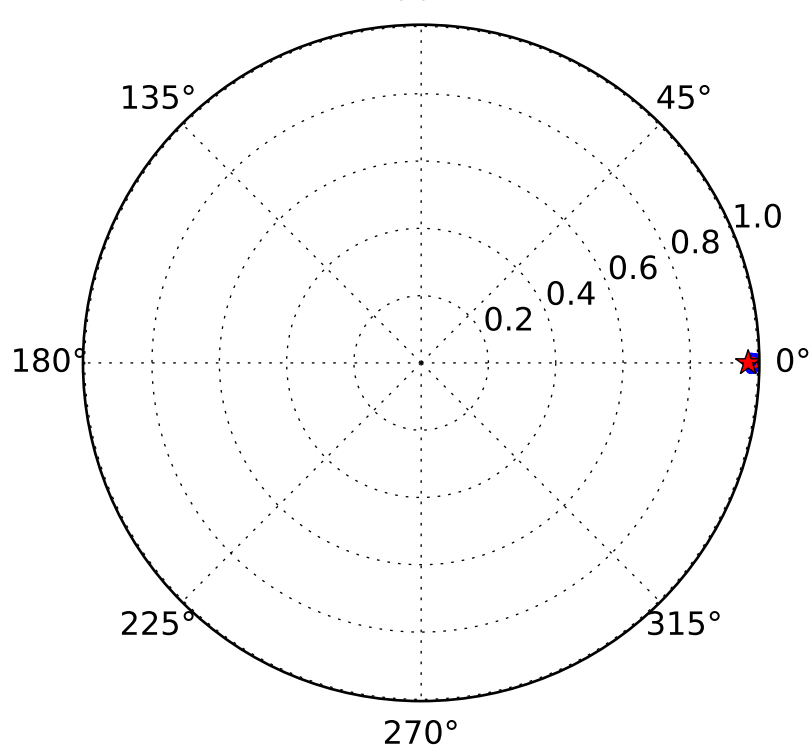
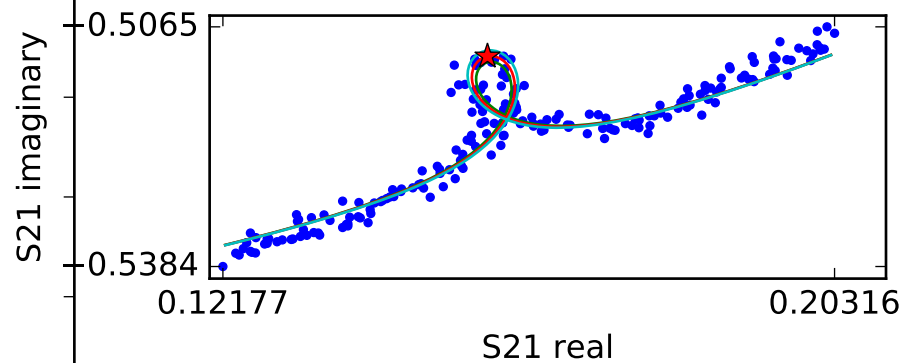
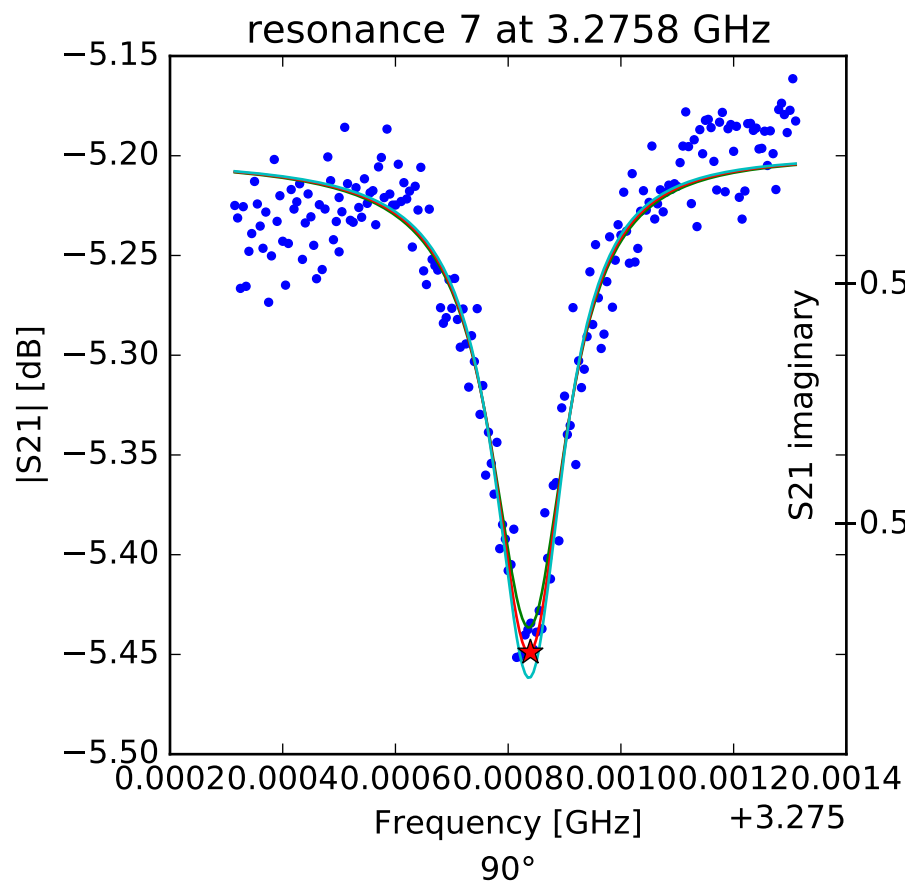
$$t_{21}(f) = ae^{-2\pi jf\tau} \left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r \left(\frac{f - f_r}{f_r} \right)} \right]$$

$f_r = 3.24603019164$
 $Q_r = 10855.2206917$
 $Q_c = 162930.45876$
 $a = (-0.491757680916 - 0.120449105592j)$
 $\phi = 0.431138433003$
 $\tau = 25.2509490914$



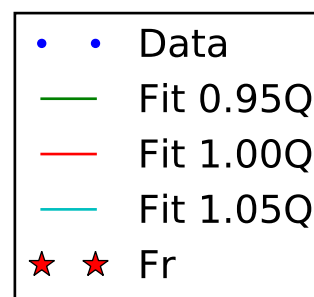
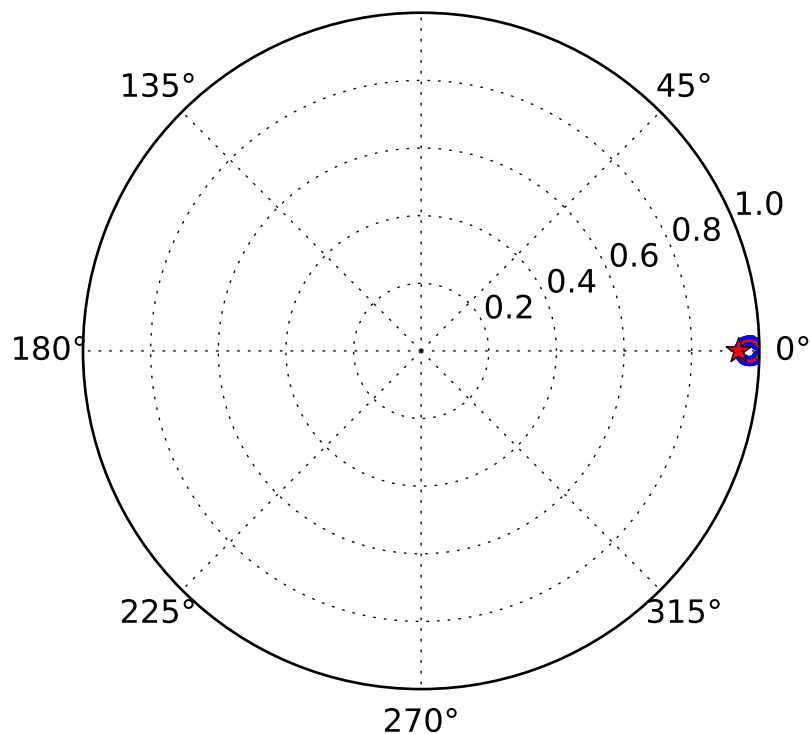
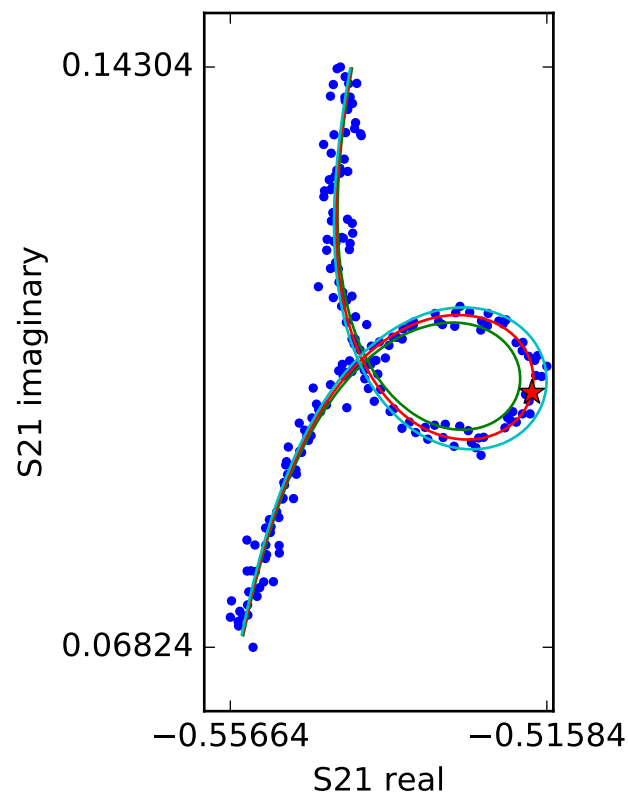
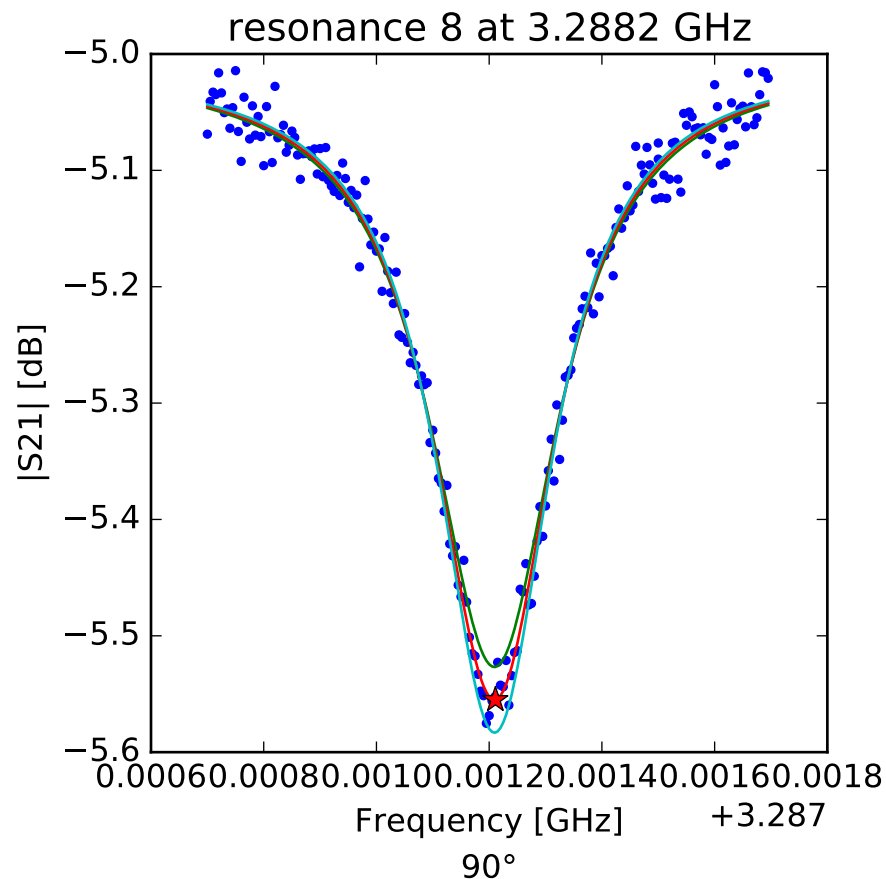
$$t_{21}(f) = ae^{-2\pi jf\tau} \left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r \left(\frac{f-f_r}{f_r} \right)} \right]$$

$f_r = 3.26098447977$
 $Q_r = 13256.8123545$
 $Q_c = 942646.732498$
 $a = (-0.533040119328 - 0.0735220329134j)$
 $\phi = 0.63036571109$
 $\tau = 26.171660697$



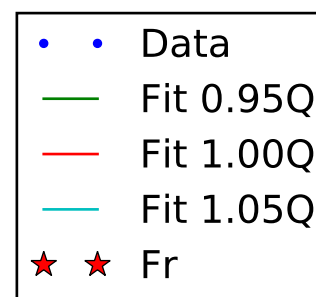
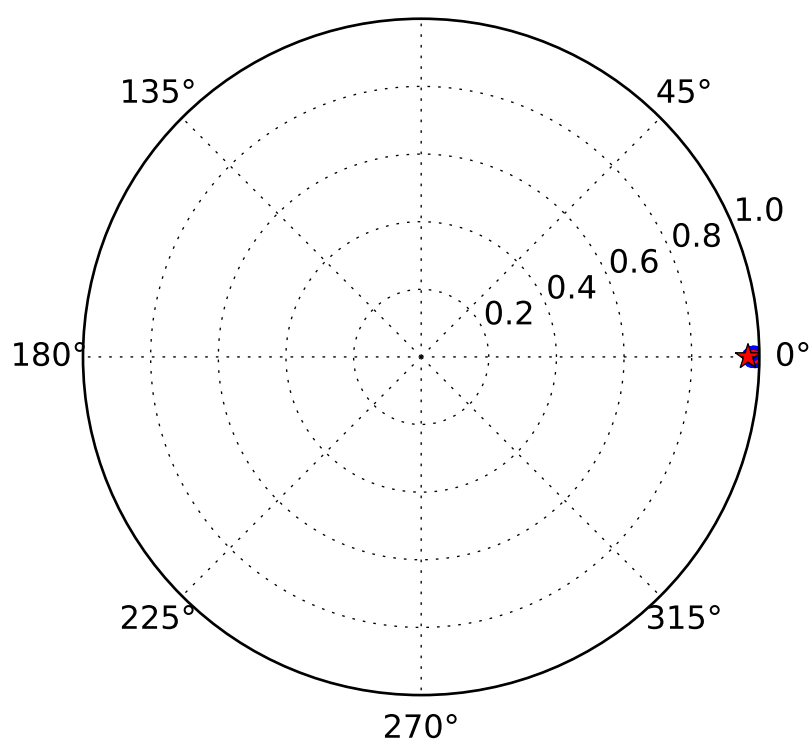
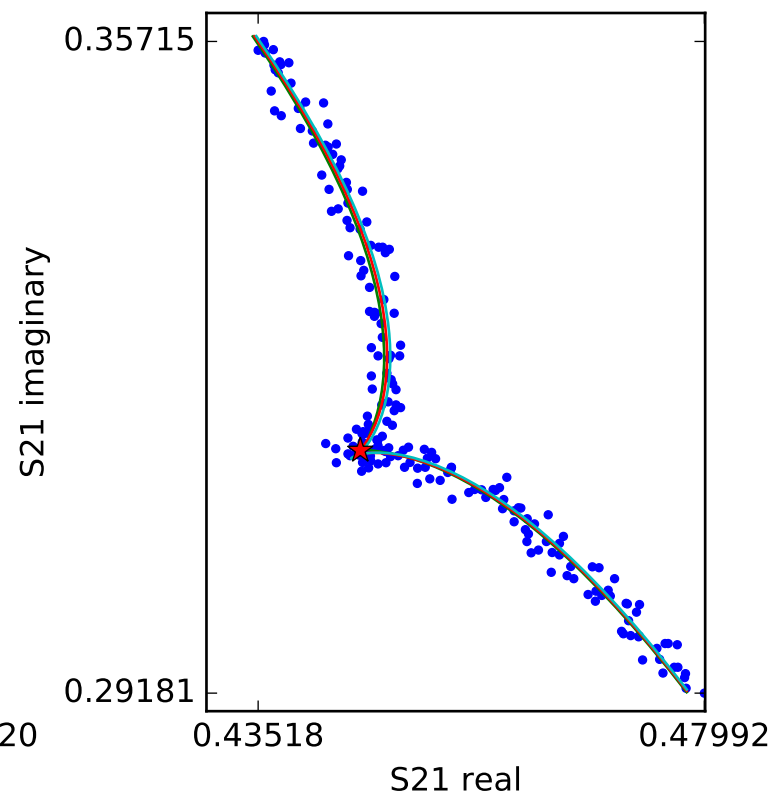
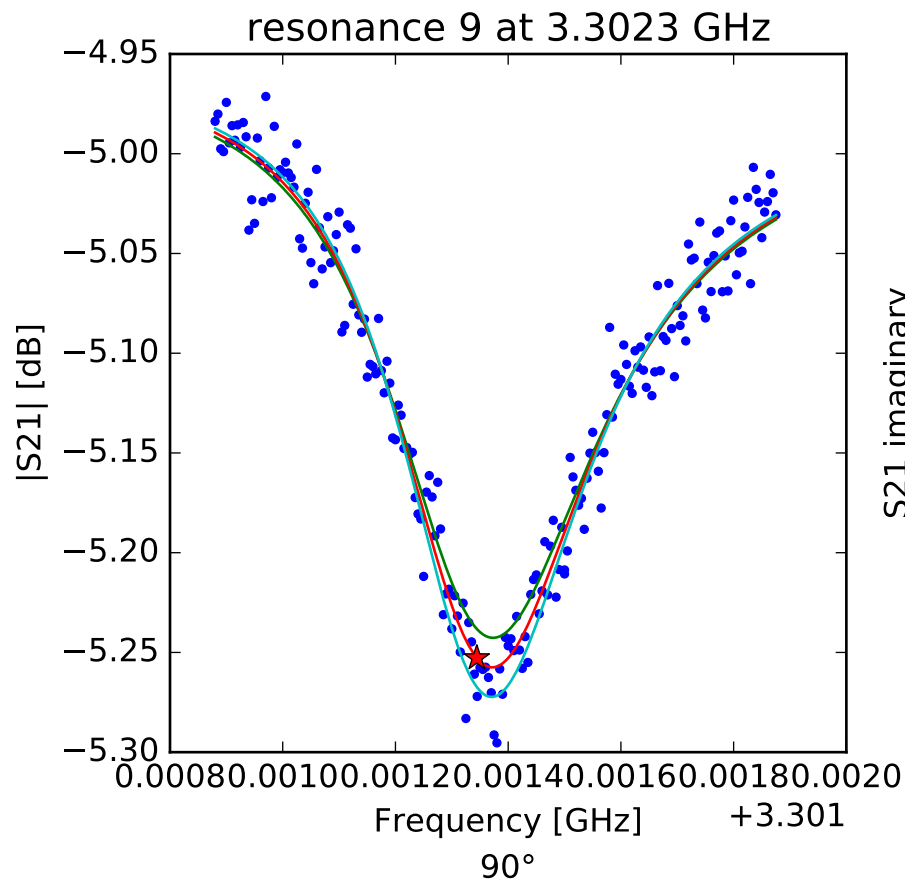
$$t_{21}(f) = ae^{-2\pi jf\tau} \left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r \left(\frac{f-f_r}{f_r} \right)} \right]$$

$f_r = 3.2758394823$
 $Q_r = 20703.1028741$
 $Q_c = 731857.259659$
 $a = (0.478796619089 + 0.269687258102j)$
 $\phi = -0.0661449301085$
 $\tau = 26.0343841769$



$$t_{21}(f) = ae^{-2\pi jf\tau} \left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r \left(\frac{f - f_r}{f_r} \right)} \right]$$

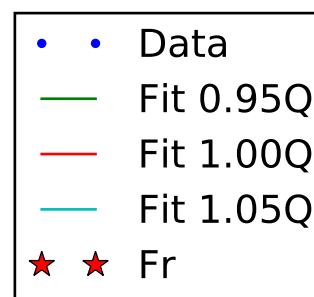
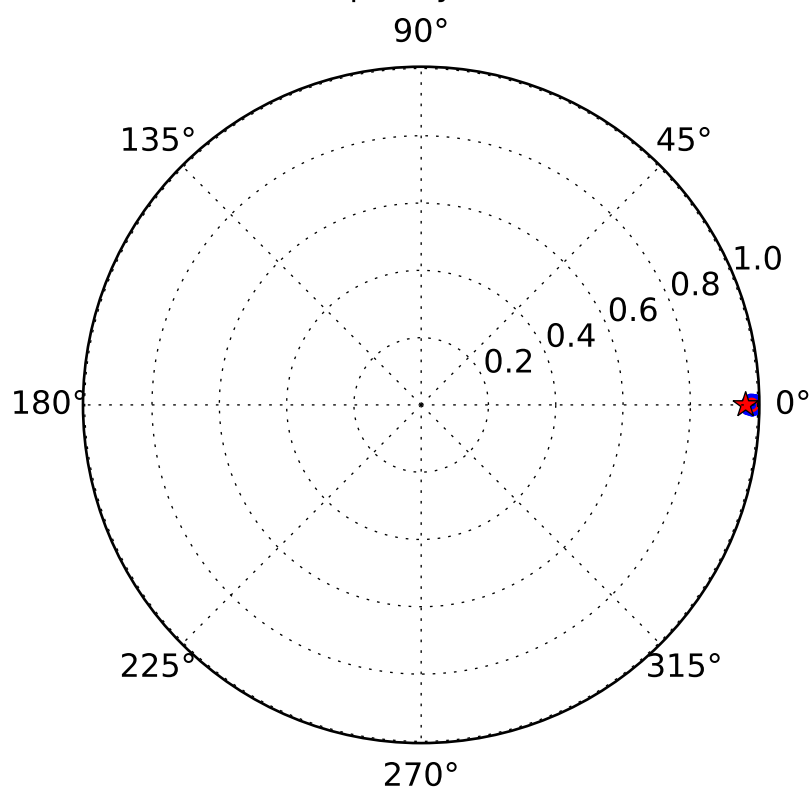
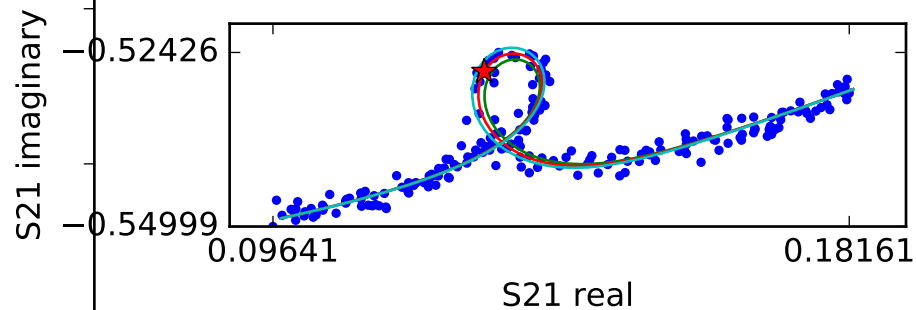
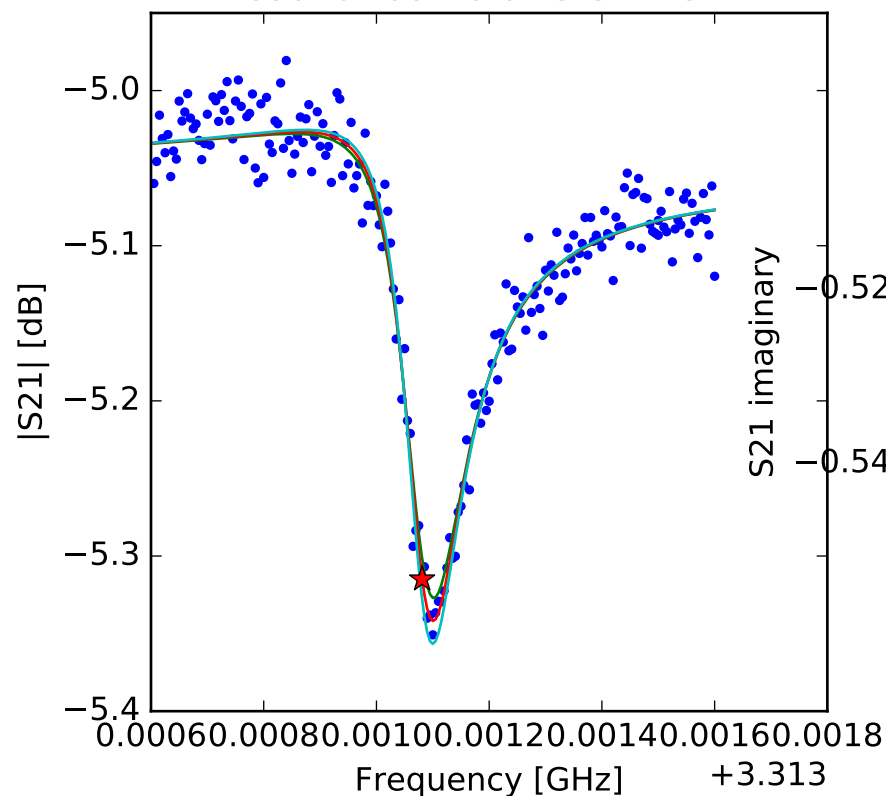
$f_r = 3.28821104783$
 $Q_r = 12202.9185306$
 $Q_c = 199996.005597$
 $a = (-0.420768060857 - 0.372263236639j)$
 $\phi = -0.0233087040581$
 $\tau = 26.1985019189$



$$t_{21}(f) = ae^{-2\pi jf\tau} \left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r \left(\frac{f-f_r}{f_r} \right)} \right]$$

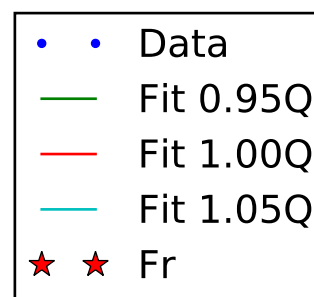
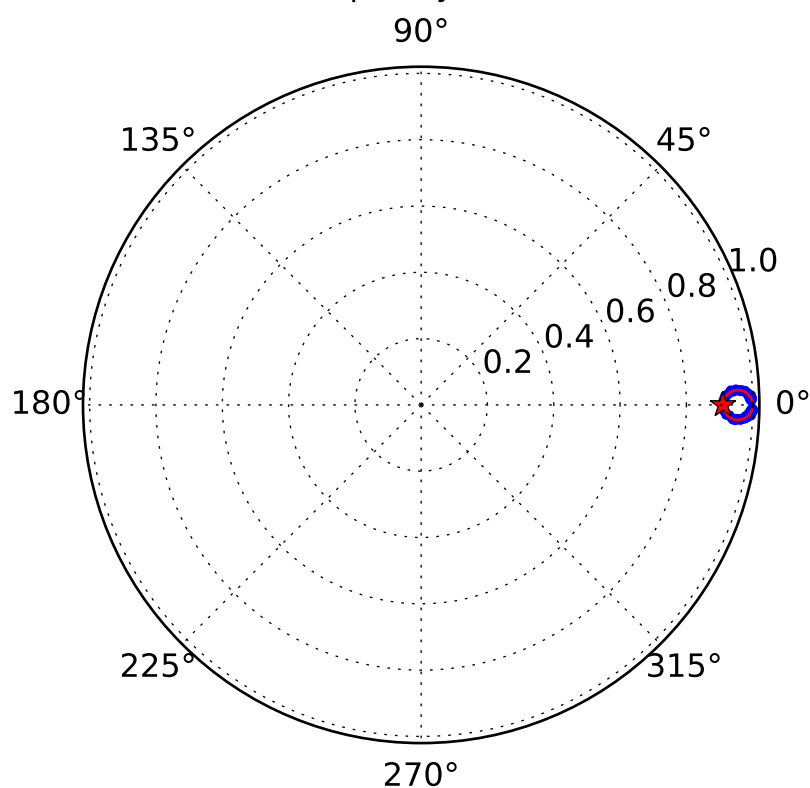
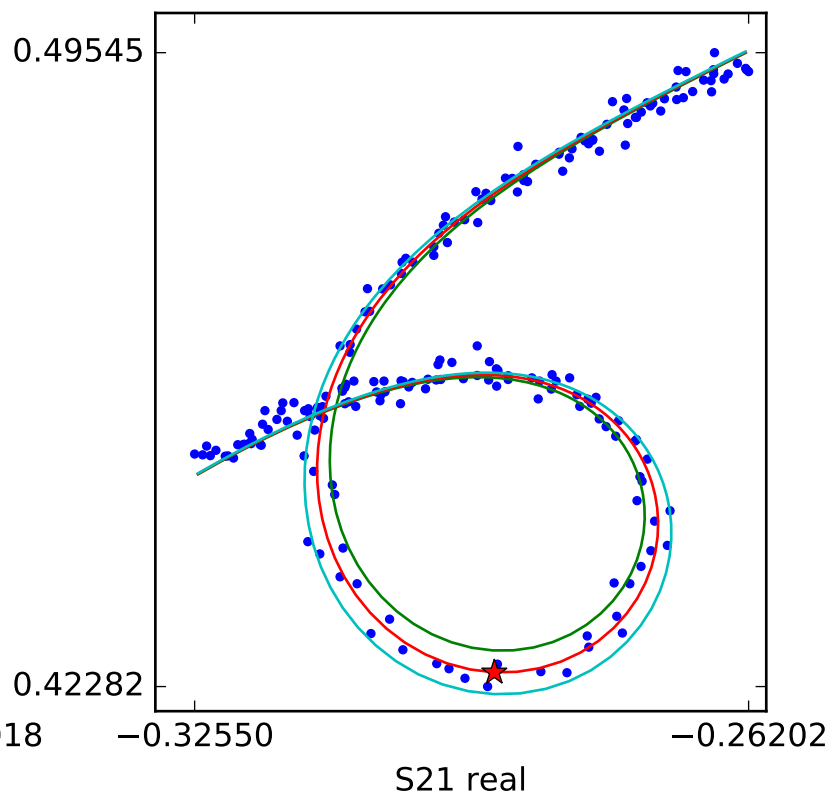
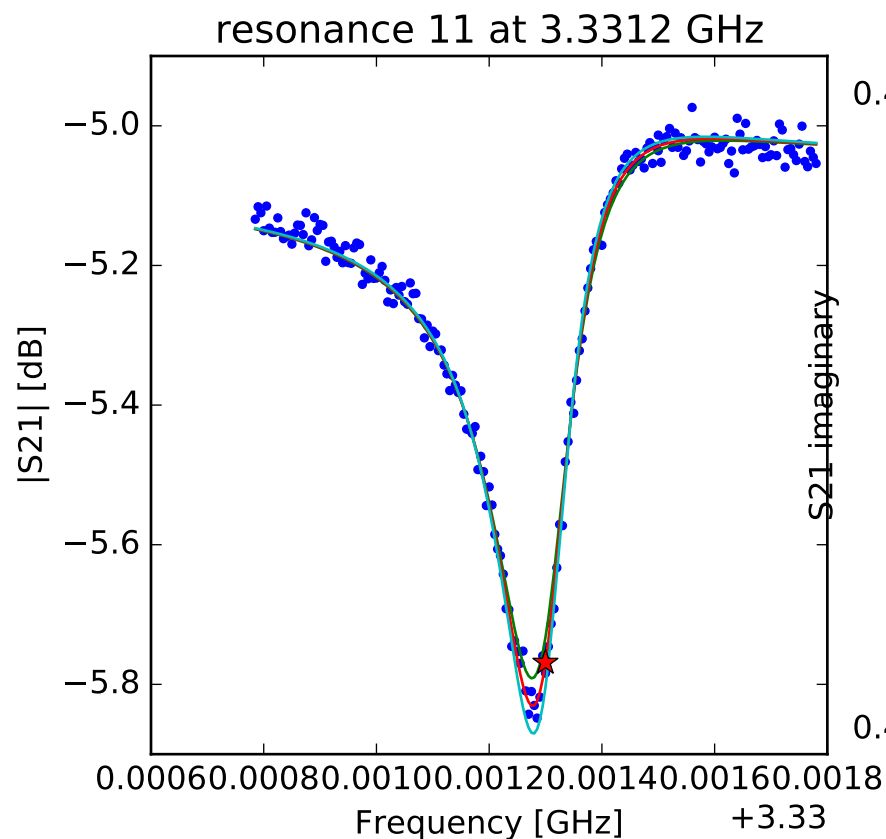
$f_r = 3.30234435295$
 $Q_r = 7530.80513674$
 $Q_c = 224720.39015$
 $a = (0.551532086908 - 0.120524196344j)$
 $\phi = 0.244948748461$
 $\tau = 26.3043988172$

resonance 10 at 3.314 GHz



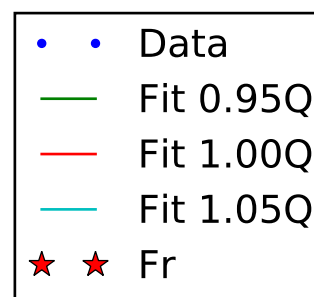
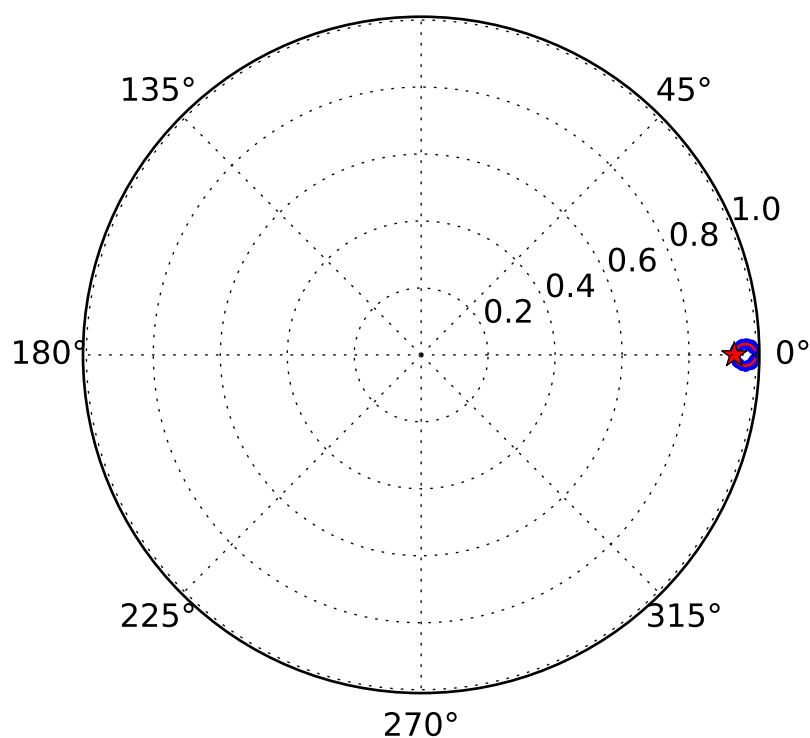
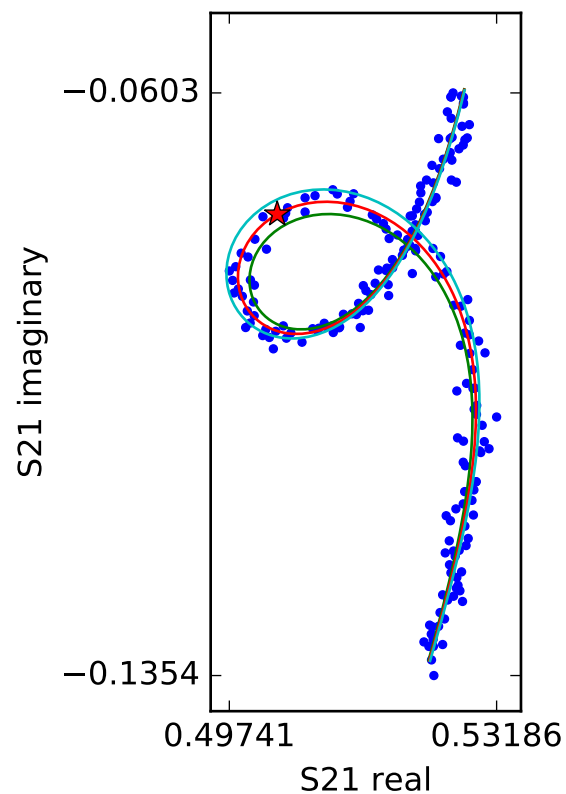
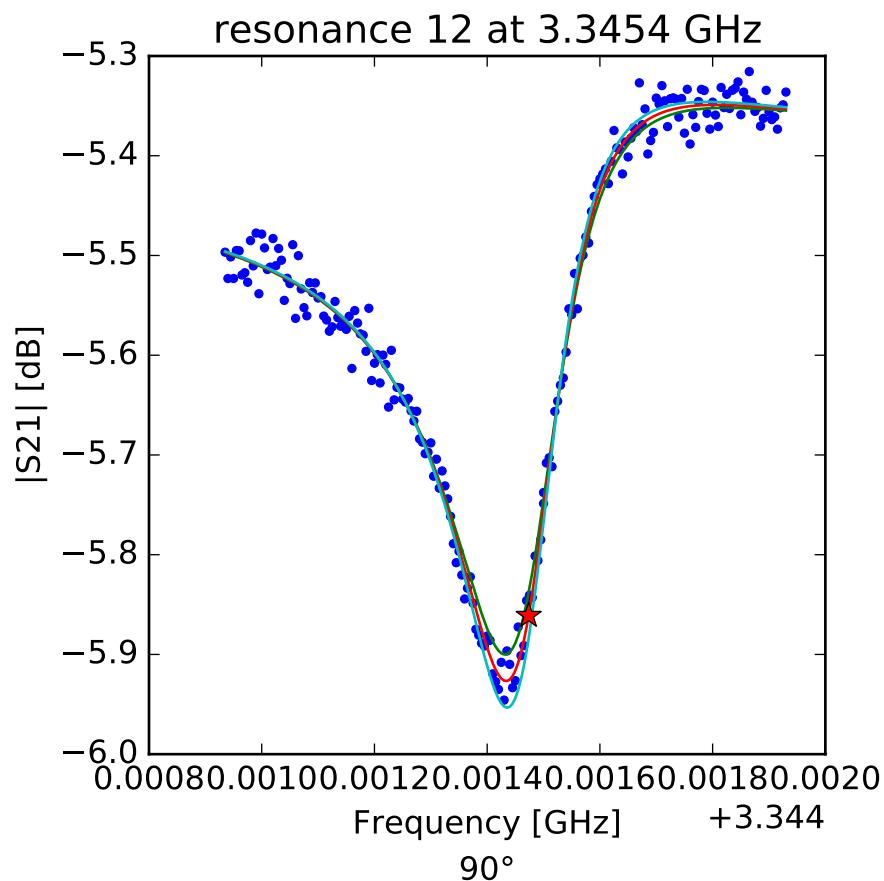
$$t_{21}(f) = ae^{-2\pi jf\tau} \left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r \left(\frac{f - f_r}{f_r} \right)} \right]$$

$f_r = 3.31408106478$
 $Q_r = 25288.6877664$
 $Q_c = 707290.608571$
 $a = (-0.105378634962 + 0.548972809154j)$
 $\phi = 0.573745467311$
 $\tau = 26.0974854864$



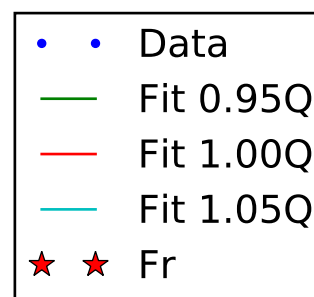
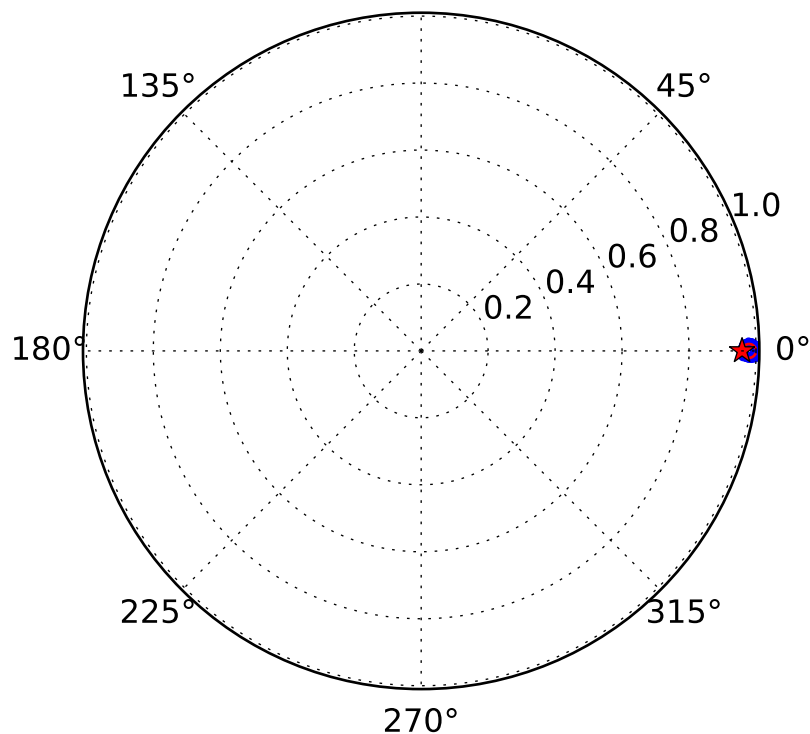
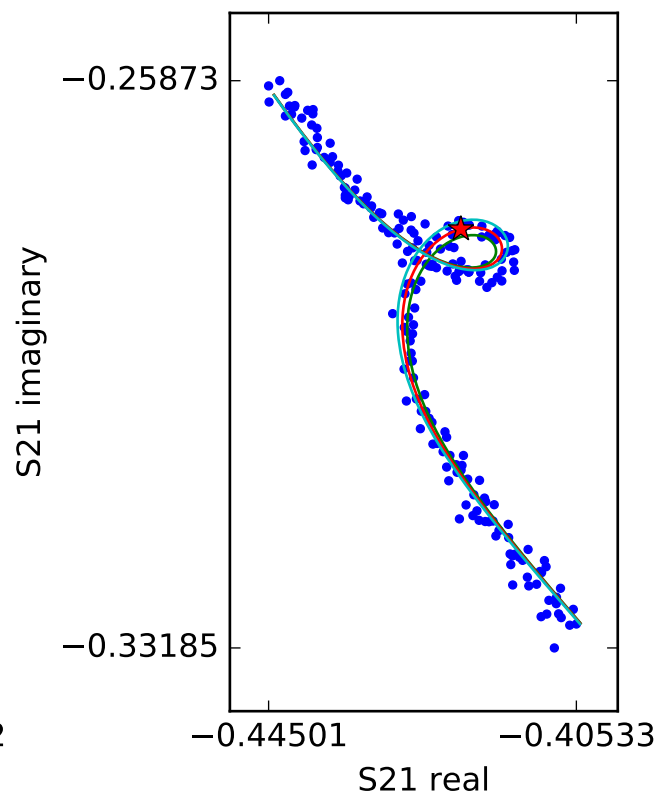
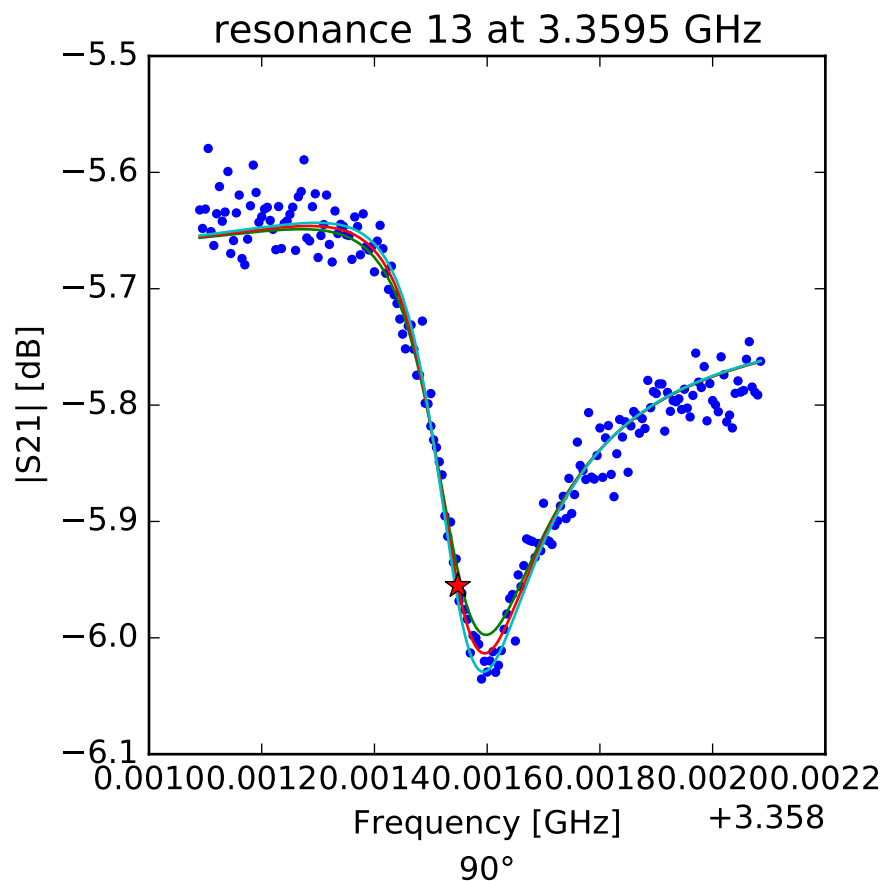
$$t_{21}(f) = ae^{-2\pi jf\tau} \left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r \left(\frac{f-f_r}{f_r} \right)} \right]$$

$f_r = 3.33129982685$
 $Q_r = 20258.0686205$
 $Q_c = 225443.885976$
 $a = (-0.271008351218 + 0.487512191203j)$
 $\phi = -0.513817088973$
 $\tau = 26.714100611$



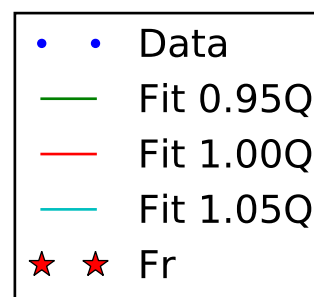
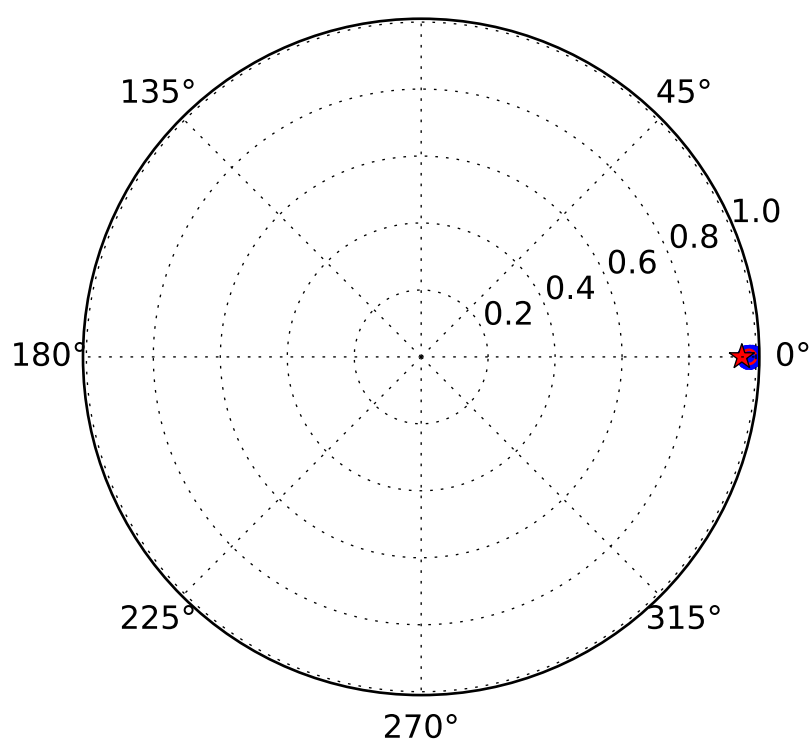
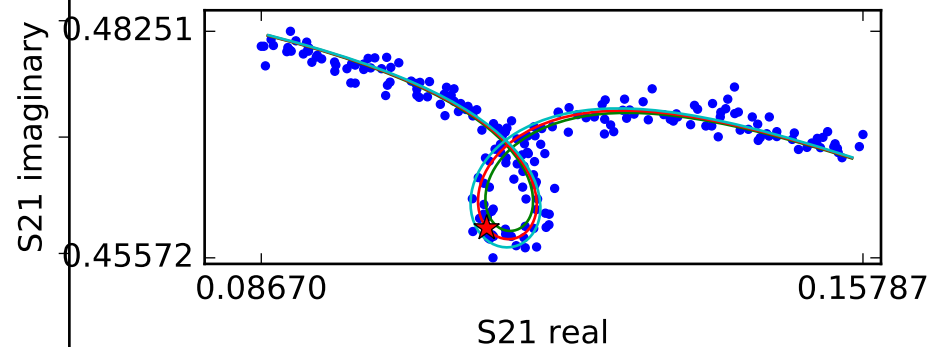
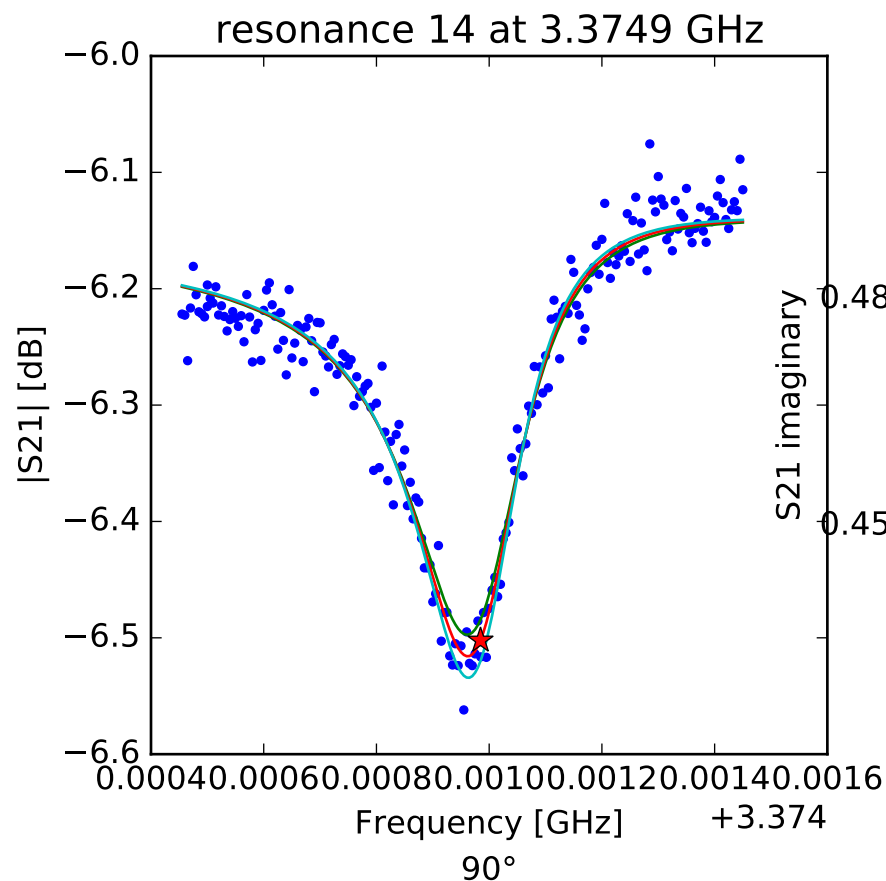
$$t_{21}(f) = ae^{-2\pi jf\tau} \left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r \left(\frac{f-f_r}{f_r} \right)} \right]$$

$f_r = 3.34547358185$
 $Q_r = 14504.0266407$
 $Q_c = 223864.328139$
 $a = (-0.115582740665 - 0.523982660593j)$
 $\phi = -0.646952003847$
 $\tau = 25.6303970335$



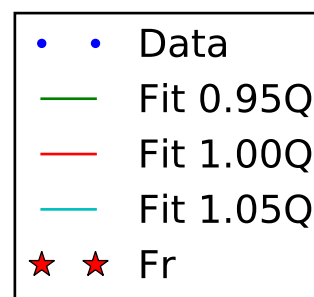
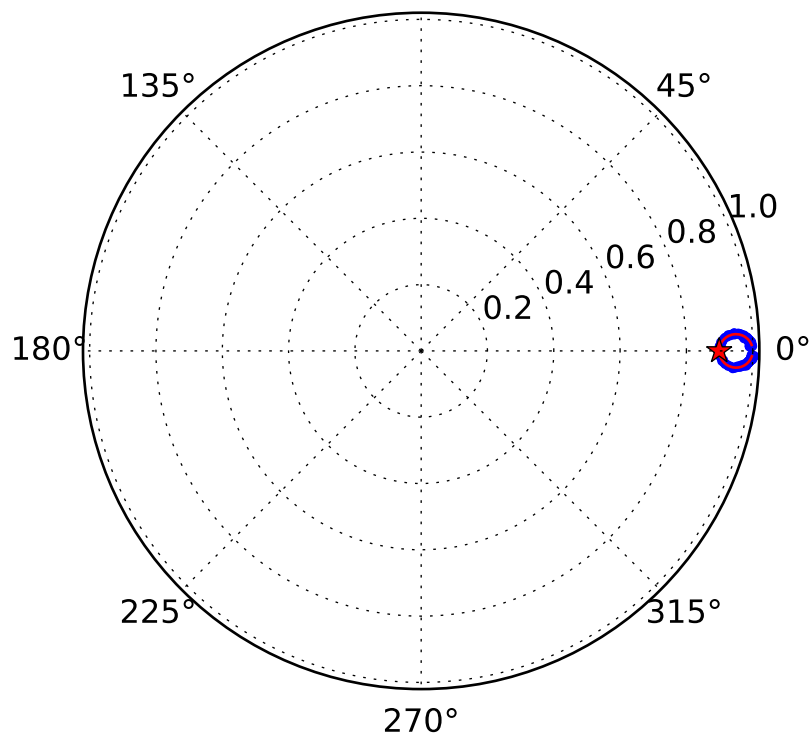
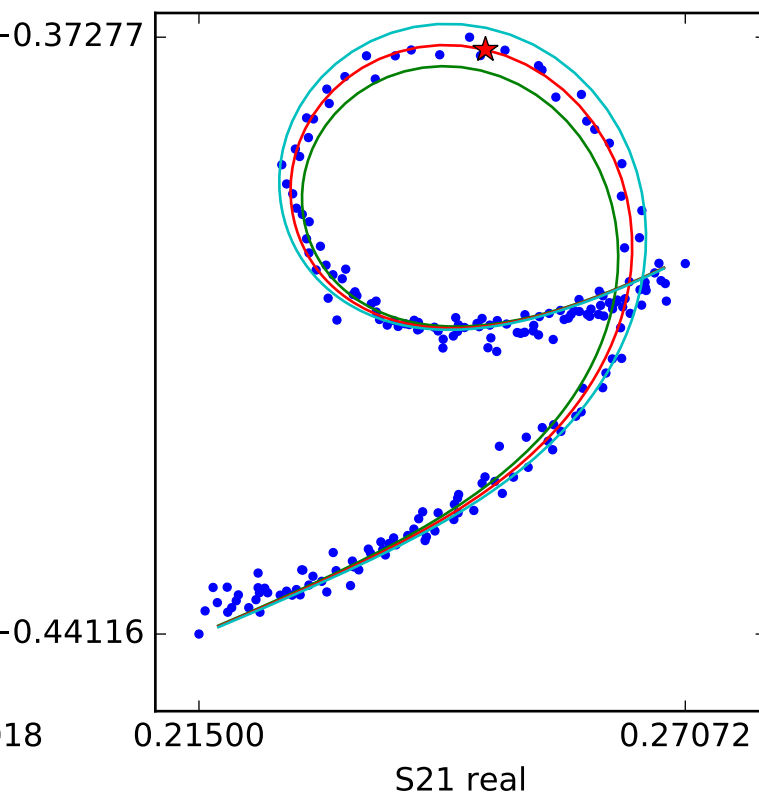
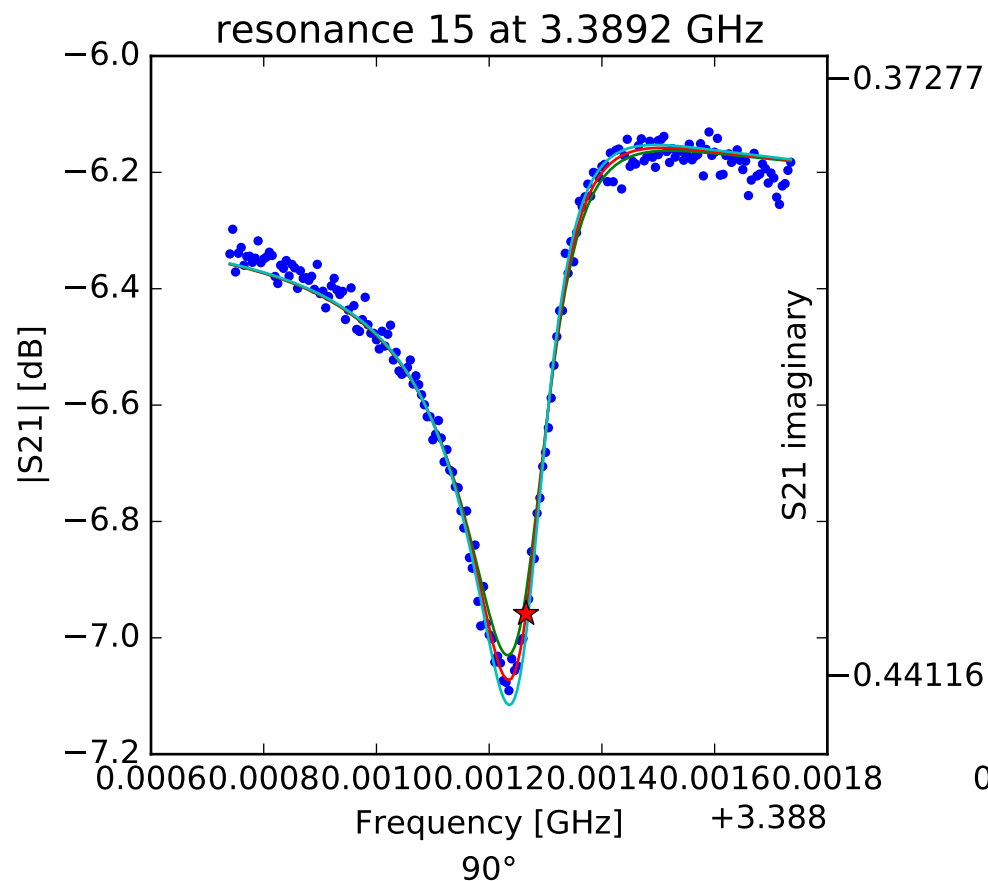
$$t_{21}(f) = ae^{-2\pi jf\tau} \left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r \left(\frac{f-f_r}{f_r} \right)} \right]$$

$f_r = 3.35954790111$
 $Q_r = 14985.17682$
 $Q_c = 359633.179848$
 $a = (0.481473293426 + 0.193189518431j)$
 $\phi = 0.788242293521$
 $\tau = 26.3317891642$



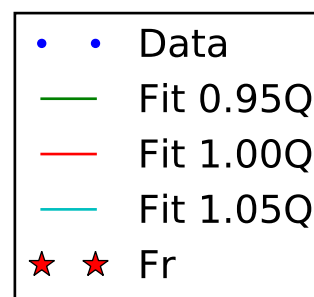
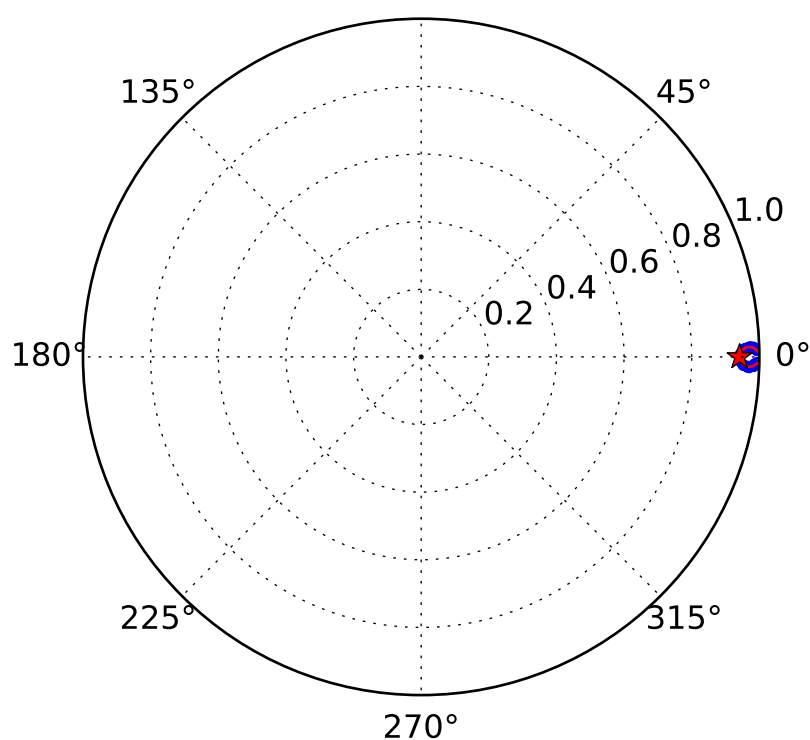
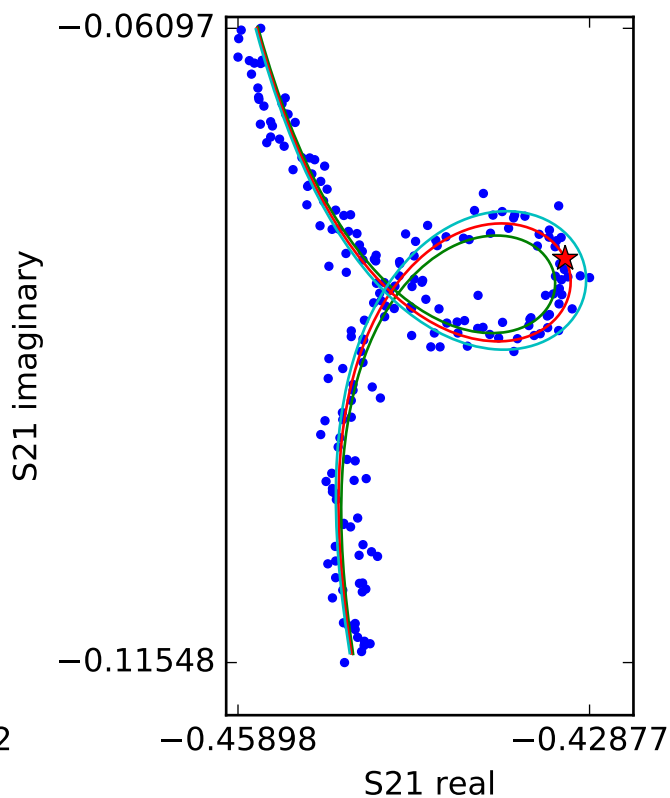
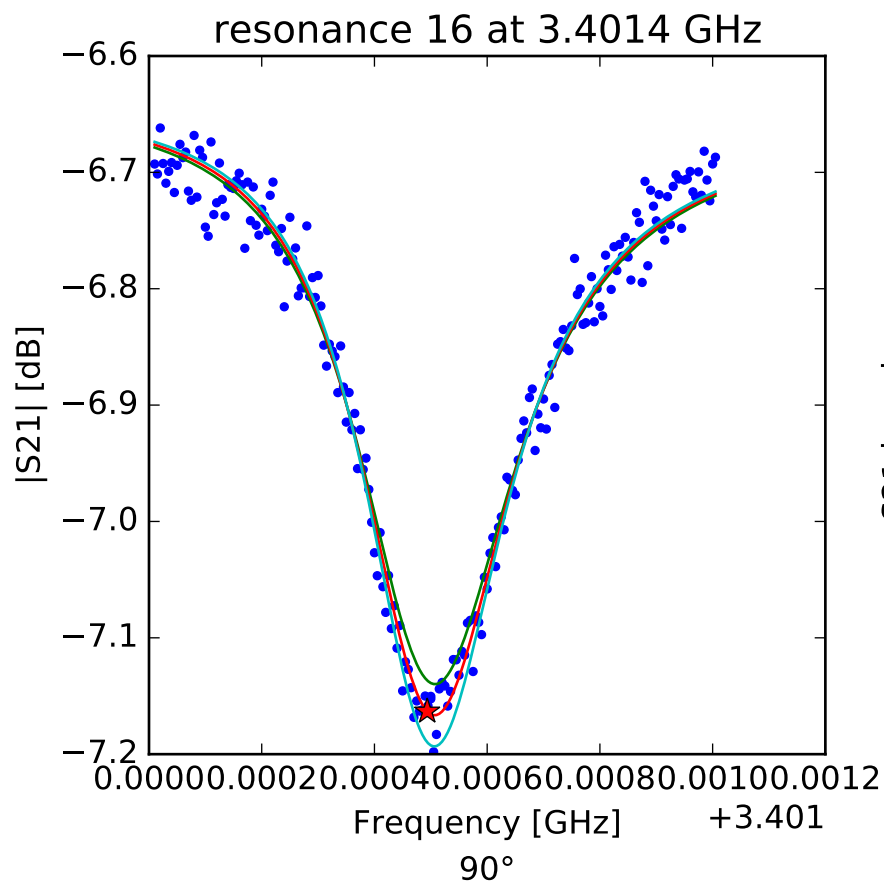
$$t_{21}(f) = ae^{-2\pi jf\tau} \left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r \left(\frac{f - f_r}{f_r} \right)} \right]$$

$f_r = 3.37498461274$
 $Q_r = 14241.9816477$
 $Q_c = 336278.18049$
 $a = (-0.491251744711 + 0.0339523185798j)$
 $\phi = -0.369105928139$
 $\tau = 25.8608779489$



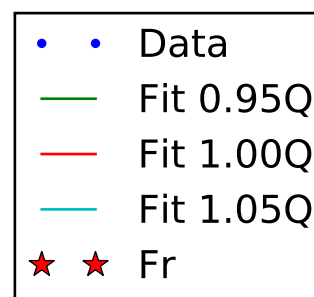
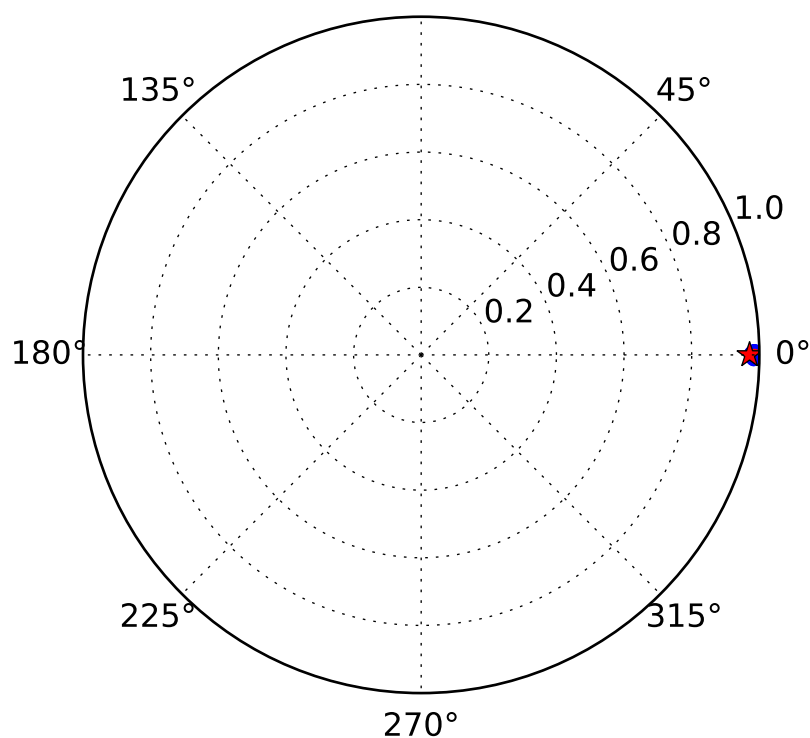
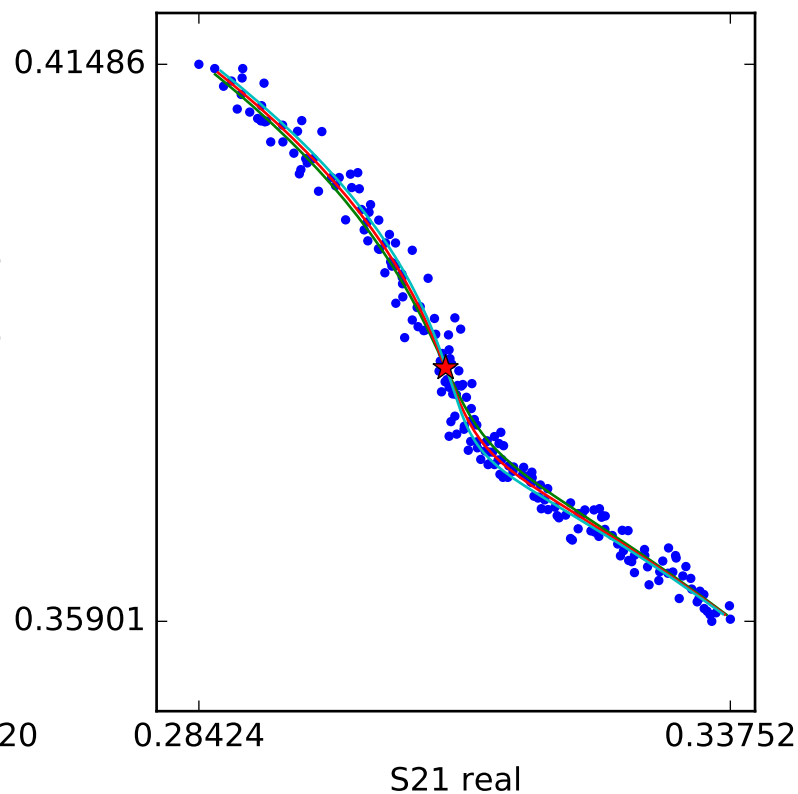
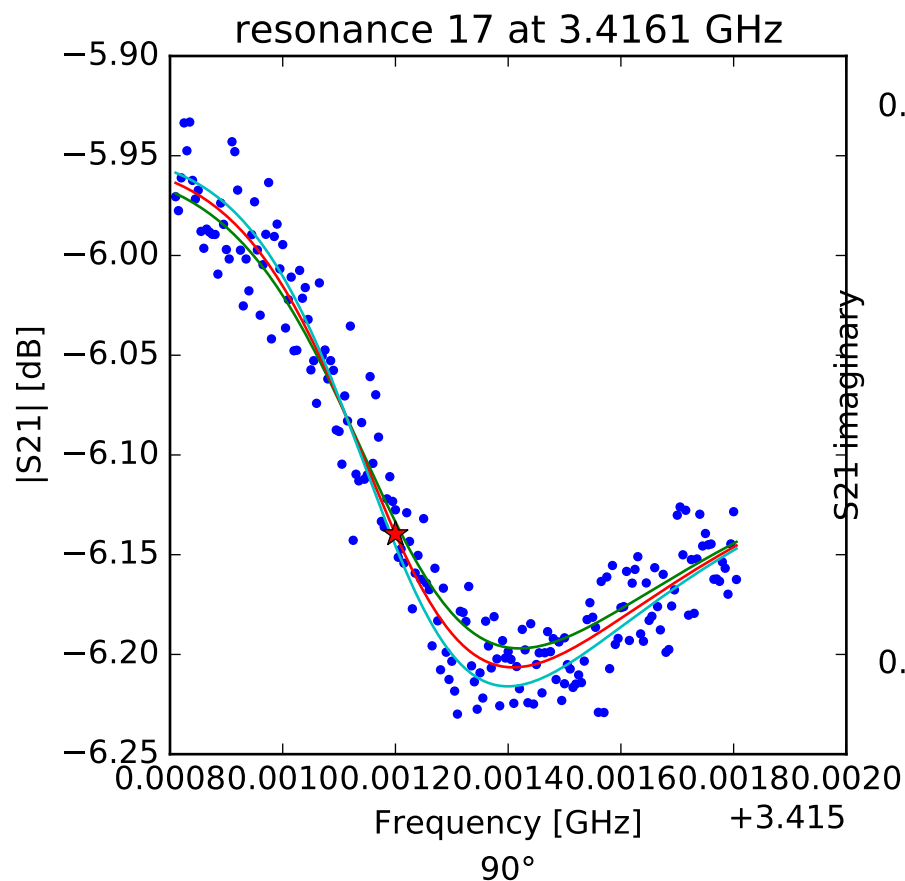
$$t_{21}(f) = ae^{-2\pi jf\tau} \left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r \left(\frac{f-f_r}{f_r} \right)} \right]$$

$f_r = 3.38926548161$
 $Q_r = 19537.5660544$
 $Q_c = 193249.089449$
 $a = (0.451426034298 + 0.182225196906j)$
 $\phi = -0.655993305644$
 $\tau = 25.7367310834$



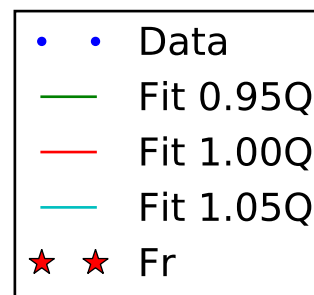
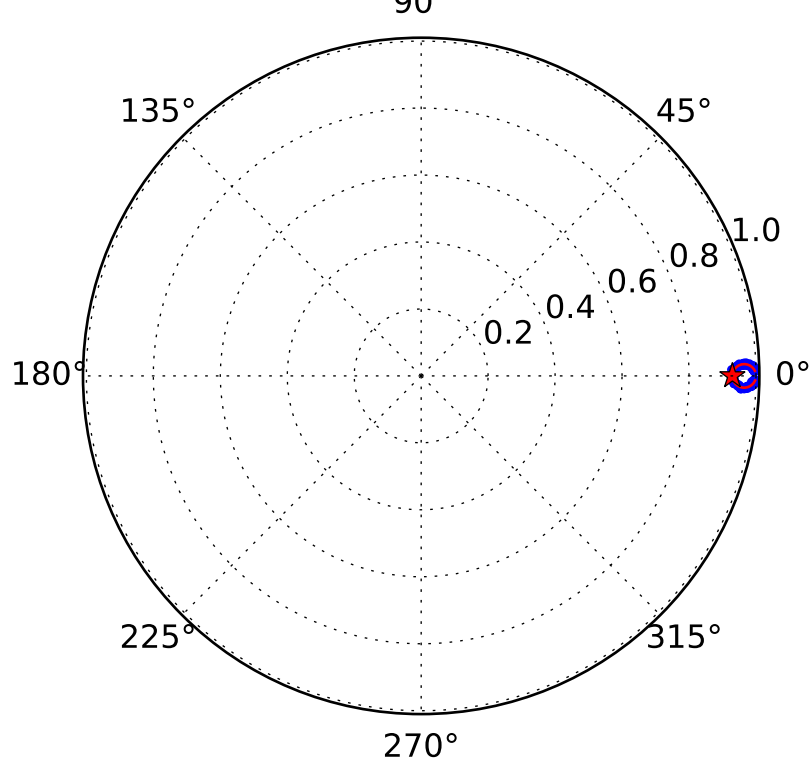
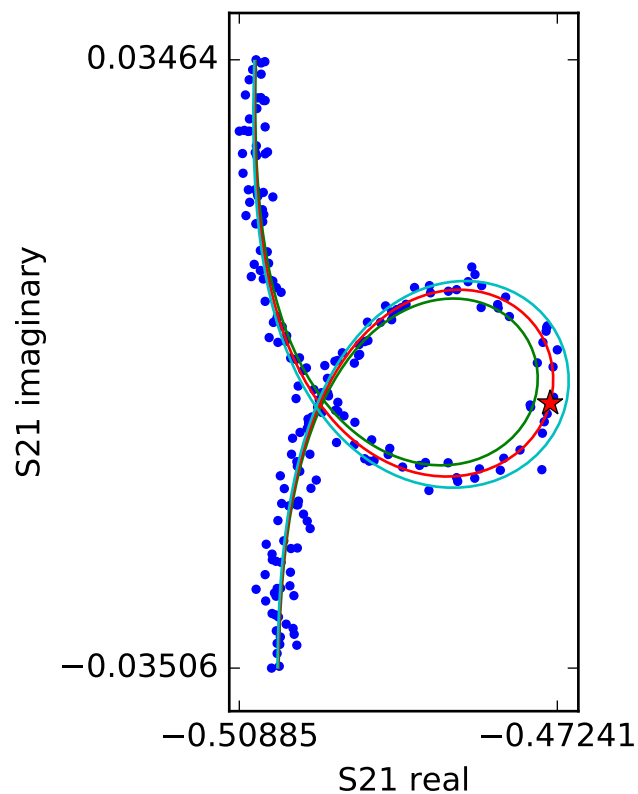
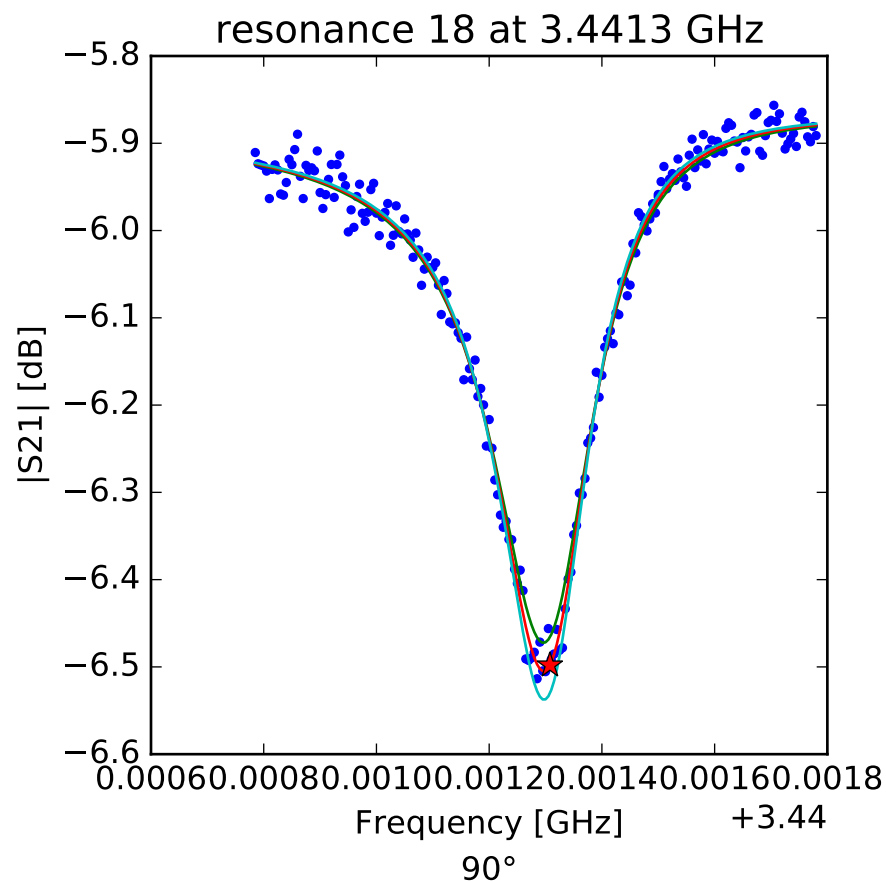
$$t_{21}(f) = ae^{-2\pi jf\tau} \left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r \left(\frac{f-f_r}{f_r} \right)} \right]$$

$f_r = 3.4014936184$
 $Q_r = 10073.0842521$
 $Q_c = 172469.159261$
 $a = (-0.0674135233787 - 0.460299504384j)$
 $\phi = 0.151746627936$
 $\tau = 24.4586310429$



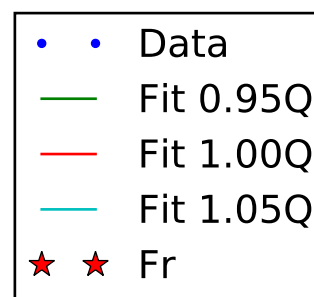
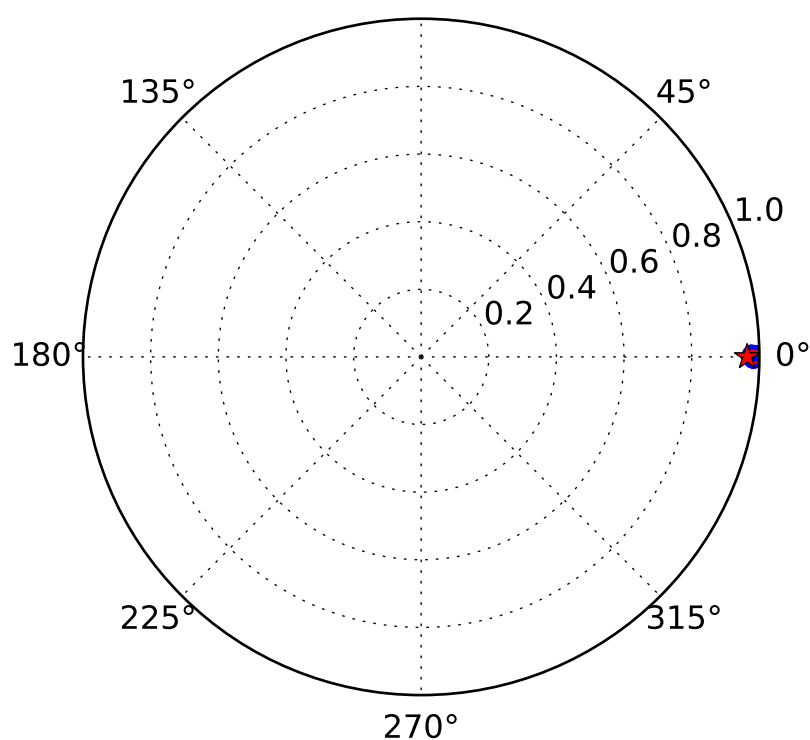
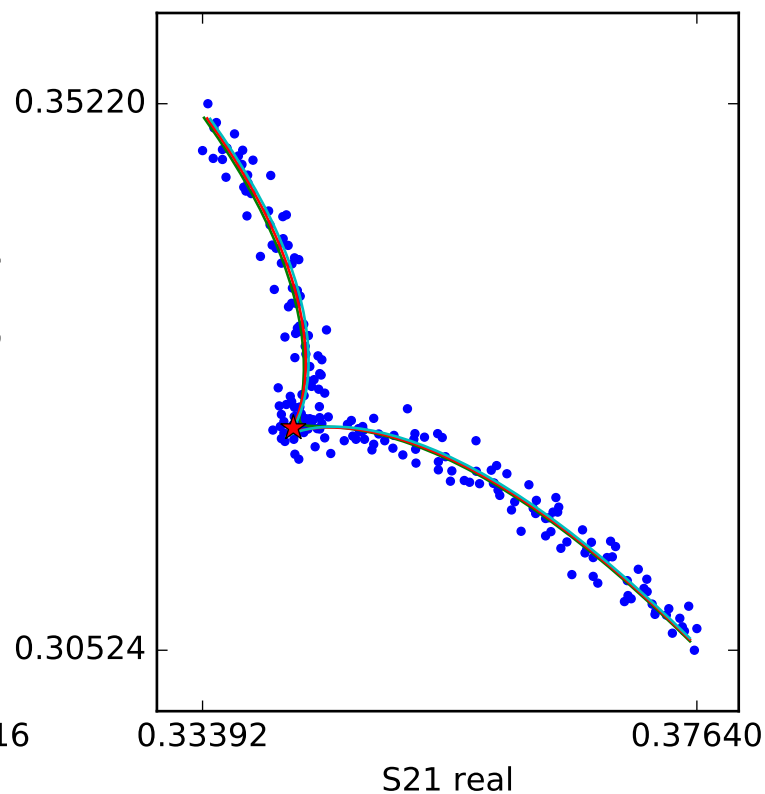
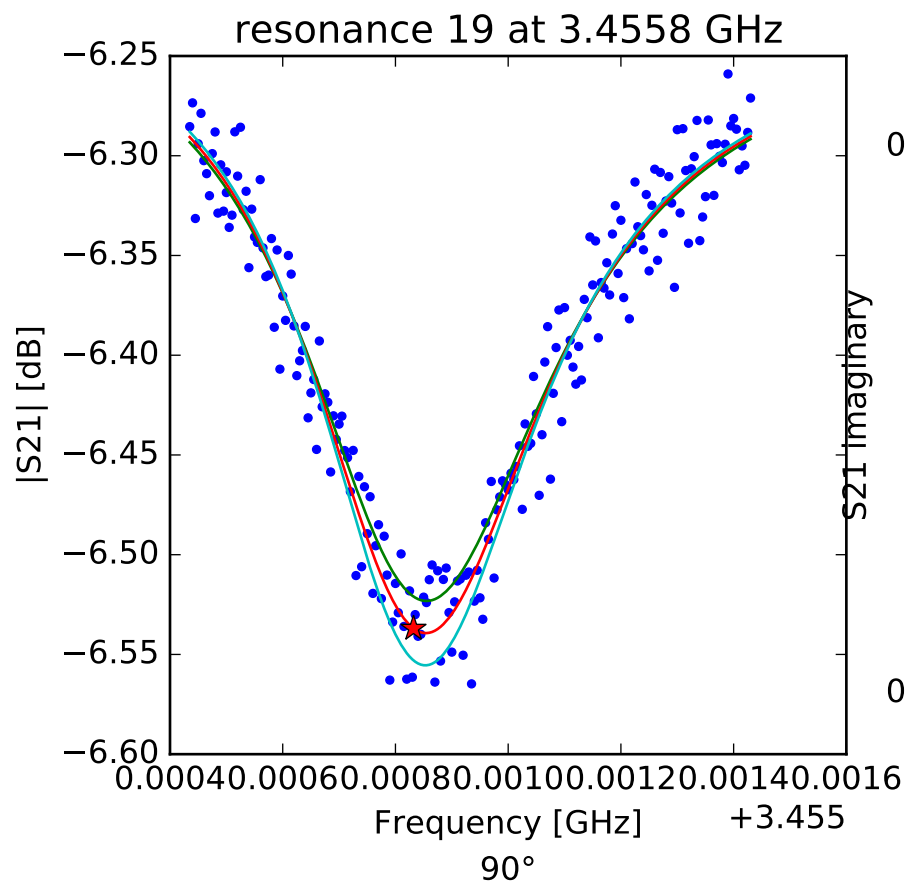
$$t_{21}(f) = ae^{-2\pi jf\tau} \left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r \left(\frac{f - f_r}{f_r} \right)} \right]$$

$f_r = 3.41619994896$
 $Q_r = 4823.88293547$
 $Q_c = 166854.479874$
 $a = (0.457094923547 - 0.20306508399j)$
 $\phi = 1.05469199541$
 $\tau = 26.5754811203$



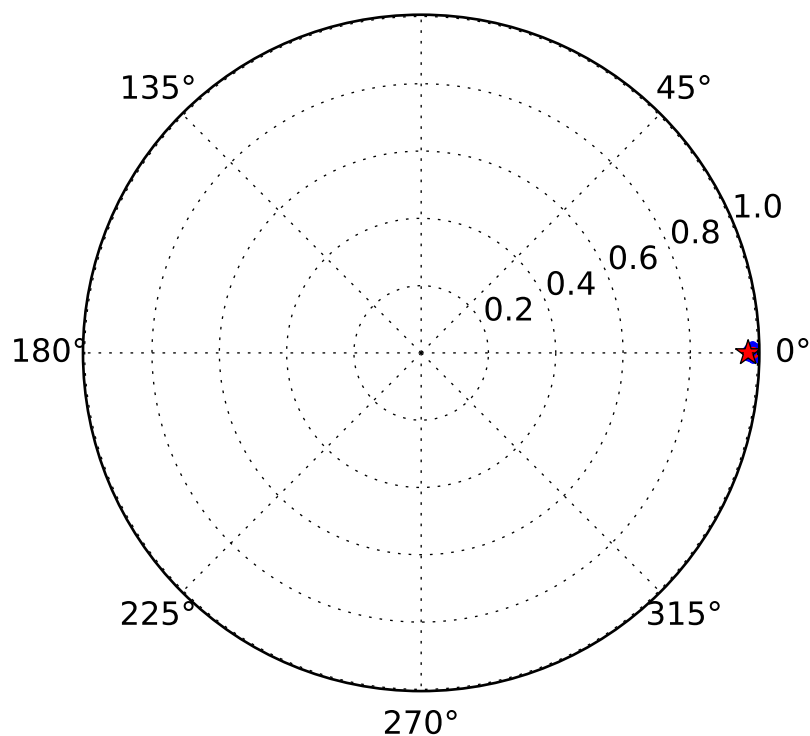
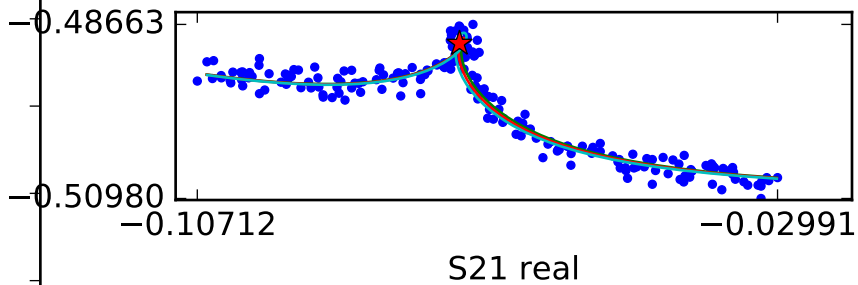
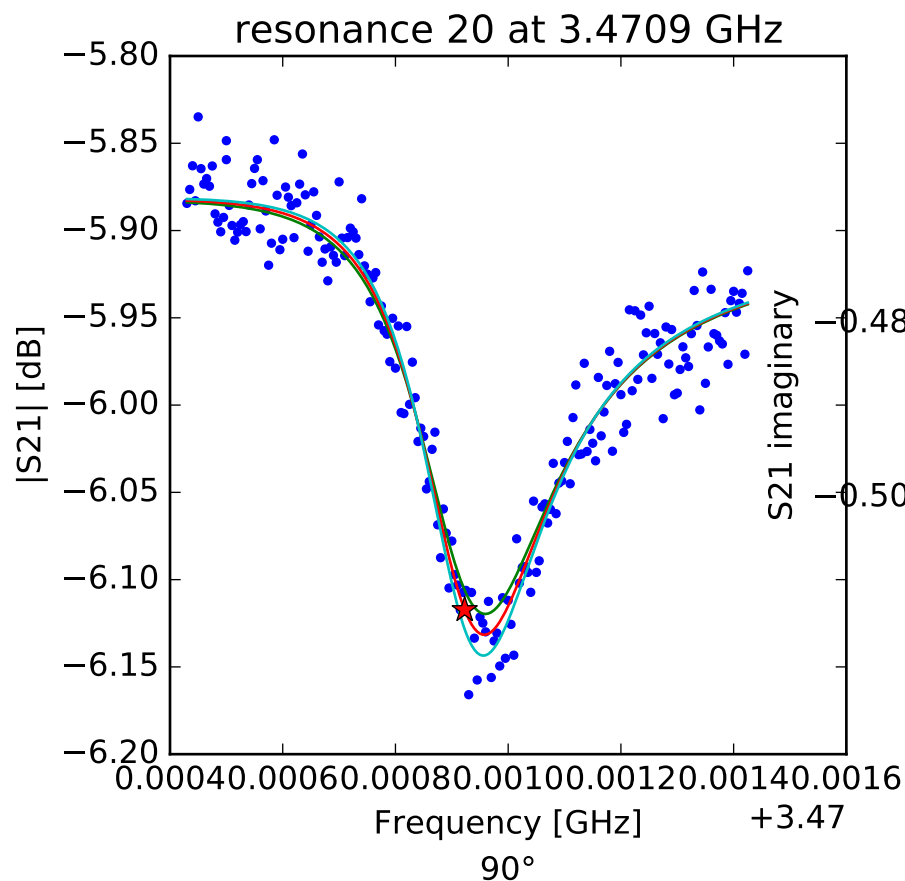
$$t_{21}(f) = ae^{-2\pi jf\tau} \left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r \left(\frac{f-f_r}{f_r} \right)} \right]$$

$f_r = 3.44130774734$
 $Q_r = 16025.6377535$
 $Q_c = 227236.270581$
 $a = (0.286002144189 - 0.420300616304j)$
 $\phi = -0.195318725015$
 $\tau = 26.5439365437$



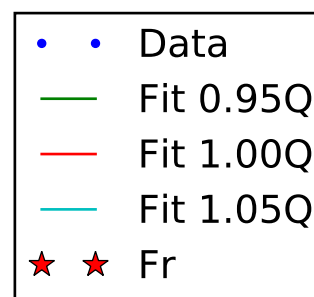
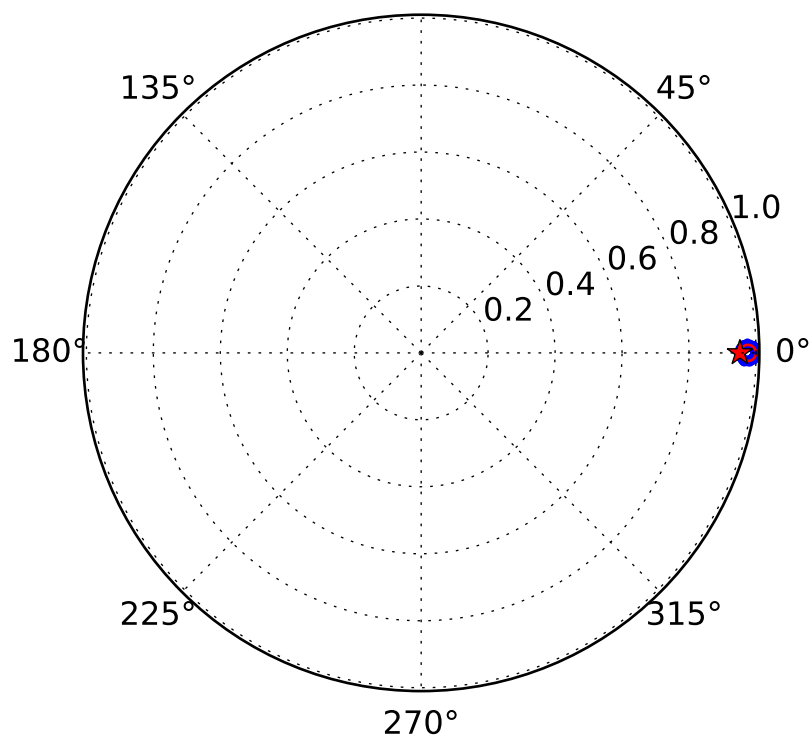
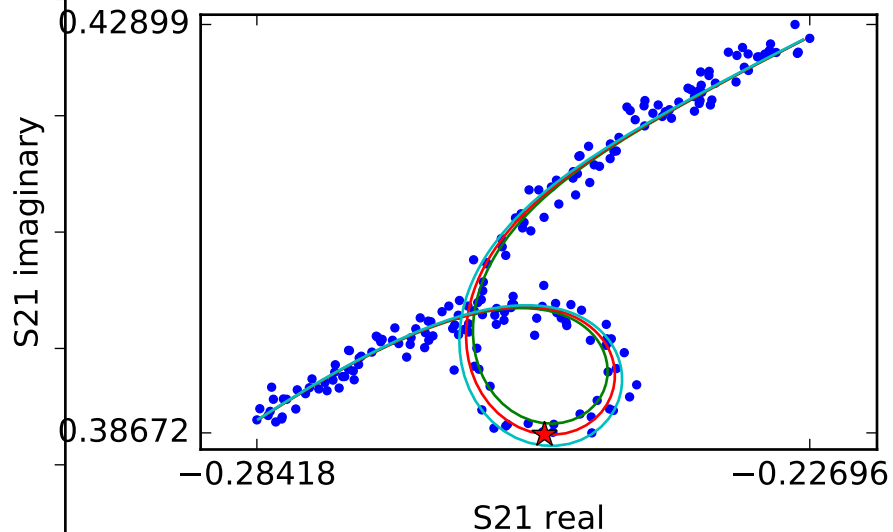
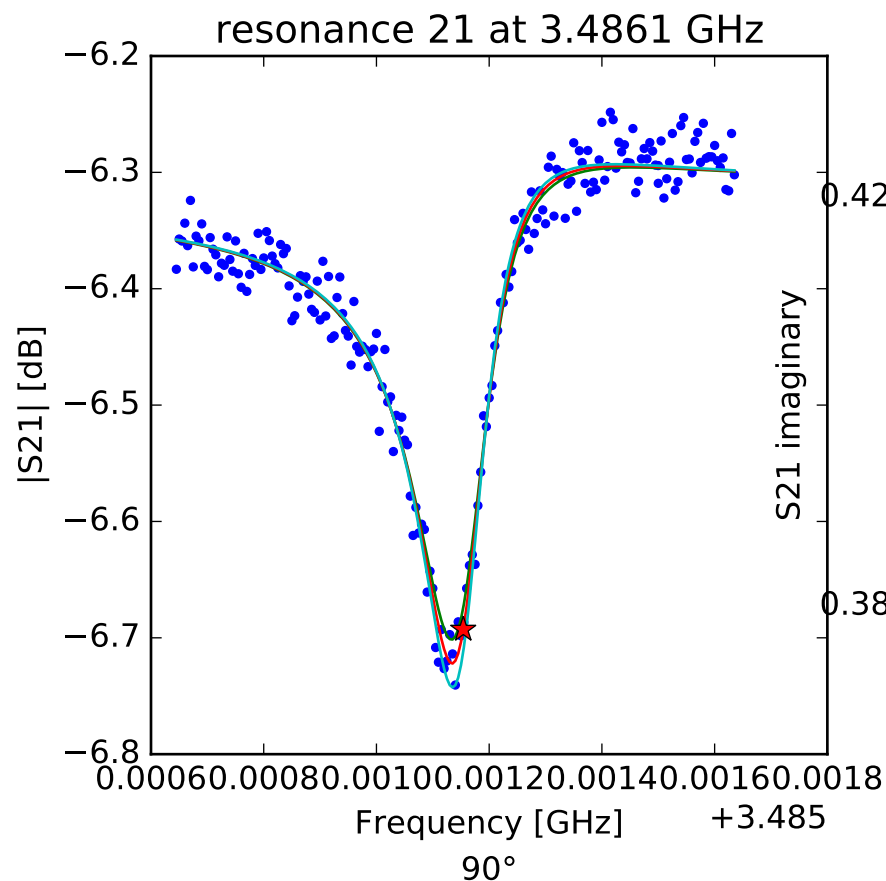
$$t_{21}(f) = ae^{-2\pi jf\tau} \left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r \left(\frac{f - f_r}{f_r} \right)} \right]$$

$f_r = 3.45583206138$
 $Q_r = 6633.878147$
 $Q_c = 183905.293442$
 $a = (-0.394300431699 - 0.288397934408j)$
 $\phi = 0.165239525624$
 $\tau = 25.0239823404$



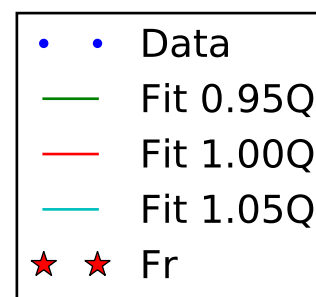
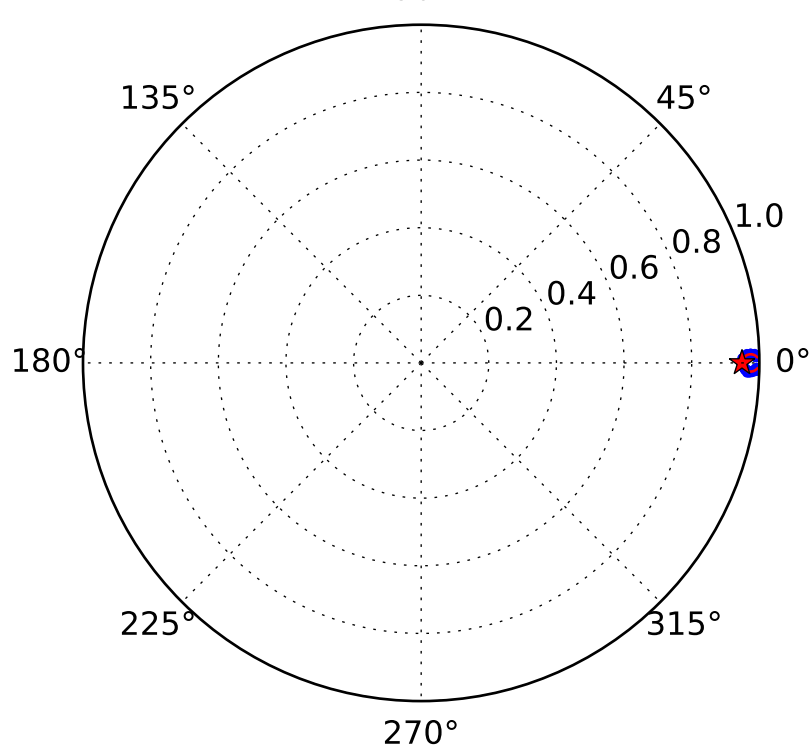
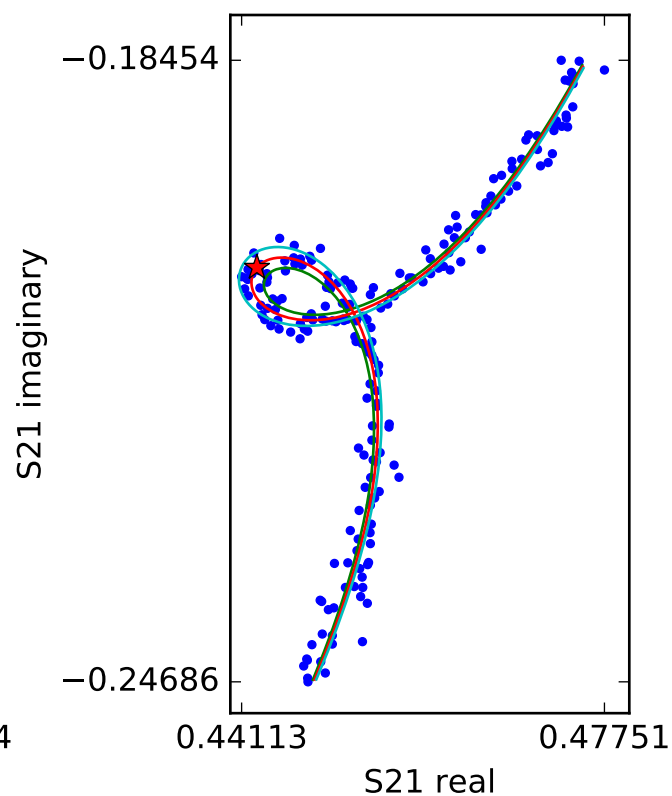
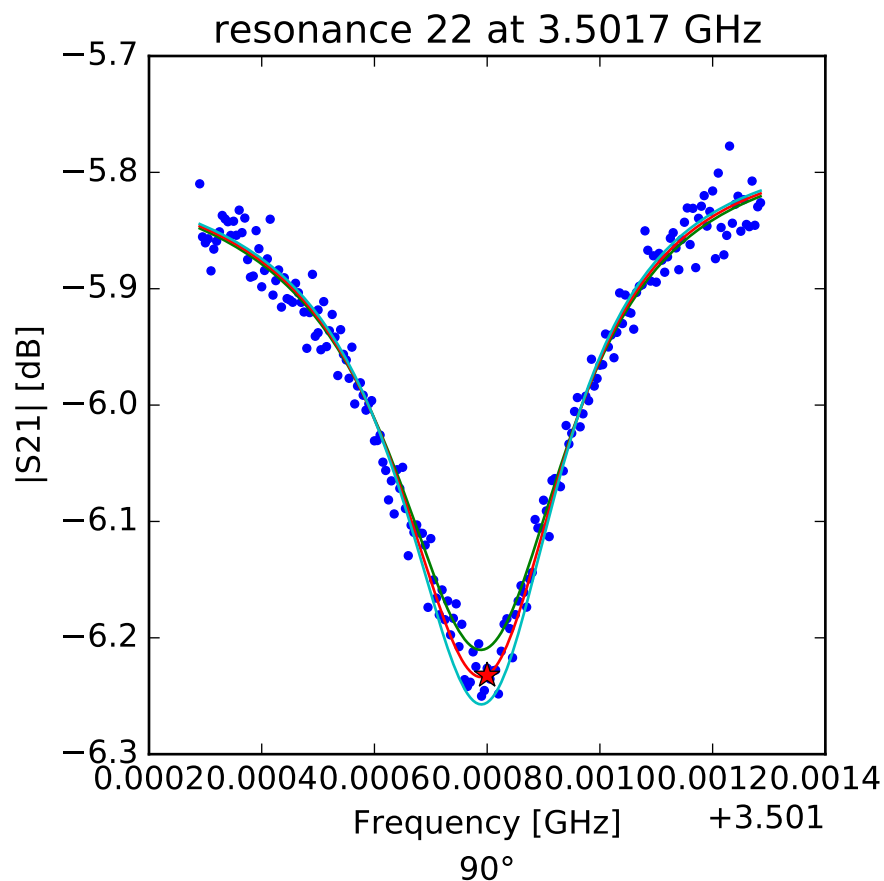
$$t_{21}(f) = ae^{-2\pi jf\tau} \left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r \left(\frac{f - f_r}{f_r} \right)} \right]$$

$f_r = 3.47092281612$
 $Q_r = 12132.1180387$
 $Q_c = 428260.997938$
 $a = (-0.126372820338 - 0.491232737651j)$
 $\phi = 0.470745525854$
 $\tau = 26.5004909737$



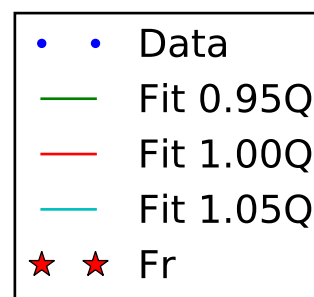
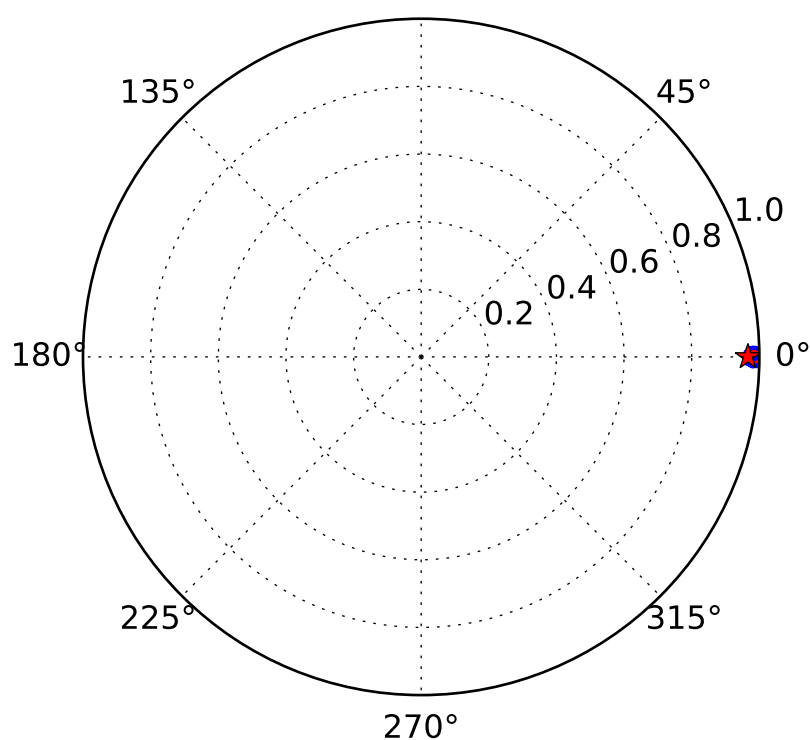
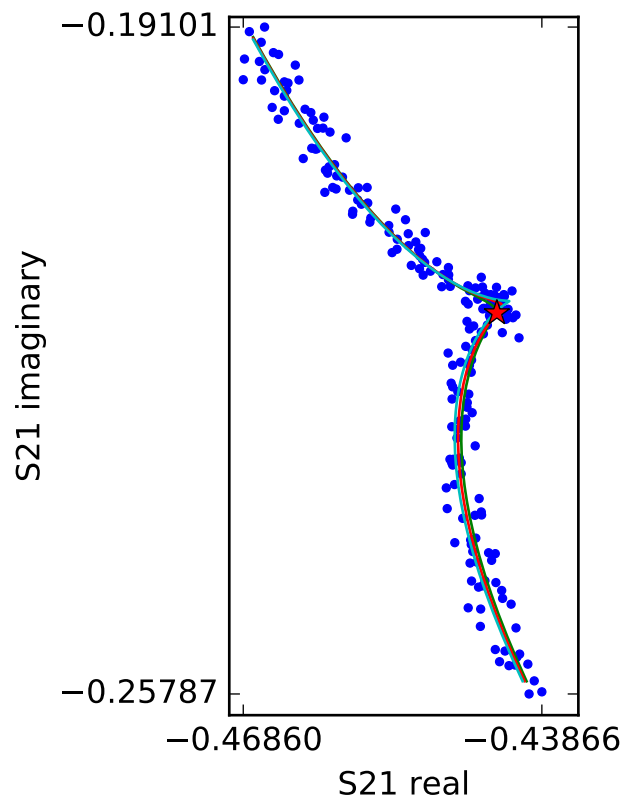
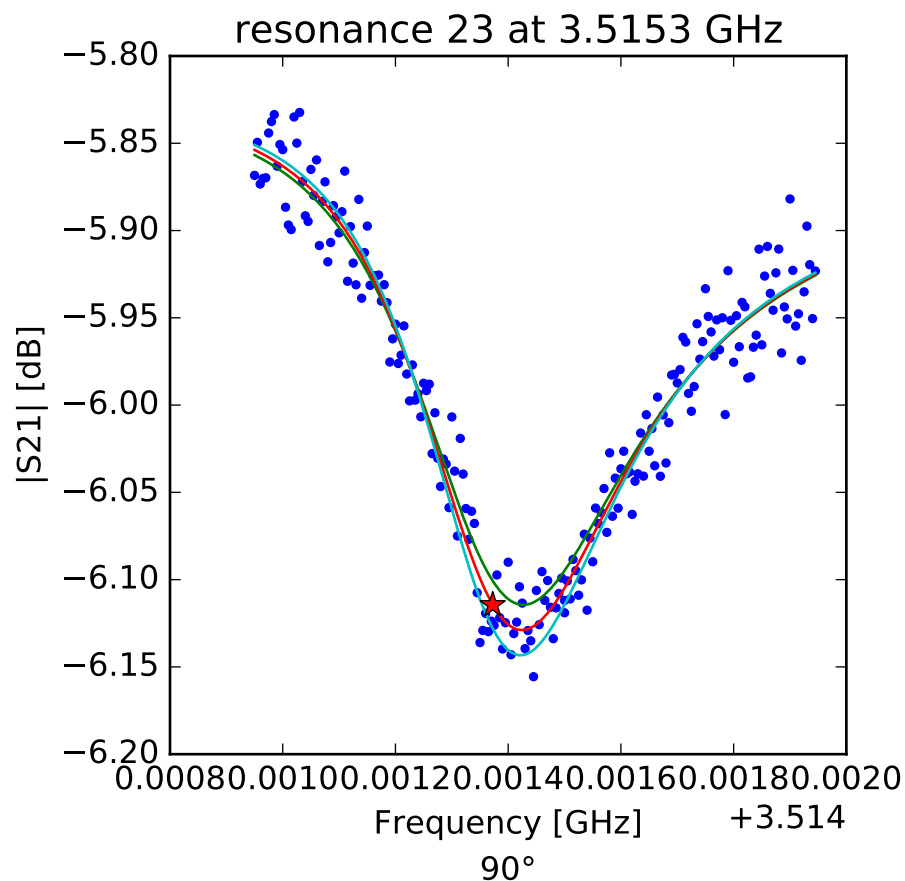
$$t_{21}(f) = ae^{-2\pi jf\tau} \left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r \left(\frac{f-f_r}{f_r} \right)} \right]$$

$f_r = 3.48615404285$
 $Q_r = 23243.5941644$
 $Q_c = 482199.674828$
 $a = (0.257701071107 + 0.408502808543j)$
 $\phi = -0.505647891295$
 $\tau = 24.9047130768$



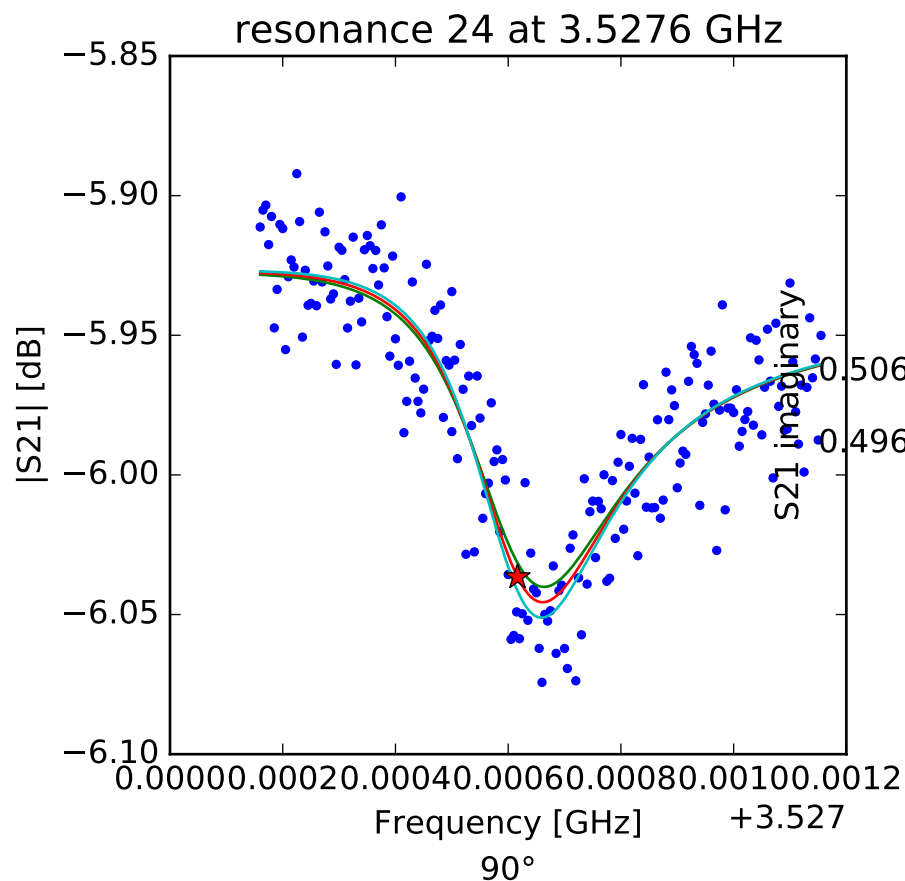
$$t_{21}(f) = ae^{-2\pi jf\tau} \left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r \left(\frac{f-f_r}{f_r} \right)} \right]$$

$f_r = 3.50179990992$
 $Q_r = 9251.2755374$
 $Q_c = 180180.198684$
 $a = (-0.352585928053 - 0.374274147823j)$
 $\phi = -0.109919572932$
 $\tau = 26.4720470872$

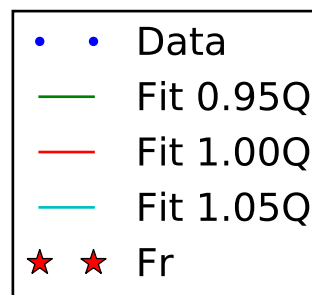
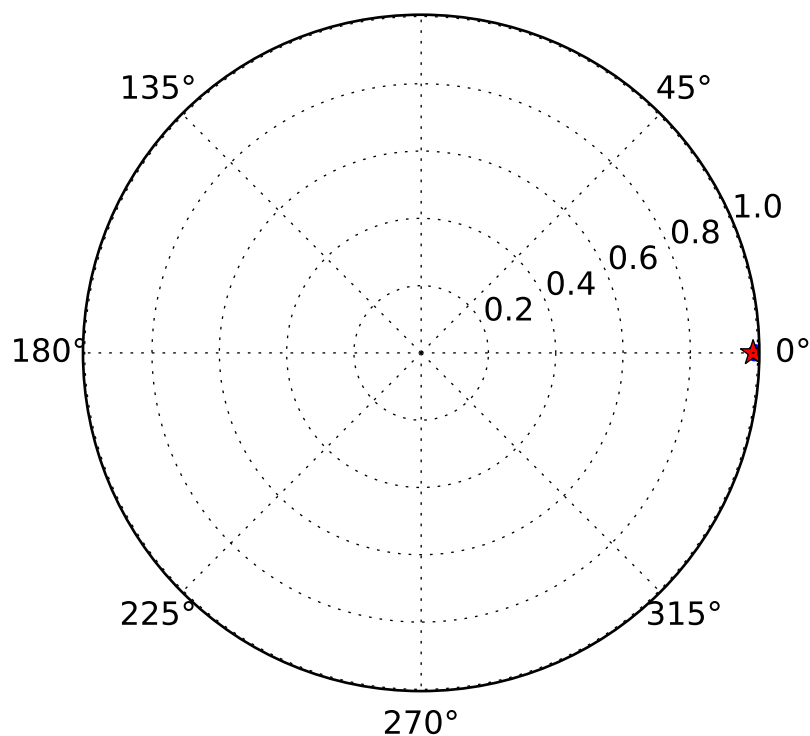
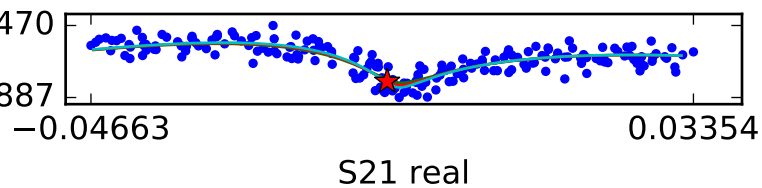


$$t_{21}(f) = ae^{-2\pi jf\tau} \left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r \left(\frac{f-f_r}{f_r} \right)} \right]$$

$f_r = 3.51537260893$
 $Q_r = 7562.26720663$
 $Q_c = 224010.863364$
 $a = (0.476878579743 + 0.181461357934j)$
 $\phi = 0.429452991331$
 $\tau = 26.023505771$

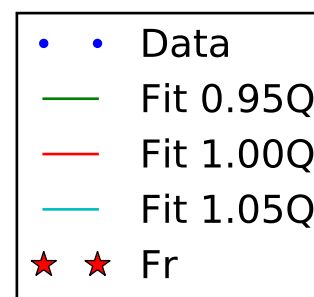
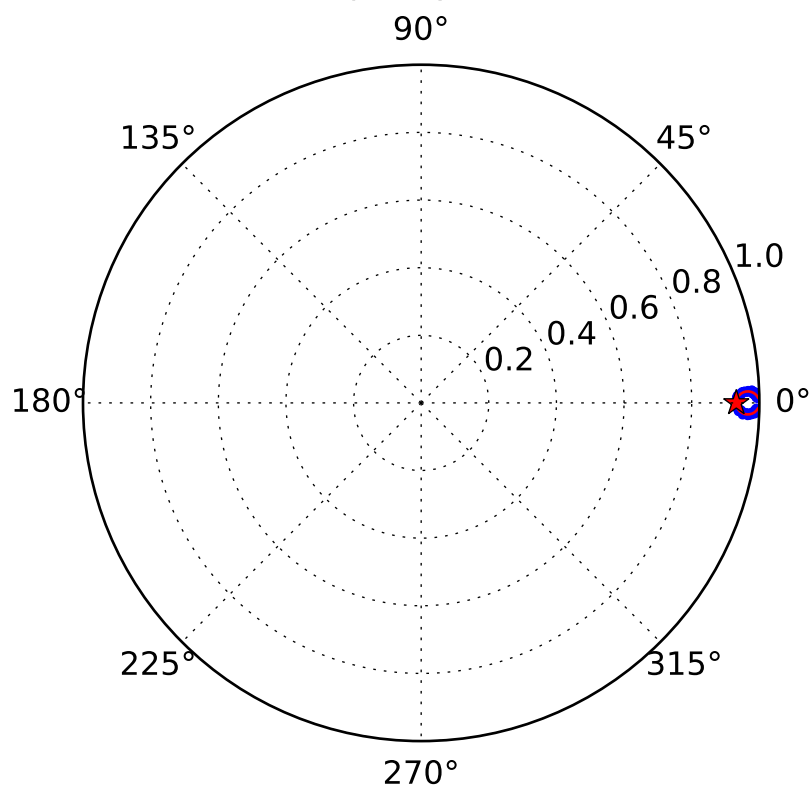
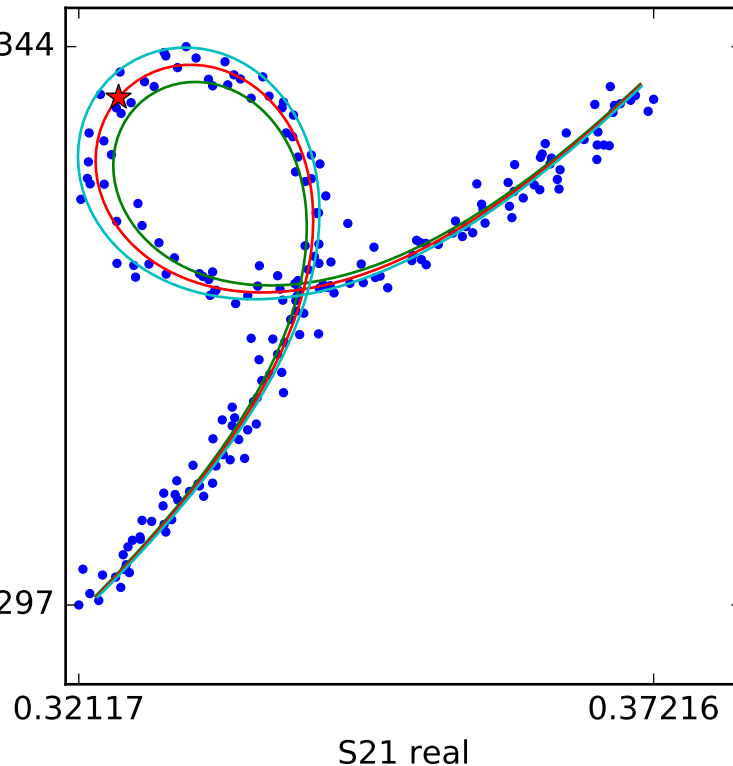
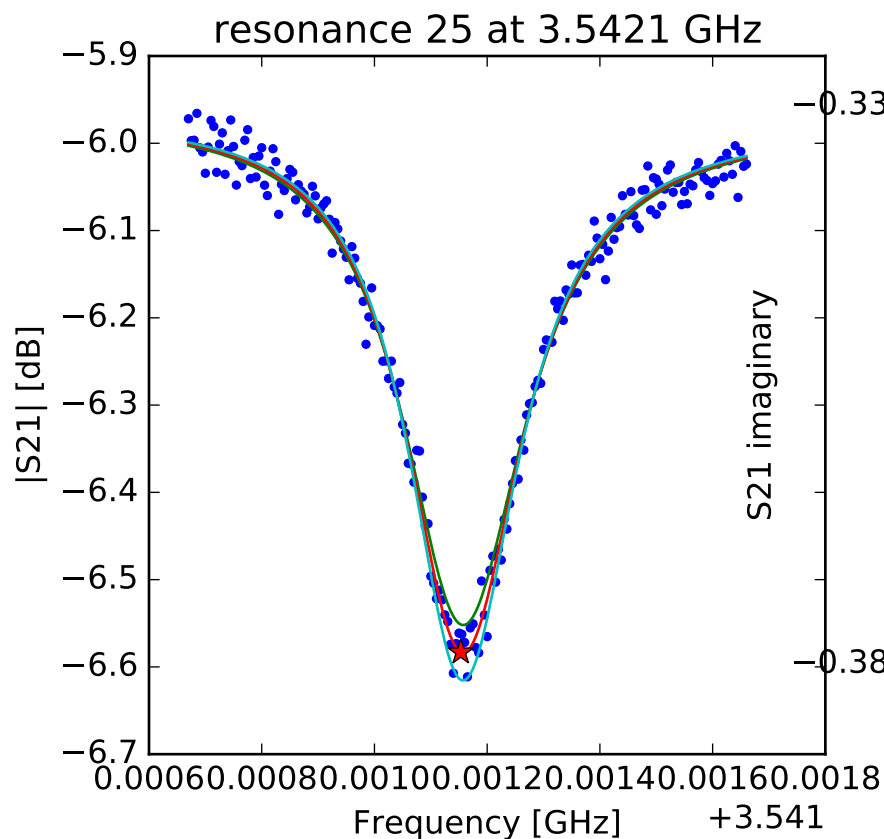


S21 imaginary



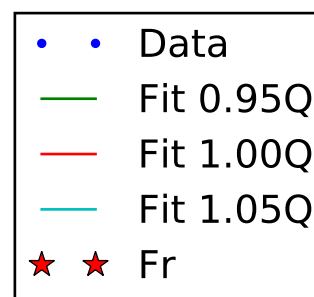
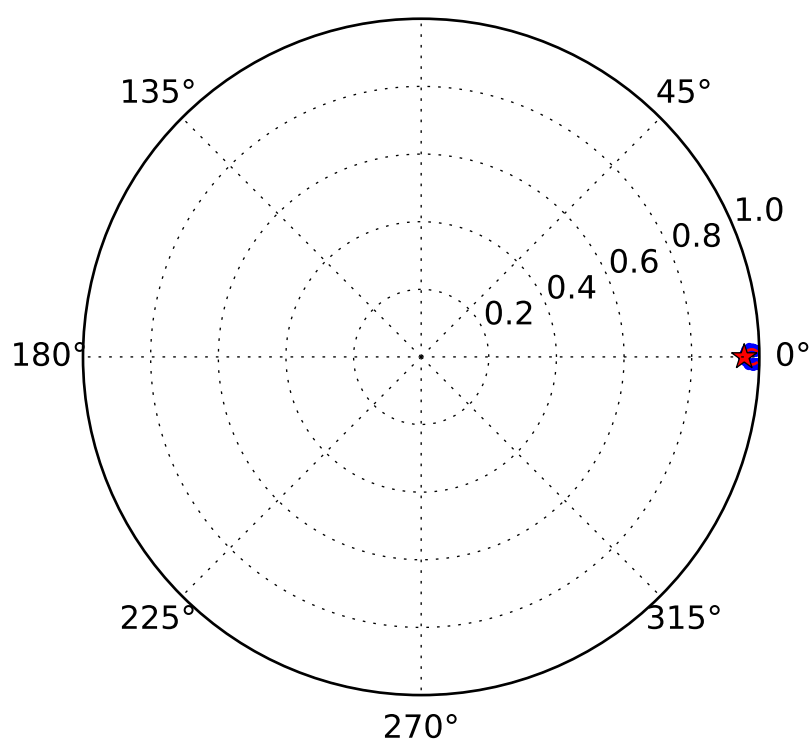
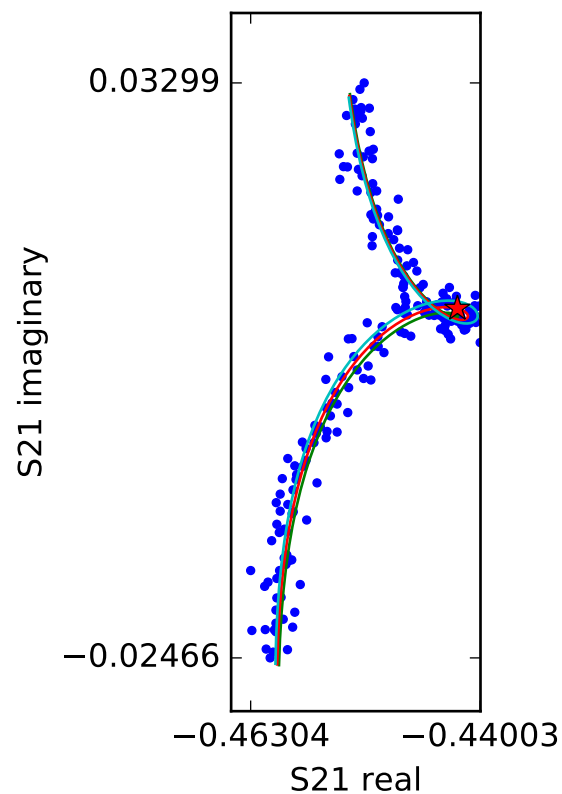
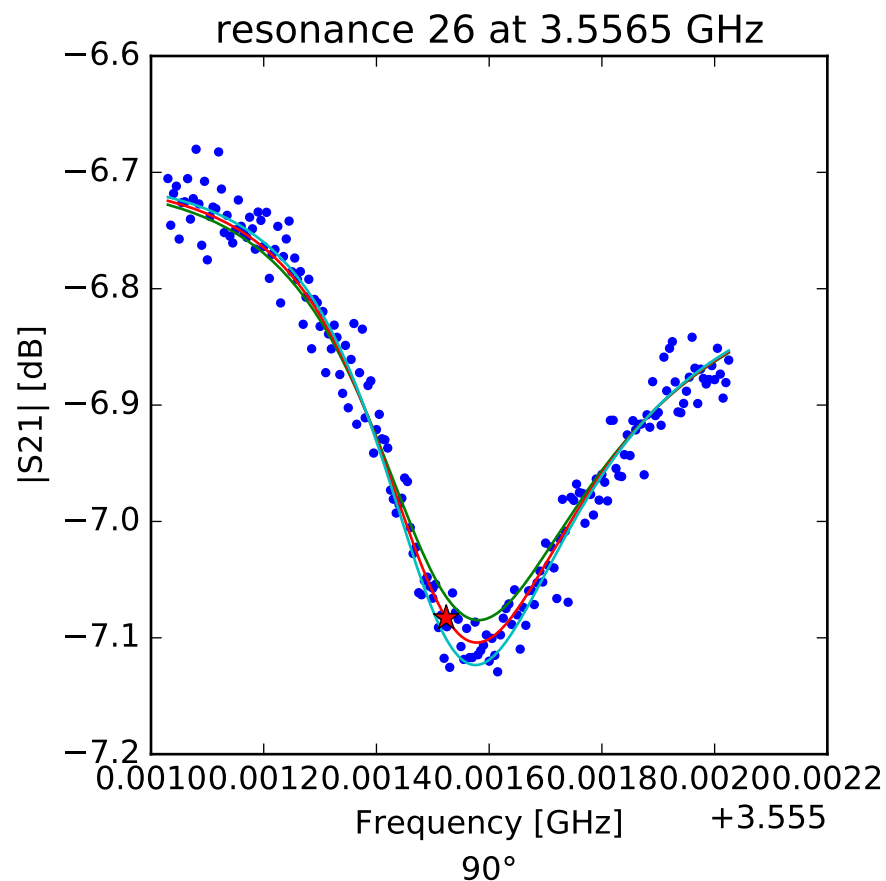
$$t_{21}(f) = ae^{-2\pi jf\tau} \left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r \left(\frac{f - f_r}{f_r} \right)} \right]$$

$f_r = 3.52761654096$
 $Q_r = 11307.5979648$
 $Q_c = 835686.435075$
 $a = (-0.254789826486 - 0.435874435511j)$
 $\phi = 0.553496006987$
 $\tau = 25.9133505953$



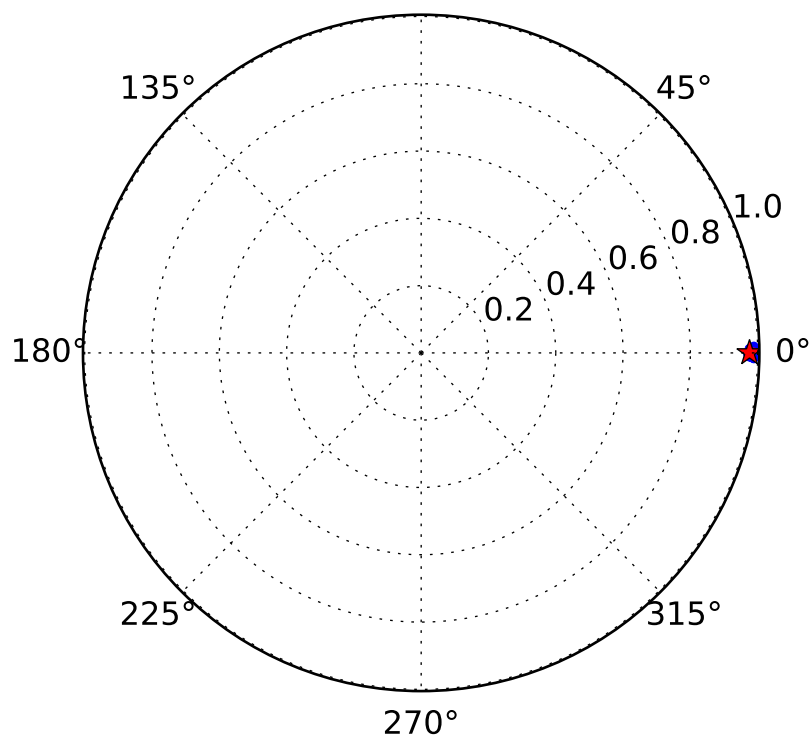
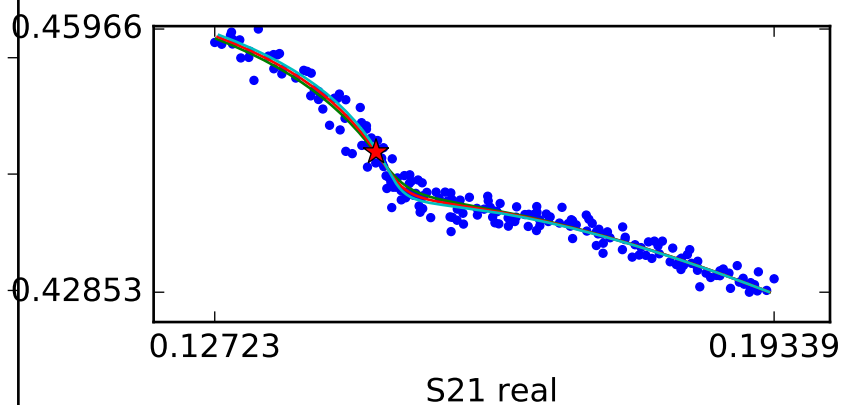
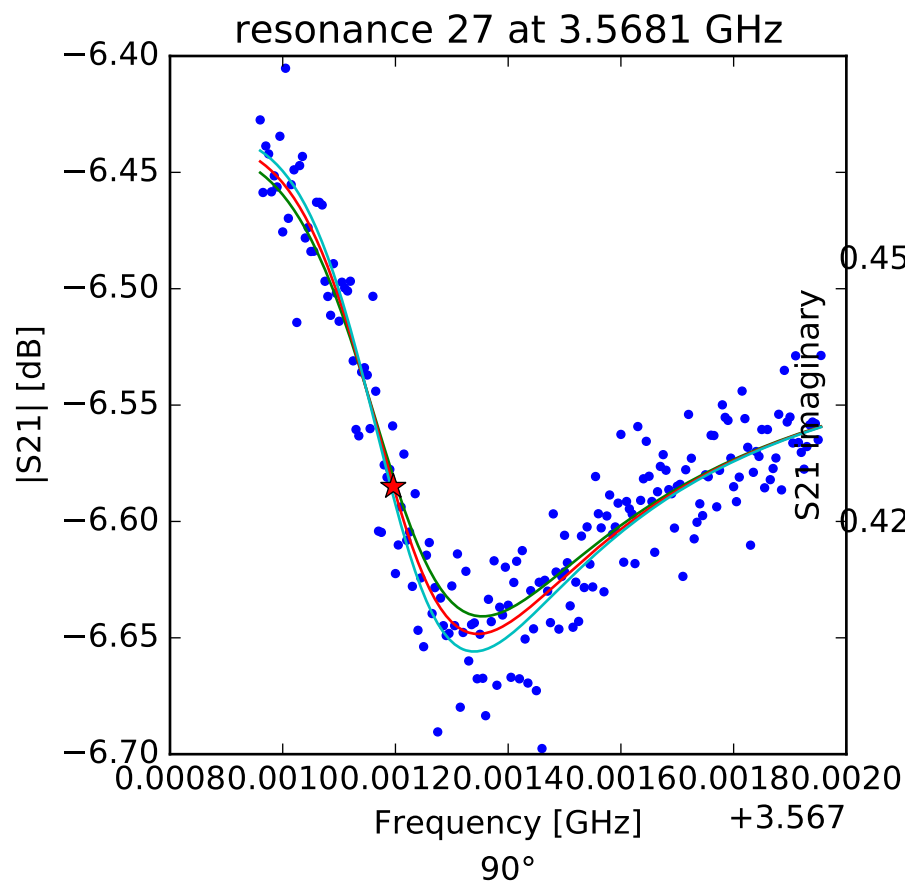
$$t_{21}(f) = ae^{-2\pi jf\tau} \left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r \left(\frac{f - f_r}{f_r} \right)} \right]$$

$f_r = 3.54215309794$
 $Q_r = 13532.7638584$
 $Q_c = 198481.295575$
 $a = (-0.501369183384 + 0.0386576646593j)$
 $\phi = 0.063140105005$
 $\tau = 26.7112104072$



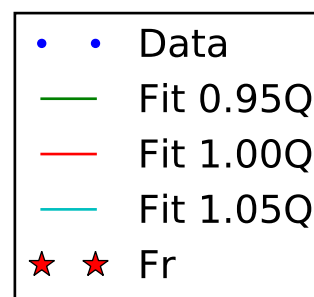
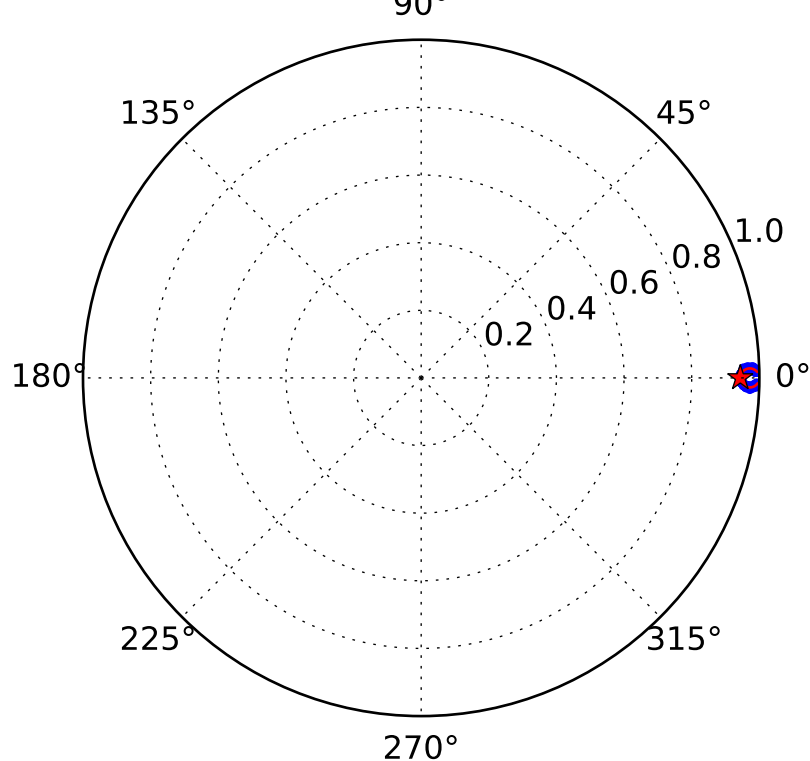
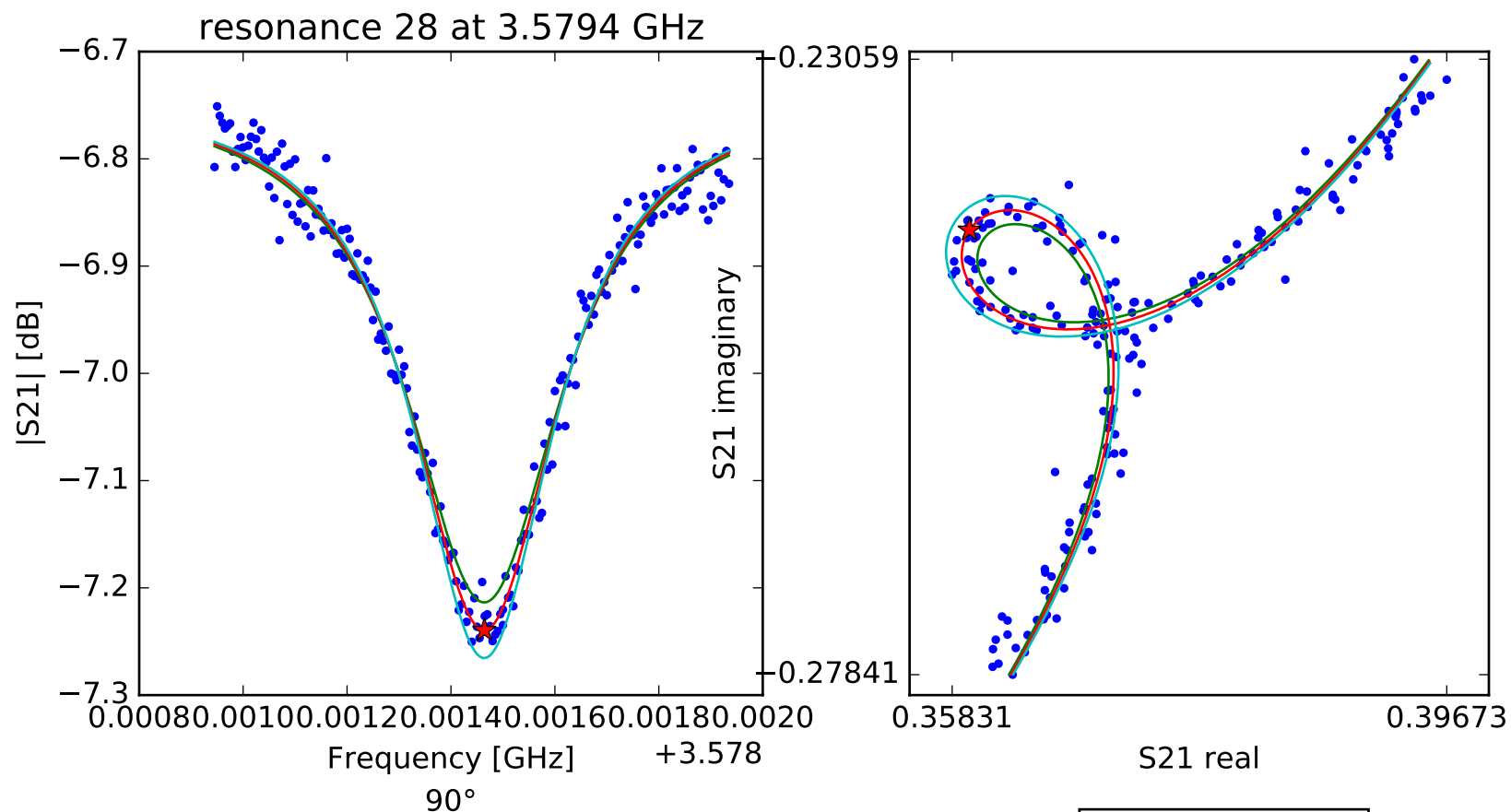
$$t_{21}(f) = ae^{-2\pi jf\tau} \left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r \left(\frac{f-f_r}{f_r} \right)} \right]$$

$f_r = 3.55652379583$
 $Q_r = 7584.2993646$
 $Q_c = 169362.55159$
 $a = (-0.192189448864 + 0.41900085559j)$
 $\phi = 0.44550001187$
 $\tau = 24.9735375526$



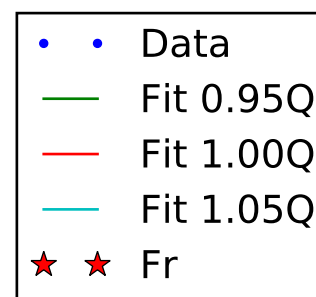
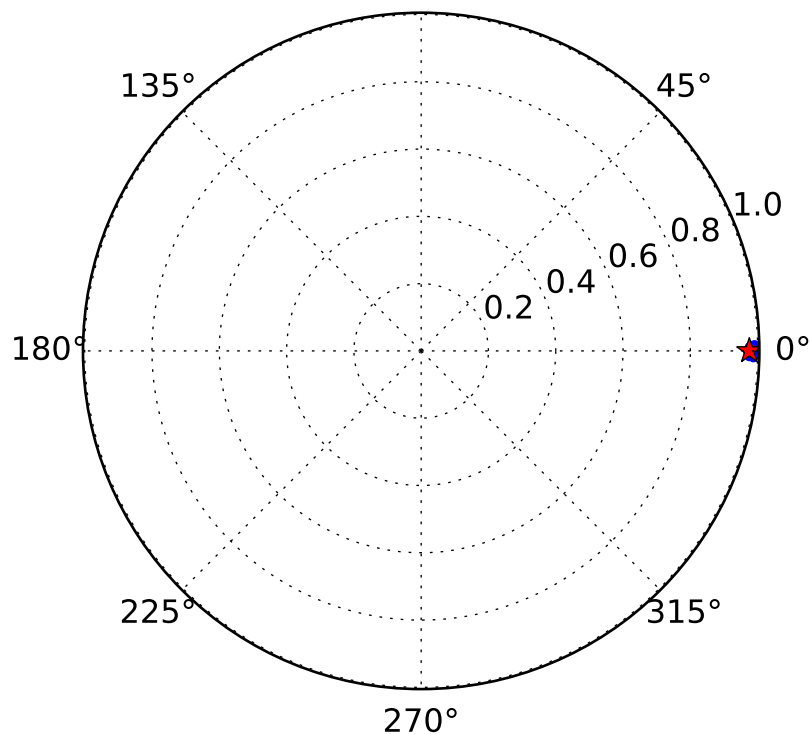
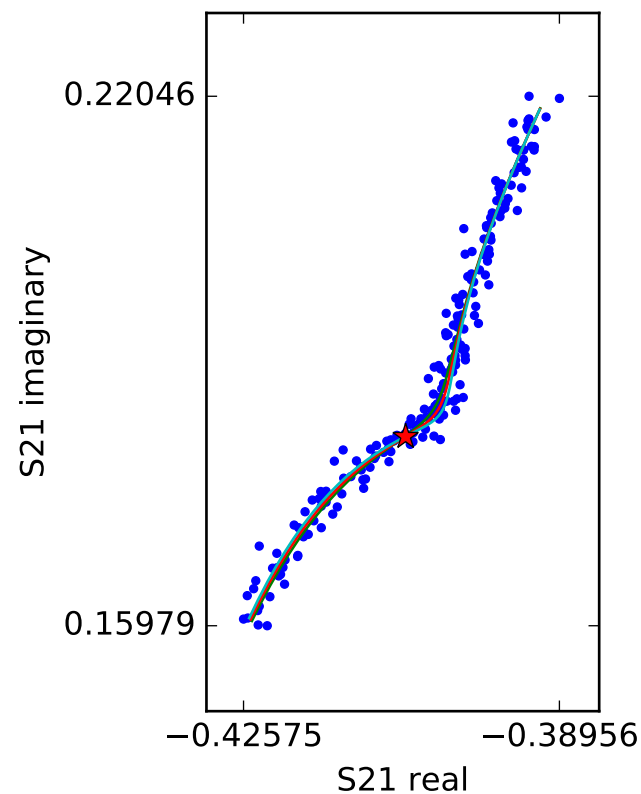
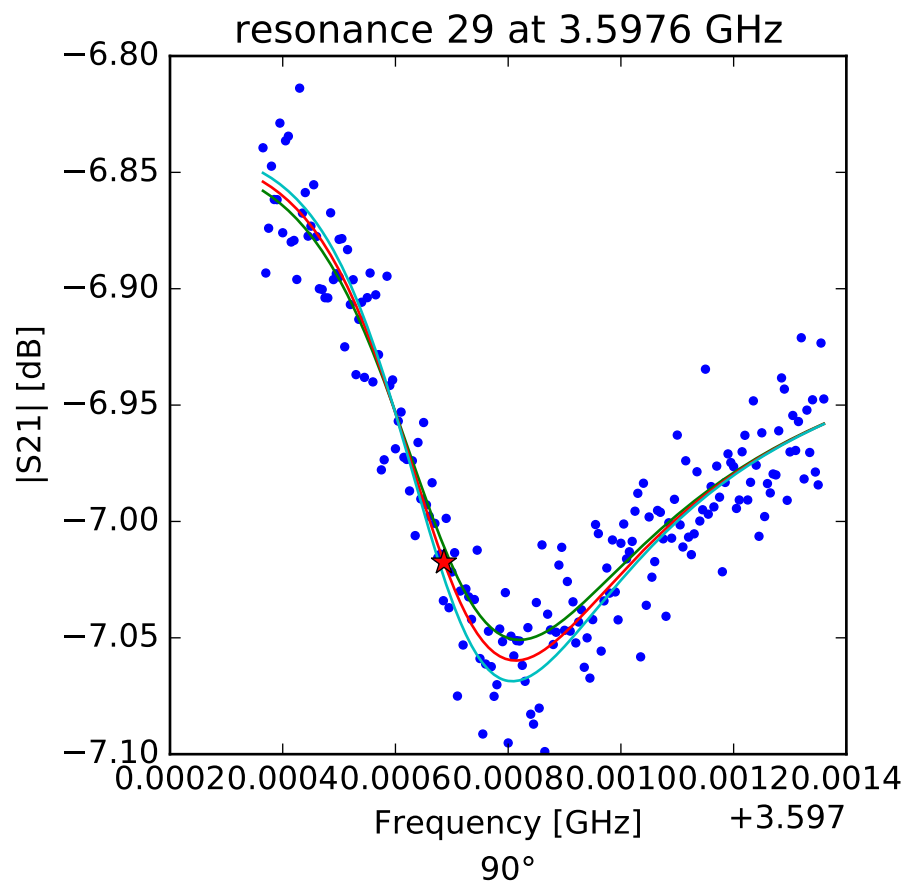
$$t_{21}(f) = ae^{-2\pi jf\tau} \left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r \left(\frac{f-f_r}{f_r} \right)} \right]$$

fr = 3.56819619631
 Qr = 7667.47782315
 Qc = 316432.273563
 a = (-0.142845389932+0.451187979859j)
 phi = 1.13573777215
 tau = 26.9312008149



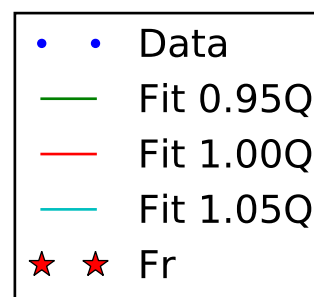
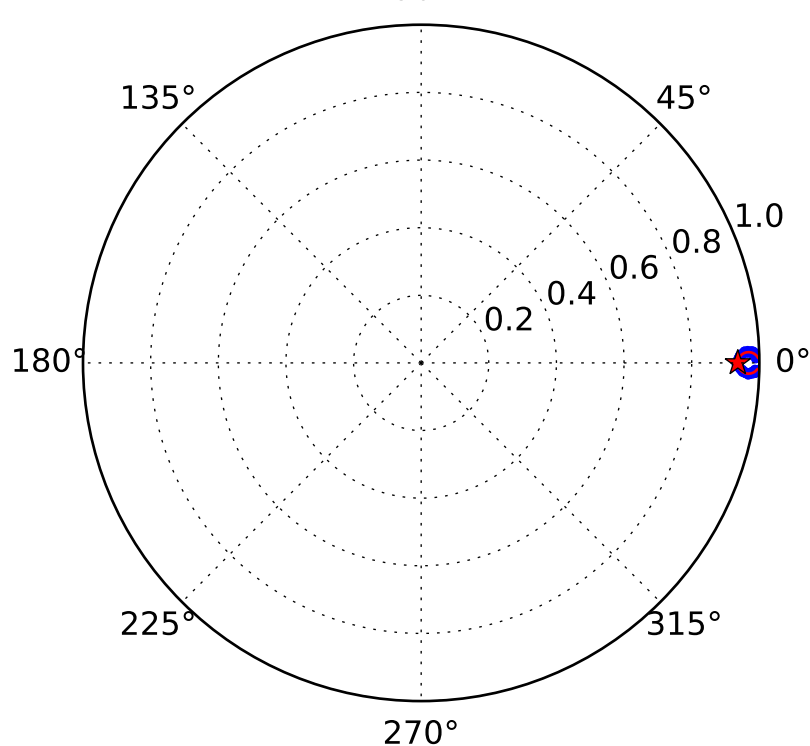
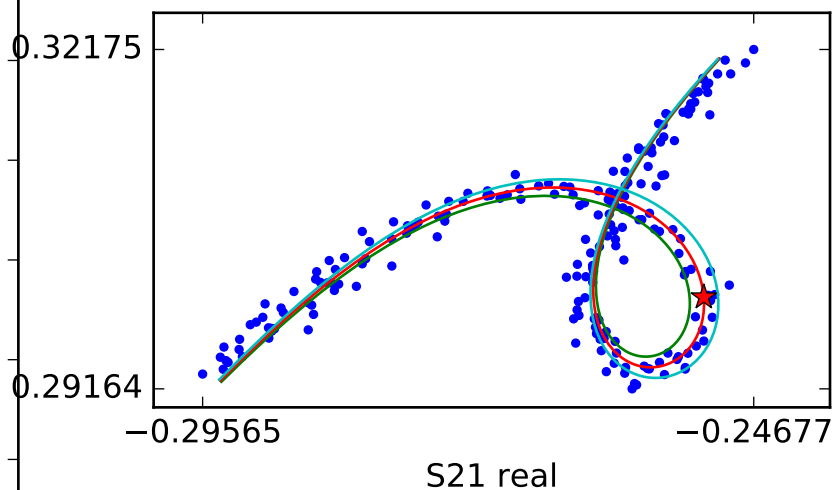
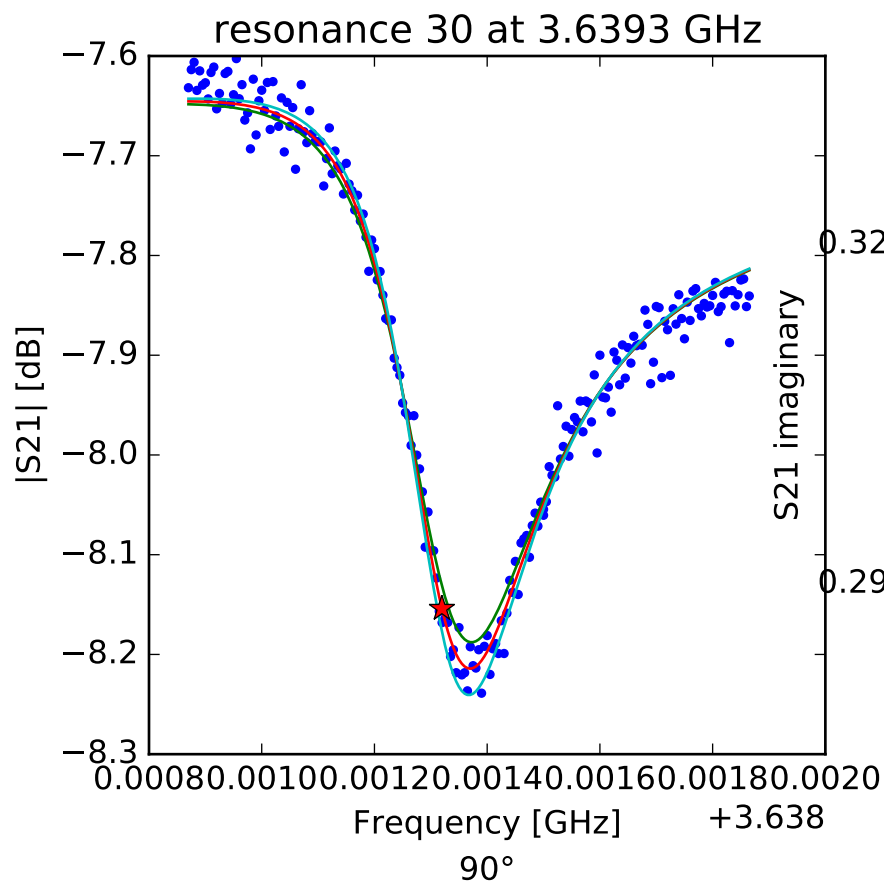
$$t_{21}(f) = ae^{-2\pi jf\tau} \left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r \left(\frac{f-f_r}{f_r} \right)} \right]$$

$f_r = 3.57946432372$
 $Q_r = 10087.9320413$
 $Q_c = 178949.537997$
 $a = (0.249966452322 + 0.386745119063j)$
 $\phi = -0.00399963312695$
 $\tau = 26.0523745492$



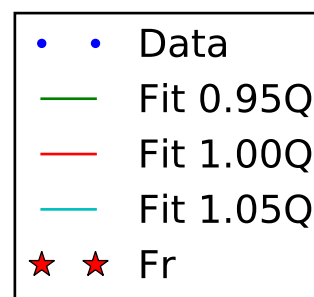
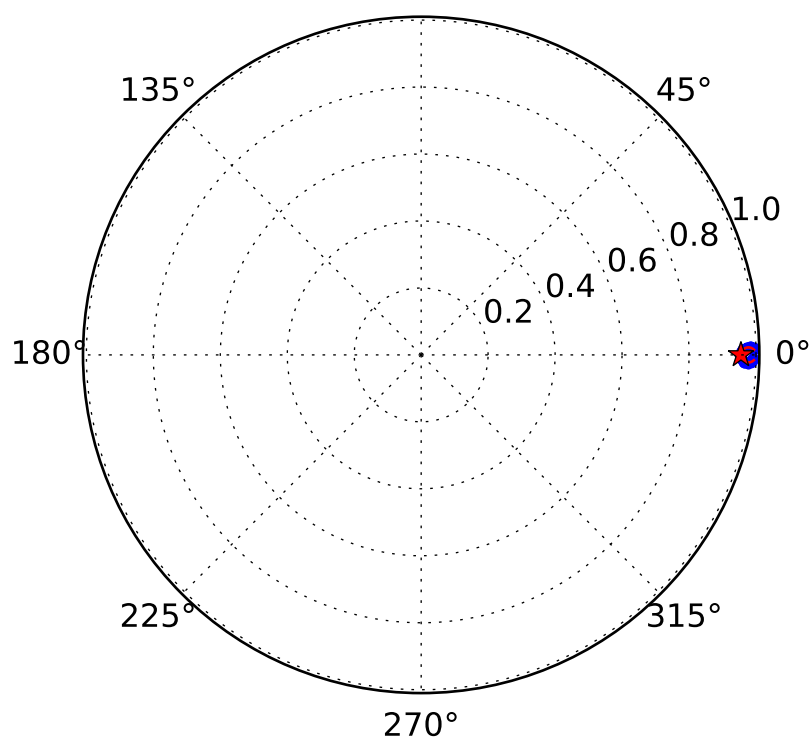
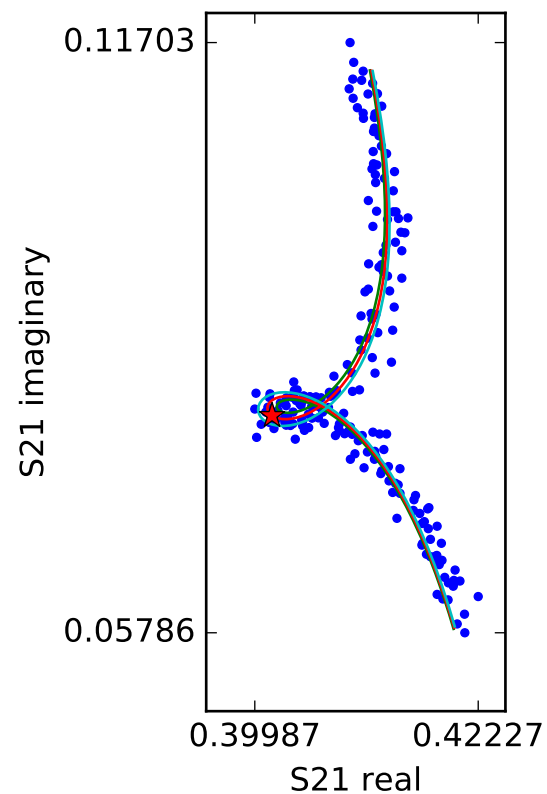
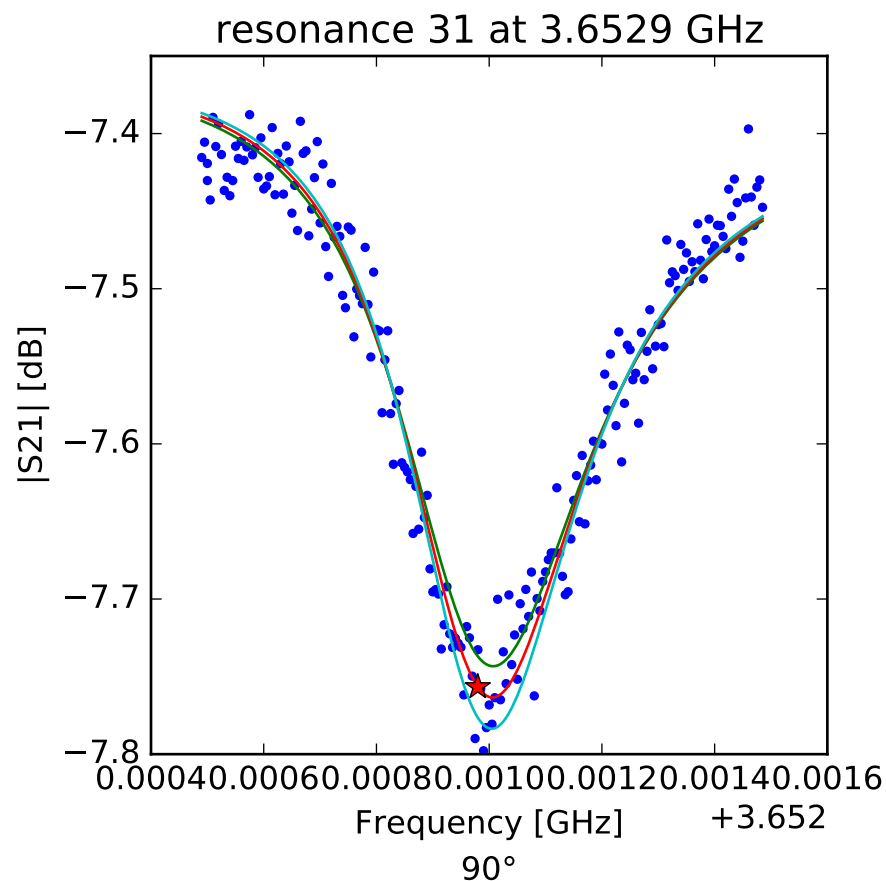
$$t_{21}(f) = ae^{-2\pi jf\tau} \left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r \left(\frac{f-f_r}{f_r} \right)} \right]$$

$f_r = 3.59768603424$
 $Q_r = 6858.143652$
 $Q_c = 276596.909505$
 $a = (-0.120743720788 + 0.436326151259j)$
 $\phi = 0.894389420009$
 $\tau = 26.6439496698$



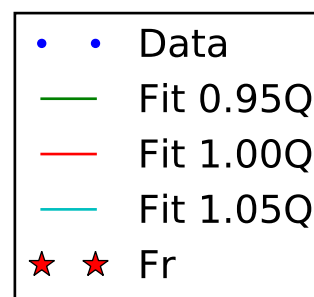
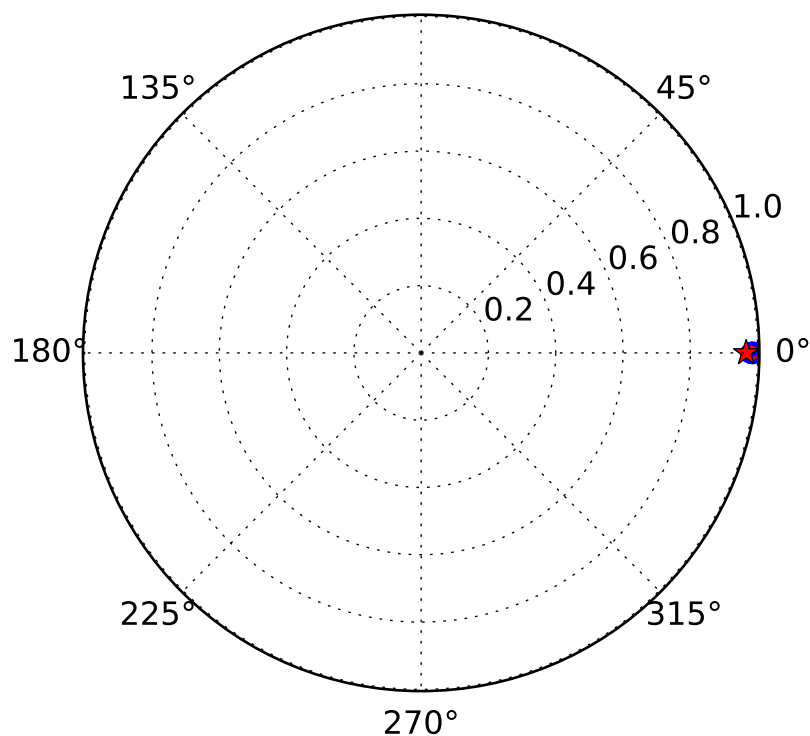
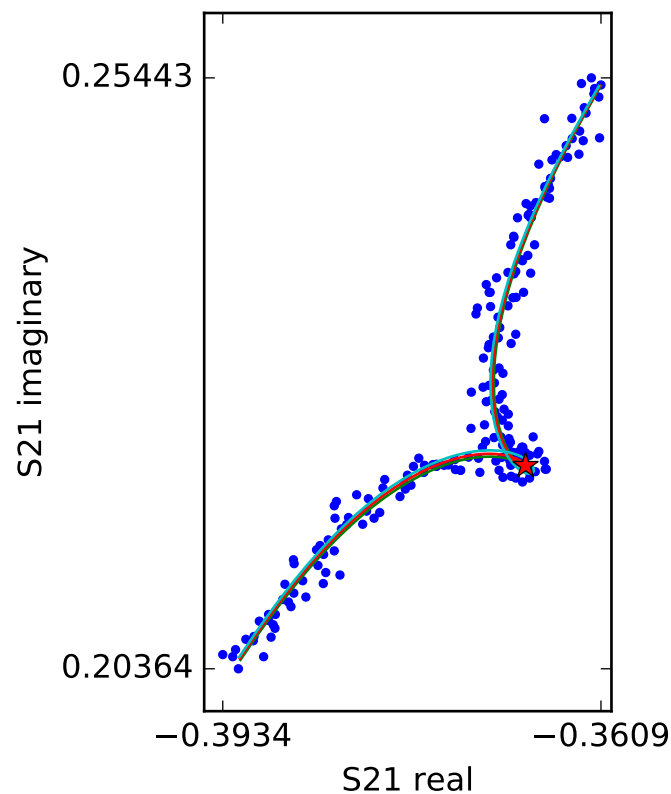
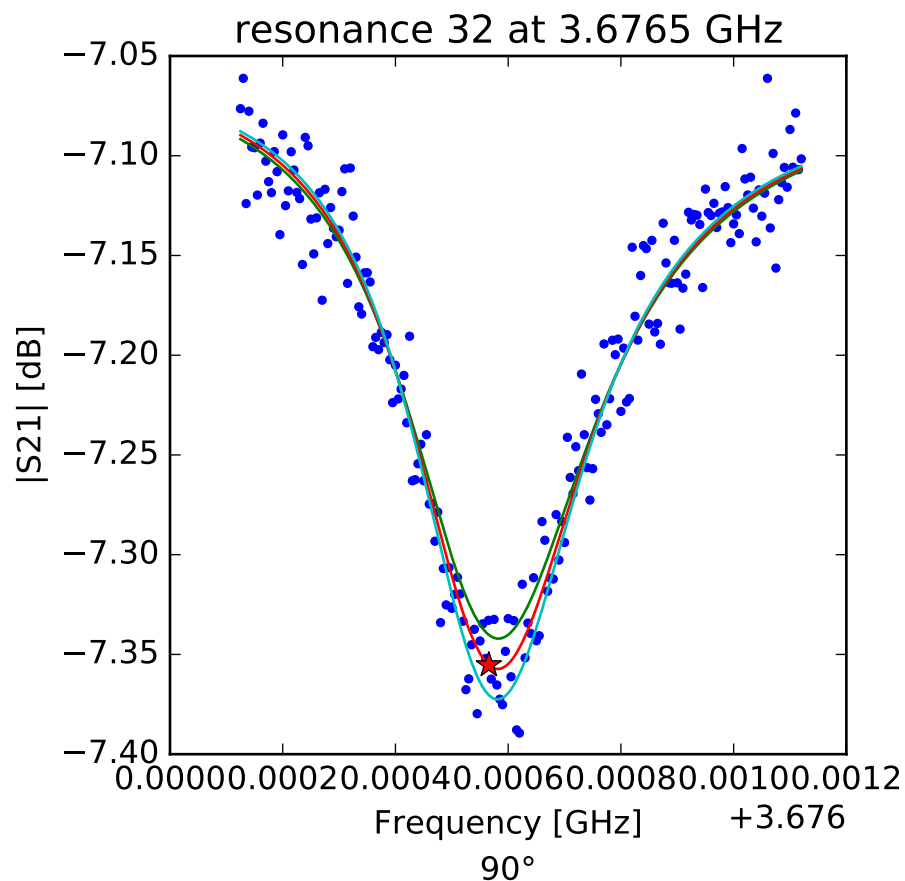
$$t_{21}(f) = ae^{-2\pi jf\tau} \left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r \left(\frac{f - f_r}{f_r} \right)} \right]$$

$f_r = 3.6393196514$
 $Q_r = 12093.0892122$
 $Q_c = 189623.243102$
 $a = (-0.341352206954 - 0.230955746031j)$
 $\phi = 0.623820654125$
 $\tau = 25.0671634446$



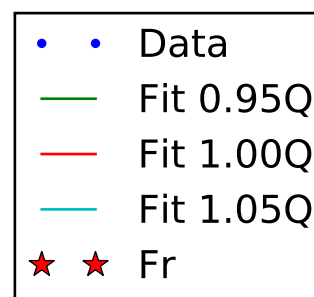
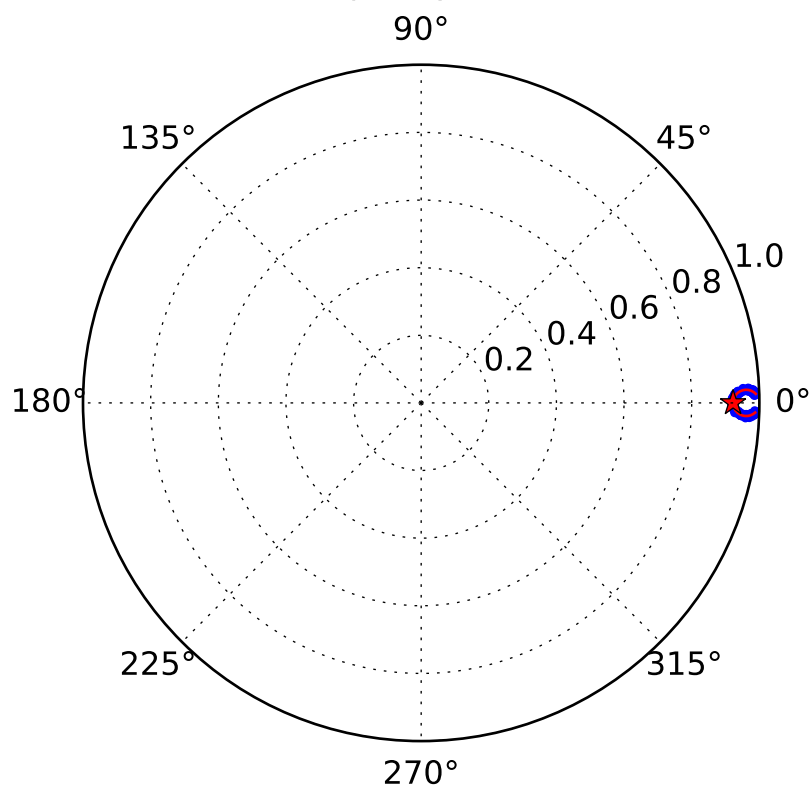
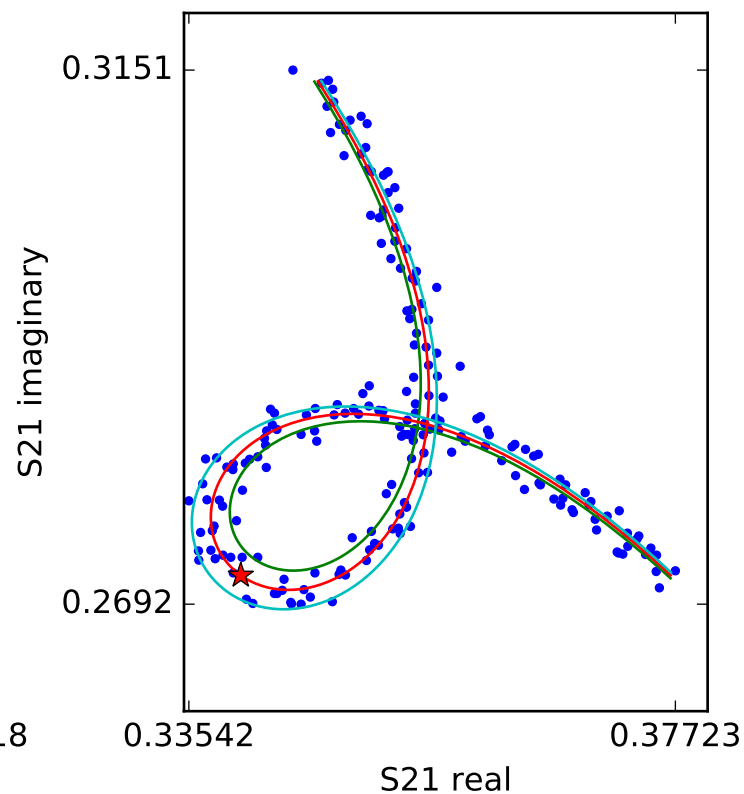
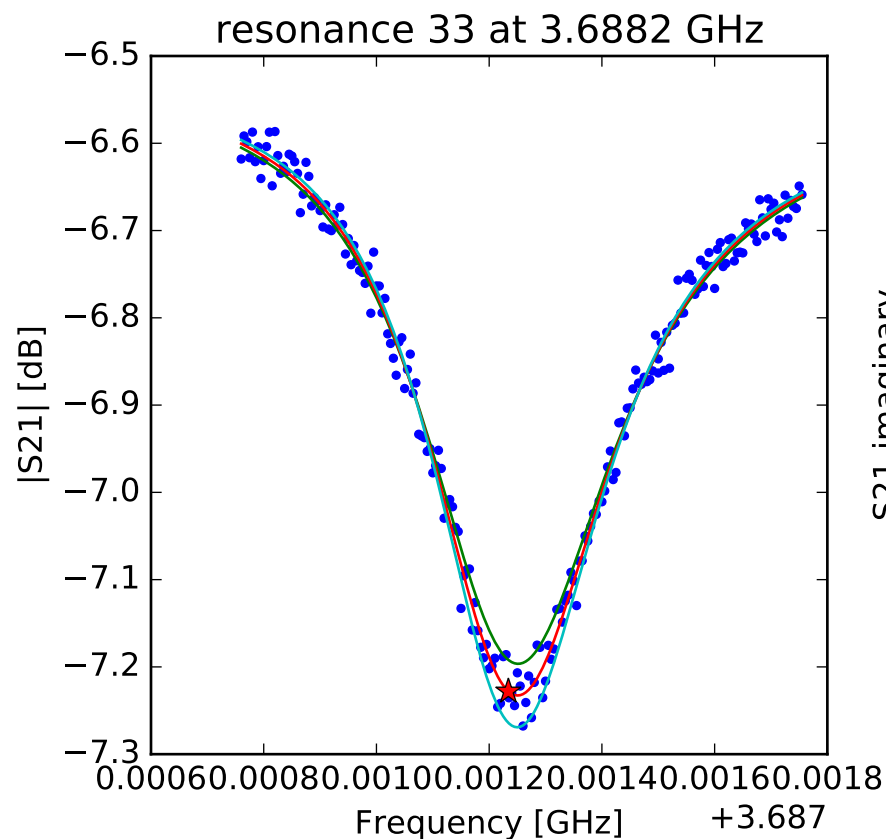
$$t_{21}(f) = ae^{-2\pi jf\tau} \left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r \left(\frac{f-f_r}{f_r} \right)} \right]$$

fr = 3.65297972277
 Qr = 9038.15837376
 Qc = 200534.267333
 a = (-0.356536533111+0.236933708762j)
 phi = 0.250319055457
 tau = 26.1084508406



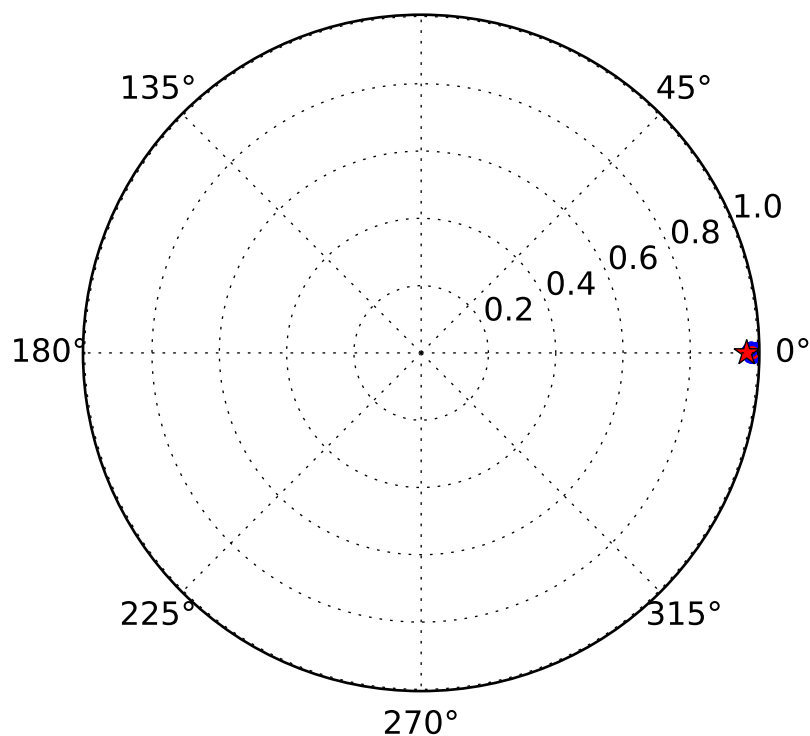
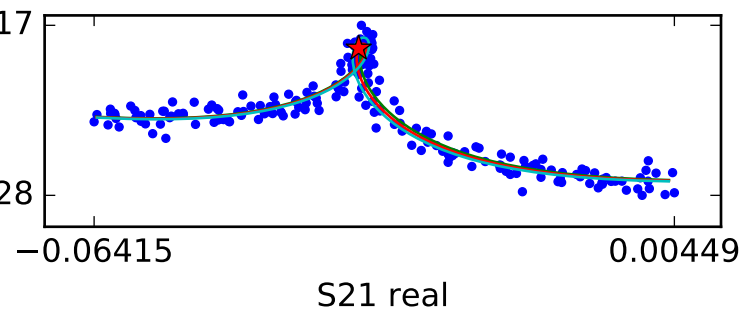
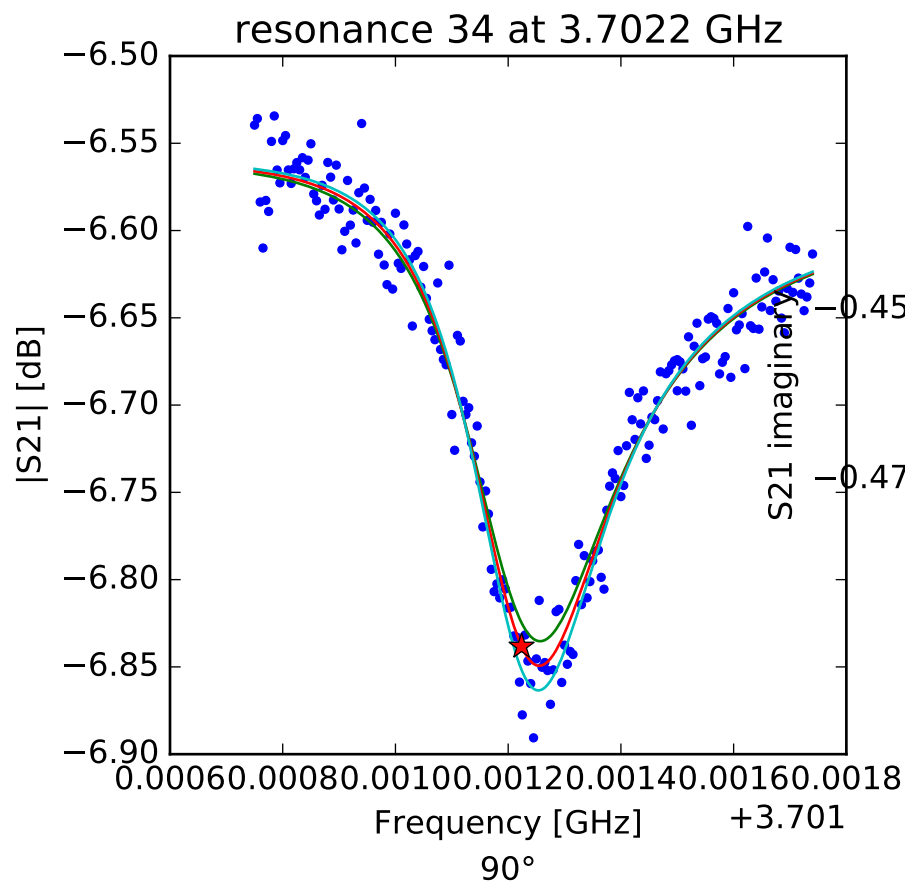
$$t_{21}(f) = ae^{-2\pi jf\tau} \left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r \left(\frac{f-f_r}{f_r} \right)} \right]$$

$f_r = 3.67656559774$
 $Q_r = 9206.61057056$
 $Q_c = 270249.008636$
 $a = (0.21171017351 - 0.389935055055j)$
 $\phi = 0.158636580886$
 $\tau = 24.8641023638$



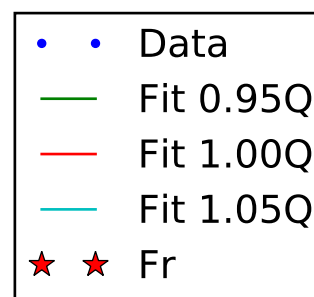
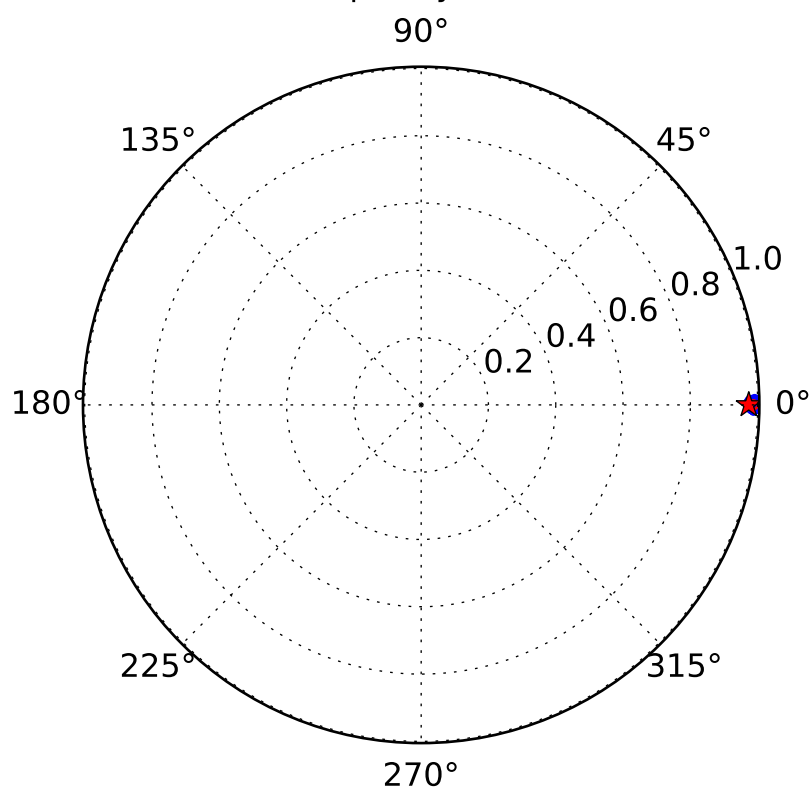
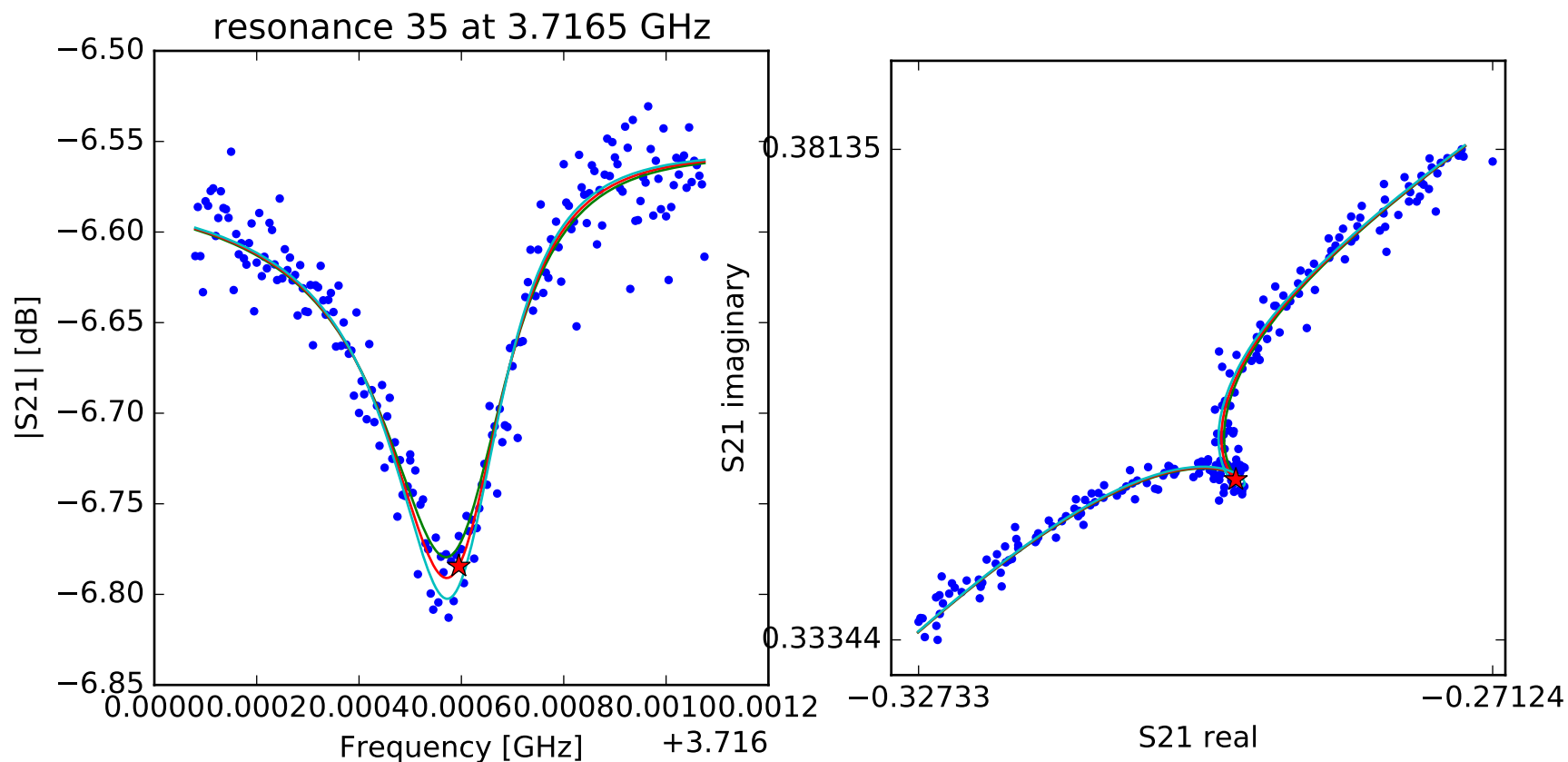
$$t_{21}(f) = ae^{-2\pi jf\tau} \left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r \left(\frac{f-f_r}{f_r} \right)} \right]$$

$f_r = 3.68823405812$
 $Q_r = 8876.68892104$
 $Q_c = 114208.405063$
 $a = (0.150347251371 - 0.446658364217j)$
 $\phi = 0.15211832982$
 $\tau = 26.7586932633$



$$t_{21}(f) = ae^{-2\pi jf\tau} \left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r \left(\frac{f-f_r}{f_r} \right)} \right]$$

$f_r = 3.70222373411$
 $Q_r = 11671.4980954$
 $Q_c = 357519.857493$
 $a = (0.438467291486 - 0.167159551751j)$
 $\phi = 0.383515817932$
 $\tau = 26.254903876$



$$t_{21}(f) = ae^{-2\pi jf\tau} \left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r \left(\frac{f-f_r}{f_r} \right)} \right]$$

$f_r = 3.71659498084$
 $Q_r = 13184.2378021$
 $Q_c = 497451.51517$
 $a = (0.449219113577 - 0.137094076912j)$
 $\phi = -0.329030670312$
 $\tau = 26.5275708418$