

04-23-2015

# UHF RFID Antenna Report

## GenX SB US version

Engineering Samples for EV3

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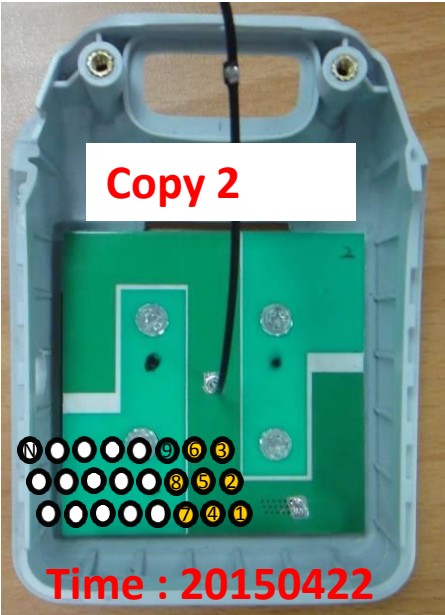
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# EV3-Engineering Copies

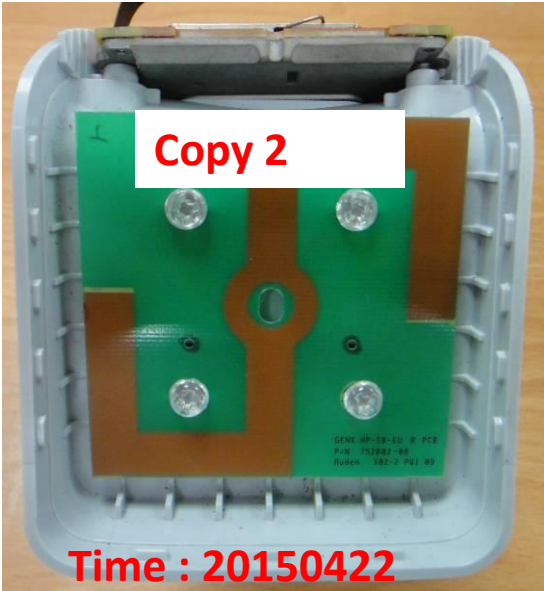
| Conf.  | WQ | WR   | P:Q    | P:R    | Z (pf)  | Cable | Hsg.   | M.BD  | U.Ch | Batt. | Imgr |
|--------|----|------|--------|--------|---------|-------|--------|-------|------|-------|------|
| C +180 | 11 | 8.25 | 1.07:1 | 1.07:1 | 1.0+1.0 | bend  | FR3010 | 1,EV2 | gnd  | 1     | 1    |

Integration(Q+R, Cal. C) – EV2 ID  
 Q31.5(W<sub>Q</sub>=11mm,W<sub>s</sub>=9mm)  
 Via used = 8,  
 R31.5(W<sub>R</sub>=8.25mm)  
 P:Q=1.07:1, P:R=1.07:1,  
 Cs=1.0 + 1.0 (pF) ;  
 Size :0402;  
 Material : RO 4534 Q element  
 FR4 R element  
 MMCX1 Cable  
 Test time : 20150422

Time : 20150422



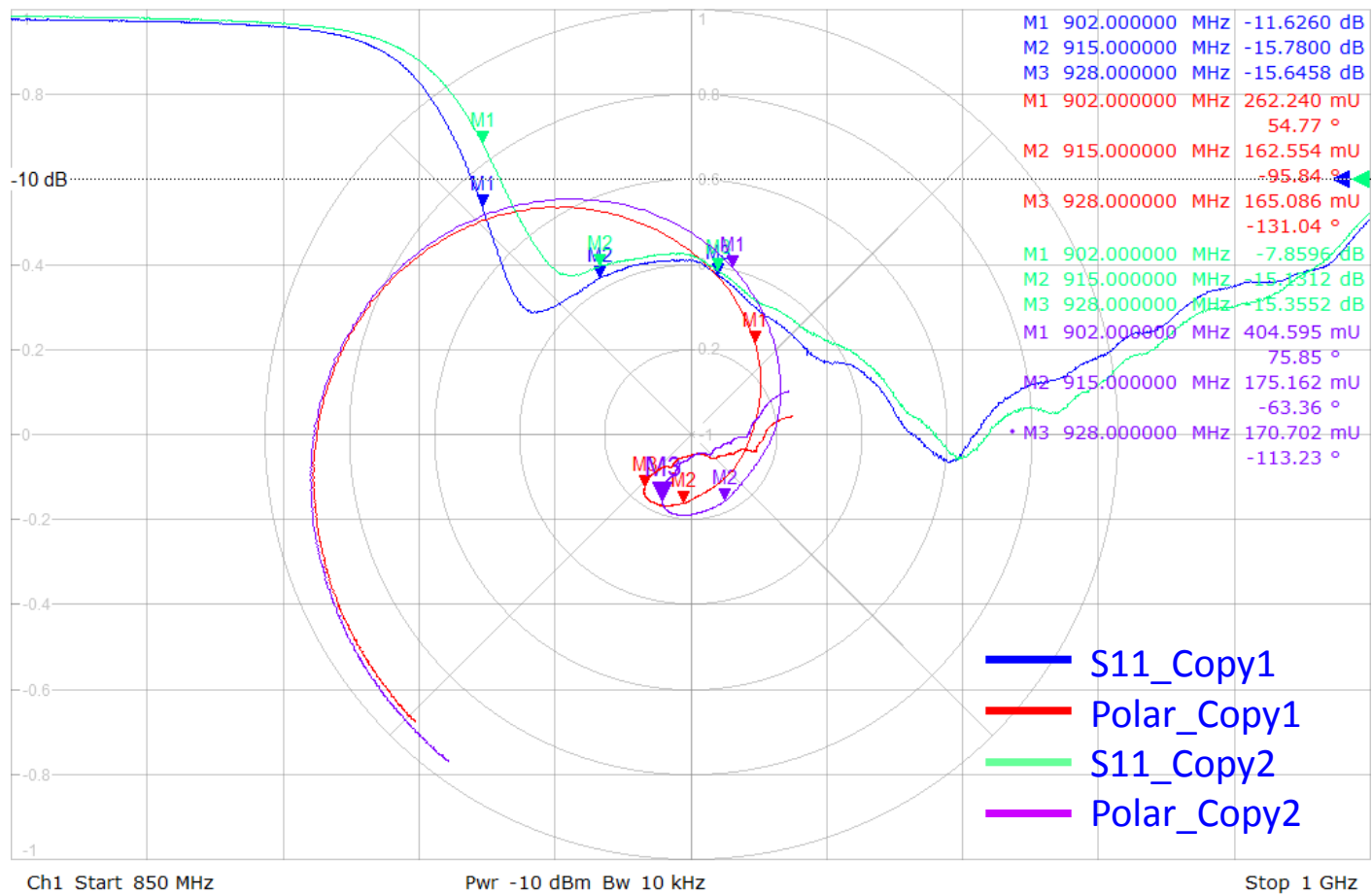
Time : 20150422



# EV3-Engineering Copies - S11 Tests

4/22/2015 11:38:19 AM  
1311.6010K42-102677-gt

Trc1 S11 dB Mag 5 dB/ Ref -10 dB Cal Offs Trc2 S11 Polar 200 mU/ Ref 1 U Cal Offs 1  
 Mem3[Trc1] S11 dB Mag 5 dB/ Ref -10 dB Offs Mem4[Trc2] S11 Polar 200 mU/ Ref 1 U Offs



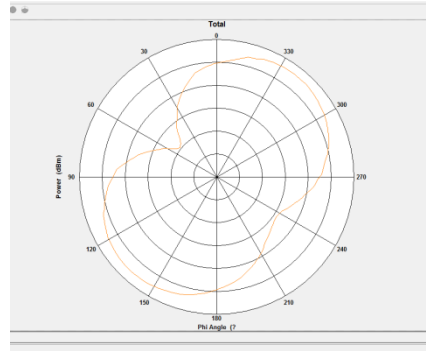
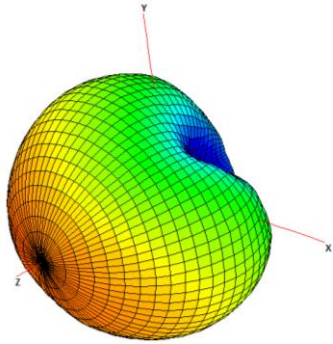
Ch1 Start 850 MHz Pwr -10 dBm Bw 10 kHz Stop 1 GHz

| Conf.  | WQ | WR   | P:Q    | P:R    | Z           | Cable | Hsg.   | M.BD  | U.Ch | Batt. | Imgr |
|--------|----|------|--------|--------|-------------|-------|--------|-------|------|-------|------|
| C +180 | 11 | 8.25 | 1.07:1 | 1.07:1 | 1.0pf+1.0pf | bend  | FR3010 | 1,EV2 | gnd  | 1     | 1    |

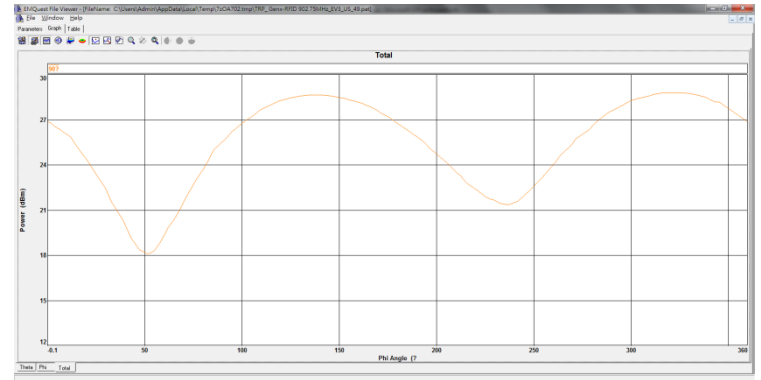
# EV3-Engineering Copies - Radiation Performance

| One Channel-H pol<br>Copy 2 | Q=R=31.5, W <sub>Q</sub> =11 W <sub>S</sub> =9, W <sub>R</sub> =8.25 P:Q 1.07:1 P:R 1.07 Via<br>used=8, Cs=1.0 pf +1.0 pf |        |       |       |       |       |       |
|-----------------------------|---|--------|-------|-------|-------|-------|-------|
| Frequency (MHz)             | 889   | 902    | 908   | 915   | 921   | 928   | 941   |
| Efficiency(%)               | 12.65   | 62.01  | 76.90 | 75.38 | 77.32 | 79.78 | 84.50 |
| Front V, max 0deg (dBi)     | -5.52   | 1.12   | 1.57  | 1.73  | 1.39  | 1.25  | 0.84  |
| Front V, max 90deg (dBi)    | -6.13   | 0.76   | 1.36  | 1.59  | 1.36  | 1.33  | 0.96  |
| Forward G, dBi              | -3.00   | 4.04   | 4.49  | 4.63  | 4.35  | 4.29  | 3.85  |
| Back G, dBi                 | -5.49   | -10.94 | -9.39 | -5.69 | -4.11 | -2.65 | -1.20 |
| V/H ratio, dBi              | -0.61   | -0.36  | -0.21 | -0.14 | -0.03 | 0.08  | 0.12  |
| F/B ratio                   | 2.5   | 15.0   | 13.9  | 10.3  | 8.5   | 6.9   | 5.1   |

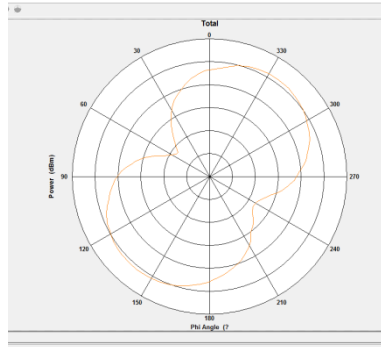
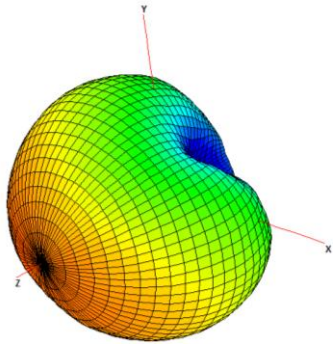
3D-pattern



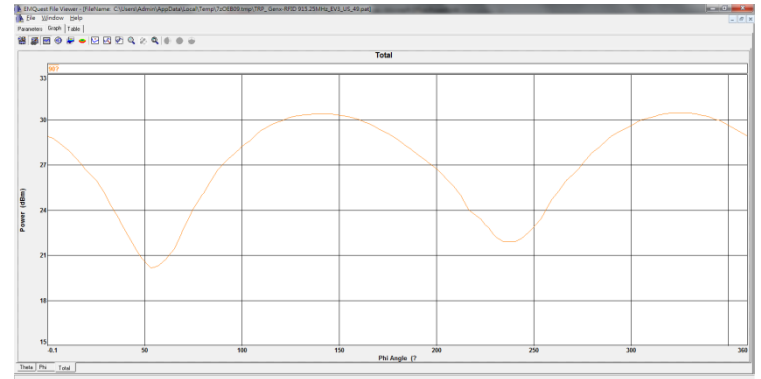
3dB beam width=88度



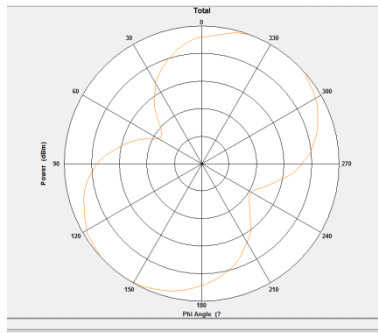
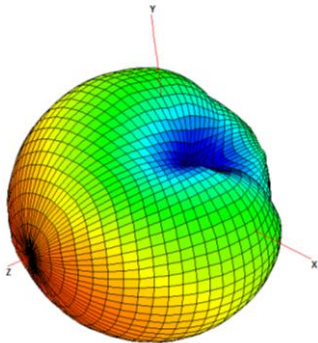
3D-pattern



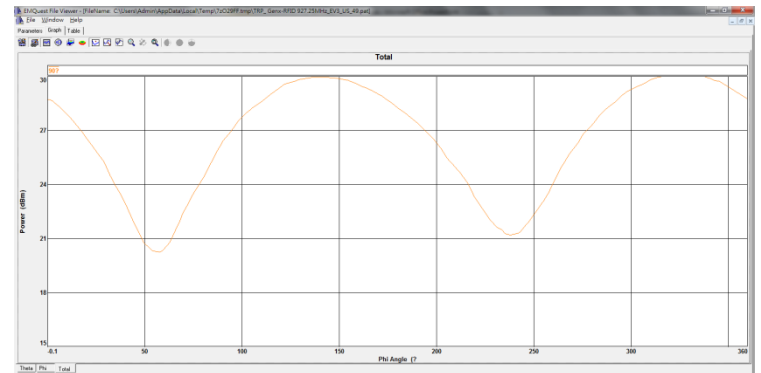
3dB beam width=86度



3D-pattern



3dB beam width=86度



902.75MHz

915.25MHz

927.25M

**Thank You**  
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