

SPECIFICATION

Patent Pending

FXP.810 2.4/4.9-6GHz Dual-band Dipole Antenna

| | | |
|--------------|---|---|
| Part No. | : | FXP.810.09.0100C |
| Product Name | : | FXP.810 Freedom WIFI 2.4/4.9-6GHz Series Dipole Antenna |
| Feature | : | Very High Efficiency Ground-plane Independent MMCX(M)RA Connector 1.37mm Diameter Micro Cable - 100 mm 31mm*31mm*0.1 mm RoHS Compliant |



Introduction

The FXP810 has a peak gain of 1.5dBi at 2.4GHz and efficiencies of 60-70%, increasing to 5dBi and 80-90% along bands 4.9GHz to 6GHz.

At 31*31*0.1mm in size this antenna is uniquely valuable for small tag type mobile devices in that it can slip between the battery and the main PCB ground of small devices to get increased performance from the ground coupling effect. Only the top 6.5mm radiating element needs to protrude out from the side of the main board, allowing such devices to have the highest possible performance at smallest possible dimensions, it accomplishes this because it does not need clearance or footprint space on the device board itself that all on-board chip, loop and patch antennas need.

I. Specification

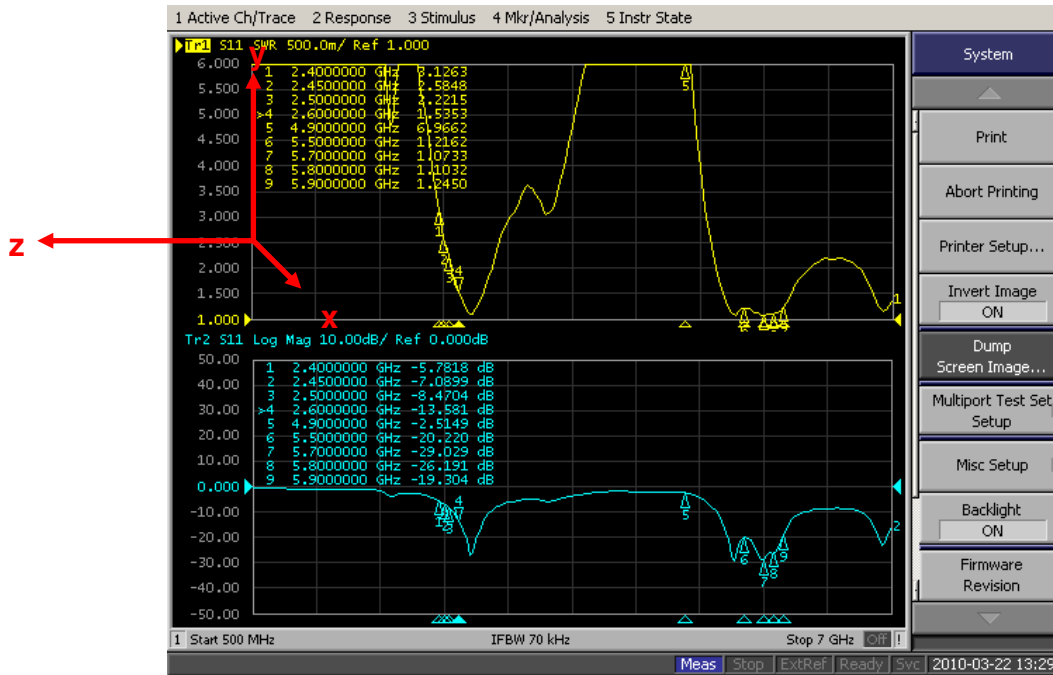
| ELECTRICAL | | |
|---------------------------|-----------------------------|--------------|
| Frequency | 2.4 ~ 2.5GHz, | 4.9 ~ 5.8GHz |
| Peak Gain (free space) | 1.5dBi | 5.1dBi |
| Peak Gain (on plastic*) | 2.4dBi | 5.0dBi |
| Average Gain (free space) | -2.6dBi | -1.1dBi |
| Average Gain (on plastic) | -1.2dBi | -0.8dBi |
| Efficiency (free space) | 56% | 78% |
| Efficiency (on plastic) | 76% | 84% |
| VSWR | ≤ 1.7 : 1 | |
| Impedance | 50 Ohms | |
| Polarization | Linear | |
| Radiation Pattern | Omni | |
| Input Power | 2W max. | |
| MECHANICAL | | |
| Dimensions | 31mm*31mm*0.1mm | |
| Antenna Body Material | Polymer | |
| Cable | Gray 100mm 1.37 co-axial | |
| Connector | MMCX(M)RA | |
| ENVIRONMENTAL | | |
| Temperature Range | -40 °C to 85 °C | |
| Humidity | Non-condensing 65 °C 95% RH | |

* On ABS Plastic 4mm

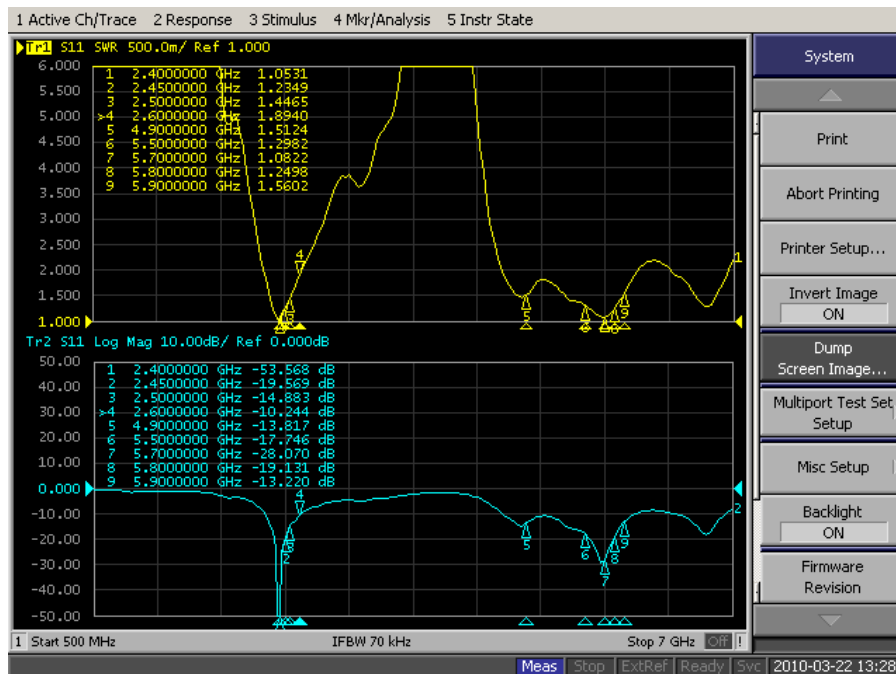
II. Electrical Property

II.1.S11 Measurement

Free Space:

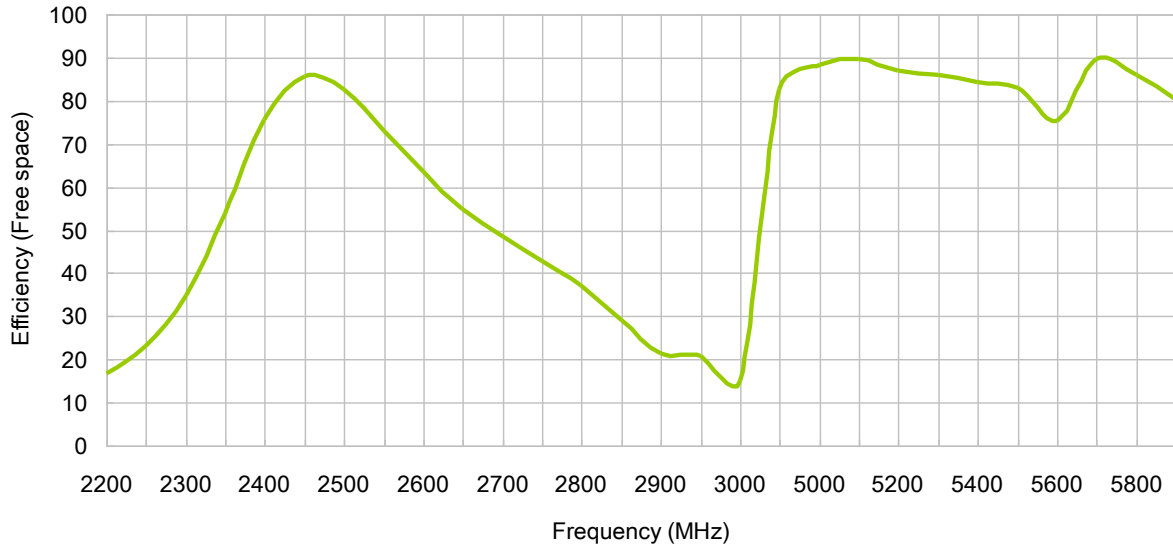


Plastic 1.5mm:



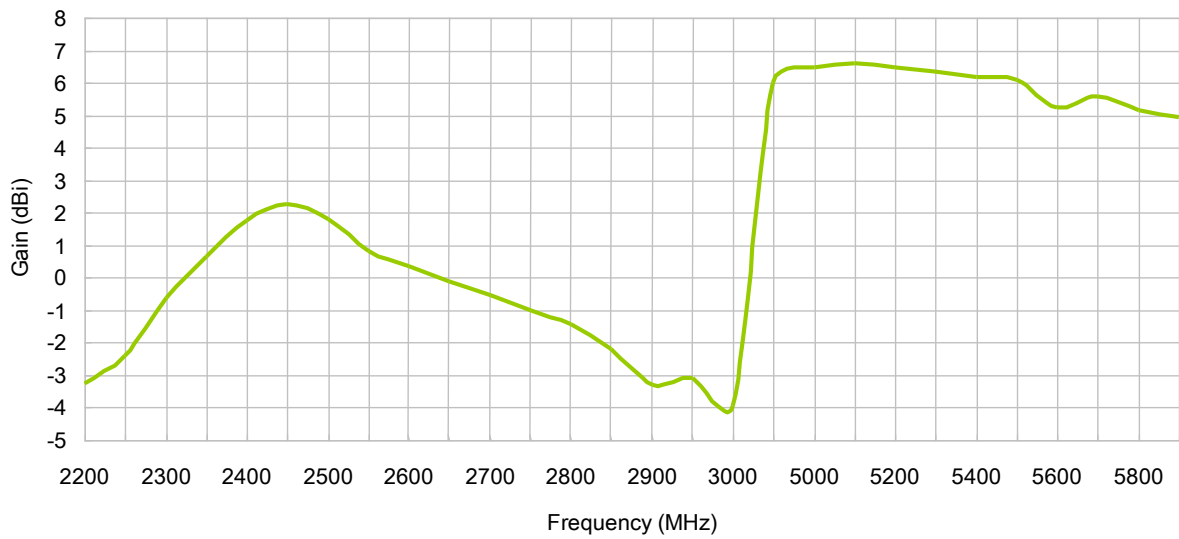
II.2. Efficiency

FXP. 810

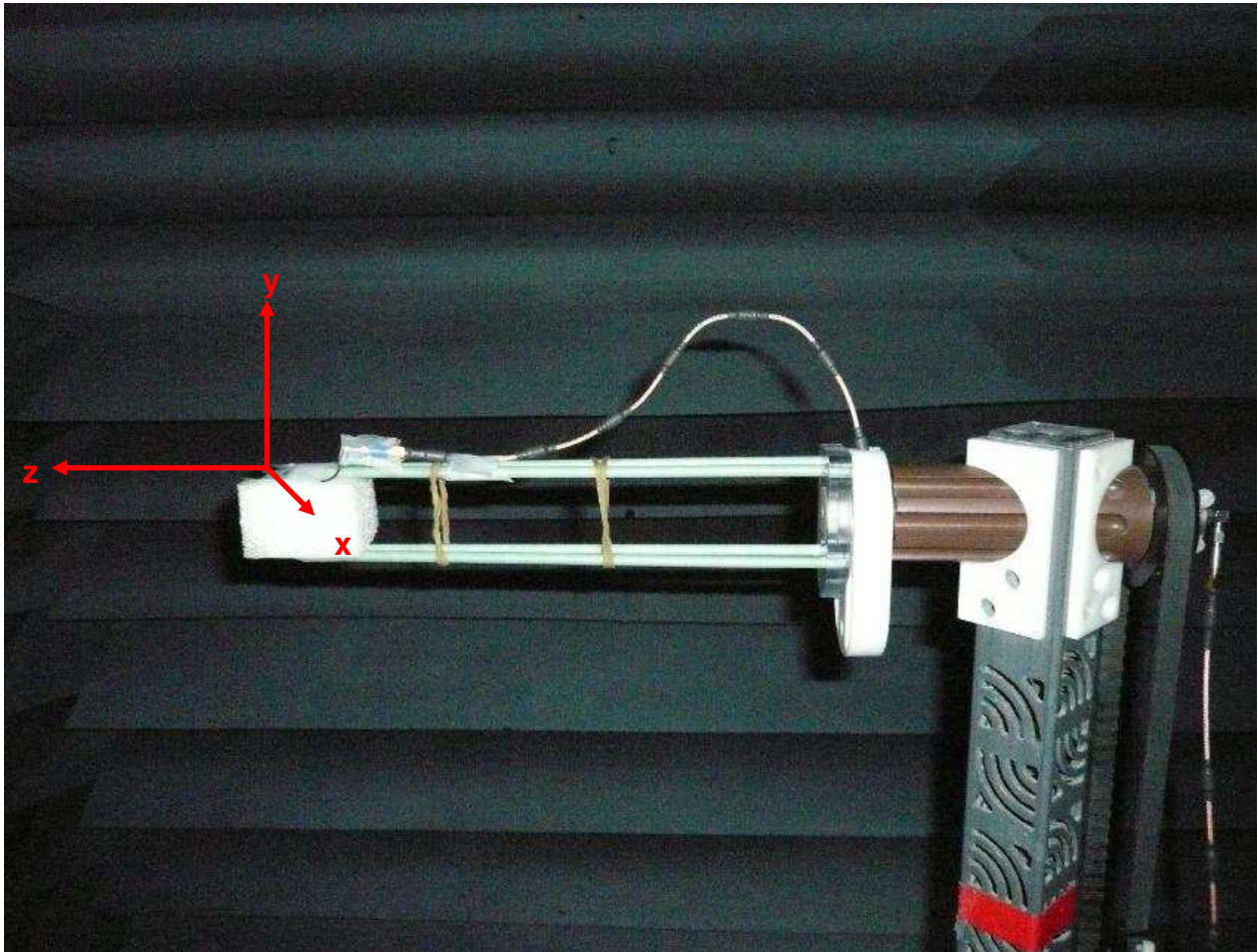


II.3. Gain

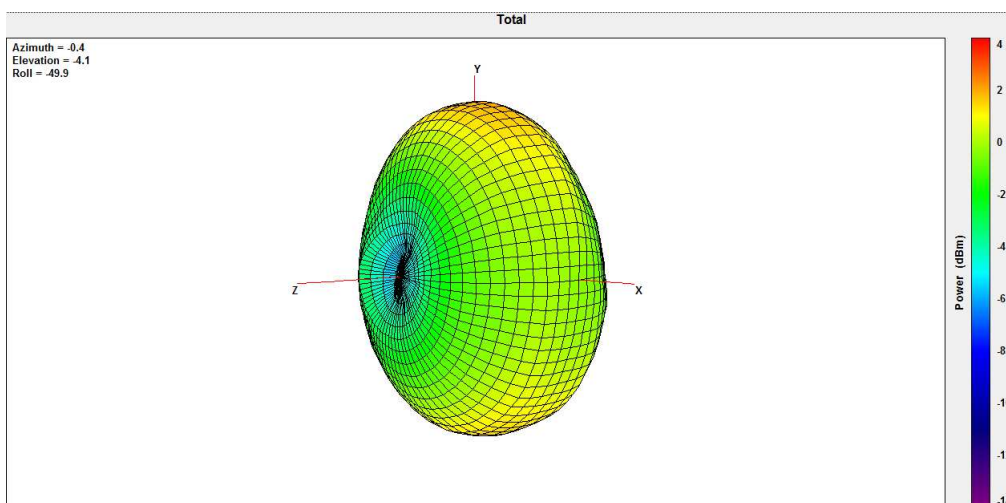
FXP. 810



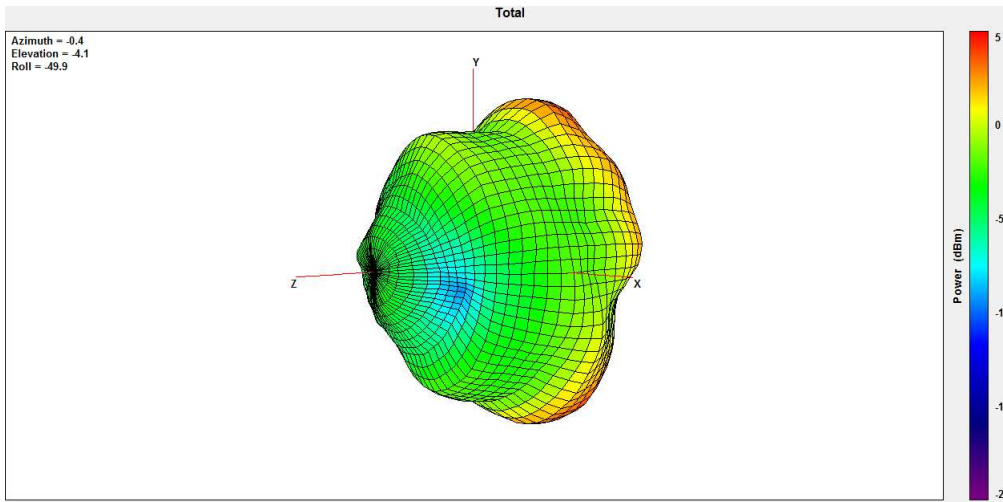
II.4. Radiation Pattern



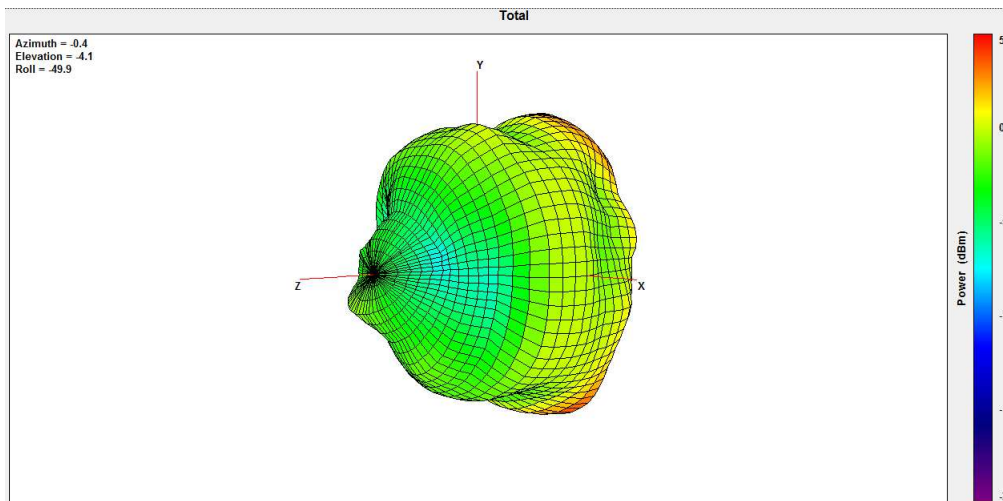
2450 MHz Pattern



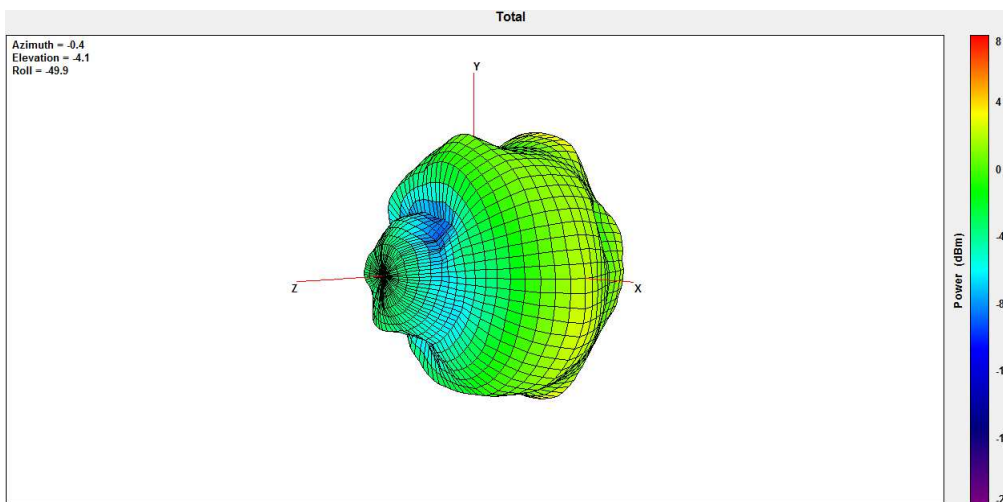
4900 MHz Pattern



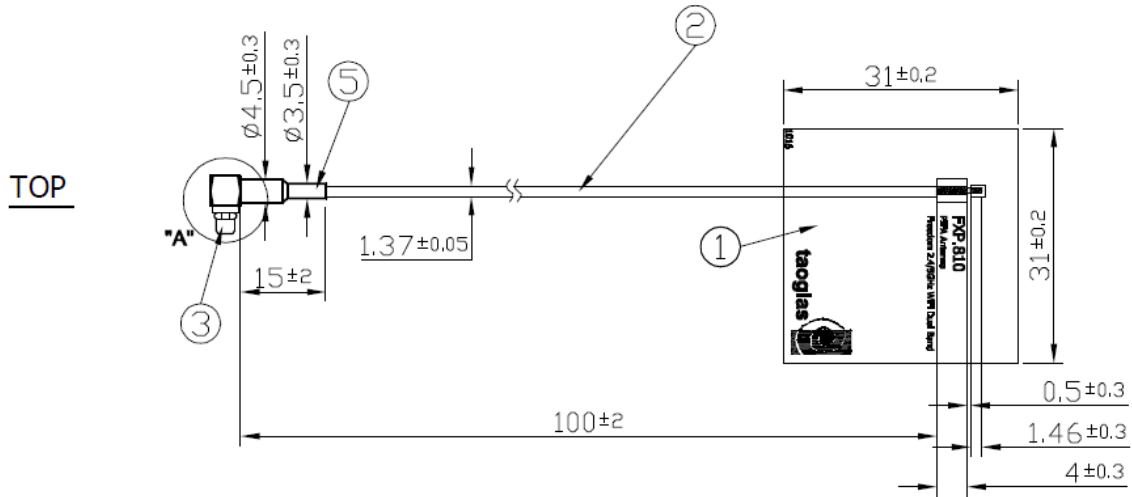
5500 MHz Pattern



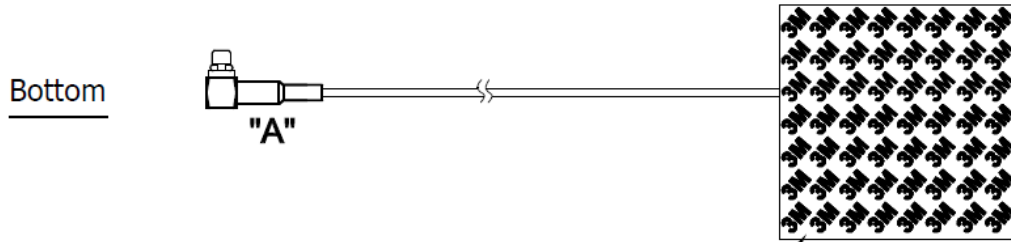
5900 MHz Pattern



III. Mechanical Drawing.



All material must be RoHS compliant.
Open/Short QC, VSWR required.



| | Name | Material | Finish | QTY |
|---|-------------------------|-----------|-------------|-----|
| ① | FXP810 PCB | FPCB 0.1t | Black | 1 |
| ② | 1.37 Mini-Coaxial Cable | FEP | Gray | 1 |
| ③ | MMCX(M) RA | Brass | Gold | 1 |
| ④ | Double-Sided Adhesive | 3M 467 | Brown Liner | 1 |
| ⑤ | Heat Shrink Tube | PE | Black | 1 |

NOTES:

- 1.NO DREGS OR INSUFFICIENT SOLDERING. SOLDER THICKNESS 1 ~1.7mm
- 2.THE SOLDER MUST BE SMOOTH AND FULL TO THE EDGES OF THE PAD.
THE SOLDER MUST NOT EXTEND OUTSIDE OF THE PAD AREA.
- 3.THE CONNECTOR POSITION HAS SPECIAL ORIENTATION TO THE PCB AS PER DRAWING.

