

**Description:** On-ground BLE/NFC combo

**Series:** Embedded Antenna

**PART NUMBER:** W5101

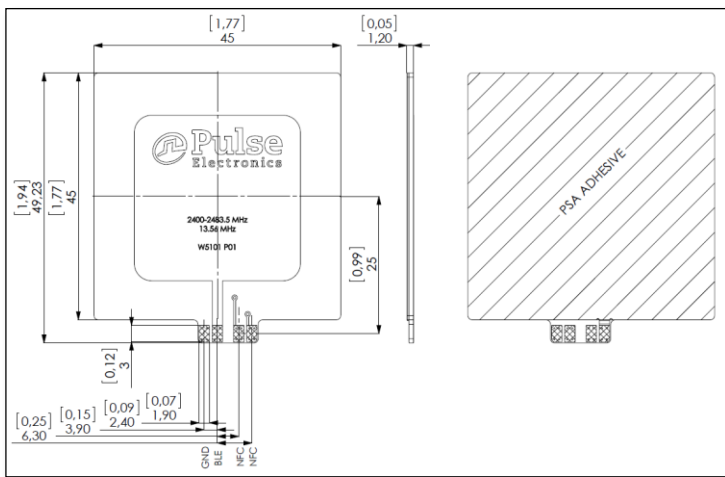


**Features:**

- Own feed ports for 2.4GHz and NFC 13.56MHz
- Ultra thin 1.2mm
- Surface area 45x45mm
- Operates on top of metal ground plane
- Mounting with adhesive tape

**Applications:**

- Devices using 2.4GHz radios and 13.56MHz NFC connectivity
- BLE, Bluetooth, Zigbee, ISM 2.4GHz
- Pairing, sharing



All dimensions are in mm / inches

Issue: 1613

In the effort to improve our products, we reserve the right to make changes judged to be necessary.

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Tel: 86 512 6807 9998



**Description:** On-ground BLE/NFC combo**Series:** Embedded Antenna**PART NUMBER:** W5101**ELECTRICAL SPECIFICATIONS**

Frequency P1	2400-2483.5 MHz
Frequency P2	13.56 MHz
P1 nominal Impedance	50Ω
P1 VSWR	<3:1
P1 Gain in free space	0.5dBi
P1 Gain over metal plate	1.5dBi
P2 Inductance in free space	1.13μH
P2 Q-value in free space	46
P2 Self Resonant Frequency in free space	57.6MHz
P2 Inductance over metal plate	1.11μH
P2 Q-value over metal plate	33
P2 Self Resonant Frequency over metal plate	53.8MHz
Connector type	Contact pads

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### MECHANICAL SPECIFICATIONS

Color	Black
Weight	5.7 g
Fixing system	Pressure sensitive adhesive

### ENVIRONMENTAL SPECIFICATIONS

Operating temperature	-40 to 85°C
Storage temperature	MIL STD 810G: 24h at 85°C and 24h at -40°C
Temperature shock	MIL STD 810G: Method 503.5, -40 for 1 hr to +85 C for 1 hr @ 15 deg.C/min rate of change; 3 cycles
Humidity	MIL STD 810G: 24h at 60°C and 95%RH
Drop test	Top, bottom, side. 3 times/orientation, 40"

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MECHANICAL DRAWING

**NOTES: UNLESS OTHERWISE SPECIFIED**  
 1. INTERPRET THIS SPECIFICATION PER PULSE PQ: 7.004.000 AND STANDARDS REFERENCED THEREIN.  
 2. VISUAL QUALITY PER PULSE PQ S.030.000 CLASS III  
 3. PRODUCT IS FREE FROM FINGERPRINTS, DUST, GREASE OR SIMILAR EXTERNAL AGENTS  
 4. DIMENSIONS WITH \* ARE FOR INSPECTION, ONLY DIMENSIONS WITH DIMENSION NUMBER NEED TO BE MEASURED

Item	Drawing number	Name of Part	Part Number	Standard Catalogue	Quantity	Material	Dimensions	Part
1	0750480.001	Copper tape						1
4	0250146.001	Fiber						1
3	0750484.001	ISBITE						1
2	0750481.001	ISBITE						1
1	0250140.001	BLE/NFC PCB						1

Recycling symbol allowed to use.

Functional Characteristics list:  
 Please specify solder required total: 0 pcs.  
 Please specify fiber required and ongoing statistical process control required total: 0 pcs.

Please follow Pulse limits of hazardous substances (RoHS, Halogen) in the document Pulse Inspection Substrate (IS) and Vendor Survey Questionnaire, Antenna Comparison (QW60A1-0305)

Material Declaration

Product: W5101  
 Part Name: BLE/NFC ANTENNA

Sheet Number: 1/2  
 General Tolerance: 0.100  
 Customer Number: 30140000  
 Scale: 2:1 (A2)  
 Document Number: W5101  
 Part Version: P01  
 Document Version: 01

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### OTHER SPECIFICATIONS

Test setup over metal (80x80mm<sup>2</sup>). Material Ni plated steel  
Antenna contact points shown for BLE(P1) and NFC (P2)



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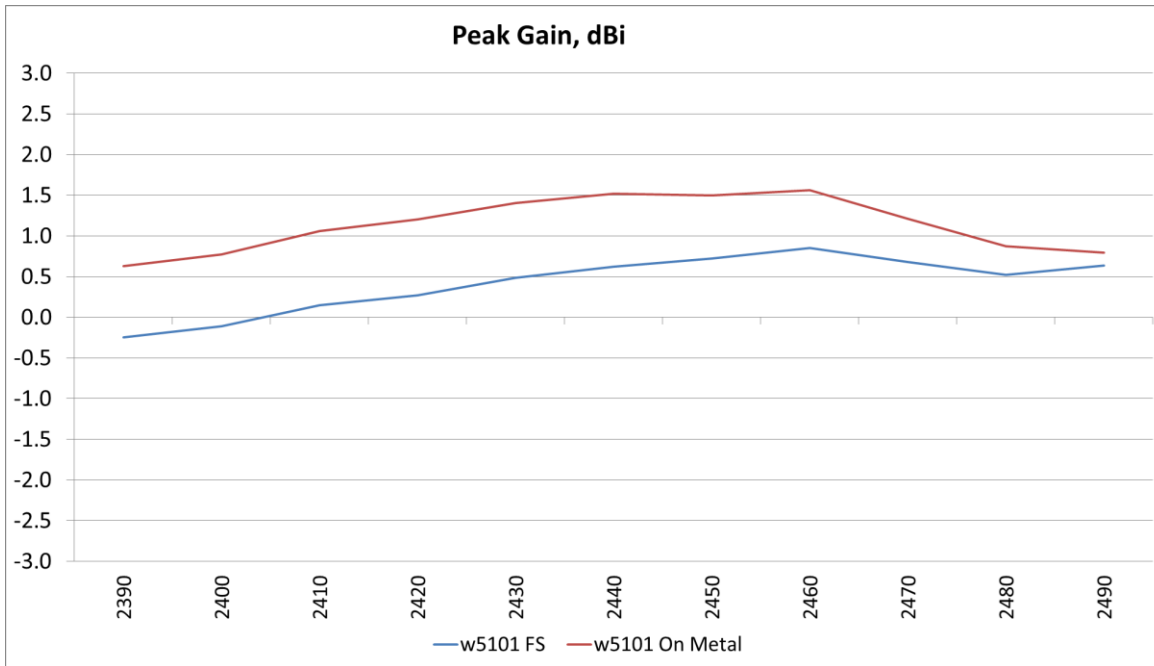
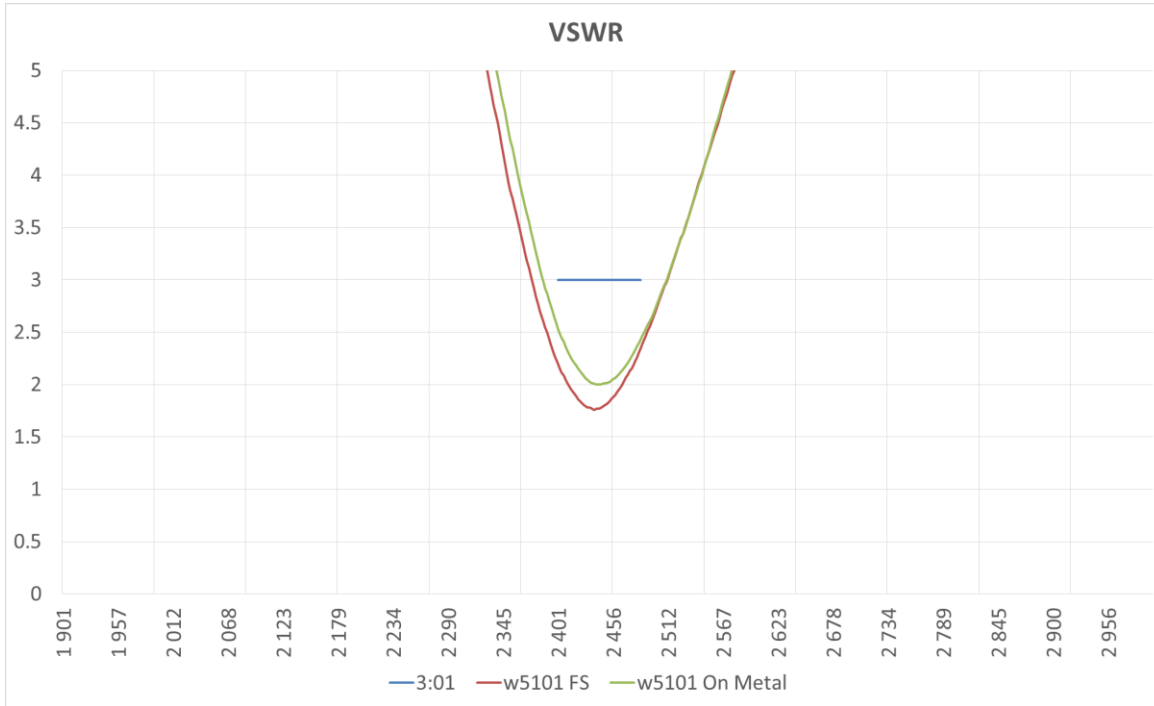
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CHARTS

P1



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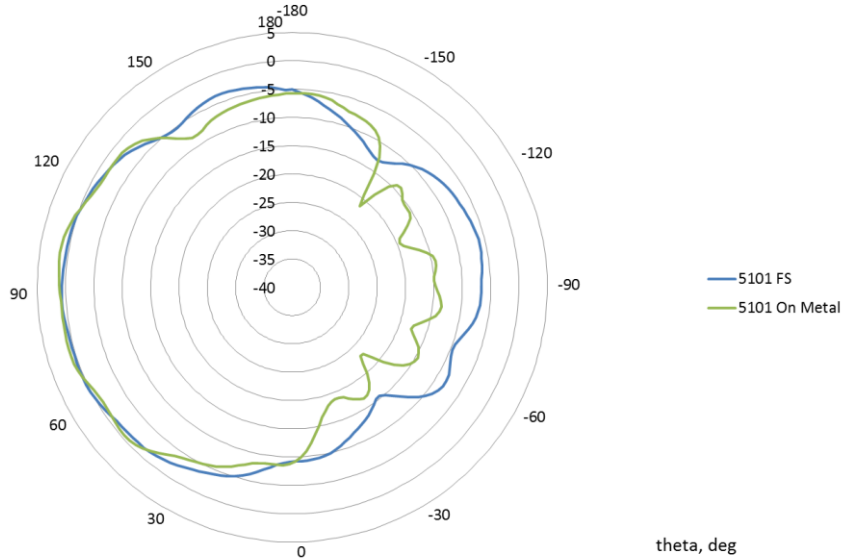
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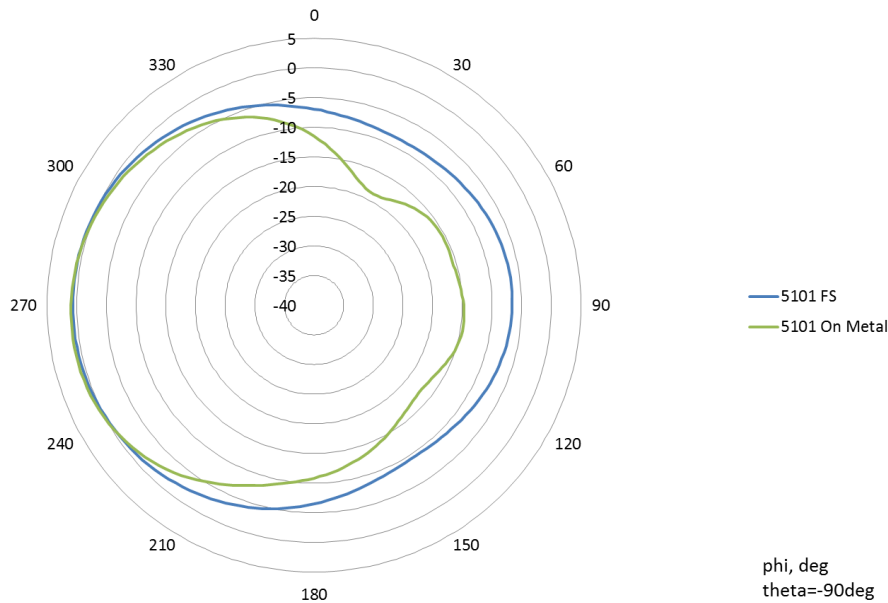
CHARTS

P1

Vertical plane



Horizontal plane



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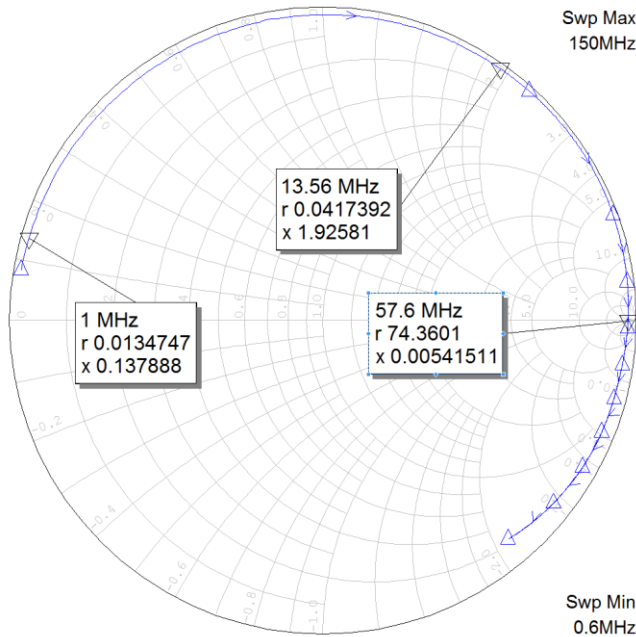
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CHARTS

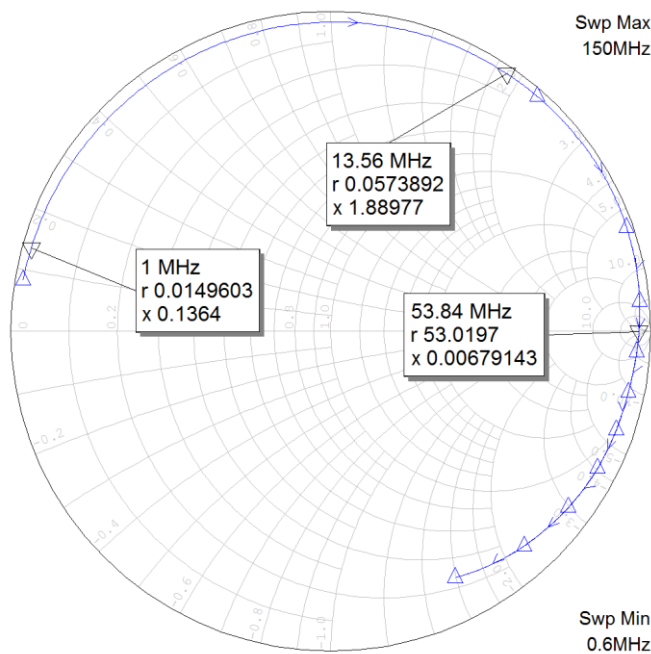
P2

Free Space 1



L @13.56MHz, $\mu\text{H}$	1.13
Q @13.56MHz	46
SRF, MHz	57.6

On Metal 1



L @13.56MHz, $\mu\text{H}$	1.11
Q @13.56MHz	33
SRF, MHz	53.8

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## PACKAGING

Sealed plastic bag 60x90mm

## ASSEMBLY

Pull off adhesive cover from backside and attach. Apply pressure 10N/cm<sup>2</sup> for 4 seconds to activate pressure sensitive adhesive.

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