WiFi Dual Band & Dual Polarization Chip Antenna

### Description

NGRV3060UW2R4G2TRF is a Chip antenna with dual polarization that is designed for WIFI applications. It operates within the frequency ranges of 2400 ~ 2484 MHz and 5150 ~ 5850 MHz respectively, making it perfect for IoT applications, Wi-Fi 6 network communication products and wireless communication devices when IEEE802.11 a/b/g/n/ac functions are needed.

### Applications

- Stable and reliable performance in both 2.4 and 5 GHz bands
- Dual polarizations
- RoHS 2.0 compliance
- SMT processes compatible

### Part Number Breakdown







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### **Electrical Specifications**

Electrical								
Frequency Range	2400 ~ 2484 MHz	5150 ~ 5850 MHz						
Peak Gain	1.2 dBi typ.	2.6 dBi typ.						
Efficiency	63.1%	68.3%						
VSWR	2 Max.							
Maximum Input Power	2 W							
Polarization	Vertical & Horizontal							
Impedance	50Ω							
Environmental								
Operating Temperature	emperature -40°C~+85°C							
Storage Temperature	-5°C~+40°C -40°C~+85°C : After mounting on PCB							
Relative Humidity	10% to 70% : Operating & Storage after mounting on PCB 20% to 70% : Storage							
Shelf Life	1 Year							
Evaluation Board	80 x 80 mm <sup>2</sup>							
RoHs Compliant	Yes							

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#### Solder Land Pattern

The solder land pattern (gold marking areas) is shown below. Recommendation on matching circuit will be provided according to customer's installation conditions.



#### **Soldering Conditions**



Recommended solder paste alloy: SAC305 (Sn96.5 /Ag3 /Cu0.5) Lead Free solder paste

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▲ 10±0.2

#### Dimensions



NOTE:

- 1. All materials are RoHS 2.0 compliant.
- 2. " $\textcircled{O} \sim \textcircled{O}$ " critical dimensions.
- 3. Unit: mm

#### Direction of antenna signal feed-in



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### Frequency Vs VSWR and Total Radiation Gain



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#### **3D Radiation Gain Pattern**

### 3D Radiation Gain Pattern@ 5500 MHz (Unit: dBi)



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### **3D Radiation Gain Pattern**

3D Radiation Gain Pattern@ 2445 MHz (Unit: dBi)



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### **Frequency Tuning**

Chip antenna tuning scenario



### **Matching Circuit**

With the following recommended values of matching and tuning components, the center frequencies will be about 2442 MHz & 5500 MHz at our standard 80 x 80 mm<sup>2</sup> evaluation board. However, these are typical reference values which may need to be changed when circuit boards or part vendors are different.



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System Matching Circuit Component								
Location	Description	Tolerance	NIC Part Number					
1 & 4	0 Ω, (0402)	-						
2	0.6pF, (0402)	±0.05pF	NMC-Q0402NPO0R6A25TRPF					
3	3.6pH, (0402)	±0.05pF	NMC-Q0402NPO3R6A25TRPF					
5	0.2pF, (0402)	±0.05pF	NMC-Q0402NPO0R2A25TRPF					

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#### Packing

- (1) Quantity/Reel: 500 pcs/Reel
- (2) Plastic tape: Black Conductive Polystyrene.
- (3) Unit Weight:  $0.375 \pm 0.1(g)$

**Tape Drawing** 



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