

# Dual band Antenna Data Sheet

Customer Name: **Particle Industries, Inc.**

Date: **04/29/2022**

Doc. Version: **2**

WNC P/N	<b>95XEAK15.G53</b>
Description	<b>DHSK-PC1, WIFI DUALBAND_2/5G, ANTENNA , XEAK-N12</b>
Version	<b>2</b>

Provided By Wistron NeWeb Corp	Reviewed By Wistron NeWeb Corp	Approved By Customer
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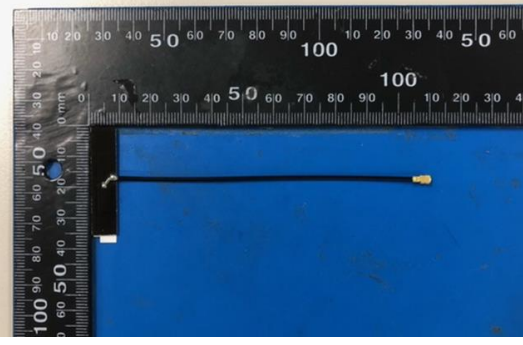
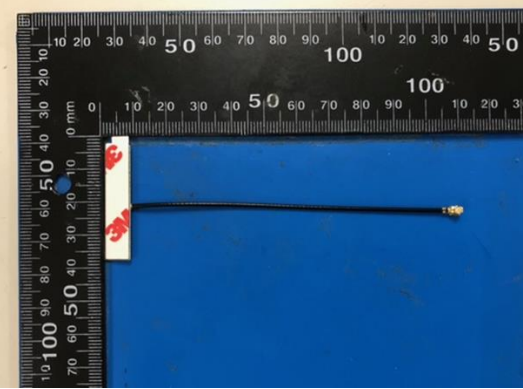
## 1. Introduction

### Antenna for Dual band system

### Dual band antenna (Dipole type)

1.1 Cable length of Dual band antenna: 100mm, Black(connector with  $\Phi$  1.37mm RF cable)

1.2 PCB size: 35mm x 8mm x 0.8mm

	Dual band Antenna
Antenna Type	Dipole type
Cable	Cable color : Black 1.37(dia) x 100mm, RF connector
Photo_Top	
Photo_Bottom	

## 2. Revision History

Date	Version	Change Description
01/20/22	X01	NEW RELEASE

## 3. Product Specifications

### 3.1 Specifications of Antenna Design

#### 3.1.1 VSWR

WLAN Main	2400MHz ~ 2500MHz	5150MHz ~ 5850MHz
VSWR	< 2	< 2

#### 3.1.2 Antenna specification

WLAN Main	2400MHz ~ 2500MHz	5150MHz ~ 5850MHz
Peak dBi (Max)	1.55	1.26

### 3.2 Mechanical Specifications

See the attached drawing.

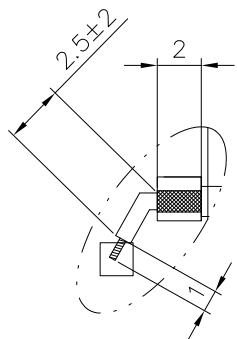
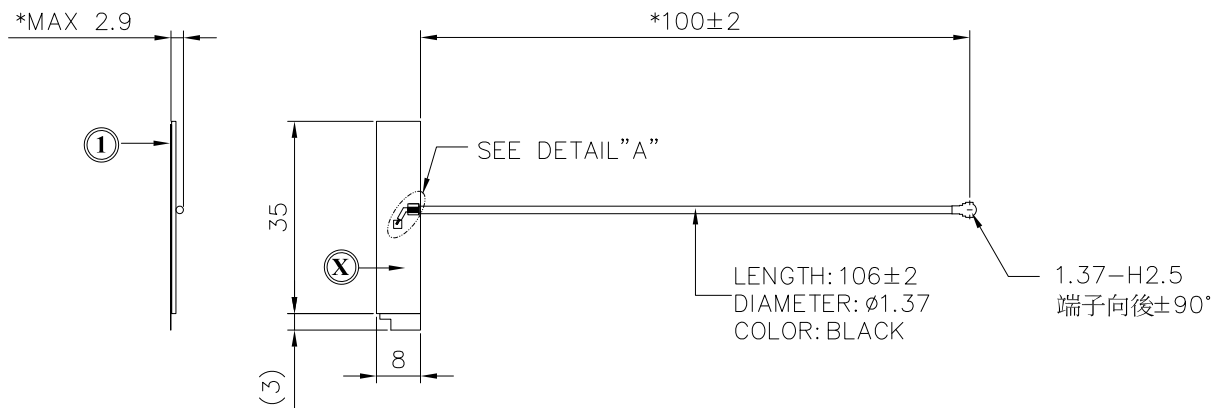
1

2

WNC CONFIDENTIAL

PART NUMBER BLOCK		CUSTOMER P/N BLOCK		CONFIRM ANTENNA SPEC.	
PART NUMBER	REV	PART NUMBER	REV	APPROVED	DATE
57XEAK15.053	A	95XEAK15.G53	X01	EASON CHEN	01/20/22

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
	A	NEW RELEASE	01/20/22	VINCENT CC LIN



DETAIL A  
SCALE: 4/1

NOTES: 1.PCB ANTENNA SHOULD BE USED HEREUNDER.

- ⊗ 48XEAK0K.SGAMLL  
XEAK-N12,PCB,1L,0.8MM(T),FR4(HF),OSP,WIFI DUALBAND,SAMPLE
- 2." \* "ARE THE CRITICAL DIMENSIONS.

1	3T.005RU.111	TAPE,ADHESVIE,DUAL-1,XEAK-N12	1
ITEM	PART NO.	DESCRIPTION	QTY

ONLY ME PARTS REFERENCE

		UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN mm AND TOLERANCES ARE:				<b>啟碁科技股份有限公司</b> 20 Park Avenue II, Hsinchu Science Park, Hsinchu 308, Taiwan, R.O.C. Tel: 886-3-6667799 Fax: 886-3-5788726	
		INTEGER DIMENSIONS ±0.2 1 PLACE DECIMAL ±0.1 2 PLACE DECIMALS ±0.05		ANGULAR DIMENSIONS ±1° HOLES UNDER Ø5.00 ±0.05		DWG TITLE DHSK-PC1, WIFI DUALBAND_2/5G, ANTENNA , XEAK-N12	
		MATERIAL: NA				SIZE DWG NO.	
		FINISH: NA				A3 57XEAK15.053	
81XEAK15.G53	XEAK-N12	THIRD ANGLE PROJECTION	DRAWN	TERESA SF LIU	01/20/22	SCALE	1/1
NEXT ASSY	USED ON		ENGR	EASON CHEN	01/20/22	SHEET	1 OF 1
APPLICATION			APVD	VINCENT CC LIN	01/20/22	REV A	

1

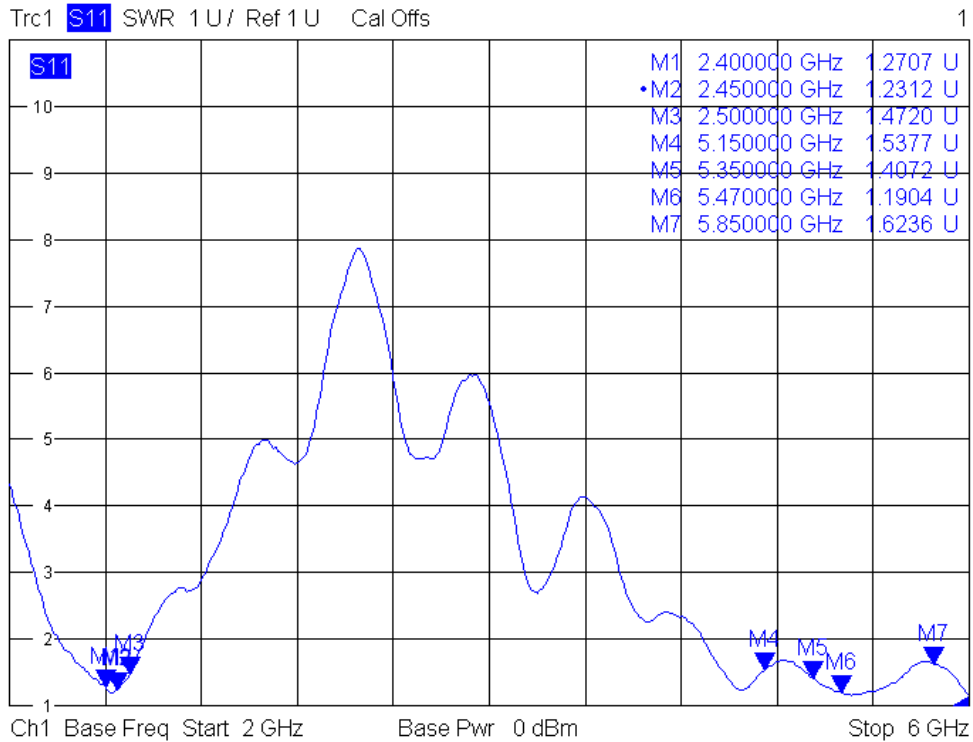
2

### 3.3 Antenna Material List

Dual band Antenna
1. PCB
2. Coaxial cable and RF connector
3. Adhesive Tape
4. Weight: 1.19g

## 4. Antenna Performance

### 4.1 VSWR



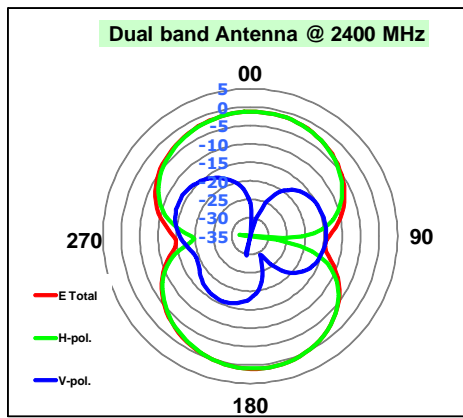
### 4.2 Antenna Efficiency

Dual band Antenna Efficiency		
Frequency	Efficiency	Efficiency(dB)
<b>2400</b>	<b>74.23</b>	<b>-1.29</b>
<b>2450</b>	<b>74.71</b>	<b>-1.27</b>
<b>2500</b>	<b>74.00</b>	<b>-1.31</b>
<b>5150</b>	<b>68.99</b>	<b>-1.61</b>
<b>5250</b>	<b>66.59</b>	<b>-1.77</b>
<b>5350</b>	<b>68.16</b>	<b>-1.66</b>
<b>5470</b>	<b>71.39</b>	<b>-1.46</b>
<b>5600</b>	<b>72.17</b>	<b>-1.42</b>
<b>5725</b>	<b>71.18</b>	<b>-1.48</b>
<b>5750</b>	<b>70.31</b>	<b>-1.53</b>
<b>5850</b>	<b>66.58</b>	<b>-1.77</b>

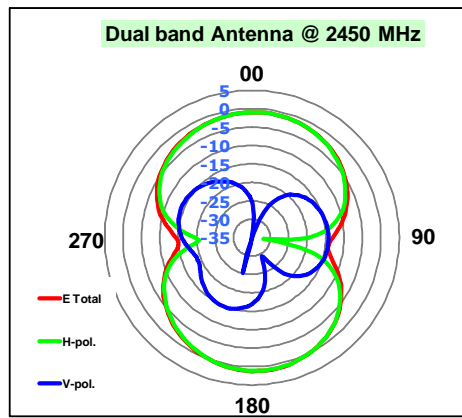
### 4.3 Antenna Peak Gain and Average Gain

Dual band Antenna Gain						
Frequency (MHz)	Max value			Average		
	H-pol	V-pol	Total (H-pol+V-pol)	H-pol	V-pol	Total (H-pol+V-pol)
<b>2400</b>	<b>1.02</b>	<b>-13.55</b>	<b>1.06</b>	<b>-4.28</b>	<b>-17.61</b>	<b>-3.89</b>
<b>2450</b>	<b>1.21</b>	<b>-14.18</b>	<b>1.26</b>	<b>-4.07</b>	<b>-17.59</b>	<b>-3.69</b>
<b>2500</b>	<b>1.49</b>	<b>-13.11</b>	<b>1.55</b>	<b>-4.07</b>	<b>-17.90</b>	<b>-3.73</b>
<b>5150</b>	<b>-0.89</b>	<b>-7.02</b>	<b>-0.55</b>	<b>-5.07</b>	<b>-12.57</b>	<b>-4.04</b>
<b>5250</b>	<b>-0.37</b>	<b>-7.28</b>	<b>-0.32</b>	<b>-5.06</b>	<b>-13.31</b>	<b>-4.11</b>
<b>5350</b>	<b>-0.10</b>	<b>-9.93</b>	<b>-0.08</b>	<b>-5.00</b>	<b>-14.89</b>	<b>-4.32</b>
<b>5470</b>	<b>0.40</b>	<b>-9.49</b>	<b>0.50</b>	<b>-4.96</b>	<b>-15.94</b>	<b>-4.42</b>
<b>5600</b>	<b>0.59</b>	<b>-8.41</b>	<b>0.87</b>	<b>-4.94</b>	<b>-14.62</b>	<b>-4.25</b>
<b>5725</b>	<b>0.29</b>	<b>-7.02</b>	<b>0.71</b>	<b>-4.72</b>	<b>-12.65</b>	<b>-3.72</b>
<b>5750</b>	<b>0.87</b>	<b>-6.97</b>	<b>1.26</b>	<b>-4.65</b>	<b>-12.61</b>	<b>-3.70</b>
<b>5850</b>	<b>0.71</b>	<b>-6.34</b>	<b>0.74</b>	<b>-5.12</b>	<b>-11.91</b>	<b>-3.78</b>

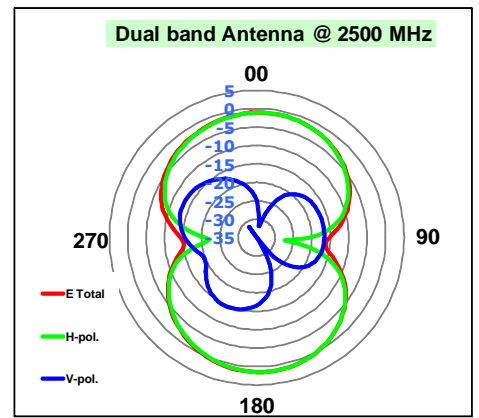
### 4.4 Antenna Pattern



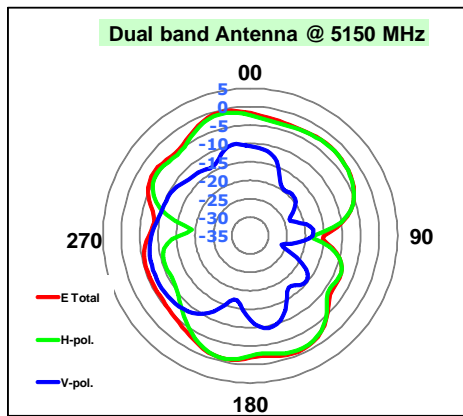
	H-pol	V pol
Peak Gain	1.02	-13.55



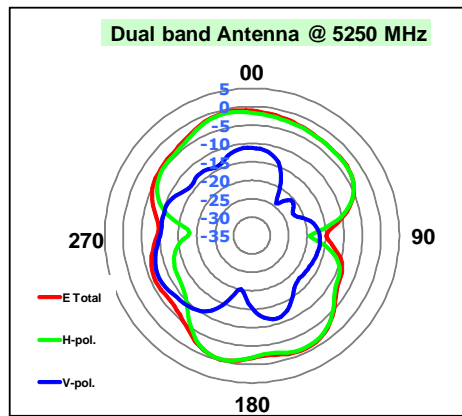
	H-pol	V pol
Peak Gain	1.21	-14.18



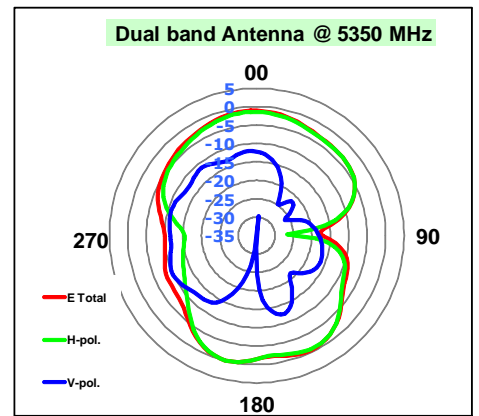
	H-pol	V pol
Peak Gain	1.49	-13.11



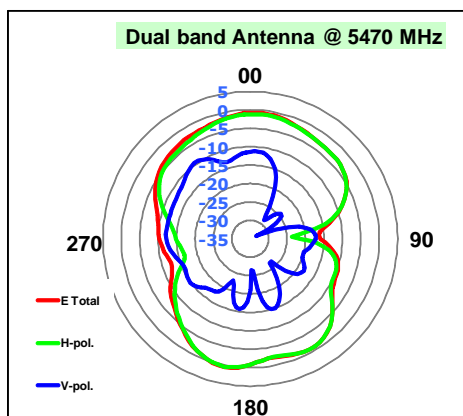
	H-pol	V pol
Peak Gain	-0.89	-7.02



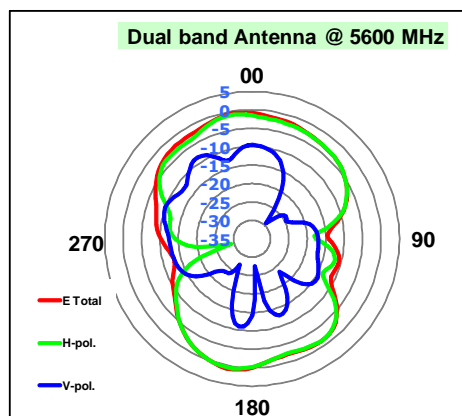
	H-pol	V pol
Peak Gain	-0.37	-7.28



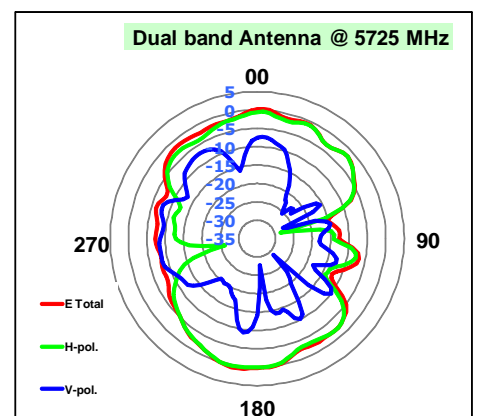
	H-pol	V pol
Peak Gain	-0.10	-9.93



	H-pol	V pol
Peak Gain	0.40	-9.49

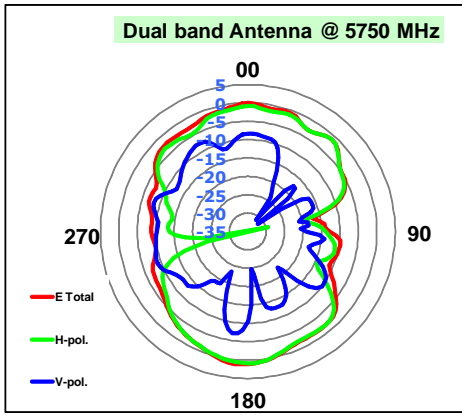


	H-pol	V pol
Peak Gain	0.59	-8.41

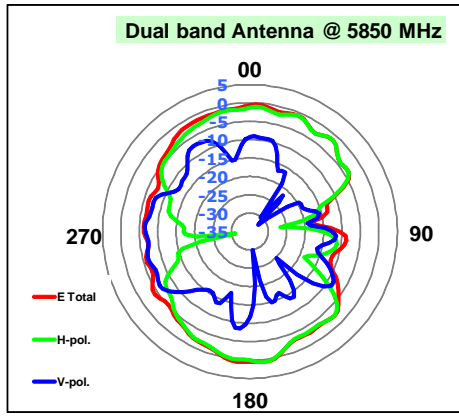


	H-pol	V pol
Peak Gain	0.29	-7.02





	H-pol	V pol
Peak Gain	0.87	-6.97



	H-pol	V pol
Peak Gain	0.71	-6.34