

# NOTES: (UNLESS OTHERWISE SPECIFIED)

1. COMPONENTS: SEE BILL OF MATERIALS ON SHEET 1.
2. ASSEMBLY PROCEDURE:

2.1: SOLDER THE CABLE TO PCB ANTENNA AS SHOWN ON SHEET 2.

2.2: USE LEAD FREE SOLDER ONLY. (SOLDER MUST COVER  $\geq 75\%$  OF PAD)

2.3: ADD ADHESIVE 3M VHB 2625T-01 WITH LINER ON BOTTOM SIDE OF PCB ANTENNA AS SHOWN ON SHEET 3.

3. COSMETIC REQUIREMENT: MARKING SHALL BE READABLE AND ASSEMBLY SHALL BE FREE OF APPEARANCE DEFECTS.

4. ASSEMBLY SHALL BE CLEAN AND FREE OF ALL FOREIGN MATTER.

5. PART MARKING: SEE SHEET 2

6. DIMENSIONAL TOLERANCES: SEE TOLERANCE BLOCK UNLESS OTHERWISE SPECIFIED IN DIMENSION.
7. FIRST ARTICLE: FIRST ARTICLE MEASUREMENT SHALL BE PERFORMED FOR ALL DRAWING DIMENSIONS ON 5 RANDOMLY SELECTED PARTS. THE FIRST ARTICLE DATA ALONG WITH THE NUMBERED FIRST ARTICLE SAMPLES SHALL BE FORWARDED TO ETHERTRONICS INC. QUALITY ENGINEERING.

8. PART SHALL MEET ALL CHARACTERISTICS OF THE 3D DATA BASE AND THE 3D DATA BASE SHALL TAKE PRECEDENCE UNLESS OTHERWISE SPECIFICALLY STATED IN THIS DRAWING

9. PACKAGING REQUIREMENT: PARTS TO BE INDIVIDUALLY PACKAGED AND PROTECTED FROM PHYSICAL DAMAGE.

10. INCLUDE MOISTURE CONTROL DESICCANT IN SHIPPING BOX.

11. PACKAGE LABELING REQUIREMENT: REFER TO 1000325 LABEL SPECIFICATION.

12. NO CHANGE SHALL BE ALLOWED ON TOOLING OR MATERIAL SPECIFICATION WITHOUT PRIOR EXPLICIT WRITTEN APPROVAL BY ETHERTRONICS, INC.

13. ENGINEERING, PURCHASING AND CONTRACTS DEPARTMENT.

14. ALL DIMENSIONS ARE IN MILLIMETER.

15. PART MUST BE COMPLIANT WITH THE REQUIREMENTS OF EU DIRECTIVE 2011/65/EU (RoHS). ADDITIONALLY THEY SHALL NOT CONTAIN INTENTIONALLY ADDED MATERIALS REQUIRING REMOVAL FROM SEPARATELY COLLECTED WASTE ELECTRICAL AND ELECTRONIC EQUIPMENT PER EU DIRECTIVE 2012/19/EU (WEEE).

16. PERFORM 100% ELECTRICAL TEST INCLUDING VSWR.

17. (X XX) INDICATES INSPECTION DIMENSION FOR QC TO MEASURE.

18. PARTS MUST BE HALOGEN FREE (HF)

19. DIMENSIONS FOR STATISTICAL QUALITY CONTROL (SOC) AND CAPABILITY STUDY ARE INDICATED BY (ST).

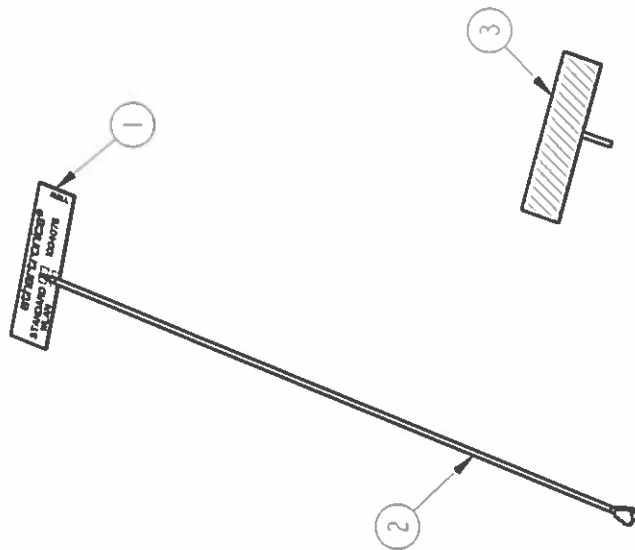
20. CAPABILITY STUDY: Cpk ANALYSIS SHALL BE PERFORMED ON ALL (ST) DRAWING DIMENSIONS ON 35 RANDOMLY SELECTED PARTS FROM A MINIMUM 500 PRODUCTION PART RUN WITH OPTIMIZED PRODUCTION PROCESS.

21. THE Cp/Cpk DATA AND MARKED PARTS SHALL BE FORWARDED TO ETHERTRONICS INC. QUALITY ENGINEERING.

## BILL OF MATERIALS

ITEM	PART NUMBER	REV	DESCRIPTION	QTY	REMARK
1	1004076	A	ANTENNA PCB, WLAN 140 J1039	1	COLOR: BLACK
2	1004077	A	CABLE COAX, 11PX 1.13B144 J1039	1	COLOR: BLACK
3	1004074	A	ADHESIVE DS TAPE, 8X35 J1039	1	MANUFACTURER: 3M MANUFAC. No.: 3M VHB 2625T-01

<b>ETHERTRONICS</b> 5501 Oberlin Drive, Suite 100, CA-92121 San Diego, USA		DATE: 2017-03-07 DRAWN BY: MANUEL RODRIGUEZ
ALL INFORMATION CONTAINED HEREIN IS UNCLASSIFIED EXCEPT WHERE SHOWN OTHERWISE. IT IS THE PROPERTY OF ETHERTRONICS, INC. AND IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT PERMISSION IN WRITING FROM ETHERTRONICS, INC.		DATE: 2017-03-07 CHECKED BY: CHEN HUANG
SEE DIMENSIONS		DATE: 2017-03-07 APPROVED BY: STEVE BRIDGERS
THIRD ANGLE PROJECTION	SCALE: 1:1000	DATE: 2017-03-07 APPROVED BY: FRANCISCO SANCHEZ
UNITS: A 2	TITLE: A3	DATE: 2017-03-07 APPROVED BY: FRANCISCO SANCHEZ
NUMBER OF SHEETS: 3		SHEET NO: 1 of 2
RELEASE (UTC)		RELEASE (UTC)



BOTTOM SIDE OF ANTENNA

FOR OQC DRAWING ONLY

$140.0 \pm 3.0$  (ST)

(DIAM. 1.13mm)

STEP 1: MAKE SURE THE  
CONNECTOR IS FACE DOWN.

$8.5 \pm 0.15$

$35.2 \pm 0.15$

ethertronics®  
STANDARD WLAN 1004075 YWW

(1.7)

ECN 339300 4AUG2017 GH

PART		REVISION	
261248-000		A.2	
SIZE	SCALE	SHEET	REVISION
A3	2.000	2 of 2	D

3/24/2017

# Part No. 1004075

## Wi-Fi Dual Band PCB Embedded Antenna

### 2.4 / 5 GHz



### Wi-Fi Dual Band PCB Embedded Antenna

2400-2485 MHz, 5150-5825 MHz

#### KEY BENEFITS

##### Stay-in-Tune

Ethertronics antenna technology provides superior RF field containment, resulting in less interaction with surrounding components.

##### Quicker Time-to-Market

By optimizing antenna size, performance and emissions, customer and regulatory specifications are more easily met.

##### Reliability

Products are the latest RoHS version compliant

#### APPLICATIONS

- Embedded design
- Cellular, Headsets, Tablets
- Gateway, Access Point
- Handheld
- Telematics
- Tracking
- Healthcare
- M2M, Industrial devices
- Smart Grid
- OBD-II

#### Real-World Performance and Implementation

Ethertronics PCB antennas are designed to produce optimal performances and 3D radiation patterns, offering increased coverage range without compromising on footprint dimensions.

#### Greater Flexibility

Ethertronics' first-in-class technology enables the advance concept designs that deliver superior performance in reception critical applications.

#### Electrical Specifications

Tested in customer's device

Frequency	2400 – 2485 MHz	5150 – 5825 MHz
Peak Gain	3.3 dBi	5.1 dBi
Average Efficiency	53%	53%
VSWR Match	2:1 max	
Feed Point Impedance	50 ohms unbalanced	
Polarization	Linear	
Power Handling	0.5 Watt CW	

#### Mechanical Specifications

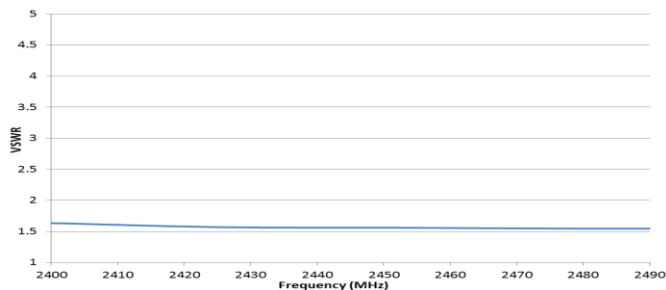
Size	35.2 x 8.5 x 1.7 mm
Mounting	Adhesive mount 3M VHB 225T-01
Weight	0.6 g
Cable and connectors	RF Ø 1.13 mm, 140 mm & u.fl compatible connector

**2.4 / 5 GHz Ethertronics' Embedded Antenna Specifications**  
 Ethertronics produces a wide variety of standard and custom antennas to meet user needs.

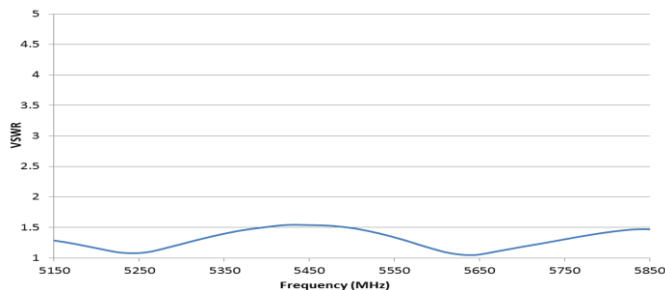
### Typical VSWR and Efficiency Plots

Tested in customer's device

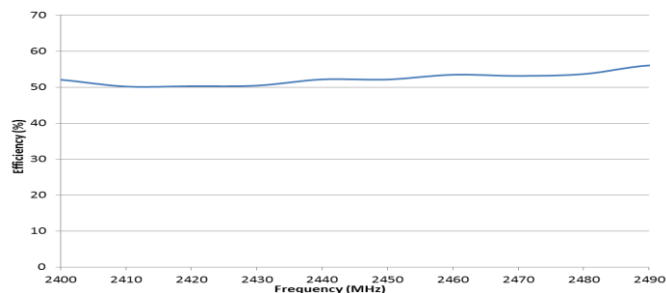
**2.4 GHz band VSWR**



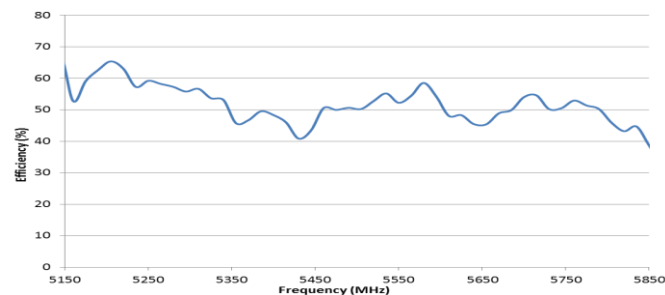
**5 GHz band VSWR**



**2.4 GHz band Efficiency**

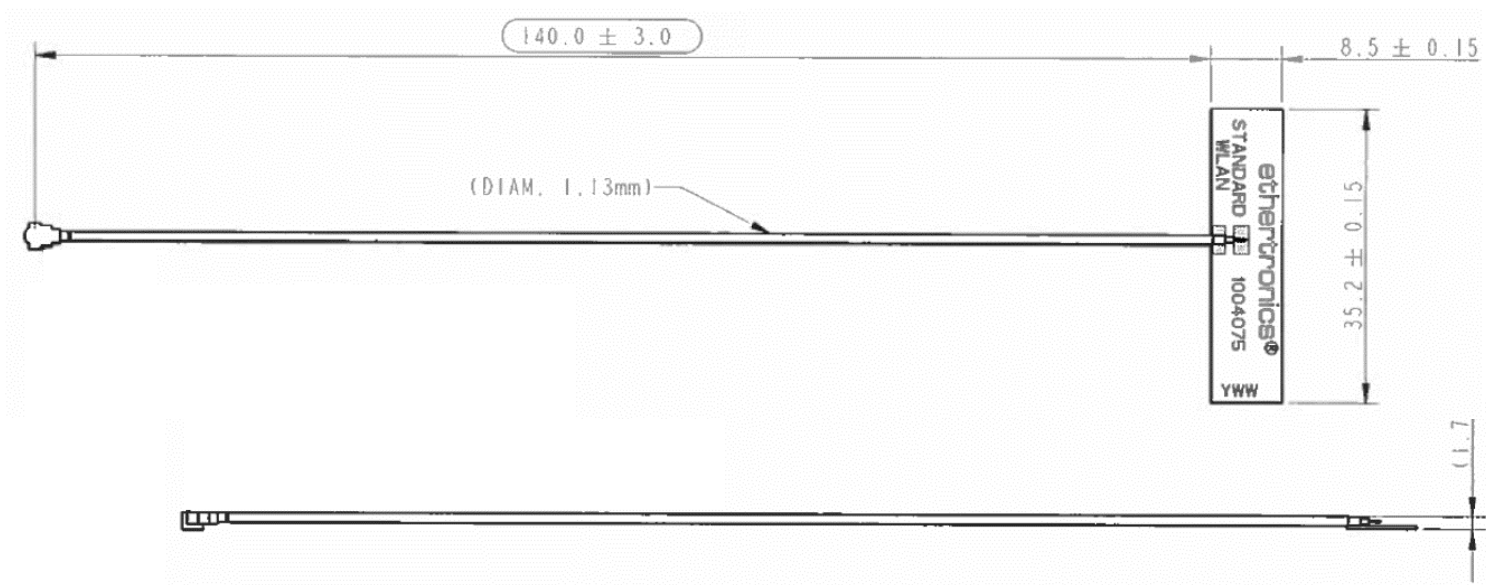


**5 GHz band Efficiency**



### Antenna Layout

For references only, in mm.

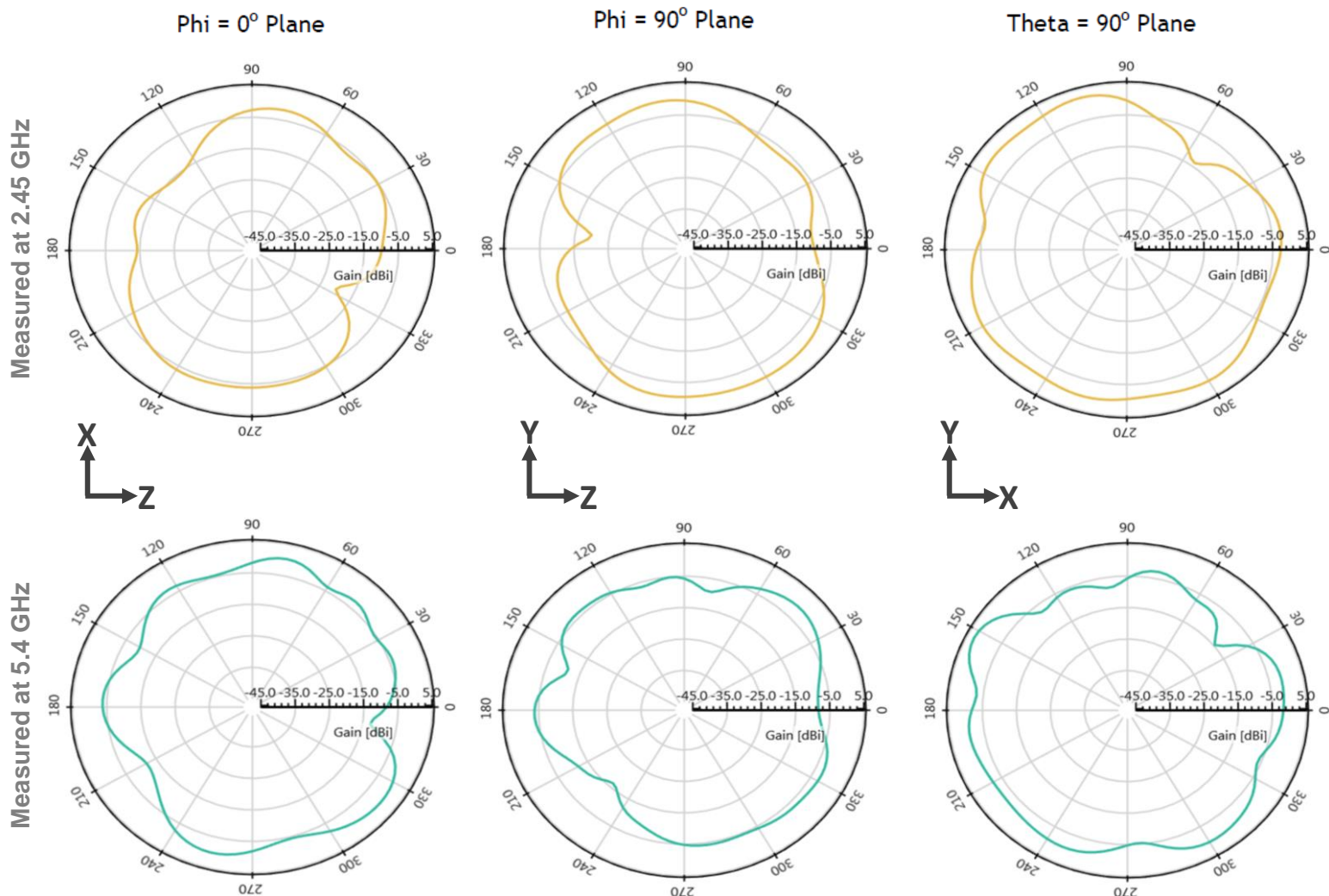
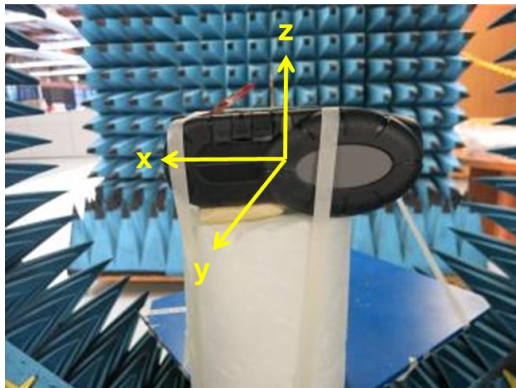


\*All dimensions provided in this document are for informational purposes only.

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### Antenna Radiation Patterns

Tested in customer's device



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2	1004080	A	CABLE COAX, IIPX 1.13W98 J1039	1	COLOR: WHITE
3	1004074	A	ADHESIVE DS TAPE, 8X35 J1039	1	MANUFACTURER: 3M MANUFAC. No.: 3M VHB 2625T-01

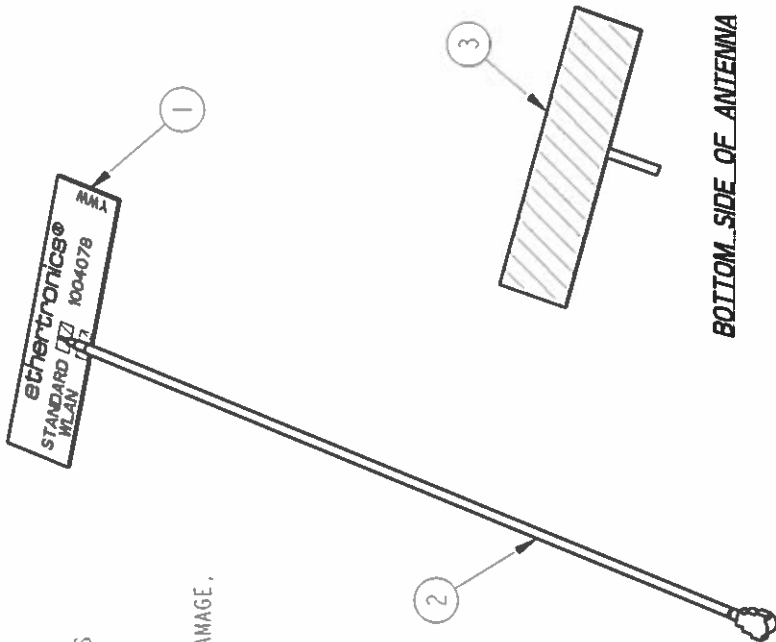
## ETHERTRONICS

5501 Oberlin Drive, Suite 100,  
CA-92121 San Diego, USA

DATE	APPROVED BY	REVISION	DESCRIPTION
2017-03-07	MANUEL RODRIGUEZ	1	ANTENNA PCB, WLAN 94 J1039
2017-03-07	CHEN HUANG	2	ANTENNA ASSY, WLAN 94 J1039
2017-03-07	STEVE BRIDGERS	3	ANTENNA ASSY, WLAN 94 J1039
2017-03-07	FRANCISCO SANCHEZ	4	ANTENNA ASSY, WLAN 94 J1039

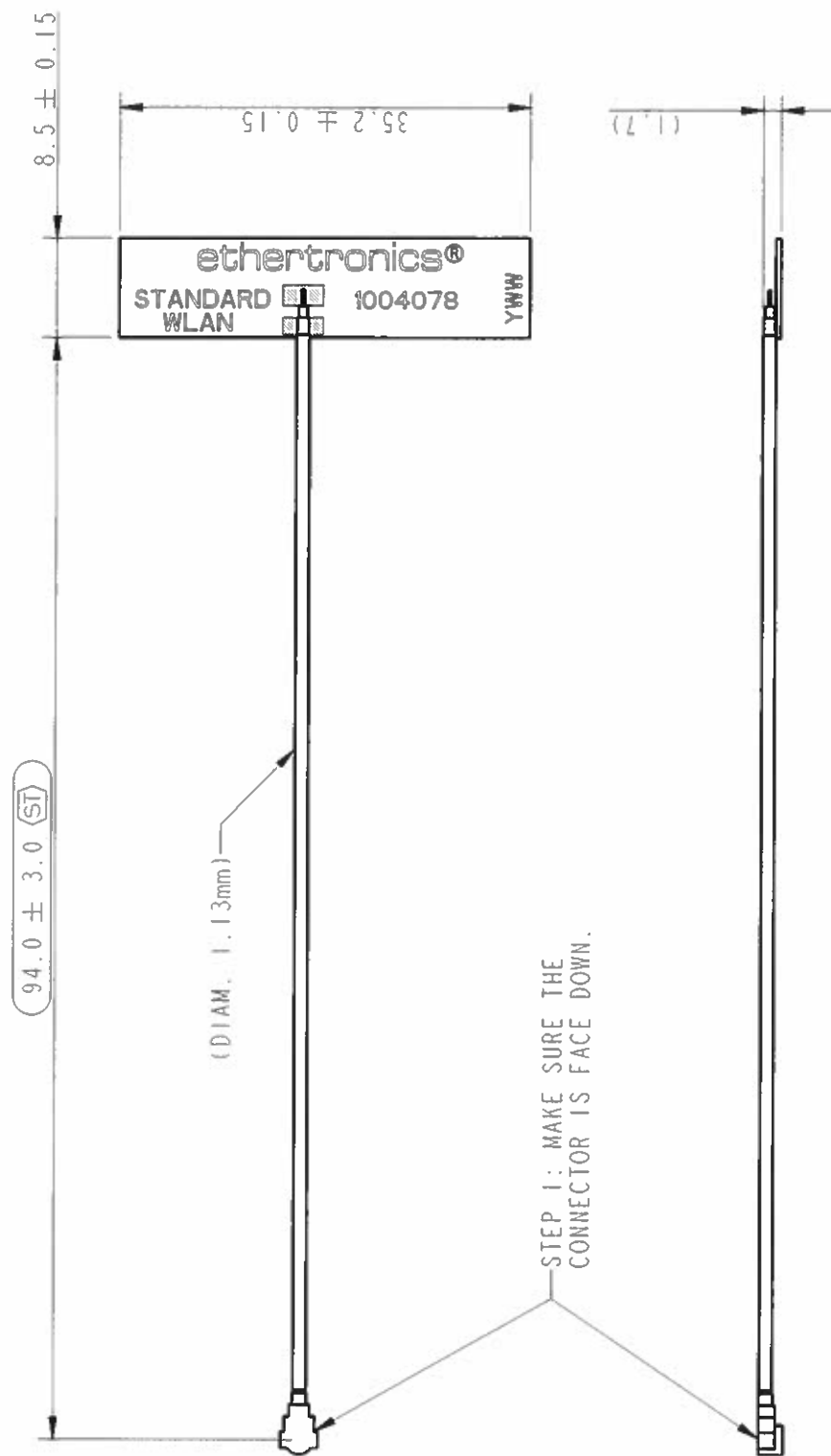
261249-000

DATE	APPROVED BY	REVISION	DESCRIPTION
2017-03-07	FRANCISCO SANCHEZ	1 of 2	D



REVISION	REVISION NOTE	APPROVED BY	DATE
A	FIRST RELEASE	MANUEL RODRIGUEZ	2017-03-07
B	3M VHB 2625T-01	GH	ECN 339300
C	ETHERTRONICS P/N 1004078	GH	ECN 339300 8/8/2017
D	ADDED DATASHEET	GH	ECN 339446 8/30/17

FOR OQC DRAWING ONLY



ECN 339300 4AUG2017 GH

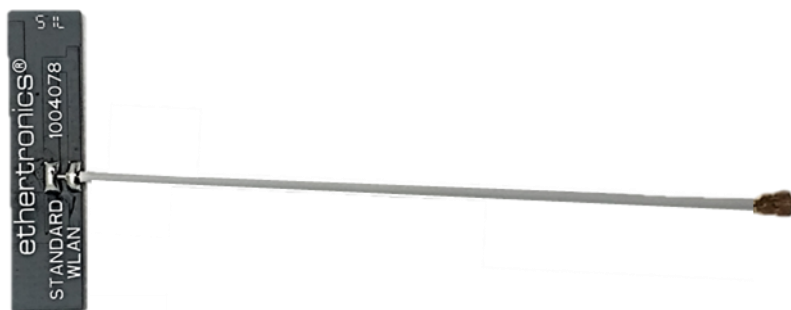
ITEM		VERSION	
261249-000	A.2	2 of 2	D
DATE	2.500	TESTED	

3/24/2017

# Part No. 1004078

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2.4 / 5 GHz



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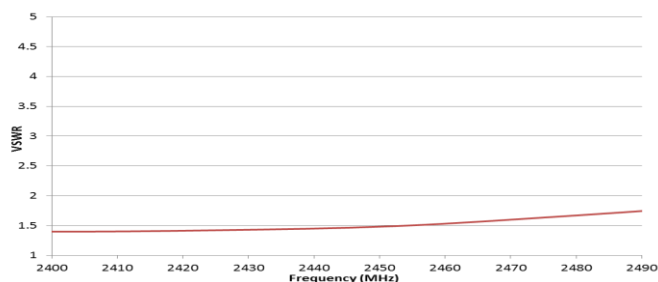


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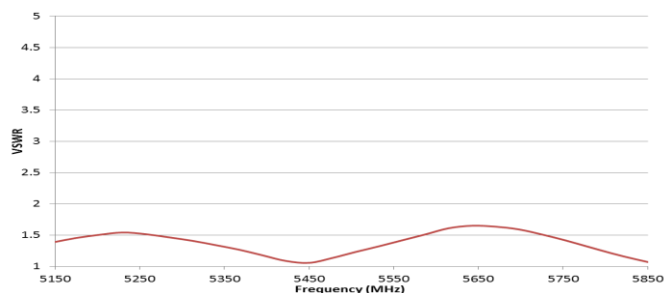
### Typical VSWR and Efficiency Plots

Tested in customer's device

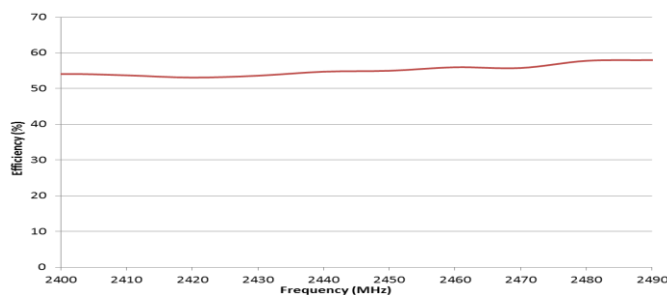
**2.4 GHz band VSWR**



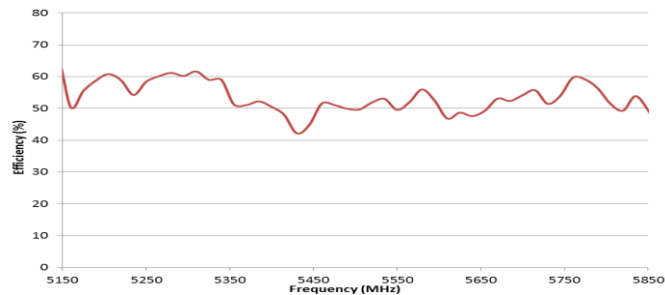
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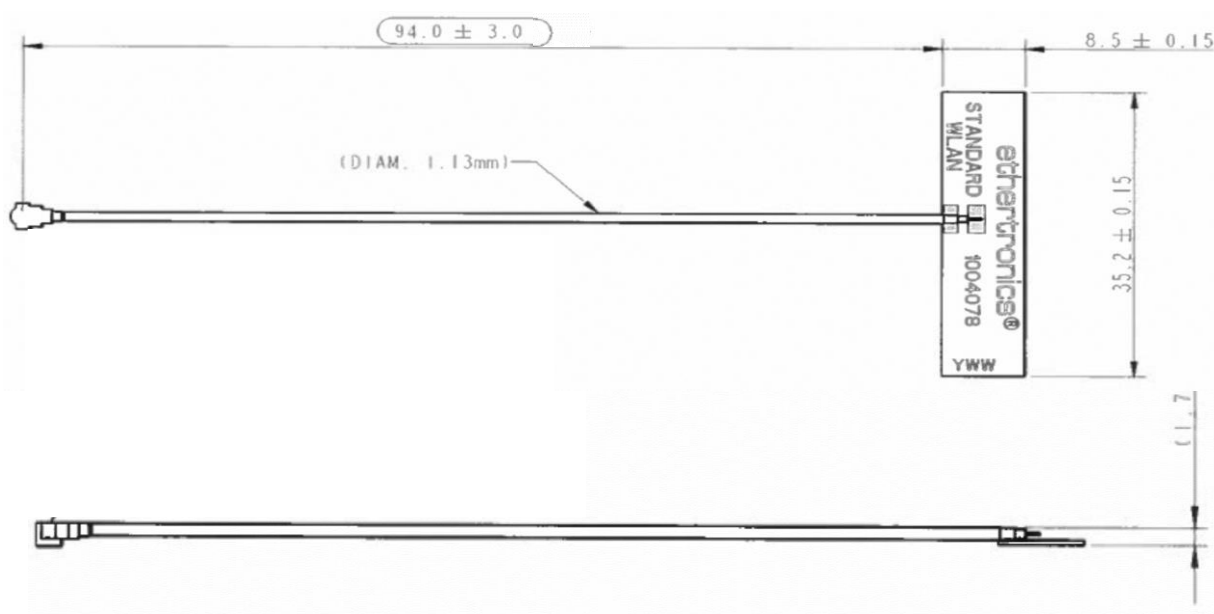


**5 GHz band Efficiency**



### Antenna Layout

For references only, in mm.

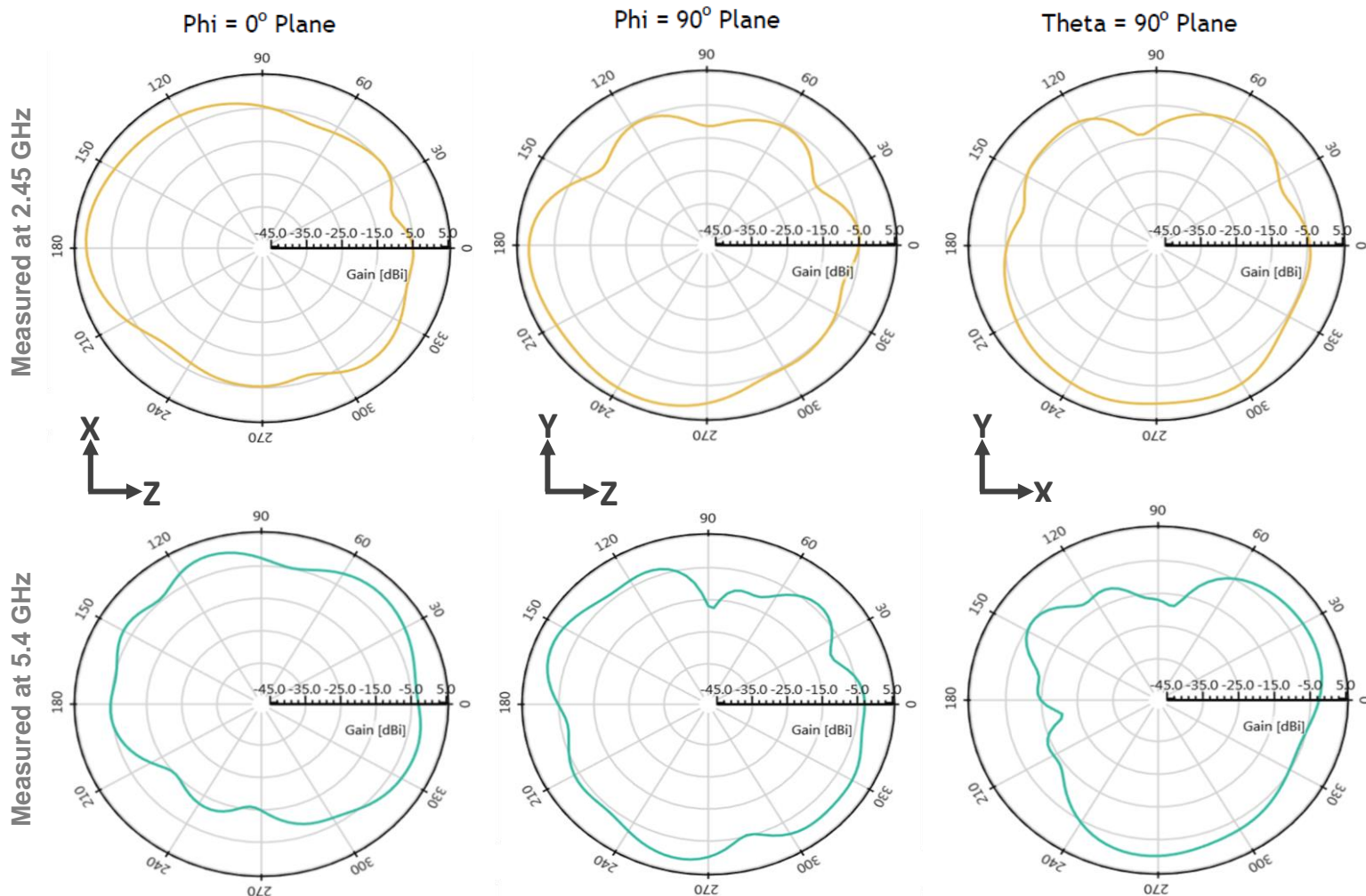
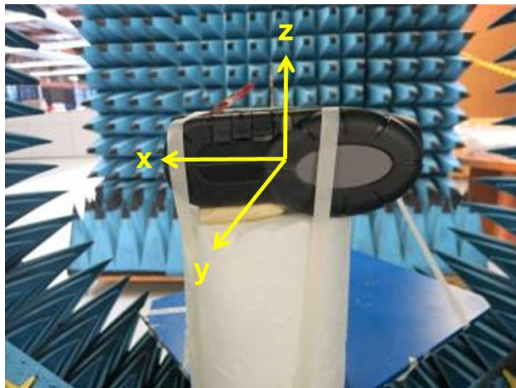


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