



# Product Spec.

|               |           |              |   |
|---------------|-----------|--------------|---|
| Customer Name | Tymphany  |              |   |
| Project Name  | FS1 MK2   |              |   |
| Customer P/N  |           |              |   |
| TE P/N        | 2195505-2 |              |   |
| Description   | WLAN      |              |   |
| DWG. Version  |           | Doc. Version | A |
| Green Part    |           |              |   |

| ME engineer                                                                         | RD engineer                                                                         | RD Supervisor | RD Manager                                                                            |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------|---------------------------------------------------------------------------------------|
|  |  |               |  |

| Customer engineer Approval |
|----------------------------|
|                            |





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LOC GP DIST 00

REVISONS  
 P LTR DESCRIPTION DATE DWN APD  
 14 ADD PART 2195505-2 11JULY17 AH RG

NOTES, UNLESS OTHERWISE SPECIFIED:

- 1 THE PRODUCT AND PROCESS SHOULD COMPLY WITH TE SPEC: TEC-138-702, SPECIFICALLY HALOGEN ELEMENTS AND COMPOUNDS ARE RESTRICTED AS DEFINED IN TEC-138-702
- 2 CABLE: DIA. 1.37MM, LOW LOSS COLOR: WHITE
- 3 CONNECTOR: I-PEX P/N REFER TO PART LIST OR TE APPROVED EQUIVALENT

PART LIST  
 2195505-\*

1: I-PEX MHF4L, 20632-001R-37  
 2: I-PEX MHF, 20351-112R-37

3

TE PART NO. 2195505-\*

| ITEM | DESCRIPTION           | QTY |
|------|-----------------------|-----|
| 3    | COPPER FOIL           | 1   |
| 2    | CABLE                 | 1   |
| 1    | WF2 PCB WITH ADHESIVE | 1   |

THIS DRAWING IS A CONTROLLED DOCUMENT.

APPROVED BY: ARES HUANG  
 DATE: 18Dec15  
 CHECKED BY: BILL WU  
 DATE: 18Dec15  
 APPROVED BY: RICHARD GONG  
 DATE: 18Dec15

TE Connectivity

WF AUX ANTENNA

SIZE CASE CODE DRAWING NO RESTRICTED TO  
 A3 00779 C-2195505

CUSTOMER DRAWING SCALE 1:1 SHEET 1 of 1 REV 14

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CUSTOMER DRAWING SCALE 1:1 SHEET 1 of 1 REV 14

1470-19 (3/11)



## 2. Antenna Photo





### **3. Antenna Related Data.**

Antenna Type

WLAN : PCB

Frequency Range:

WLAN : 2400~2500MHz & 5150 ~ 5875MHz

Cable Color:

WLAN : White

Cable Type :

WLAN :  $\Phi 1.13\text{mm}$

VSWR:

$2400\sim 2500\text{MHz} \leq 3$

$5150\sim 5875\text{MHz} \leq 4$

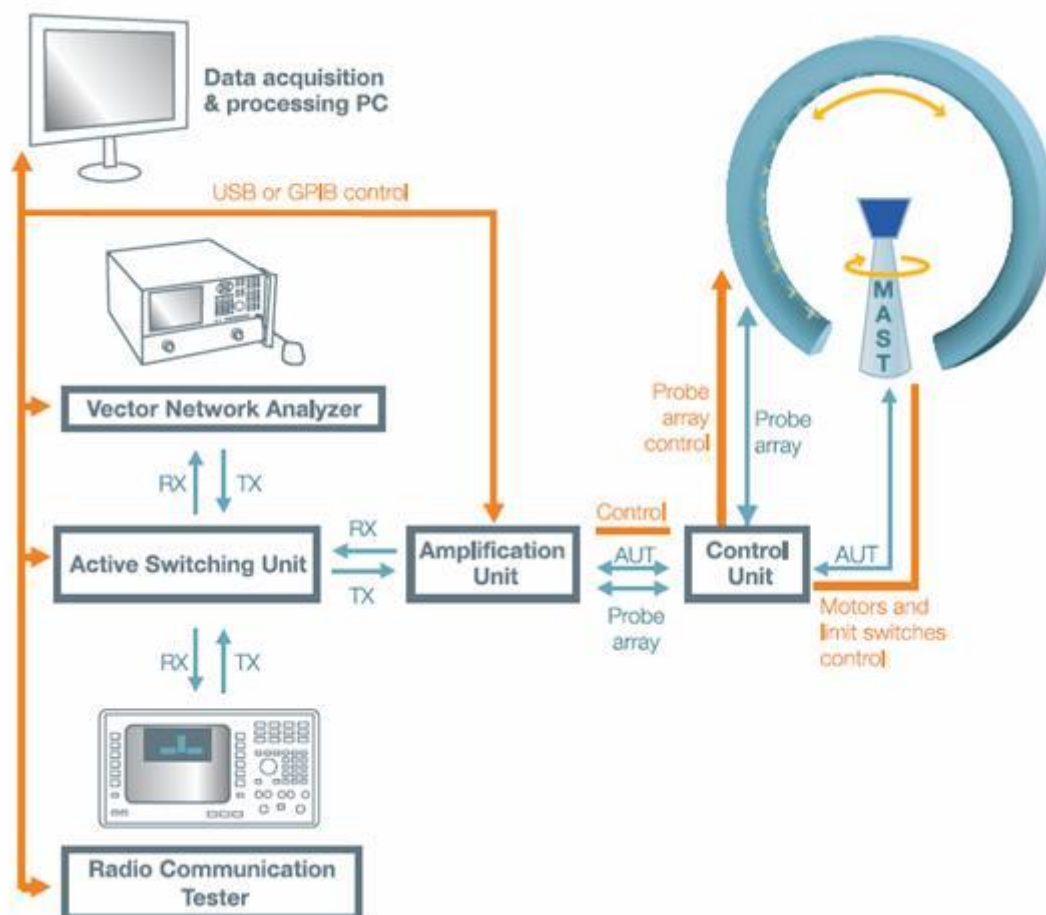
Average Gain :

$\geq -6.0 \text{ dBi @ } 2400\sim 2500\text{MHz}$

$\geq -6.5 \text{ dBi @ } 5150\sim 5875\text{MHz}$

## 4. Antenna Testing Conditions

### Test Configuration(3D):



(Testing by 3D anechoic chamber)

| Support Equipment |                  |            |            |
|-------------------|------------------|------------|------------|
| No.               | Equipment        | Brand Name | Model Name |
| 1                 | Chamber          | Satimo     | StarLab    |
| 2                 | Network Analyzer | Agilent    | E5071C     |

| Test Lab                                                     |              |                  |              |
|--------------------------------------------------------------|--------------|------------------|--------------|
| ADD : 3F, No. 45, Dongsing Road, Taipei 11070, Taiwan R.O.C. |              |                  |              |
| TEL : 886-2-2171-5349                                        |              |                  |              |
| Test Information                                             |              |                  |              |
| Condition                                                    | Engineer     | Environment      | Date         |
| Raidated                                                     | Raymond Wang | 22~24°C / 55~70% | 16/Jul./2018 |

# 5. Test Result.

## 5.1 VSWR

### WLAN

| Frequency<br>(MHz) | 2400 | 2500 | 5150 | 5875 |
|--------------------|------|------|------|------|
| WLAN               | 1.59 | 1.69 | 1.84 | 2.84 |





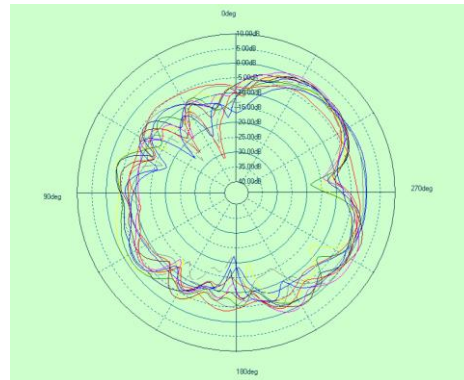
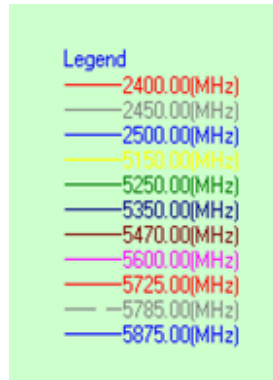
## 5.2 Gain value (Testing by 3D anechoic chamber)

### WLAN

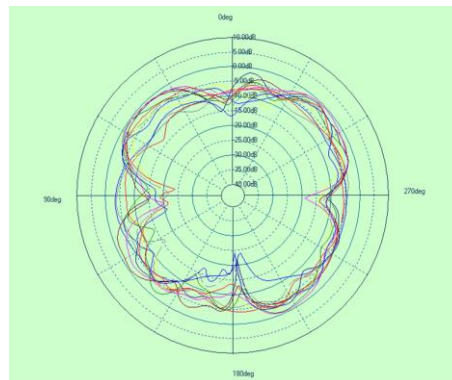
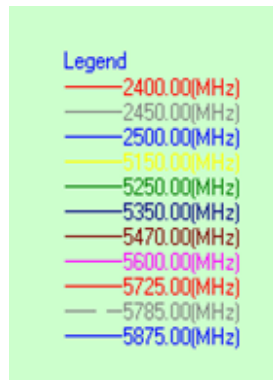
| Antenna   | WLAN    |            |           |         |          |
|-----------|---------|------------|-----------|---------|----------|
| Frequency | Gain    | Efficiency | Peak Gain |         |          |
|           | 3D      | 3D         | Phi 0     | Phi 90  | Theta 90 |
| ( MHz )   | ( dBi ) | ( % )      | ( dBi )   | ( dBi ) | ( dBi )  |
| 2400      | -4.83   | 32.9%      | -1.52     | -3.60   | -2.64    |
| 2450      | -4.16   | 38.4%      | -0.14     | -3.36   | -0.48    |
| 2500      | -4.37   | 36.6%      | 0.77      | -3.43   | 0.36     |
| 4900      | -6.56   | 22.1%      | -2.53     | -1.84   | -5.30    |
| 5000      | -5.15   | 30.5%      | 0.06      | -1.65   | -2.40    |
| 5100      | -5.46   | 28.4%      | 0.17      | -2.83   | -2.71    |
| 5150      | -5.49   | 28.2%      | -0.16     | -3.65   | -4.30    |
| 5250      | -5.16   | 30.5%      | -1.30     | -0.67   | -4.73    |
| 5350      | -3.99   | 39.9%      | 0.04      | -1.25   | -4.74    |
| 5470      | -3.61   | 43.5%      | 0.96      | -0.69   | -2.95    |
| 5725      | -5.00   | 31.6%      | 0.00      | -1.43   | -2.90    |
| 5785      | -5.21   | 30.1%      | -0.58     | -2.29   | -5.20    |
| 5875      | -5.36   | 29.1%      | -0.35     | -1.43   | -5.08    |

## 6.3 Gain Pattern (Testing by 3D anechoic chamber)

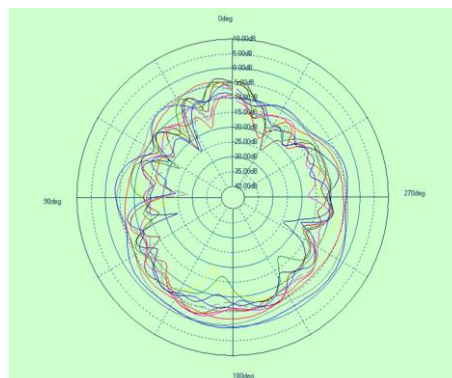
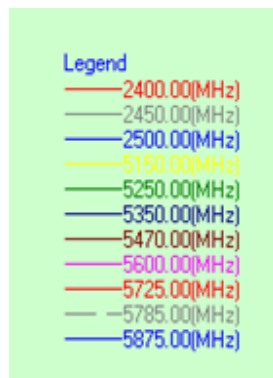
### WLAN



Phi 0



Phi 90



Theta90