



# **QUBE 6015 PLUS**

UHF RFID Antenna

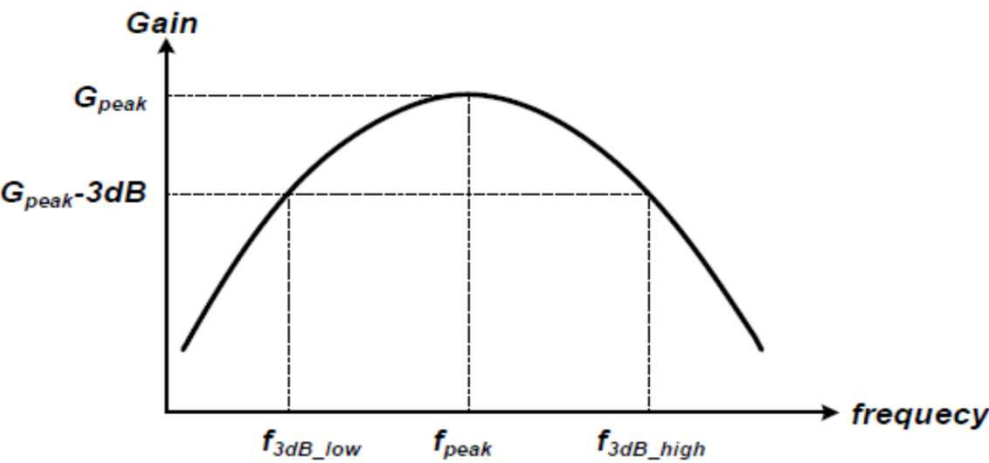
Specification

1. Part Name  
KSA-921A6015B100E

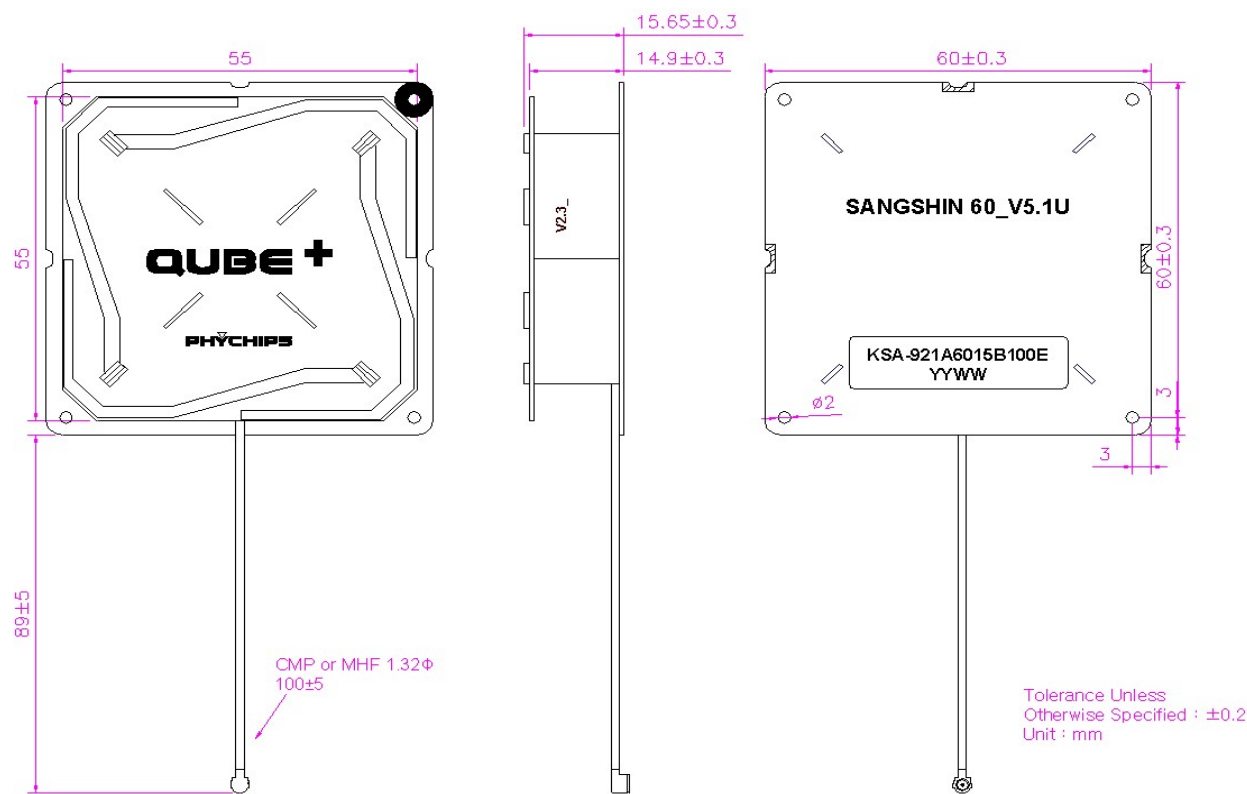
2. Electrical Specifications

| Item                     | Specifications |         |      |      |
|--------------------------|----------------|---------|------|------|
|                          | Min.           | Typical | Max. | Unit |
| Center Frequency (= Fc)  | 917            | 921     | 925  | MHz  |
| 3dB Bandwidth            | 26             | 30      |      | MHz  |
| Return Loss @ Fc         |                |         | -15  | dB   |
| Polarization             | R.H.C.P        |         |      |      |
| Peak Gain @ Fc (RHCP)    |                | 4       |      | dBic |
| Gain @ Reference Antenna | -14            | -11     |      | dB   |

Note 1. Operating frequency is defined as frequency range between f3dB\_low and f3dB\_high.



3. Dimensions



\* Both CMP(Gigalane) and MHF(I-PEX) can be used interchangeably.  
However, only one type, either CMP or MHF, must be used in the same LOT production.

\* YYWW : Date Code

\* Dimensions of Connector

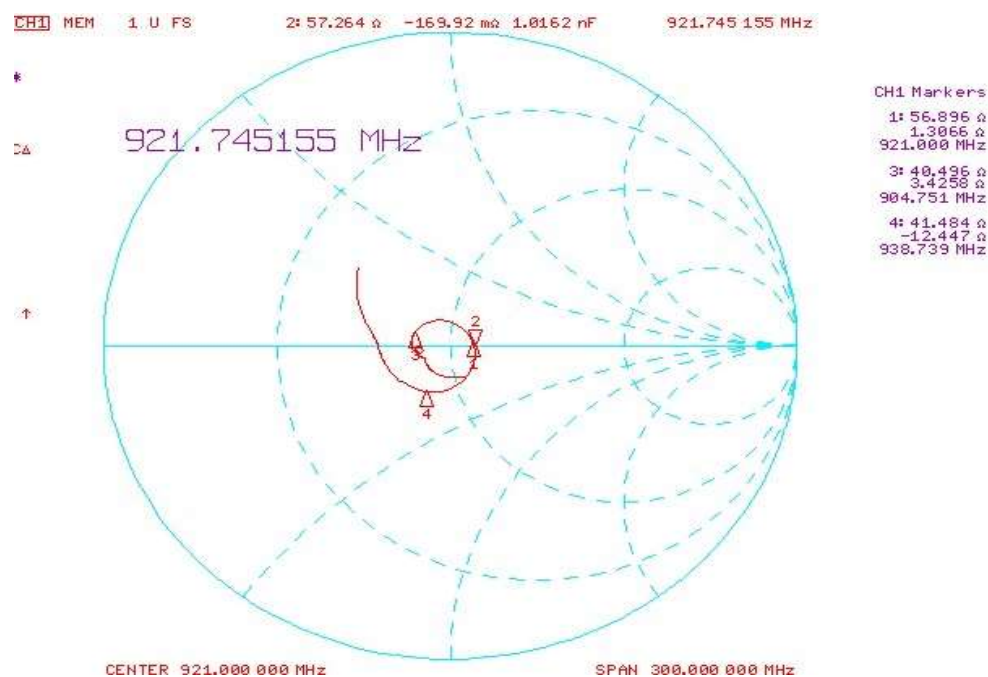
| CMP | MHF |
|-----|-----|
|     |     |

4. S-parameter Data

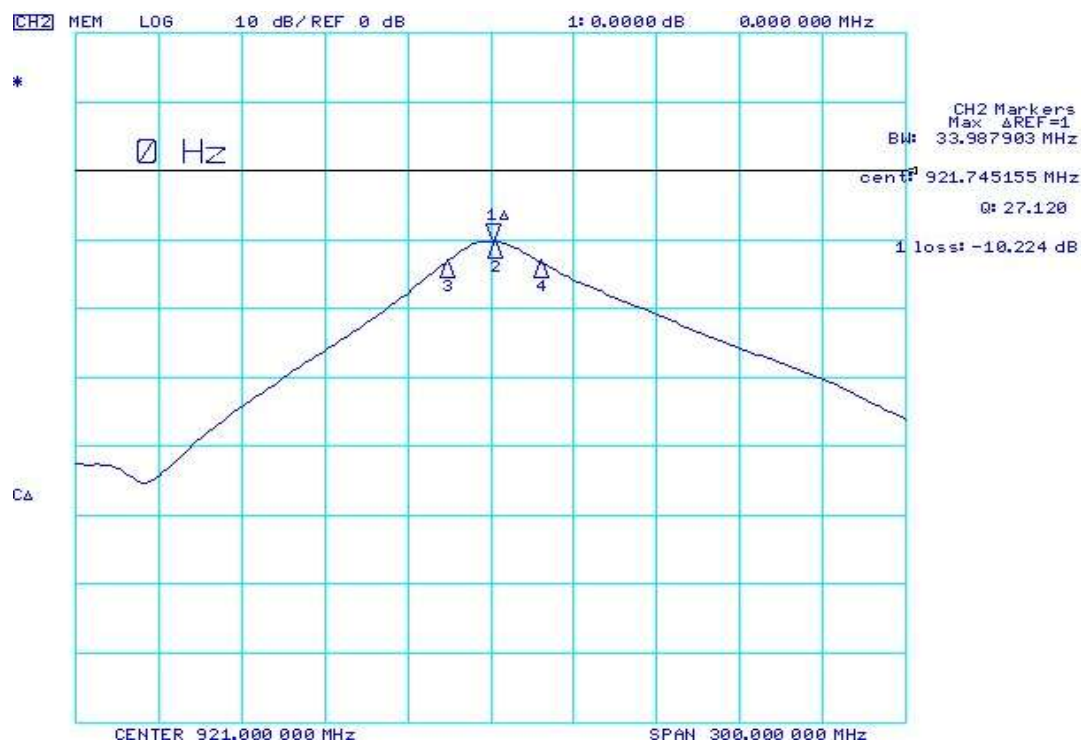
4.1 Return Loss (S11)



4.2 Smith Chart (S11)



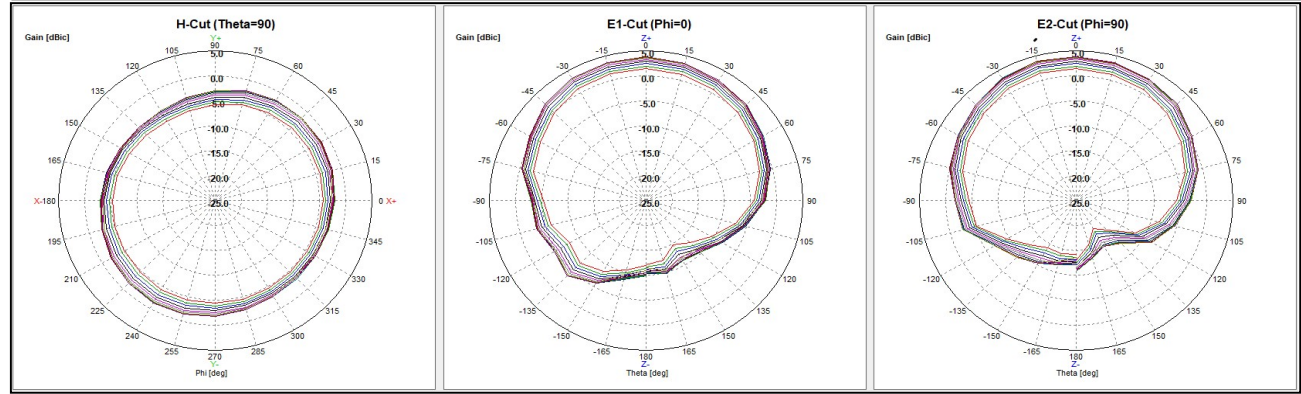
4.3 Gain (S21)



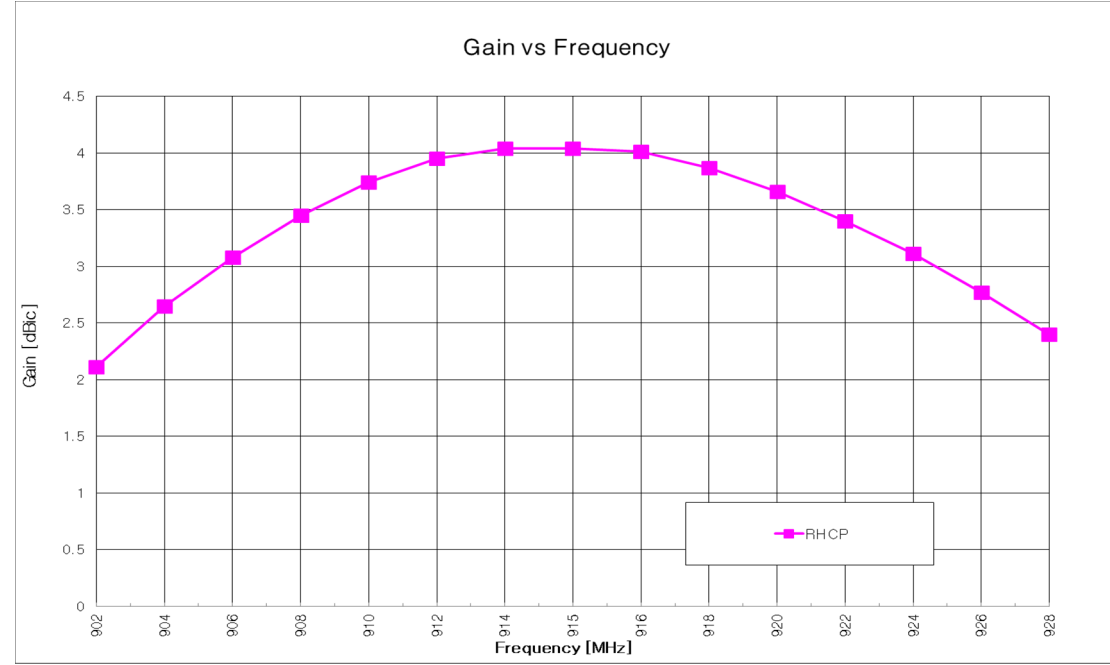
5. Antenna Chamber Data

5.1 RHCP Gain

| No.   |         | RHCP    |            |            |        | H(Theta=1 |            |            |        | E1(Phi=0 |            |            |        | E2(Phi=90 |            |            |        |         |
|-------|---------|---------|------------|------------|--------|-----------|------------|------------|--------|----------|------------|------------|--------|-----------|------------|------------|--------|---------|
| Freq. |         | Eff.[%] | Avg.[dBic] | Peak[dBic] | Theta[ | Phi[deg]  | Avg.[dBic] | Peak[dBic] | [deg]  | BW[deg]  | Avg.[dBic] | Peak[dBic] | Theta[ | BW[deg]   | Avg.[dBic] | Peak[dBic] | Theta[ | BW[deg] |
| 4     | 906.000 | 45.86   | -3.39      | 1.58       | 0.00   | 255.00    | -4.92      | -4.19      | 30.00  | 999.00   | -2.67      | 1.43       | 0.00   | 124.17    | -2.87      | 1.46       | -15.00 | 123.39  |
| 5     | 908.000 | 51.74   | -2.86      | 2.09       | 0.00   | 255.00    | -4.39      | -3.62      | 30.00  | 999.00   | -2.14      | 1.96       | 0.00   | 123.91    | -2.36      | 1.97       | -15.00 | 123.16  |
| 6     | 910.000 | 57.84   | -2.38      | 2.57       | 0.00   | 255.00    | -3.90      | -3.11      | 30.00  | 999.00   | -1.66      | 2.42       | 0.00   | 123.99    | -1.88      | 2.46       | -15.00 | 122.97  |
| 7     | 912.000 | 64.32   | -1.92      | 3.03       | 0.00   | 255.00    | -3.43      | -2.60      | 30.00  | 999.00   | -1.20      | 2.89       | 0.00   | 123.35    | -1.42      | 2.92       | -15.00 | 122.91  |
| 8     | 914.000 | 70.58   | -1.51      | 3.43       | 0.00   | 255.00    | -3.02      | -2.17      | 30.00  | 999.00   | -0.80      | 3.29       | 0.00   | 122.79    | -1.01      | 3.31       | 0.00   | 122.75  |
| 10    | 916.000 | 75.51   | -1.22      | 3.73       | 0.00   | 255.00    | -2.72      | -1.78      | 240.00 | 999.00   | -0.53      | 3.56       | 0.00   | 122.42    | -0.71      | 3.62       | -15.00 | 122.37  |
| 11    | 918.000 | 78.49   | -1.05      | 3.93       | 0.00   | 255.00    | -2.54      | -1.50      | 240.00 | 999.00   | -0.37      | 3.73       | 0.00   | 121.45    | -0.53      | 3.80       | -15.00 | 122.17  |
| 12    | 920.000 | 79.66   | -0.99      | 4.00       | 0.00   | 255.00    | -2.46      | -1.37      | 240.00 | 999.00   | -0.33      | 3.79       | 0.00   | 120.46    | -0.45      | 3.87       | -15.00 | 121.82  |
| 13    | 921.000 | 79.80   | -0.98      | 4.01       | 0.00   | 270.00    | -2.45      | -1.32      | 240.00 | 999.00   | -0.34      | 3.81       | 0.00   | 119.98    | -0.43      | 3.89       | -15.00 | 121.73  |
| 14    | 922.000 | 79.58   | -0.99      | 4.01       | 0.00   | 255.00    | -2.46      | -1.31      | 240.00 | 359.29   | -0.36      | 3.80       | 0.00   | 119.44    | -0.44      | 3.88       | -15.00 | 121.55  |
| 15    | 924.000 | 78.25   | -1.06      | 3.97       | 0.00   | 270.00    | -2.53      | -1.36      | 240.00 | 358.63   | -0.45      | 3.74       | 0.00   | 118.31    | -0.48      | 3.83       | -15.00 | 120.73  |
| 16    | 926.000 | 75.33   | -1.23      | 3.84       | 0.00   | 255.00    | -2.69      | -1.51      | 240.00 | 999.00   | -0.64      | 3.61       | 0.00   | 116.45    | -0.62      | 3.70       | -15.00 | 119.91  |
| 17    | 928.000 | 71.07   | -1.48      | 3.63       | 0.00   | 255.00    | -2.95      | -1.75      | 240.00 | 999.00   | -0.89      | 3.41       | 0.00   | 114.73    | -0.84      | 3.49       | -15.00 | 118.83  |
| 18    | 930.000 | 66.25   | -1.79      | 3.36       | 0.00   | 270.00    | -3.27      | -2.08      | 240.00 | 999.00   | -1.21      | 3.14       | 0.00   | 113.56    | -1.13      | 3.22       | -15.00 | 117.56  |
| 19    | 932.000 | 61.37   | -2.12      | 3.09       | 0.00   | 270.00    | -3.62      | -2.47      | 240.00 | 999.00   | -1.54      | 2.87       | 0.00   | 112.07    | -1.43      | 2.92       | -15.00 | 116.27  |
| 20    | 934.000 | 56.49   | -2.48      | 2.78       | 0.00   | 270.00    | -4.01      | -2.88      | 240.00 | 999.00   | -1.90      | 2.56       | 0.00   | 111.08    | -1.77      | 2.62       | -15.00 | 115.08  |
| 21    | 936.000 | 51.41   | -2.89      | 2.40       | 0.00   | 270.00    | -4.46      | -3.32      | 240.00 | 999.00   | -2.30      | 2.21       | 0.00   | 109.63    | -2.16      | 2.25       | -15.00 | 114.05  |



5.2 Gain vs Frequency



6. Measurement within enclosure  
TBD

6.1 Reader or Model Name

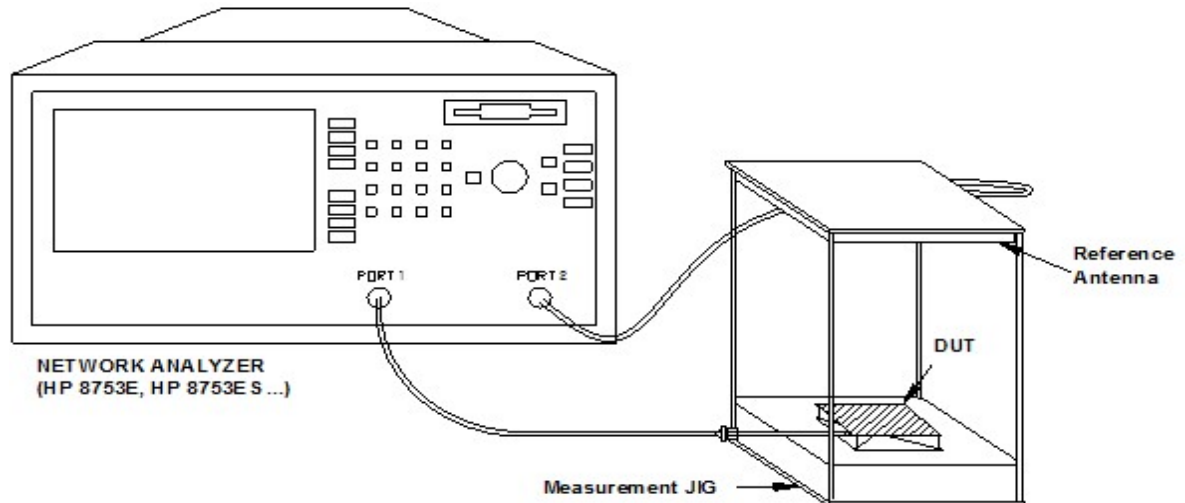
6.2 Electrical Specifications

| Item                    | Specifications |         |      |      |
|-------------------------|----------------|---------|------|------|
|                         | Min.           | Typical | Max. | Unit |
| Center Frequency (= Fc) |                |         |      | MHz  |
| 3dB Bandwidth           |                |         |      | MHz  |
| Return Loss @ Fc        |                |         |      | dB   |
| Polarization            | R.H.C.P        |         |      |      |
| Peak Gain @ Fc (RHCP)   |                |         |      | dBic |

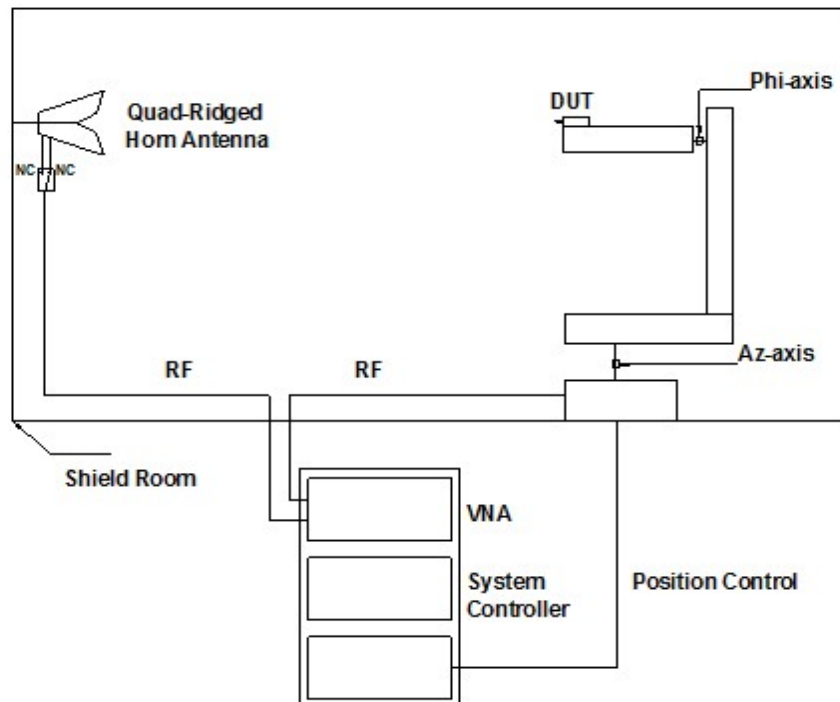
6.3 Antenna Chamber Data within enclosure

## 7. Measurement Condition

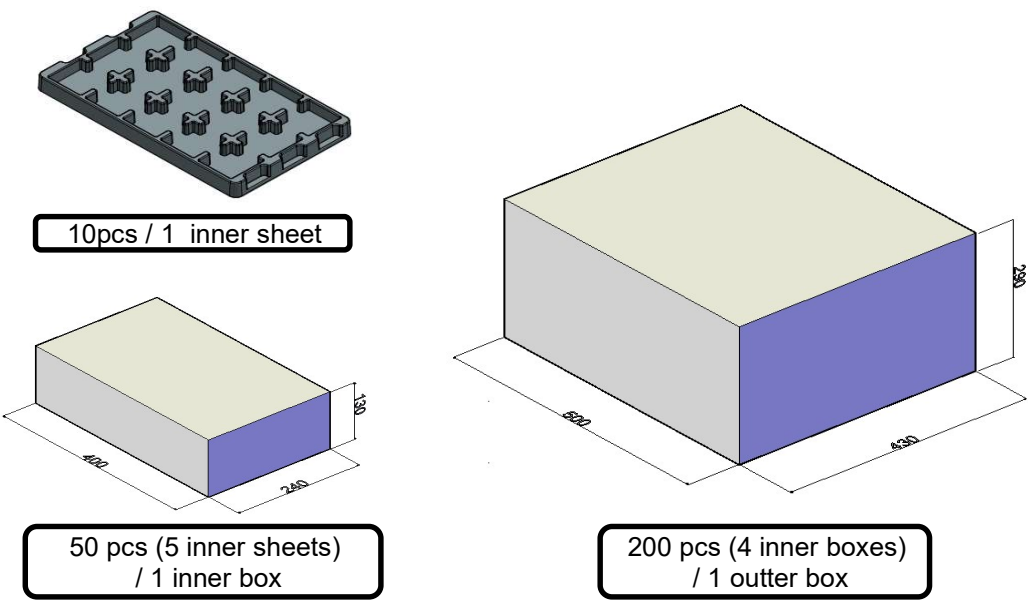
### 7.1 S-parameter Measurement



### 7.2 Gain Measurement



8. Package



9. Revision

| Revision No. | Originator | Description of Change | Date of Changes |
|--------------|------------|-----------------------|-----------------|
| 1.0.0        | SM Yun     | Full specification    | 10-Jan-24       |
|              |            |                       |                 |
|              |            |                       |                 |
|              |            |                       |                 |
|              |            |                       |                 |
|              |            |                       |                 |

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