

## 天 线 规 格 书

### Antenna specification for approval

客户名称: 普联

机型: TW-1

天线类型: 4G 主天线/4G 副天线

天线频段: LTE: 1/3/5+WCDMA:2100

材质要求: FPC

颜色: 黑色

4G主天线: G1576A-1L22B-085-A

4G副天线: G1085B-1D22B-080-A

制作日期: 2020-04-29

Version: A

| 承 认 签 章<br>Admit that signature   |  |                              |  |
|-----------------------------------|--|------------------------------|--|
| 云 希 承 认<br>Confirmation Signature |  | 客 户 承 认<br>Customer Approved |  |
|                                   |  |                              |  |
| 承办人 Responsible                   |  | 承办人 Responsible              |  |
| 品质 QC                             |  | 主管 Chief                     |  |
| 核准 Approve                        |  | 核准 Approve                   |  |
| 日 期 Date                          |  | 日 期 Date                     |  |

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## 一：概述

- This approval sheet supports for MID project. FPC antennas include in this project. This report is for the performance of 4G antenna.
- Antenna shape size: Meet the requirement of MID
- Antenna band: 824MHz~960MHz,1710MHz~2700MHz
- Antenna material: Antenna material meet the requirement of MID
- Adhesive performance: Adhesive performance meet the requirement of MID
- Antenna performance meet the spec below:

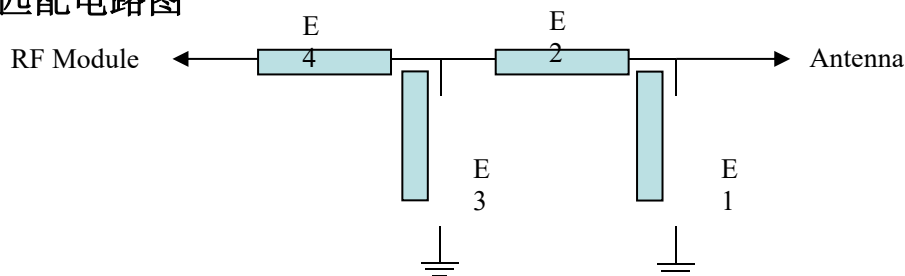
| Description            | 824MHz~960MHz,1710MHz~2700MHz |             | Units |
|------------------------|-------------------------------|-------------|-------|
| VSWR                   | $\leq 5.0$                    | $\leq 5$    | dB    |
| Average Antenna Gain   | $\geq -4.5$                   | $\geq -4.0$ |       |
| Antenna Efficiency     | $\geq 30$                     | $\geq 40$   |       |
| Feed Impedance         | 50 ohms                       |             |       |
| Operating Temperature  | -40 to +85 deg C              |             |       |
| Polarization / Azimuth | Linear / Omni-directional     |             |       |

## ● Mechanical Information

| Mechanical Dimension  |                  |
|-----------------------|------------------|
| Cable Length          | 085/080mm/Black  |
| Description           | 4G antenna       |
| Material              | FPC              |
| Coaxial Cable         | 50Ohm/0.D.0.81mm |
| Environmental         |                  |
| Operation Temperature | -40 to +85 deg C |
| Storage Temperature   | -40 to +85 deg C |

## 二：匹配电路图、机器图片、天线图片

### 2.1匹配电路图



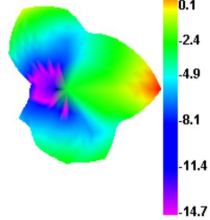
我司未对天线匹配做修改

## 2.2机器图片、天线图片

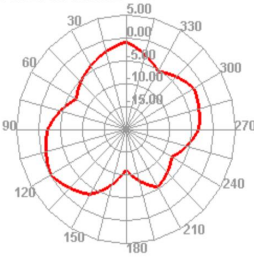


| Passive Test For WIFI2.4 |          |           |            |            |         |          |          |          |             |             |
|--------------------------|----------|-----------|------------|------------|---------|----------|----------|----------|-------------|-------------|
| Freq (MHz)               | Effi (%) | Effi (dB) | Gain (dBi) | Gain (dBd) | UHS (%) | DHIS (%) | Max (dB) | Min (dB) | Attenut Hor | Attenut Ver |
| 2400                     | 35.78    | -4.46     | 1.73       | -0.42      | 19.833  | 15.951   | 1.73     | -14.72   | 48.17       | 48.27       |
| 2410                     | 34.55    | -3.51     | 2.57       | 0.42       | 25.076  | 19.479   | 2.57     | -13.37   | 48.82       | 48.98       |
| 2420                     | 37.59    | -3.23     | 2.62       | 0.47       | 26.804  | 20.784   | 2.62     | -13.23   | 49.21       | 49.73       |
| 2430                     | 35.21    | -4.53     | 1.36       | -0.79      | 20.321  | 14.886   | 1.36     | -15.12   | 47.85       | 48.18       |
| 2440                     | 32.58    | -4.87     | 0.94       | -1.21      | 18.968  | 13.616   | 0.94     | -15.49   | 47.45       | 47.61       |
| 2450                     | 33.82    | -4.71     | 0.93       | -1.22      | 19.744  | 14.073   | 0.93     | -16.14   | 47.52       | 47.61       |
| 2460                     | 38.24    | -3.17     | 2.28       | 0.13       | 28.15   | 20.093   | 2.28     | -14.39   | 49.2        | 49.47       |
| 2470                     | 39.11    | -4.08     | 1.32       | -0.83      | 22.903  | 16.204   | 1.32     | -14.96   | 48.51       | 48.69       |
| 2480                     | 33.99    | -4.69     | 0.78       | -1.37      | 19.903  | 14.082   | 0.78     | -15.95   | 47.62       | 47.62       |
| 2490                     | 34.28    | -4.65     | 0.84       | -1.31      | 20.06   | 14.217   | 0.84     | -15.83   | 47.76       | 47.65       |
| 2500                     | 40.14    | -3.65     | 1.82       | -0.33      | 25.1    | 18.039   | 1.82     | -14.37   | 48.93       | 48.83       |

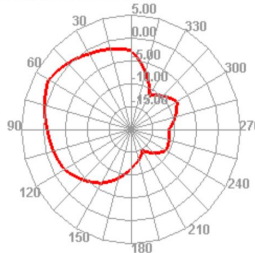
2400.000MHz



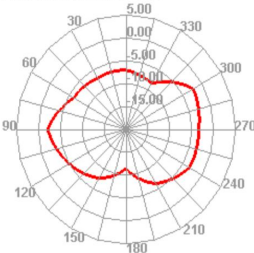
2400.000MHz H



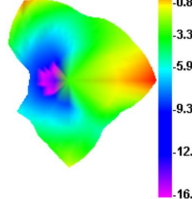
2400.000MHz E1



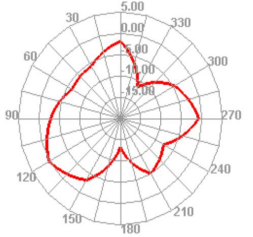
2400.000MHz E2



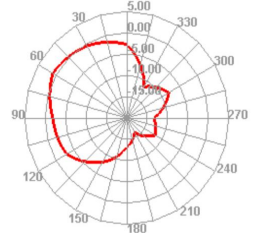
2450.000MHz



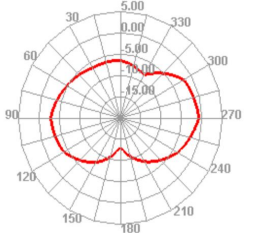
2450.000MHz H



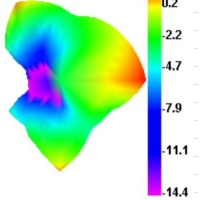
2450.000MHz E1



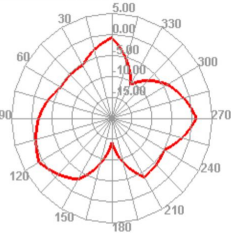
2450.000MHz E2



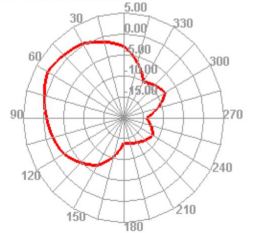
2500.000MHz



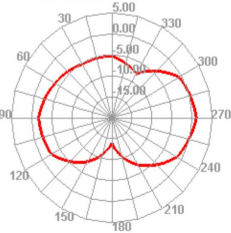
2500.000MHz H



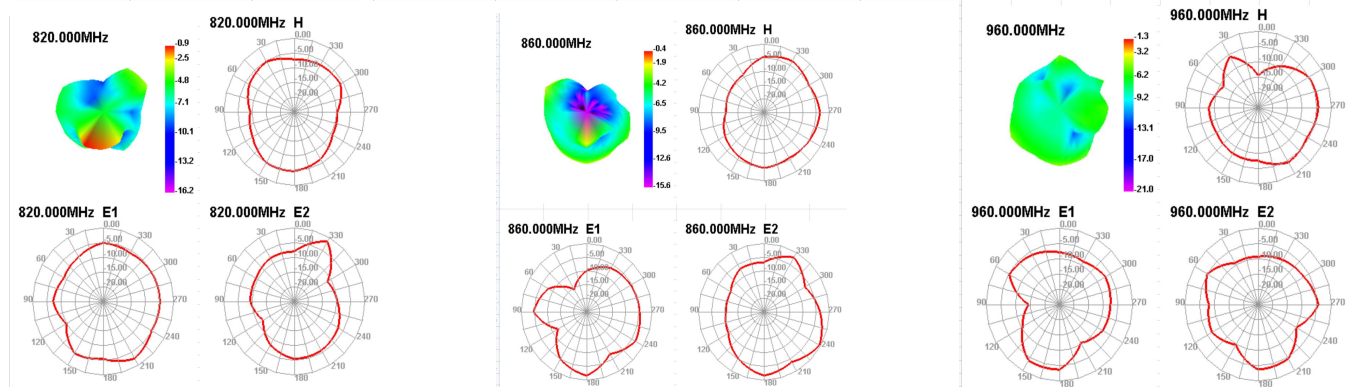
2500.000MHz E1



2500.000MHz E2



| Passive Test For 低频 |          |           |            |            |         |          |          |          |             |             |
|---------------------|----------|-----------|------------|------------|---------|----------|----------|----------|-------------|-------------|
| Freq (MHz)          | Effi (%) | Effi (dB) | Gain (dBi) | Gain (dBd) | UHS (%) | DHIS (%) | Max (dB) | Min (dB) | Attenut Hor | Attenut Ver |
| 820                 | 23.75    | -6.24     | -0.93      | -3.08      | 11.686  | 12.061   | -0.93    | -16.23   | 38.99       | 38.99       |
| 830                 | 27.44    | -5.62     | -1.33      | -3.48      | 11.869  | 15.576   | -1.33    | -13.42   | 38.88       | 38.82       |
| 840                 | 23.25    | -6.34     | -1.5       | -3.65      | 9.731   | 13.521   | -1.5     | -13.02   | 37.97       | 37.92       |
| 850                 | 27.15    | -5.66     | -0.66      | -2.81      | 10.758  | 16.394   | -0.66    | -14.73   | 38.3        | 38.39       |
| 860                 | 29.3     | -5.33     | -0.41      | -2.56      | 11.655  | 17.648   | -0.41    | -15.62   | 38.21       | 38.25       |
| 870                 | 34.45    | -4.63     | 0.45       | -1.7       | 13.676  | 20.776   | 0.45     | -20.74   | 38.2        | 38.32       |
| 880                 | 34.9     | -4.57     | 0.68       | -1.47      | 13.319  | 21.577   | 0.68     | -18.79   | 38.32       | 38.42       |
| 890                 | 31.34    | -5.04     | -0.16      | -2.31      | 13.098  | 18.24    | -0.16    | -19.88   | 38.67       | 38.62       |
| 900                 | 27.3     | -5.64     | -0.52      | -2.67      | 12.547  | 14.749   | -0.52    | -17.74   | 38.74       | 38.81       |
| 910                 | 24.92    | -6.03     | -1.58      | -3.73      | 12.695  | 12.227   | -1.58    | -16.5    | 38.76       | 38.94       |
| 920                 | 29.27    | -5.34     | -0.85      | -3         | 15.509  | 13.756   | -0.85    | -14.08   | 39.96       | 40.1        |
| 930                 | 26.29    | -5.8      | -1.6       | -3.75      | 14.306  | 11.986   | -1.6     | -12.69   | 40.17       | 40.61       |
| 940                 | 19.33    | -7.14     | -2.94      | -5.09      | 10.595  | 8.734    | -2.94    | -16.27   | 39.53       | 39.83       |
| 950                 | 14.53    | -8.38     | -2.65      | -4.8       | 7.763   | 6.771    | -2.65    | -19.84   | 38.9        | 39.35       |
| 960                 | 18.59    | -7.31     | -1.28      | -3.43      | 9.302   | 9.287    | -1.28    | -20.98   | 40.24       | 40.77       |





| Passive Test For 高频 |             |              |               |               |            |             |             |             |                |                |
|---------------------|-------------|--------------|---------------|---------------|------------|-------------|-------------|-------------|----------------|----------------|
| Freq<br>(MHz)       | Effi<br>(%) | Effi<br>(dB) | Gain<br>(dBi) | Gain<br>(dBd) | UHS<br>(%) | DHIS<br>(%) | Max<br>(dB) | Min<br>(dB) | Attenut<br>Hor | Attenut<br>Ver |
| 1700                | 39.76       | -4.01        | -1.08         | -3.23         | 18.773     | 20.983      | -1.08       | -13.22      | 44.86          | 44.86          |
| 1710                | 39.12       | -4.08        | -1.25         | -3.4          | 17.816     | 21.301      | -1.25       | -15.96      | 45.28          | 45.38          |
| 1720                | 38.91       | -4.1         | -1.22         | -3.37         | 17.357     | 21.548      | -1.22       | -16.91      | 45.54          | 45.68          |
| 1730                | 46.13       | -3.36        | -0.15         | -2.3          | 19.967     | 26.16       | -0.15       | -17.35      | 46.24          | 46.11          |
| 1740                | 41.07       | -3.86        | -0.09         | -2.24         | 17.369     | 23.701      | -0.09       | -18.15      | 45.65          | 45.7           |
| 1750                | 43.49       | -3.62        | 0.14          | -2.01         | 17.921     | 25.57       | 0.14        | -18.95      | 45.84          | 45.89          |
| 1760                | 37.01       | -4.32        | -0.26         | -2.41         | 14.941     | 22.066      | -0.26       | -18.88      | 45.45          | 45.55          |
| 1770                | 35.27       | -4.53        | -0.71         | -2.86         | 14.11      | 21.157      | -0.71       | -18.11      | 45.62          | 45.34          |
| 1780                | 41.27       | -3.84        | 0.08          | -2.07         | 16.492     | 24.782      | 0.08        | -18.46      | 46.45          | 46             |
| 1790                | 31.68       | -4.99        | -1.25         | -3.4          | 12.449     | 19.229      | -1.25       | -21.42      | 45.25          | 45             |
| 1800                | 32.92       | -4.82        | -0.9          | -3.05         | 12.913     | 20.011      | -0.9        | -21.37      | 45.16          | 45.02          |
| 1810                | 32.44       | -4.89        | -0.82         | -2.97         | 12.58      | 19.857      | -0.82       | -21.61      | 45.22          | 45.1           |
| 1820                | 41.17       | -3.85        | 0.22          | -1.93         | 15.925     | 25.241      | 0.22        | -19.57      | 46.55          | 46.39          |
| 1830                | 34.09       | -4.67        | -0.51         | -2.66         | 13.193     | 20.892      | -0.51       | -20.52      | 45.84          | 45.3           |
| 1840                | 26.13       | -5.83        | -1.61         | -3.76         | 9.984      | 16.148      | -1.61       | -21.36      | 45.04          | 44.69          |
| 1850                | 33.82       | -4.71        | -0.39         | -2.54         | 12.734     | 21.09       | -0.39       | -20.99      | 45.73          | 45.7           |
| 1860                | 42.24       | -3.74        | 0.31          | -1.84         | 15.706     | 26.531      | 0.31        | -20.81      | 46.6           | 46.64          |
| 1870                | 37.86       | -4.22        | -0.14         | -2.29         | 13.902     | 23.953      | -0.14       | -21.88      | 46.13          | 45.97          |
| 1880                | 33.6        | -4.74        | -0.79         | -2.94         | 12.179     | 21.421      | -0.79       | -21.73      | 45.61          | 45.49          |
| 1890                | 32.69       | -4.86        | -0.8          | -2.95         | 11.673     | 21.015      | -0.8        | -21.47      | 46.2           | 45.95          |
| 1900                | 39.61       | -4.02        | 0             | -2.15         | 13.836     | 25.775      | 0           | -20.46      | 47.03          | 47.1           |
| 1910                | 40.16       | -3.96        | 0.29          | -1.86         | 13.863     | 26.296      | 0.29        | -20.82      | 47.32          | 47.37          |
| 1920                | 29.84       | -5.25        | -1.08         | -3.23         | 10.134     | 19.706      | -1.08       | -22.17      | 46.13          | 46.35          |
| 1930                | 36.15       | -4.42        | -0.15         | -2.3          | 12.266     | 23.888      | -0.15       | -20.78      | 46.75          | 46.64          |
| 1940                | 40.81       | -3.89        | 0.44          | -1.71         | 13.96      | 26.848      | 0.44        | -18.15      | 47.4           | 47.35          |
| 1950                | 47.3        | -3.25        | 0.8           | -1.35         | 16.891     | 30.412      | 0.8         | -17.18      | 47.8           | 47.91          |
| 1960                | 36.79       | -4.34        | -0.42         | -2.57         | 13.486     | 23.304      | -0.42       | -18.45      | 46.9           | 47.18          |
| 1970                | 31.28       | -5.05        | -0.98         | -3.13         | 11.714     | 19.57       | -0.98       | -19.21      | 46.63          | 46.6           |
| 1980                | 34.97       | -4.56        | -0.56         | -2.71         | 13.097     | 21.878      | -0.56       | -19.89      | 46.6           | 46.84          |
| 1990                | 45.04       | -3.46        | 0.61          | -1.54         | 16.98      | 28.061      | 0.61        | -19.45      | 47.77          | 47.98          |
| 2000                | 45.34       | -3.43        | 0.55          | -1.6          | 17.039     | 28.305      | 0.55        | -18.03      | 47.58          | 47.72          |
| 2010                | 35.82       | -4.46        | -0.35         | -2.5          | 13.573     | 22.245      | -0.35       | -16.83      | 46.84          | 47             |
| 2020                | 31.59       | -5.01        | -0.95         | -3.1          | 11.995     | 19.591      | -0.95       | -16.29      | 46.57          | 46.64          |
| 2030                | 47.71       | -3.21        | 0.84          | -1.31         | 18.434     | 29.272      | 0.84        | -13.29      | 48.31          | 48.37          |
| 2040                | 32.52       | -4.88        | -0.93         | -3.08         | 12.622     | 19.893      | -0.93       | -14.91      | 46.95          | 47.05          |
| 2050                | 28.84       | -5.4         | -1.34         | -3.49         | 11.309     | 17.526      | -1.34       | -16.74      | 46.07          | 46.29          |
| 2060                | 25.3        | -5.97        | -1.88         | -4.03         | 9.898      | 15.4        | -1.88       | -17.37      | 45.61          | 45.47          |
| 2070                | 36.21       | -4.41        | -0.13         | -2.28         | 14.291     | 21.915      | -0.13       | -14.95      | 47.31          | 47.35          |
| 2080                | 29.91       | -5.24        | -0.78         | -2.93         | 11.686     | 18.226      | -0.78       | -14.22      | 46.15          | 46.42          |
| 2090                | 27.34       | -5.63        | -1.02         | -3.17         | 10.737     | 16.601      | -1.02       | -16.24      | 45.96          | 46.34          |
| 2100                | 21.92       | -6.59        | -2.03         | -4.18         | 8.488      | 13.428      | -2.03       | -18.71      | 45.1           | 45.03          |
| 2110                | 31.71       | -4.99        | -0.42         | -2.57         | 12.344     | 19.364      | -0.42       | -18.55      | 46.41          | 46.64          |



深圳市云希科技有限公司

天|线|制|造|商

Shen zhen Vic-Proud Technogy Co.,Ltd

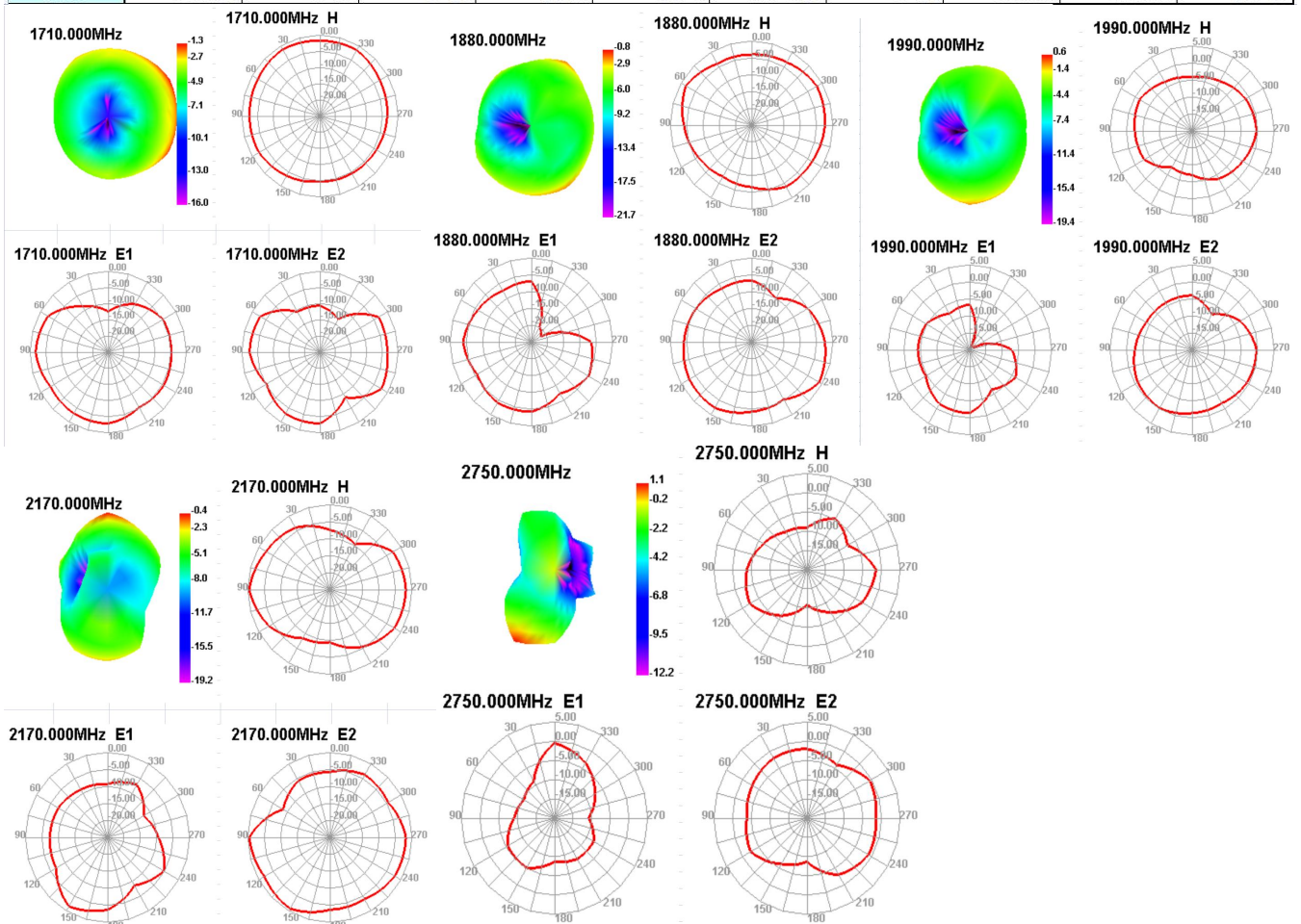
|      |       |       |       |       |        |        |       |        |       |       |
|------|-------|-------|-------|-------|--------|--------|-------|--------|-------|-------|
| 2120 | 30.24 | -5.19 | -0.79 | -2.94 | 11.658 | 18.581 | -0.79 | -19.32 | 46.35 | 46.35 |
| 2130 | 35.97 | -4.44 | -0.33 | -2.48 | 13.944 | 22.026 | -0.33 | -18.18 | 46.93 | 46.79 |
| 2140 | 26.82 | -5.72 | -1.8  | -3.95 | 10.331 | 16.489 | -1.8  | -19.4  | 45.64 | 45.55 |
| 2150 | 32.43 | -4.89 | -0.81 | -2.96 | 12.535 | 19.898 | -0.81 | -18.89 | 46.17 | 46.42 |
| 2160 | 29.89 | -5.24 | -1.09 | -3.24 | 11.383 | 18.507 | -1.09 | -19.45 | 45.93 | 45.83 |
| 2170 | 34.18 | -4.66 | -0.44 | -2.59 | 12.883 | 21.298 | -0.44 | -19.23 | 46.84 | 46.41 |
| 2180 | 32.24 | -4.92 | -0.51 | -2.66 | 11.995 | 20.244 | -0.51 | -19.27 | 46.19 | 45.98 |
| 2190 | 45.18 | -3.45 | 1.1   | -1.05 | 16.752 | 28.423 | 1.1   | -16.96 | 47.52 | 47.45 |
| 2200 | 36.13 | -4.42 | 0.2   | -1.95 | 13.208 | 22.923 | 0.2   | -16.66 | 46.49 | 46.45 |
| 2210 | 44.23 | -3.54 | 1.1   | -1.05 | 16.11  | 28.12  | 1.1   | -14.76 | 47.41 | 47.2  |
| 2220 | 33.76 | -4.72 | -0.01 | -2.16 | 12.172 | 21.586 | -0.01 | -14.77 | 46.45 | 46.31 |
| 2230 | 40.65 | -3.91 | 0.86  | -1.29 | 14.666 | 25.986 | 0.86  | -13.37 | 47.55 | 47.19 |
| 2240 | 41.5  | -3.82 | 1.01  | -1.14 | 14.974 | 26.523 | 1.01  | -13.43 | 47.8  | 47.51 |
| 2250 | 28.6  | -5.44 | -0.57 | -2.72 | 10.399 | 18.205 | -0.57 | -15.52 | 46.08 | 45.88 |
| 2260 | 33.2  | -4.79 | 0.03  | -2.12 | 12.18  | 21.025 | 0.03  | -15.71 | 46.53 | 46.26 |
| 2270 | 28.35 | -5.48 | -0.7  | -2.85 | 10.56  | 17.785 | -0.7  | -17.49 | 46.17 | 46.05 |
| 2280 | 41.28 | -3.84 | 0.96  | -1.19 | 15.67  | 25.613 | 0.96  | -17.05 | 47.78 | 47.6  |
| 2290 | 34.64 | -4.6  | 0.19  | -1.96 | 13.351 | 21.286 | 0.19  | -18.14 | 47.32 | 47.02 |
| 2300 | 38.65 | -4.13 | 0.68  | -1.47 | 15.181 | 23.471 | 0.68  | -17.11 | 47.98 | 47.77 |
| 2310 | 27.98 | -5.53 | -0.54 | -2.69 | 11.161 | 16.814 | -0.54 | -17.45 | 45.94 | 46.32 |
| 2320 | 37.47 | -4.26 | 0.73  | -1.42 | 15.03  | 22.443 | 0.73  | -15.13 | 47.75 | 47.83 |
| 2330 | 40.43 | -3.93 | 1.1   | -1.05 | 16.203 | 24.227 | 1.1   | -13.62 | 48.44 | 48.12 |
| 2340 | 45.74 | -3.4  | 1.68  | -0.47 | 18.188 | 27.556 | 1.68  | -12.56 | 48.96 | 48.89 |
| 2350 | 33.05 | -4.81 | 0.28  | -1.87 | 12.952 | 20.098 | 0.28  | -13.92 | 47.67 | 47.78 |
| 2360 | 31.34 | -5.04 | -0.09 | -2.24 | 12.144 | 19.193 | -0.09 | -14.99 | 48.23 | 48.07 |
| 2370 | 36.19 | -4.41 | 0.06  | -2.09 | 14.933 | 21.26  | 0.06  | -13.39 | 48.98 | 48.84 |
| 2380 | 43.32 | -3.63 | 0.73  | -1.42 | 18.474 | 24.847 | 0.73  | -12.05 | 49.39 | 49.7  |
| 2390 | 26.98 | -5.69 | -1.49 | -3.64 | 11.716 | 15.262 | -1.49 | -13.98 | 47.72 | 47.91 |
| 2400 | 28.59 | -5.44 | -1.27 | -3.42 | 12.793 | 15.799 | -1.27 | -13.75 | 48.17 | 48.27 |
| 2410 | 36.62 | -4.36 | -0.25 | -2.4  | 16.672 | 19.951 | -0.25 | -12.92 | 48.82 | 48.98 |
| 2420 | 39.89 | -3.99 | 0.19  | -1.96 | 18.525 | 21.369 | 0.19  | -12.59 | 49.21 | 49.73 |
| 2430 | 29.51 | -5.3  | -1.14 | -3.29 | 13.724 | 15.785 | -1.14 | -14    | 47.85 | 48.18 |
| 2440 | 26.41 | -5.78 | -1.61 | -3.76 | 12.353 | 14.057 | -1.61 | -14.6  | 47.45 | 47.61 |
| 2450 | 26.01 | -5.85 | -1.69 | -3.84 | 12.105 | 13.903 | -1.69 | -14.98 | 47.52 | 47.61 |
| 2460 | 42.34 | -3.73 | 0.61  | -1.54 | 19.767 | 22.573 | 0.61  | -13.01 | 49.2  | 49.47 |
| 2470 | 34.14 | -4.67 | -0.36 | -2.51 | 15.804 | 18.34  | -0.36 | -14.29 | 48.51 | 48.69 |
| 2480 | 29.21 | -5.35 | -1.02 | -3.17 | 13.528 | 15.679 | -1.02 | -15.26 | 47.62 | 47.62 |
| 2490 | 28.29 | -5.48 | -1.23 | -3.38 | 13.006 | 15.283 | -1.23 | -15.94 | 47.76 | 47.65 |
| 2500 | 36.87 | -4.33 | -0.08 | -2.23 | 17.093 | 19.776 | -0.08 | -15.56 | 48.93 | 48.83 |
| 2510 | 38.98 | -4.09 | 0.16  | -1.99 | 18.054 | 20.929 | 0.16  | -15.73 | 48.88 | 48.94 |
| 2520 | 27.99 | -5.53 | -1.34 | -3.49 | 13.145 | 14.842 | -1.34 | -17.57 | 47.79 | 47.57 |
| 2530 | 27.26 | -5.64 | -1.5  | -3.65 | 12.835 | 14.429 | -1.5  | -17.88 | 47.47 | 47.4  |
| 2540 | 37.27 | -4.29 | -0.06 | -2.21 | 17.704 | 19.566 | -0.06 | -16.9  | 48.83 | 48.73 |
| 2550 | 43.1  | -3.65 | 0.54  | -1.61 | 20.403 | 22.701 | 0.54  | -15.68 | 49.67 | 49.6  |
| 2560 | 33.79 | -4.71 | -0.6  | -2.75 | 16.068 | 17.721 | -0.6  | -16.4  | 48.79 | 48.21 |

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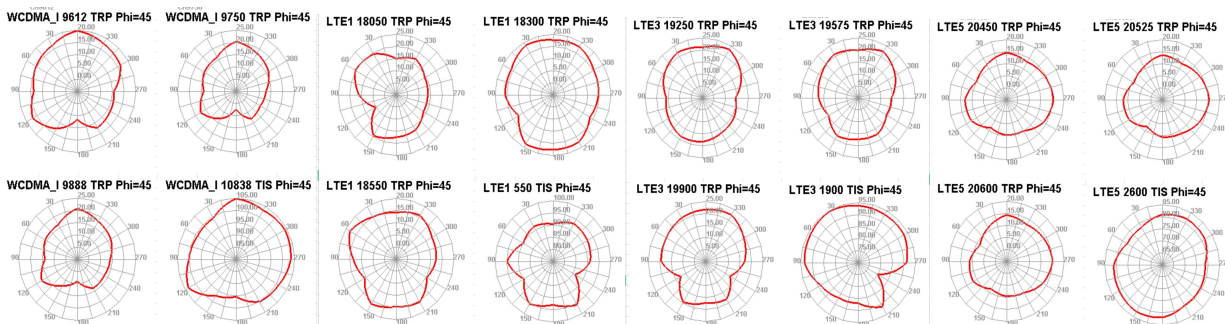
|      |       |       |       |       |        |        |       |        |       |       |
|------|-------|-------|-------|-------|--------|--------|-------|--------|-------|-------|
| 2570 | 34.43 | -4.63 | -0.47 | -2.62 | 16.351 | 18.081 | -0.47 | -15.37 | 48.86 | 48.65 |
| 2580 | 39.13 | -4.07 | 0.28  | -1.87 | 18.781 | 20.353 | 0.28  | -14.39 | 49.08 | 49.15 |
| 2590 | 52.21 | -2.82 | 1.59  | -0.56 | 25.199 | 27.006 | 1.59  | -12.5  | 50.44 | 50.9  |
| 2600 | 41.57 | -3.81 | 0.63  | -1.52 | 20.349 | 21.226 | 0.63  | -13    | 49.84 | 49.56 |
| 2610 | 36.82 | -4.34 | 0.1   | -2.05 | 18.207 | 18.615 | 0.1   | -13.14 | 49.52 | 48.99 |
| 2620 | 40.33 | -3.94 | 0.69  | -1.46 | 20.273 | 20.055 | 0.69  | -13.41 | 49.5  | 49.55 |
| 2630 | 53.68 | -2.7  | 1.84  | -0.31 | 27.148 | 26.532 | 1.84  | -12.06 | 50.89 | 51.11 |
| 2640 | 40.29 | -3.95 | 0.57  | -1.58 | 20.455 | 19.835 | 0.57  | -13.24 | 50.15 | 49.97 |
| 2650 | 33.34 | -4.77 | 0.09  | -2.06 | 16.737 | 16.605 | 0.09  | -13.69 | 49.96 | 49.83 |
| 2660 | 41.91 | -3.78 | 0.89  | -1.26 | 21.002 | 20.905 | 0.89  | -12.71 | 50.28 | 50.49 |
| 2670 | 60.05 | -2.21 | 2.93  | 0.78  | 29.511 | 30.541 | 2.93  | -10.34 | 52.46 | 52.19 |
| 2680 | 50.39 | -2.98 | 2.1   | -0.05 | 24.592 | 25.799 | 2.1   | -10.87 | 51.61 | 51.43 |
| 2690 | 39.37 | -4.05 | 0.64  | -1.51 | 19.168 | 20.198 | 0.64  | -11.8  | 50.57 | 51.05 |
| 2700 | 29.76 | -5.26 | -0.17 | -2.32 | 14.517 | 15.242 | -0.17 | -12.18 | 49.96 | 50.05 |
| 2710 | 39.05 | -4.08 | 1.53  | -0.62 | 19.116 | 19.934 | 1.53  | -10.33 | 52    | 51.23 |
| 2720 | 41.92 | -3.78 | 1.19  | -0.96 | 21.062 | 20.858 | 1.19  | -9.97  | 51.72 | 51.78 |
| 2730 | 38.19 | -4.18 | 0.81  | -1.34 | 19.527 | 18.663 | 0.81  | -10.5  | 50.79 | 51.62 |
| 2740 | 28.13 | -5.51 | -0.19 | -2.34 | 14.446 | 13.687 | -0.19 | -11.82 | 50.18 | 49.84 |
| 2750 | 35.84 | -4.46 | 1.11  | -1.04 | 18.5   | 17.343 | 1.11  | -12.15 | 51.23 | 51.18 |



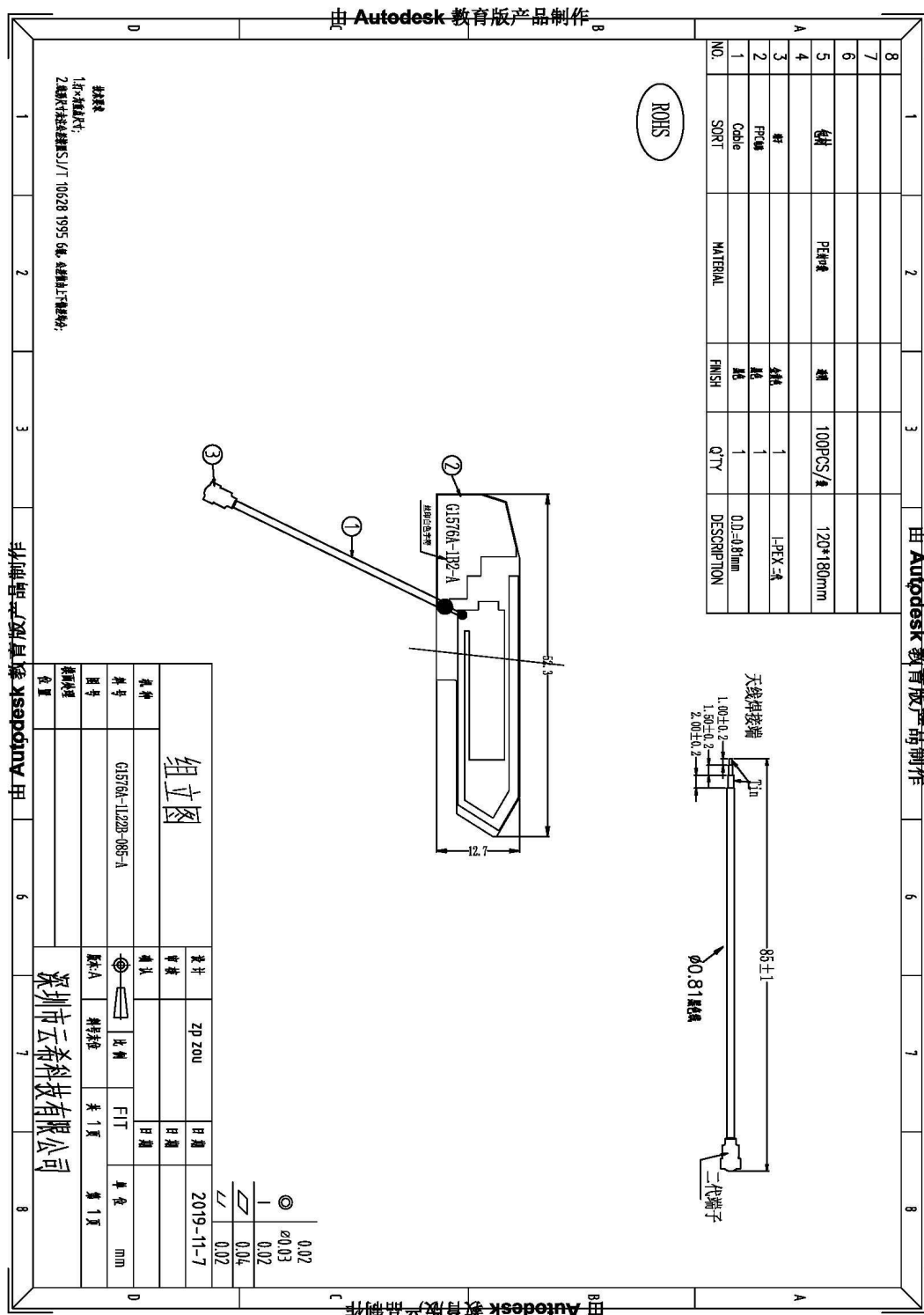
### 三：3D数据

| band  | W2100 |       |         |
|-------|-------|-------|---------|
| 信 道   | 10562 | 10700 | 10838   |
| T R P | 15.53 | 15.59 | 15.47   |
| M A X | 22.04 | 22.67 | 21.42   |
| T I S |       |       | -105.19 |
| M I S |       |       | -109.39 |

| band  | B1    |       |        | B3    |       |        | B5    |       |        |
|-------|-------|-------|--------|-------|-------|--------|-------|-------|--------|
| 信 道   | 18100 | 18300 | 18500  | 19300 | 19575 | 19850  | 20245 | 20252 | 20600  |
| T R P | 16.92 | 16.68 | 16.55  | 18.75 | 17.14 | 17.57  | 12.49 | 12.88 | 12.62  |
| M A X | 22.33 | 22.3  | 22.18  | 23.12 | 22.14 | 23.43  | 14.12 | 14.42 | 14.64  |
| T I S |       |       | -91.86 |       |       | -87.35 |       |       | -82.64 |
| M I S |       |       | -95.2  |       |       | -91.42 |       |       | -85.34 |



#### 四：4G主天线



## 4G 副天线

