

# 样品承认书

## Confirmation of products

|                           |                              |                      |                   |            |           |
|---------------------------|------------------------------|----------------------|-------------------|------------|-----------|
| 客户名称<br>Customer          |                              |                      |                   |            |           |
| 项目名称<br>Project Name      | SD20                         | 版本<br>Version        | A. 1              | 日期<br>Date | 2026-3-30 |
| 项目料号<br>Project NO.       | 03. 23. 03. 004              | 客户料号<br>Customer NO. | 54. 07. 001. 0179 |            |           |
| 频段<br>Frequency Range     | 2400~2500MHz<br>5100~5800MHz | 备注<br>Notes          | FPC               |            |           |
| 设计<br>Designed By         |                              |                      |                   |            |           |
| 审核<br>Approved By         |                              |                      |                   |            |           |
| 客户确认<br>Clients' Approval |                              |                      |                   |            |           |

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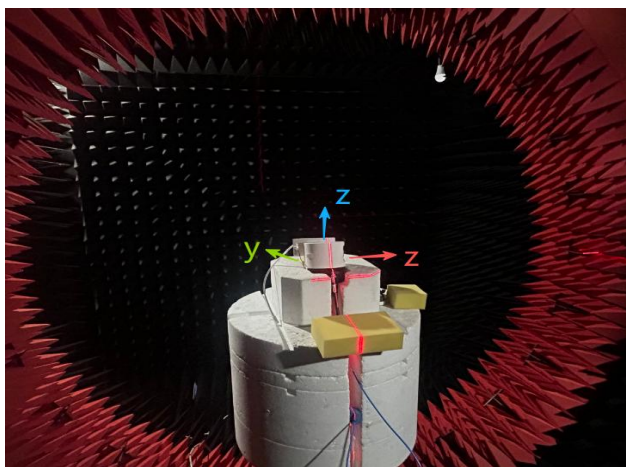
ADD: Floor 3, building 1, LianJian Industrial Park, Huarong Road, Dalang street, Longhua District, Shenzhen

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## 1、Specification

This report mainly provides the testing conditions of various electric and structural performance parameters for cell phone antenna ----SD20 Picture 1 shows the antenna designed by LR.



## 2、 VSWR Testing

### 2.1 Testing connection

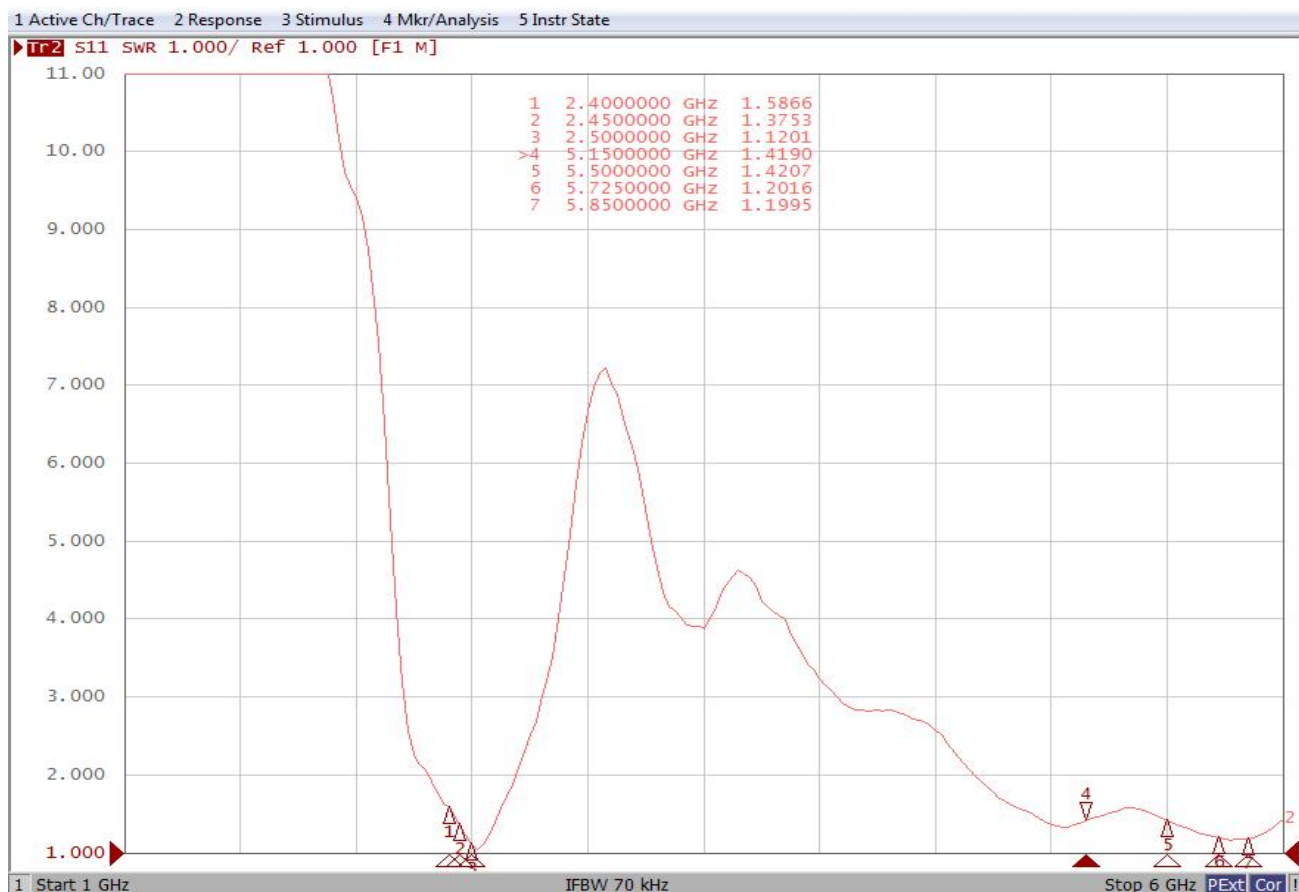
The **Return Loss** testing devices are connected in sequence: Agilent5071C Network Analyzer →Testing Cable → Customer-providing Devices.

### 2.2 VSWR

The following table expresses the vswr value of antenna's two edges of its frequency range. With regard to the relevant diagram of VSWR

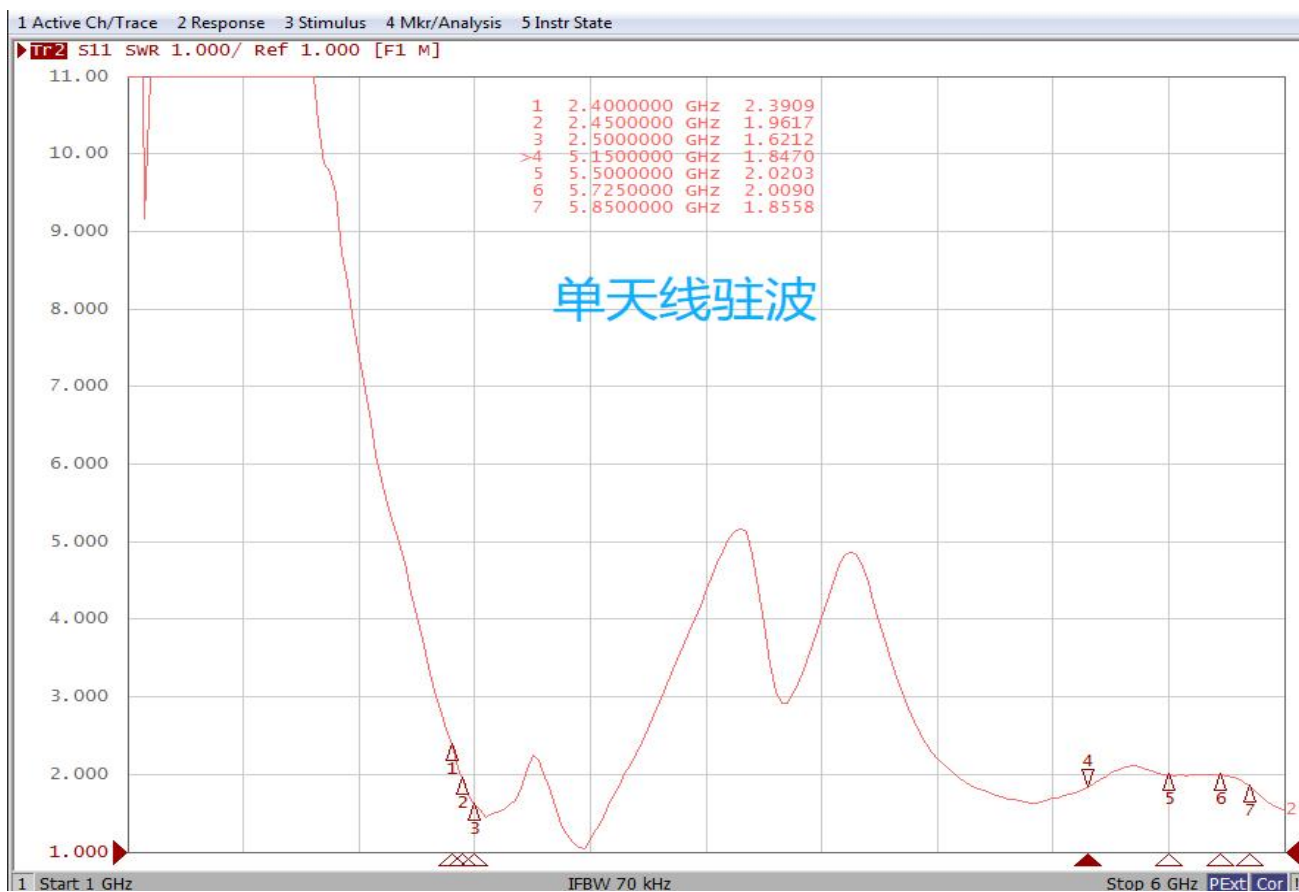
| SD20 WIFI VSWR  |      |      |      |      |      |      |
|-----------------|------|------|------|------|------|------|
| Frequency (MHz) | 2400 | 2450 | 2500 | 5150 | 5500 | 5850 |
| VSWR            | 1.58 | 1.37 | 1.12 | 1.41 | 1.42 | 1.19 |

### 2.3 Testing data



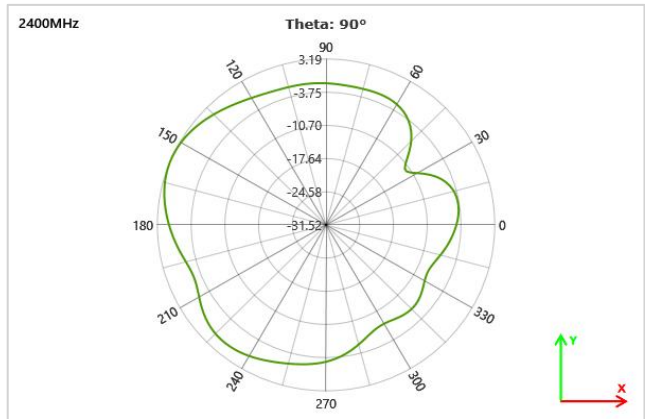
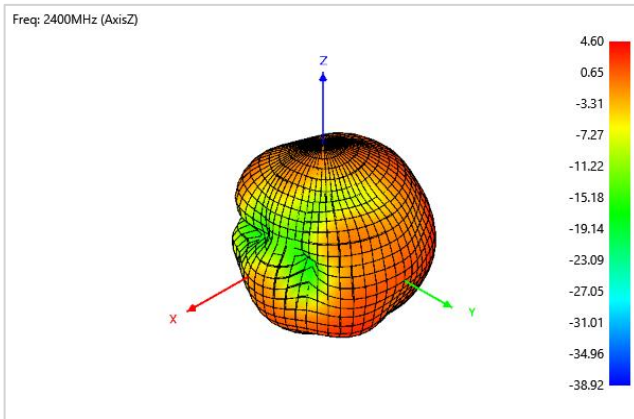
2.4+5.8G WIFI antenna VSWR

## 2.4 Single antenna test VSWR

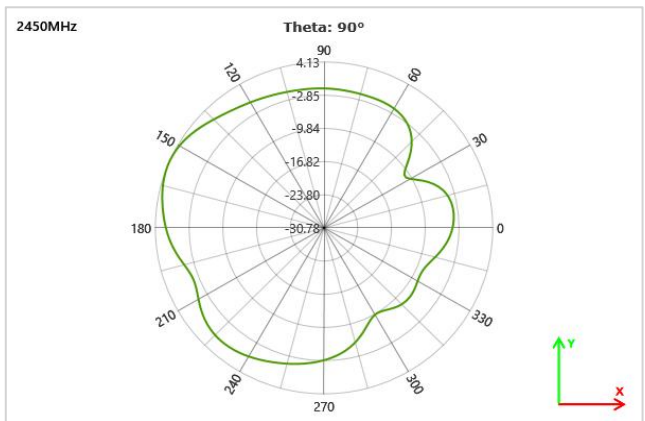
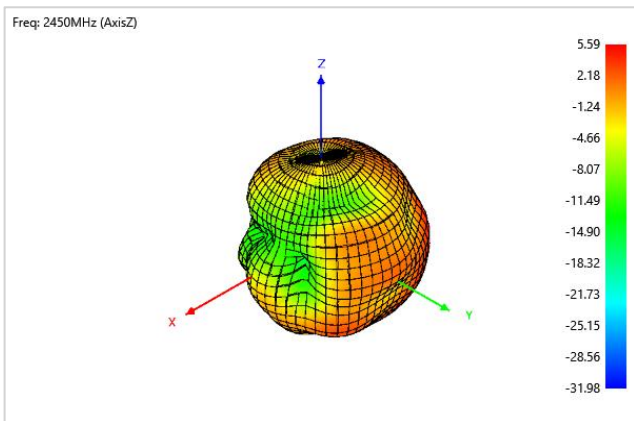


## 2.5 Antenna 3D/2D pattern

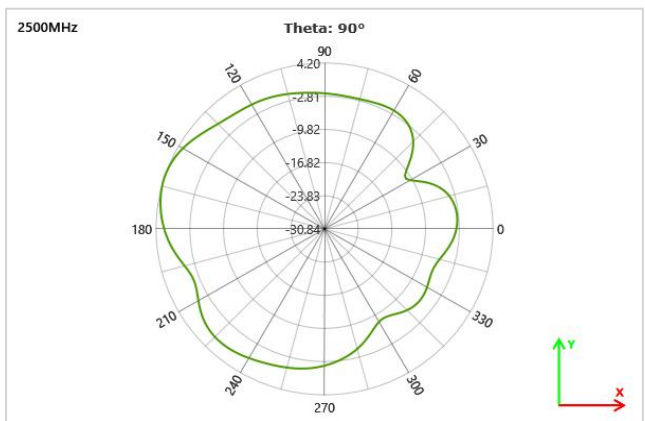
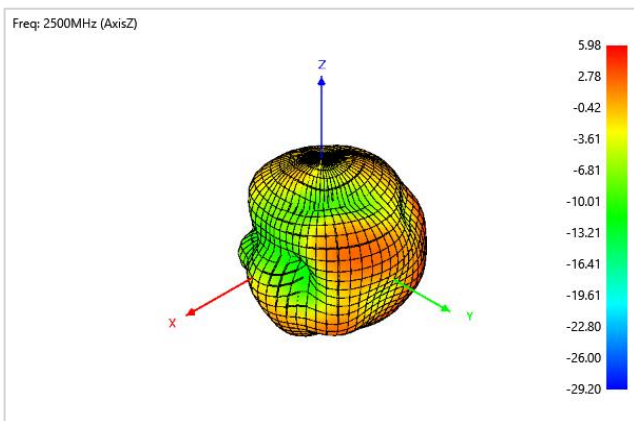
2400MHz



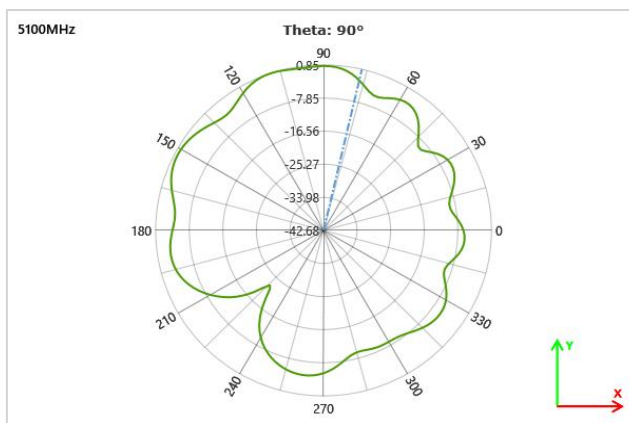
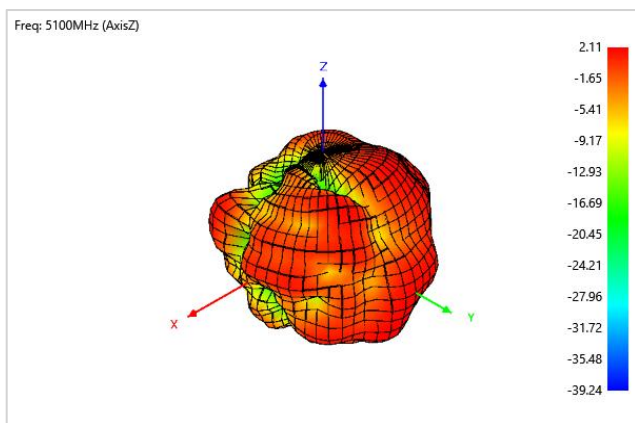
2450MHz



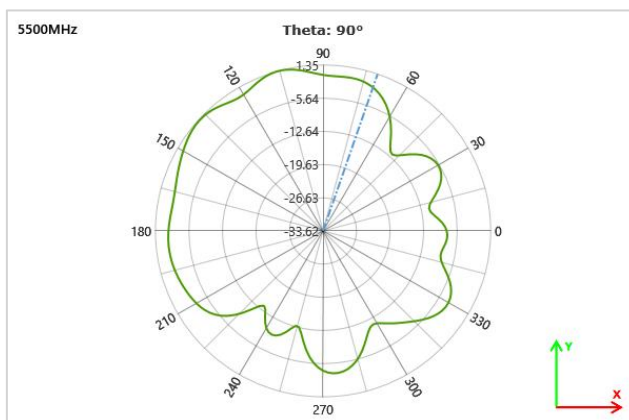
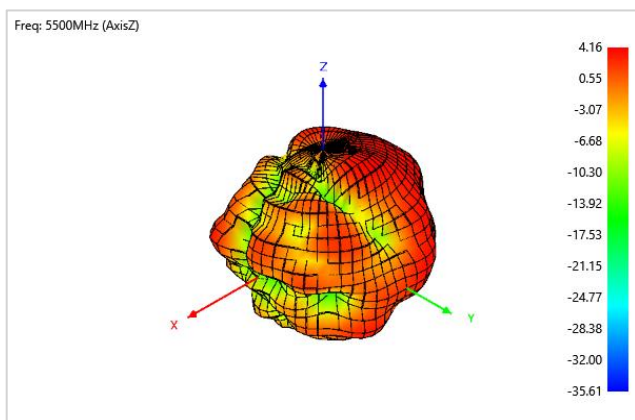
2500MHz



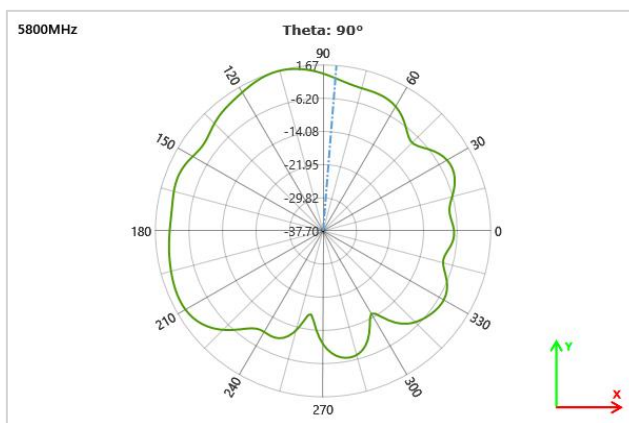
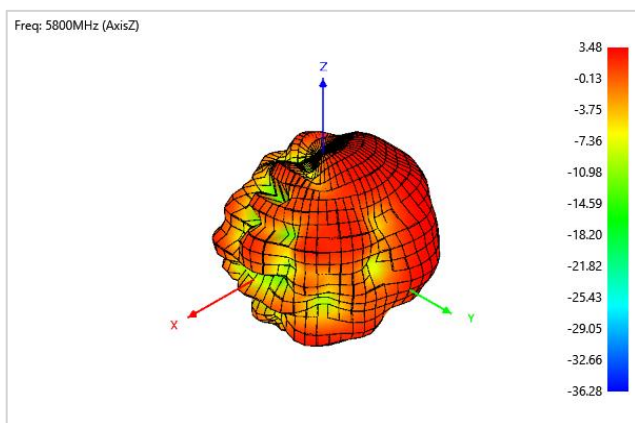
5100MHz



5500MHz



5800MHz



### 3、Power、Sensiticity Testing

#### 3.1 Testing field

LR Microwave Anechoic Chamber : testing frequency ranges from 400MHz to 6GHz and the 40cm diameter spherical quite zone, the chamber provides less than  $-90\text{dB}$  reflectivity from 400MHz—6GHz.

#### 3.2 Testing results

The following table indicates the testing results related to Power and Sensitivity in Microwave Anechoic Chamber, concerning the relative diagram.

### 3.3 Active testing.

#### SD20 Antenna efficiency

| Freq(MHz) | Gain(dBi) | Efficiency(%) | Freq(MHz) | Gain(dBi) | Efficiency(%) |
|-----------|-----------|---------------|-----------|-----------|---------------|
| 2300      | 4.08      | 59.13         | 5200      | 5.58      | 72.53         |
| 2310      | 4.03      | 57.96         | 5220      | 5.86      | 74.29         |
| 2320      | 3.93      | 57.14         | 5240      | 6.05      | 73.62         |
| 2330      | 3.89      | 57.39         | 5260      | 5.58      | 70.95         |
| 2340      | 3.73      | 57.11         | 5280      | 5.10      | 71.96         |
| 2350      | 3.55      | 57.17         | 5300      | 4.65      | 65.23         |
| 2360      | 3.43      | 58.45         | 5320      | 4.41      | 61.88         |
| 2370      | 3.22      | 59.97         | 5340      | 4.50      | 63.03         |
| 2380      | 2.99      | 61.55         | 5360      | 4.61      | 62.39         |
| 2390      | 3.16      | 64.64         | 5380      | 4.74      | 65.10         |
| 2400      | 3.41      | 66.62         | 5400      | 4.82      | 64.64         |
| 2410      | 3.90      | 68.63         | 5420      | 4.70      | 63.23         |
| 2420      | 4.23      | 71.45         | 5440      | 4.43      | 62.62         |
| 2430      | 4.47      | 72.99         | 5460      | 4.29      | 63.03         |
| 2440      | 4.78      | 74.23         | 5480      | 4.04      | 63.96         |
| 2450      | 4.97      | 75.71         | 5500      | 4.10      | 63.05         |
| 2460      | 4.96      | 74.86         | 5520      | 4.06      | 60.81         |
| 2470      | 5.19      | 74.78         | 5540      | 4.00      | 60.05         |
| 2480      | 5.08      | 74.69         | 5560      | 3.93      | 60.65         |
| 2490      | 4.86      | 73.20         | 5580      | 3.93      | 62.83         |
| 2500      | 4.83      | 72.12         | 5600      | 4.00      | 67.01         |
| 2510      | 4.54      | 71.06         | 5620      | 4.30      | 71.12         |
| 2520      | 4.42      | 70.00         | 5640      | 4.11      | 70.17         |
| 2530      | 4.54      | 70.91         | 5660      | 3.68      | 68.68         |
| 2540      | 4.47      | 71.72         | 5680      | 3.50      | 70.02         |
| 2550      | 4.46      | 71.22         | 5700      | 3.56      | 67.58         |
| 2560      | 4.47      | 71.15         | 5720      | 3.55      | 63.08         |
| 2570      | 4.53      | 70.88         | 5740      | 3.50      | 62.71         |
| 2580      | 4.41      | 69.76         | 5760      | 3.15      | 63.35         |
| 2590      | 4.56      | 70.14         | 5780      | 2.75      | 64.97         |
| 2600      | 4.75      | 71.52         | 5800      | 3.03      | 69.31         |
| 5100      | 5.03      | 67.32         | 5820      | 2.99      | 72.43         |
| 5120      | 4.75      | 68.07         | 5840      | 3.34      | 69.82         |
| 5140      | 5.73      | 68.47         | 5860      | 3.62      | 65.40         |
| 5160      | 6.27      | 69.35         | 5880      | 3.95      | 67.81         |
| 5180      | 6.00      | 71.69         | 5900      | 3.57      | 62.73         |

#### SD20 Active data

| 2#      |    |       |        |
|---------|----|-------|--------|
|         | CN | TRP   | TIS    |
| 11B-11M | 1  | 21.10 | -81.03 |
|         | 6  | 21.72 | -81.50 |
|         | 11 | 21.94 | -82.60 |
| 11G-54M | 1  | 20.95 | -70.53 |
|         | 6  | 21.57 | -70.55 |
|         | 11 | 21.57 | -71.13 |
| 11N-65M | 1  | 20.97 | -62.14 |
|         | 6  | 21.55 | -62.47 |

| 1#      |    |       |        |
|---------|----|-------|--------|
|         | CN | TRP   | TIS    |
| 11B-11M | 1  | 21.54 | -80.77 |
|         | 6  | 21.86 | -80.11 |
|         | 11 | 21.88 | -80.71 |
| 11G-54M | 1  | 21.51 | -70.09 |
|         | 6  | 21.77 | -70.66 |
|         | 11 | 21.62 | -70.44 |
| 11N-65M | 1  | 21.53 | -61.22 |
|         | 6  | 21.77 | -61.44 |

|          |     |       |        |  |          |         |       |        |        |
|----------|-----|-------|--------|--|----------|---------|-------|--------|--------|
|          | 11  | 21.69 | -63.55 |  |          | 11      | 21.60 | -62.58 |        |
| 11A-54M  | 36  | 21.71 | -71.24 |  |          | 11A-54M | 36    | 21.27  | -72.23 |
| 11N-MCS7 | 36  | 20.36 | -67.76 |  | 11N-MCS7 | 36      | 20.69 | -63.39 |        |
|          | 56  | 19.53 | -67.80 |  |          | 56      | 20.02 | -62.86 |        |
|          | 165 | 19.37 | -67.98 |  |          | 165     | 19.39 | -67.53 |        |
| 11N-MCS0 | 36  | 20.56 | -88.35 |  | 11N-MCS0 | 36      | 20.22 | -83.69 |        |
|          | 56  | 20.02 | -88.65 |  |          | 56      | 19.85 | -83.65 |        |
|          | 165 | 19.65 | -88.58 |  |          | 165     | 19.52 | -88.85 |        |

#### 4、Environmental treatment

Original machine environment



5、Mechanical Dimension Drawing

