

# KC.IA.00426(TVCI)

## Antenna Specification

### 1. Application:

This application shall apply for antenna unit which shall be used such as automotive, conventional communications, smart home, etc..

### 2. Electrical Specification:

*Those specifications were specially defined for **customer's** model, and all characteristics were measured under the model's handset testing jig .*

#### 2-1. Frequency Band:

| Frequency Band | MHz          |
|----------------|--------------|
| WiFi/BT        | 2400~2500MHz |

#### 2-2. Impedance

50 ohm nominal

#### 2-3. VSWR

##### 2-3-1. Measurement frequency points and VSWR value

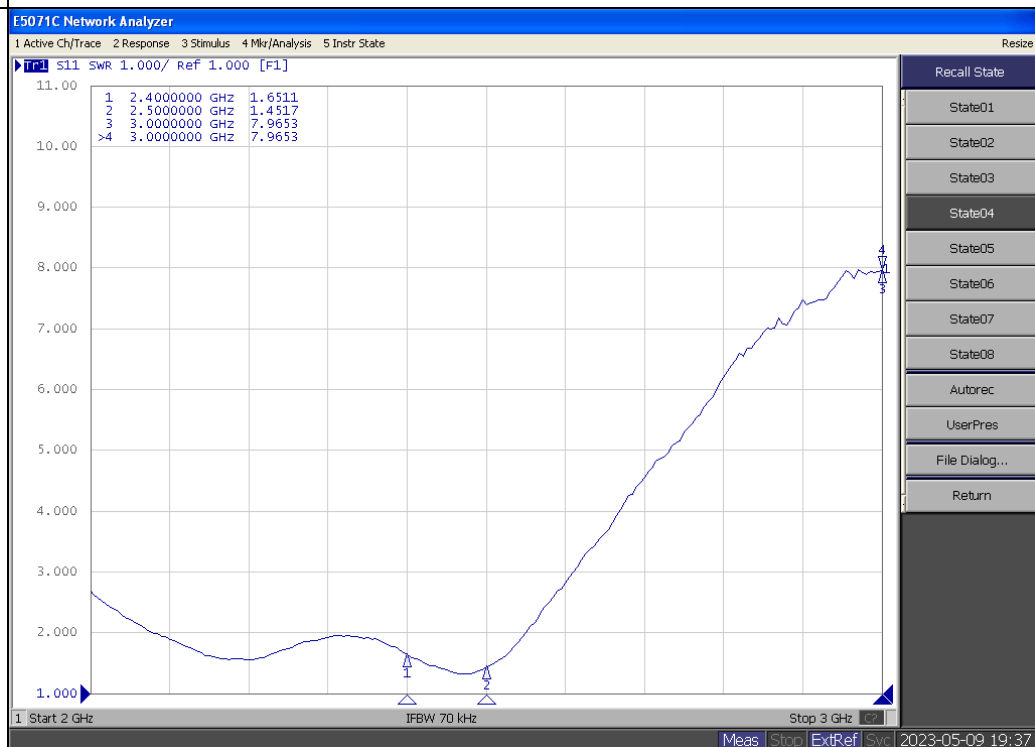
| Frequency Band(MHz)   | 2400 | 2500 |
|-----------------------|------|------|
| Typical Value: (VSWR) | 1.6  | 1.4  |

|                                                                                                                                                 |                 |                                                                                                                                                                                                                         |
|-------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| UNLESS OTHER SPECIFIED TOLERANCES ON :<br>X=±                      X.X=±                      X.XX=±<br>ANGLES=±                      HOLEDIA=± |                 |  <b>TOXU TECHNOLOGY CO., LTD.</b><br><small>No. 52, Xikeng Road, Xinhe Community, Fucheng Street, Longhua District, Shenzhen</small> |
| SCALE :                                                                                                                                         | UNIT : mm       |                                                                                                                                                                                                                         |
| DRAWN BY: LI                                                                                                                                    | CHECKED BY: YS  | THIS DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF TOXU TECHNOLOGY CO.,LTD.AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS OR DEVICES WITHOUT PERMISSION                    |
| DESIGNED BY: De wen                                                                                                                             | APPROVED BY: YS |                                                                                                                                                                                                                         |
| TITLE : KC.IA.00426 Antenna Specification                                                                                                       |                 | SPEC REV.                                                                                                                                                                                                               |
|                                                                                                                                                 |                 | P0                                                                                                                                                                                                                      |

2-3-4 Measuring Method

1. A 50  $\Omega$  coaxial cable is connected to the antenna. Then this cable is connected to a network analyzer to measure the VSWR.
2. Keeping this jig away from metal at least 20 cm

2-3-5 Picture



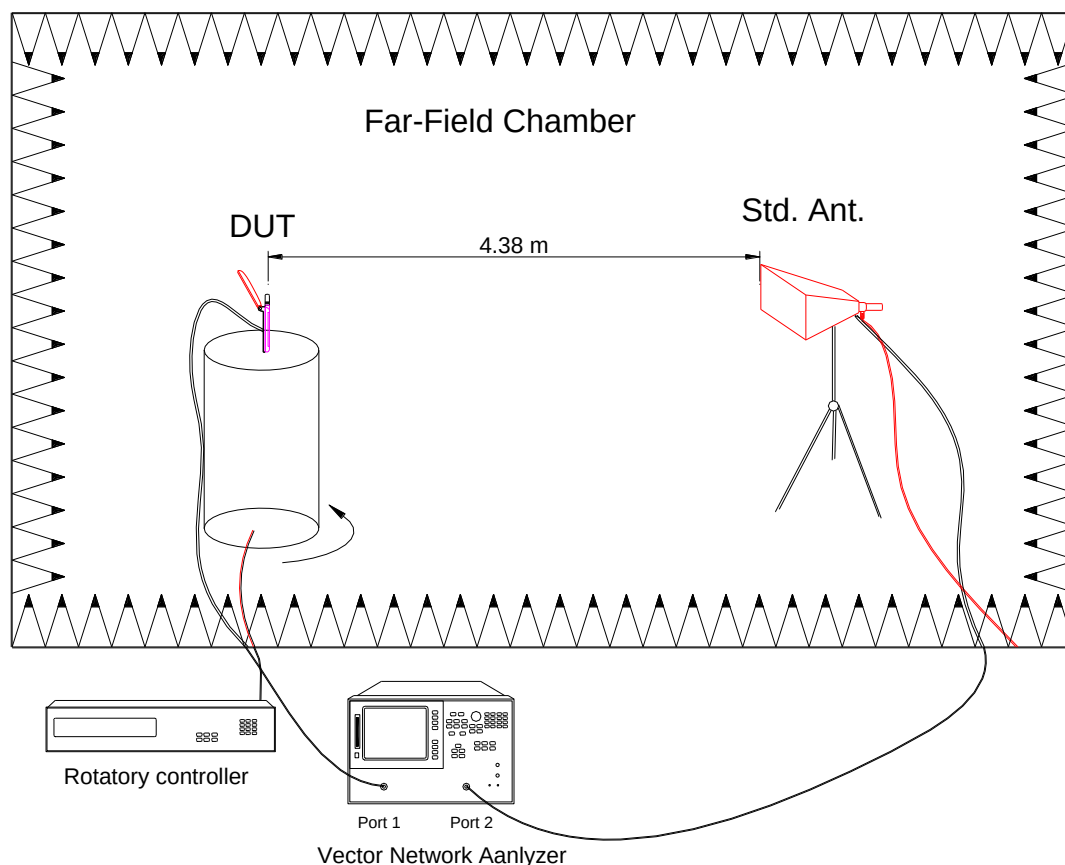
|                                                                                                                                                                      |                        |                                                                                                                                                                                                      |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>UNLESS OTHER SPECIFIED TOLERANCES ON :</b><br><b>X=±                      X.X=±                      X.XX=±</b><br><b>ANGLES=±                      HOLEDIA=±</b> |                        | <b>TOXU</b><br>同讯技术<br><b>TOXU TECHNOLOGY CO., LTD.</b><br>No. 52, Xikeng Road, Xinhe Community, Fucheng Street, Longhua District, Shenzhen                                                          |
| <b>SCALE :</b>                                                                                                                                                       | <b>UNIT : mm</b>       |                                                                                                                                                                                                      |
| <b>DRAWN BY: LI</b>                                                                                                                                                  | <b>CHECKED BY: YS</b>  | THIS DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF TOXU TECHNOLOGY CO.,LTD.AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS OR DEVICES WITHOUT PERMISSION |
| <b>DESIGNED BY: De wen</b>                                                                                                                                           | <b>APPROVED BY: YS</b> |                                                                                                                                                                                                      |
| <b>TITLE : KC.IA.00426 Antenna Specification</b>                                                                                                                     |                        | <b>SPEC REV.</b><br><b>P0</b>                                                                                                                                                                        |

## 2-4. Efficiency and Gain

### 4-5.1 Measure method

1. Using a low loss coaxial cable to link a standard handset jig
2. Fixed this handset jig on chamber's rotator plane
3. Linking jig into network analyzer port and using a probing horn antenna to collect data.
4. Using another standard gain horn antenna to calibrated those data

### 4-5.2 Chamber definition

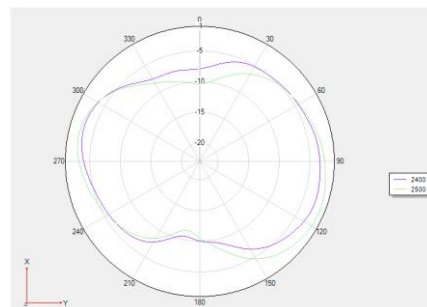
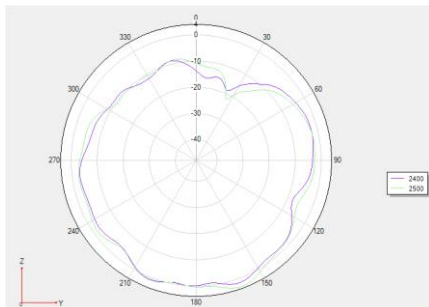
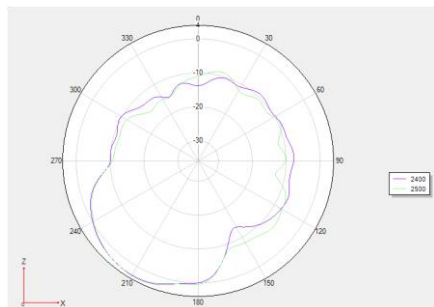
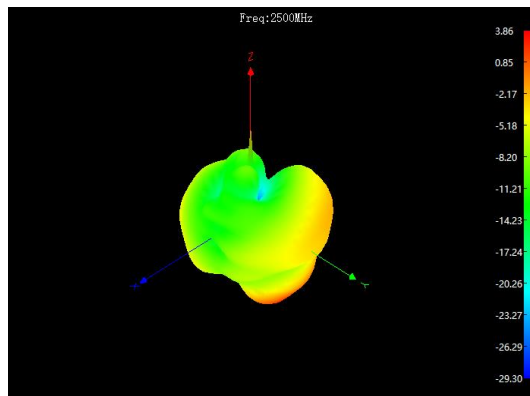
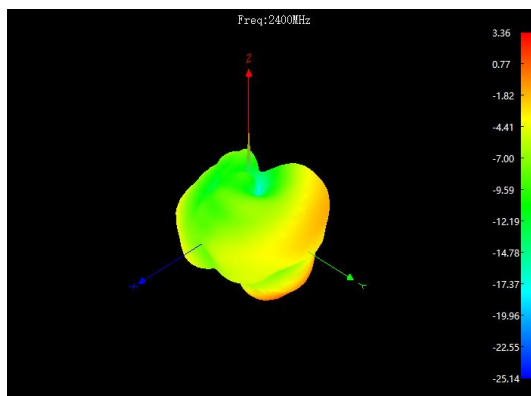


1. An anechoic chamber (7mx4mx3m) which satisfied far-field condition was applied to avoid multi-path effect
2. The quite room region is 40cmx40cmx40cm at the center of rotator
3. The distance between DUT and standard antenna is 4.38 m
4. Probing antenna (9120D horn antenna) and standard gain horn antenna (BBHA9120 LPF 700MHz ~6GHz)

|                                                                                                                                                          |                        |                                                                                                                                                                                                             |
|----------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>UNLESS OTHER SPECIFIED TOLERANCES ON :</b><br><b>X=±                  X.X=±                  X.XX=±</b><br><b>ANGLES=±                  HOLEDIA=±</b> |                        | <b>TOXU</b><br>同讯技术<br><b>TOXU TECHNOLOGY CO., LTD.</b><br><small>No. 52, Xikeng Road, Xinhe Community, Fucheng Street, Longhua District, Shenzhen</small>                                                  |
| <b>SCALE :</b>                                                                                                                                           | <b>UNIT : mm</b>       |                                                                                                                                                                                                             |
| <b>DRAWN BY: LI</b>                                                                                                                                      | <b>CHECKED BY: YS</b>  | <b>THIS DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF TOXU TECHNOLOGY CO.,LTD.AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS OR DEVICES WITHOUT PERMISSION</b> |
| <b>DESIGNED BY: De wen</b>                                                                                                                               | <b>APPROVED BY: YS</b> |                                                                                                                                                                                                             |
| <b>TITLE : KC.IA.00426 Antenna Specification</b>                                                                                                         |                        | <b>SPEC REV.</b><br><b>P0</b>                                                                                                                                                                               |

## 2-4-1 Efficiency and Gain and 3D Date

| Frequency/Mhz | MaxGain/dBi | Efficiency / % |
|---------------|-------------|----------------|
| 2400          | 3.36        | 51.59          |
| 2410          | 4.15        | 53.45          |
| 2420          | 3.78        | 55.29          |
| 2430          | 4.23        | 54.16          |
| 2440          | 3.46        | 51.78          |
| 2450          | 3.49        | 50.74          |
| 2460          | 3.23        | 52.07          |
| 2470          | 3.29        | 51.02          |
| 2480          | 3.59        | 53.95          |
| 2490          | 3.61        | 53.55          |
| 2500          | 3.86        | 54.16          |

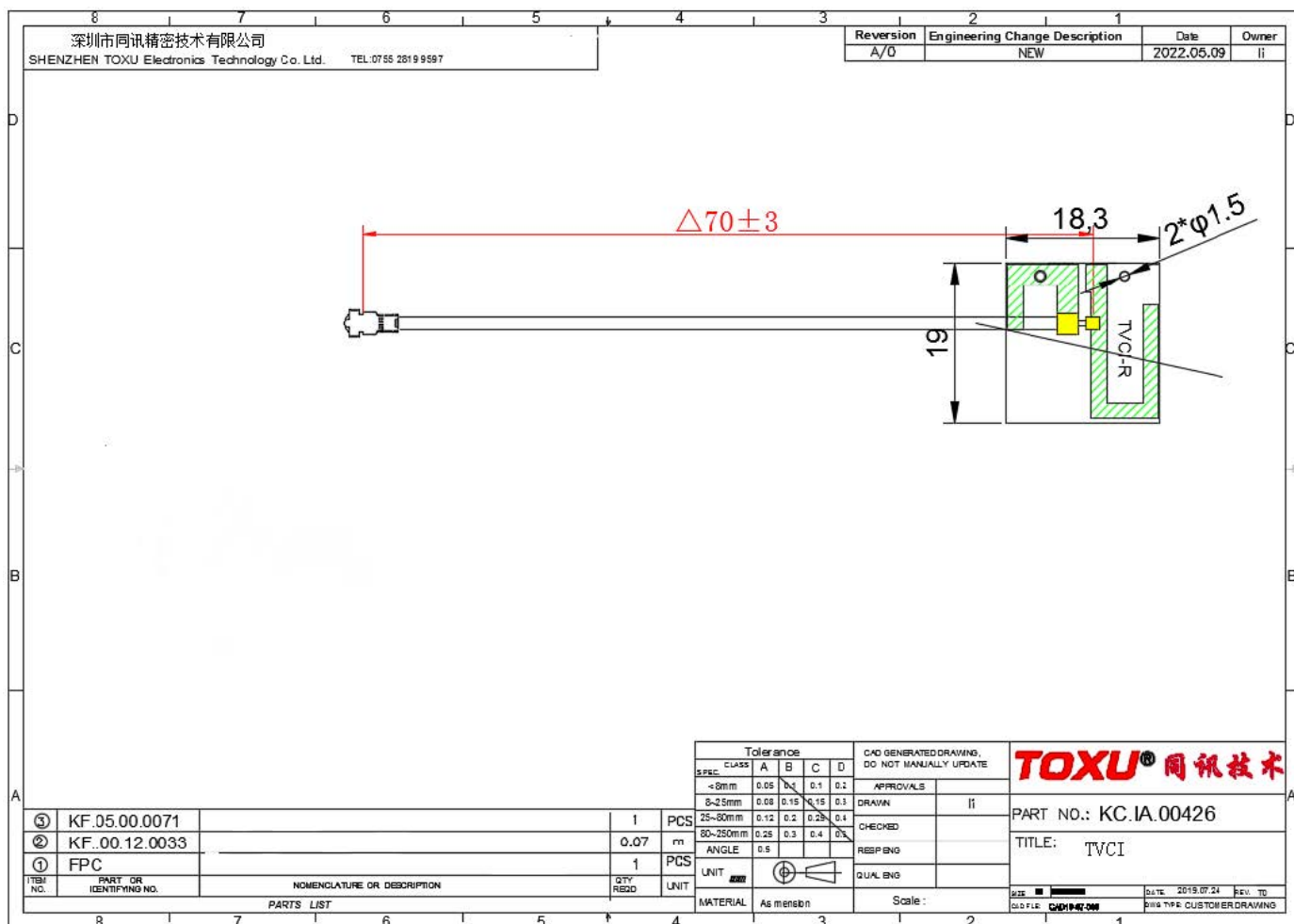


|                                                                                                                                                                      |                        |                                                                                                                                                                                                      |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>UNLESS OTHER SPECIFIED TOLERANCES ON :</b><br><b>X=±                      X.X=±                      X.XX=±</b><br><b>ANGLES=±                      HOLEDIA=±</b> |                        | <b>TOXU</b><br>同讯技术<br><b>TOXU TECHNOLOGY CO., LTD.</b><br>No. 52, Xikeng Road, Xinhe Community, Fucheng Street, Longhua District, Shenzhen                                                          |
| <b>SCALE :</b>                                                                                                                                                       | <b>UNIT : mm</b>       |                                                                                                                                                                                                      |
| <b>DRAWN BY: LI</b>                                                                                                                                                  | <b>CHECKED BY: YS</b>  | THIS DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF TOXU TECHNOLOGY CO.,LTD.AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS OR DEVICES WITHOUT PERMISSION |
| <b>DESIGNED BY: De wen</b>                                                                                                                                           | <b>APPROVED BY: YS</b> |                                                                                                                                                                                                      |
| <b>TITLE : KC.IA.00426 Antenna Specification</b>                                                                                                                     |                        | <b>SPEC REV.</b><br><b>P0</b>                                                                                                                                                                        |

### 3. Mechanical Specification:

#### 3-1. Mechanical Configuration (Unit: mm)

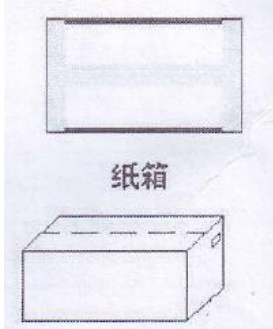
The appearance of the antenna is according to drawing



|                                                                                                       |                 |                                                                                                                                                                                                      |                                                                                                                              |
|-------------------------------------------------------------------------------------------------------|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|
| UNLESS OTHER SPECIFIED TOLERANCES ON :                                                                |                 |                                                                                                                   | TOXU TECHNOLOGY CO., LTD.<br><small>No. 52, Xikeng Road, Xinhe Community, Fucheng Street, Longhua District, Shenzhen</small> |
| X=±                      X.X=±                      X.XX=±<br>ANGLES=±                      HOLEDIA=± |                 |                                                                                                                                                                                                      |                                                                                                                              |
| SCALE :                                                                                               | UNIT : mm       | THIS DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF TOXU TECHNOLOGY CO.,LTD.AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS OR DEVICES WITHOUT PERMISSION |                                                                                                                              |
| DRAWN BY: LI                                                                                          | CHECKED BY: YS  |                                                                                                                                                                                                      |                                                                                                                              |
| DESIGNED BY: De wen                                                                                   | APPROVED BY: YS |                                                                                                                                                                                                      |                                                                                                                              |
| TITLE : KC.IA.00426    Antenna Specification                                                          |                 |                                                                                                                                                                                                      | SPEC REV.                                                                                                                    |
|                                                                                                       |                 |                                                                                                                                                                                                      | P0                                                                                                                           |

## 4.Packaging specification:

|                                               |         |                     |       |
|-----------------------------------------------|---------|---------------------|-------|
| <b>Product number:</b> xxxxx                  |         |                     |       |
| <b>Product model:</b> xxxxx                   |         |                     |       |
| <b>1、Label requirements:</b>                  |         |                     |       |
| <b>Customer</b>                               | xxx     |                     |       |
| <b>supplier</b>                               | xxxxxx  |                     |       |
| <b>Material coding</b>                        | xx      |                     |       |
| <b>Product model</b>                          | xx      |                     |       |
| <b>Number</b>                                 | XXX PCS | <b>Factory date</b> | X X X |
| <b>Remarks</b>                                |         |                     |       |
| <br><b>2、Boxing:</b>                          |         |                     |       |
| <b>Job description:</b>                       |         |                     |       |
| <b>1. Inner packaging:</b>                    |         |                     |       |
| XXpcs A bag                                   |         |                     |       |
| <b>2. External packaging:</b>                 |         |                     |       |
| Xx PCS ;                                      |         |                     |       |
| <b>3. Matters needing attention:</b>          |         |                     |       |
| a. Whether to add partition and pearl cotton; |         |                     |       |
| b. Label attachments, such as ROHS, etc.;     |         |                     |       |

|                                                                                                        |                        |                                                                                                                                                                                                      |                                                                                                                      |
|--------------------------------------------------------------------------------------------------------|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|
| UNLESS OTHER SPECIFIED TOLERANCES ON :                                                                 |                        |                                                                                                                   | <b>TOXU TECHNOLOGY CO., LTD.</b><br>No. 52, Xikeng Road, Xinhe Community, Fucheng Street, Longhua District, Shenzhen |
| X=±                    X.X=±                    X.XX=±<br><b>ANGLES=±                    HOLEDIA=±</b> |                        |                                                                                                                                                                                                      |                                                                                                                      |
| <b>SCALE :</b>                                                                                         | <b>UNIT : mm</b>       | THIS DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF TOXU TECHNOLOGY CO.,LTD.AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS OR DEVICES WITHOUT PERMISSION |                                                                                                                      |
| <b>DRAWN BY: LI</b>                                                                                    | <b>CHECKED BY: YS</b>  |                                                                                                                                                                                                      |                                                                                                                      |
| <b>DESIGNED BY: De wen</b>                                                                             | <b>APPROVED BY: YS</b> |                                                                                                                                                                                                      |                                                                                                                      |
| <b>TITLE : KC.IA.00426    Antenna Specification</b>                                                    |                        |                                                                                                                                                                                                      | <b>SPEC REV.</b><br><b>P0</b>                                                                                        |