

**Customer : LG**

Approval No.

ISSUE

1.0

## Specifications for Approval

Product Name : 17Z90SP ANTENNA, ASSY

Vendor Model Name : LUXSHARE-ICT

Customer Part No. : EAA65985901

Vendor P/N : L1LRF016-CS-H

Condition : 1. \_\_\_\_\_  
2. \_\_\_\_\_  
3. \_\_\_\_\_  
4. \_\_\_\_\_

The product above is approved.

|                            |           |   |   |  |   |
|----------------------------|-----------|---|---|--|---|
| <b>LG MC<br/>Approval</b>  | Category  | Checked   | Reviewed  | Agreed   | Approved  |
|                            | Name      |   |   |  |   |
|                            | Signature |   |   |  |   |
| <b>Vendor<br/>Approval</b> | Category  | Designed  | Checked   | Agreed   | Approved  |
|                            | Name      | 郭林  | 陈宝球   | 蒋志坚  | 李坤松   |
|                            | Signature |  |  |  |  |

Vendor Name :LUXSHARE-ICT

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XianMao Road, Economic Development Zone, Bo zhou City, Anhui Province, 236800, China  
Building A, West Sanyo New Industrial Zone, oyster I, Shajing Street, Baoan District, S henzhen, China

P/N:L1LRF016-CS-H

**SPECIFICATION**  
MODEL NAME:16Z90SP ANTENNA, ASSY

REV.NO:1.0

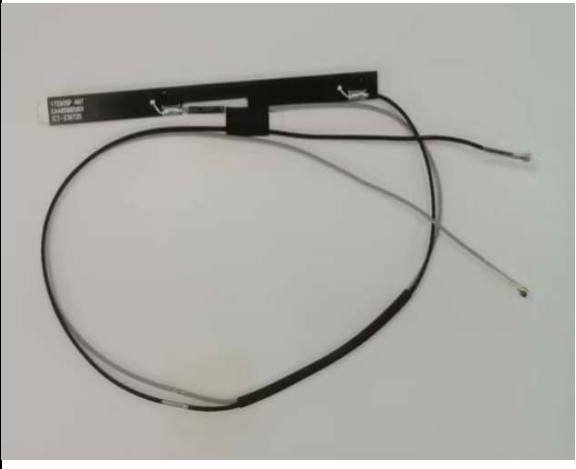
**History of Revision**

| Revision  | Date       | Item | Contents of Revision Change | Basis |
|-----------|------------|------|-----------------------------|-------|
| ISSUE 1.0 | 2023.08.25 |      | Initial Release             | NA    |
|           |            |      |                             |       |
|           |            |      |                             |       |
|           |            |      |                             |       |
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|           |            |      |                             |       |
|           |            |      |                             |       |
|           |            |      |                             |       |



17Z90SP ANTENNA, ASSY

## Product Feature and Image

|              |                       |                    |  |
|--------------|-----------------------|--------------------|--|
| PRODUCT NAME | 17Z90SP ANTENNA, ASSY |                    |  |
| Customer P/N | EAA65985901           |                    |  |
| Vendor P/N   | L1LRF016- CS- H       |                    |  |
| NET WEIGHT   | 1.76g+/- 10%          |                    |  |
| SIZE         | CABLE                 | L=277MM<br>L=324MM |  |
|              | PCB                   | L*W=75*5MM         |  |

|                    |  |            |
|--------------------|--|------------|
| P/N: L1LRF016-CS-H | SPECIFICATION MODEL NAME:<br>17Z90SP ANTENNA, ASSY | REV.NO:1.0 |
|--------------------|--|------------|

**SPECIFICATION**

**Test items**

1) Apperance and structure check

| Check item        | Judgement   |
|-------------------|---|
| Visual Inspection | The shape, structure, and color should be consistent with the limit sample and related specifications |
| Standard          | These defects should not be allowed such as damage, correosion, sink, scratches, etc.                 |

2) Dimension Check : Measuring improtant dimensions

Dimensions should meet the requirements of the acknowledgment

3) Mate / Unmating Force : mate connector with a suitable gauge at rate of 25±3 mm/min.  
measure force when gauge reaches surface of connector.

| mating Force       | unmating Force   |
|--------------------|--|
| 30N (or 3000g) Max | 5 ~ 20 N (or 500g ~ 2000g)<br>3 ~ 20 N (or 300g ~ 2000g) Final 30 Cycles |

4) Disintegration : Parts are allowed to be chiseled, not inserted, dirty etc.

soldering state of PCB like cold welding, less welding, over welding are not allowed. The length of the parts should be suitable.  
and parts can not be touched each other.

5) Tape adhesion : Double Sided tape should be not sliped  
should be satisfied standard specification.

6) VSWR

Test equipment : Network Analyzer equipment

| Frequency(unit MHz) | MAIN  | AUX  |
|---------------------|---|--|
| VSWR                | 2.45~3.0GHZ<10<br>5.0~5.9GHZ<5<br>6.31~7.2GHZ<5 | 2.45~3.0GHZ<8<br>5.4~5.9GHZ<5<br>6.31~7GHZ<5 |

|                    |   |            |
|--------------------|---|------------|
| P/N: L1LRF016-CS-H | <b>SPECIFICATION</b><br>MODEL NAME: 17Z90SP ANTENNA, ASSY | REV.NO:1.0 |
|--------------------|---|------------|

## SPECIFICATION

### Test items

#### 7) Gain

Test equipment : Network Analyzer equipment

| Frquency(MHZ) | Efficiency(%) |
|---------------|---------------|
| 2400          | >30           |
| 2450          | >30           |
| 2500          | >30           |
| 5150          | >30           |

#### 8) Thermal Shock

|           |  |
|-----------|--|
| Condition | Temperature : 85°C (30min), -40°C (30min) 10 Cycles.<br>Being Placed 2 Hours |
| Judgement | Product's mechanism and VSWR should be OK.                                   |

#### 9) High Temperature

|           |  |
|-----------|--|
| Condition | Temperature : 80°C, 96H, Being Placed 2 Hours. |
| Judgement | Product's mechanism and VSWR should be OK.     |

#### 10) Low Temperature

|           |   |
|-----------|---|
| Condition | Temperature : -20°C, 96H, Being Placed 2 Hours. |
| Judgement | Product's mechanism and VSWR should be OK.      |

|                    |  |            |
|--------------------|--|------------|
| P/N: L1LRF016-CS-H | SPECIFICATION MODEL NAME:<br>17Z90SP ANTENNA, ASSY | REV.NO:1.0 |
|--------------------|--|------------|

**SPECIFICATION**

**Test items**

12) High Temperature and humidity test

|           |   |
|-----------|---|
| Condition | Temperature : 40°C, Humidity : 90 – 95% 96H,<br>Being Placed 2 Hours. |
| Judgement | Product’s mechanism and VSWR should be OK.                            |

13) Virbration Test

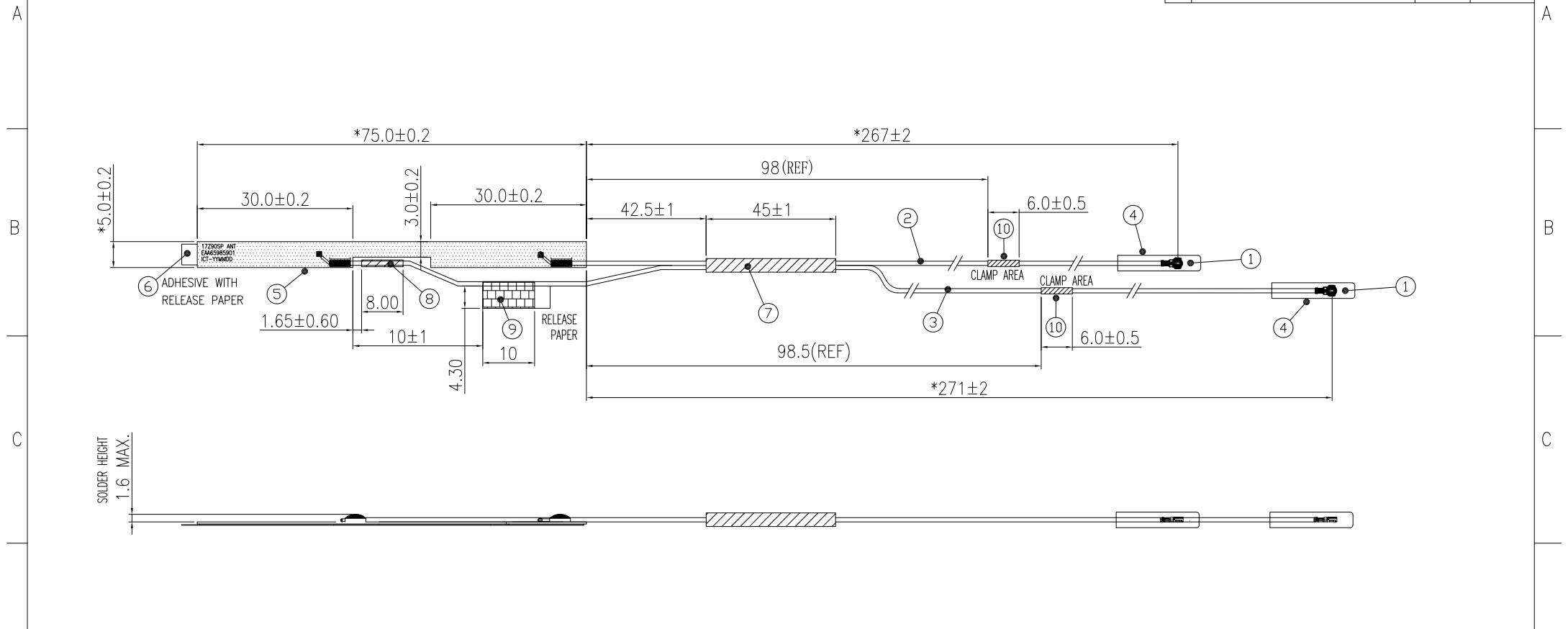
|           |   |
|-----------|---|
| Condition | Class V3 [0.27 Grms, 10-500Hz, 50min, Per 3 axes (X,Y,Z)] |
| Judgement | Product’s mechanism and VSWR should be OK.                |

14) Drop Test

|           |   |
|-----------|---|
| Condition | Height : 100cm to Iron Plate (Thickness : 5mm or more)<br>one edge/Three corners/six faces are once<br>total : 10 times |
| Judgement | there should be no crack and or damage parts.   |

**RoHS + HF**

| REV | DESCRIPTION   | DESIGN | DATE       |
|-----|---------------|--------|------------|
| X1  | NEW DRAWING   | JACK   | 2023.06.25 |
| X2  | UPDATED BOM   | JACK   | 2023.07.12 |
| X3  | ADD TOLERANCE | JACK   | 2023.07.31 |



| ITEM | PART NO       | NAME                | DESCRIPTION   | Q'TY |
|------|---------------|---------------------|---|------|
| 10   | 058-20G1-0031 | CABLE CLIP          | COPPER ALLOY, GOLD FLASH, FOR 0.81 CABLE                      | 2    |
| 9    | ---           | ACETATE TAPE        | L=10mm  | 1    |
| 8    | ---           | HEAT-SHRINKING TUBE | L=8mm, COLOR : BLACK  | 1    |
| 7    | ---           | HEAT-SHRINKING TUBE | L=45mm, COLOR : BLACK   | 1    |
| 6    | ---           | ADHESIVE            | 3M 9888T T=0.15MM L74mm x W4mm                                | 1    |
| 5    | ---           | PCB                 | FR4 , L75 x W5 x T 0.4mm                                      | 1    |
| 4    | ---           | TRANSPARENT TUBE    | L=16MM  | 2    |
| 3    | ---           | AUX CABLE           | DIA. 0.81MM SINGLE ENDED COAXIAL LOW LOSS CABLE (COLOR:GRAY)  | 1    |
| 2    | ---           | MAIN CABLE          | DIA. 0.81MM SINGLE ENDED COAXIAL LOW LOSS CABLE (COLOR:BLACK) | 1    |
| 1    | ---           | CONNECTOR           | I-Pex 20572 FOR CABLE DIA. 0.81MM PLUG CONNECTOR              | 2    |

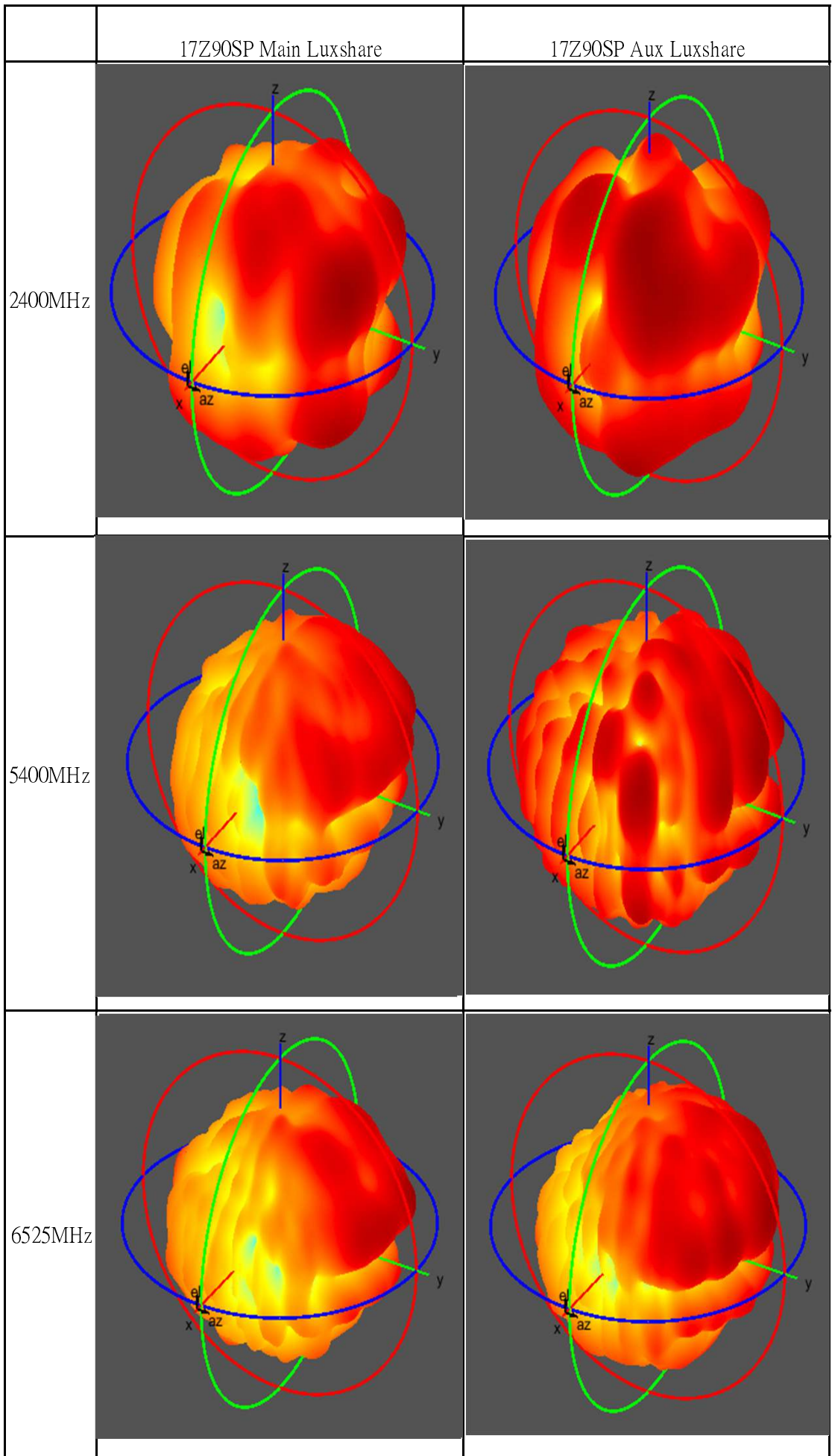
**備註:**

- 電氣特性必須100%測試, 標註\*的尺寸須做重點檢驗(SPC)
- 所有焊接處焊錫不可超出PCB及塑件外
- 焊接處焊錫不可超出PCB及塑件外
- 線材焊接處焊錫不可超出鍍金區域範圍
- 焊錫不可有虛焊, 假焊, 錫尖, 汗點等不良
- 焊錫表面需均勻且光滑飽滿
- 本產品使用原物料及製程必須符合立訊"QW-Q-043"環境管理物質相關規定
- 此產品及其附屬包裝材料的均質成份須滿足無鹵管制要求:  
BR<900PPM, CL<900PPM, BR+CL<1500PPM

|   |                          |                              |
|---|--------------------------|------------------------------|
| TOLERANCE(UNLESS SPECIFIED)   | CUSTOMER P/N: EA65985901 | <b>LUXSHARE-ICT</b>          |
| *X ±0.5   | APPD: ANDERSON           |                              |
| *X.X ±0.25  |                          | TITLE: 17Z90SP ANTENNA, ASSY |
| *X.XX ±0.10   | CHKD: JACK               | PART NO: L1LRF016-CS-H       |
| *X.XXX ±0.05  |                          | DRAW: JACK                   |
| UNITS: mm   | SCALE SHEET SIZE REV     |                              |
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| Frequency (MHz) | Main            |                 |                | Aux             |                 |                |
|-----------------|-----------------|-----------------|----------------|-----------------|-----------------|----------------|
|                 | Peak gain (dBi) | Efficiency (dB) | Efficiency (%) | Peak gain (dBi) | Efficiency (dB) | Efficiency (%) |
| 2400            | 5.813           | -3.215          | 47.695         | 5.132           | -3.172          | 48.169         |
| 2450            | 3.347           | -4.924          | 32.185         | 2.955           | -4.825          | 32.923         |
| 2500            | 0.679           | -6.498          | 22.397         | 0.944           | -6.952          | 20.173         |
| 5150            | 2.506           | -3.708          | 42.578         | 3.566           | -4.245          | 37.623         |
| 5250            | 2.194           | -3.512          | 44.547         | 4.988           | -3.830          | 41.402         |
| 5350            | 3.567           | -4.445          | 35.932         | 5.712           | -4.546          | 35.104         |
| 5470            | 3.171           | -5.787          | 26.380         | 3.754           | -4.557          | 35.022         |
| 5600            | 3.047           | -4.844          | 32.777         | 2.810           | -4.794          | 33.160         |
| 5725            | 3.224           | -5.117          | 30.785         | 0.502           | -6.123          | 24.416         |
| 5785            | 3.558           | -4.807          | 33.062         | -0.056          | -6.122          | 24.421         |
| 5800            | 3.783           | -4.675          | 34.084         | -0.409          | -5.978          | 25.249         |
| 5850            | 4.741           | -4.345          | 36.769         | 0.850           | -5.544          | 27.898         |
| 5925            | 3.067           | -3.930          | 40.457         | 1.324           | -5.510          | 28.120         |
| 6025            | 3.313           | -3.758          | 42.089         | 2.275           | -7.036          | 19.790         |
| 6125            | 2.951           | -4.352          | 36.712         | 2.380           | -6.229          | 23.830         |
| 6225            | 4.728           | -5.475          | 28.344         | 1.790           | -6.694          | 21.410         |
| 6325            | 4.000           | -5.747          | 26.623         | 1.277           | -7.140          | 19.319         |
| 6425            | 3.299           | -6.714          | 21.309         | 3.020           | -5.960          | 25.351         |
| 6525            | 2.456           | -7.718          | 16.913         | 0.810           | -7.642          | 17.209         |
| 6625            | 1.446           | -8.061          | 15.627         | -0.314          | -8.912          | 12.847         |
| 6725            | 1.770           | -7.866          | 16.345         | 1.870           | -7.860          | 16.370         |
| 6825            | 1.036           | -8.564          | 13.918         | 1.129           | -8.539          | 14.000         |
| 6925            | 1.097           | -8.418          | 14.396         | 1.120           | -8.284          | 14.845         |
| 7025            | 3.194           | -7.052          | 19.716         | 1.471           | -7.045          | 19.748         |
| 7125            | 2.120           | -8.182          | 15.199         | 1.589           | -8.359          | 14.591         |





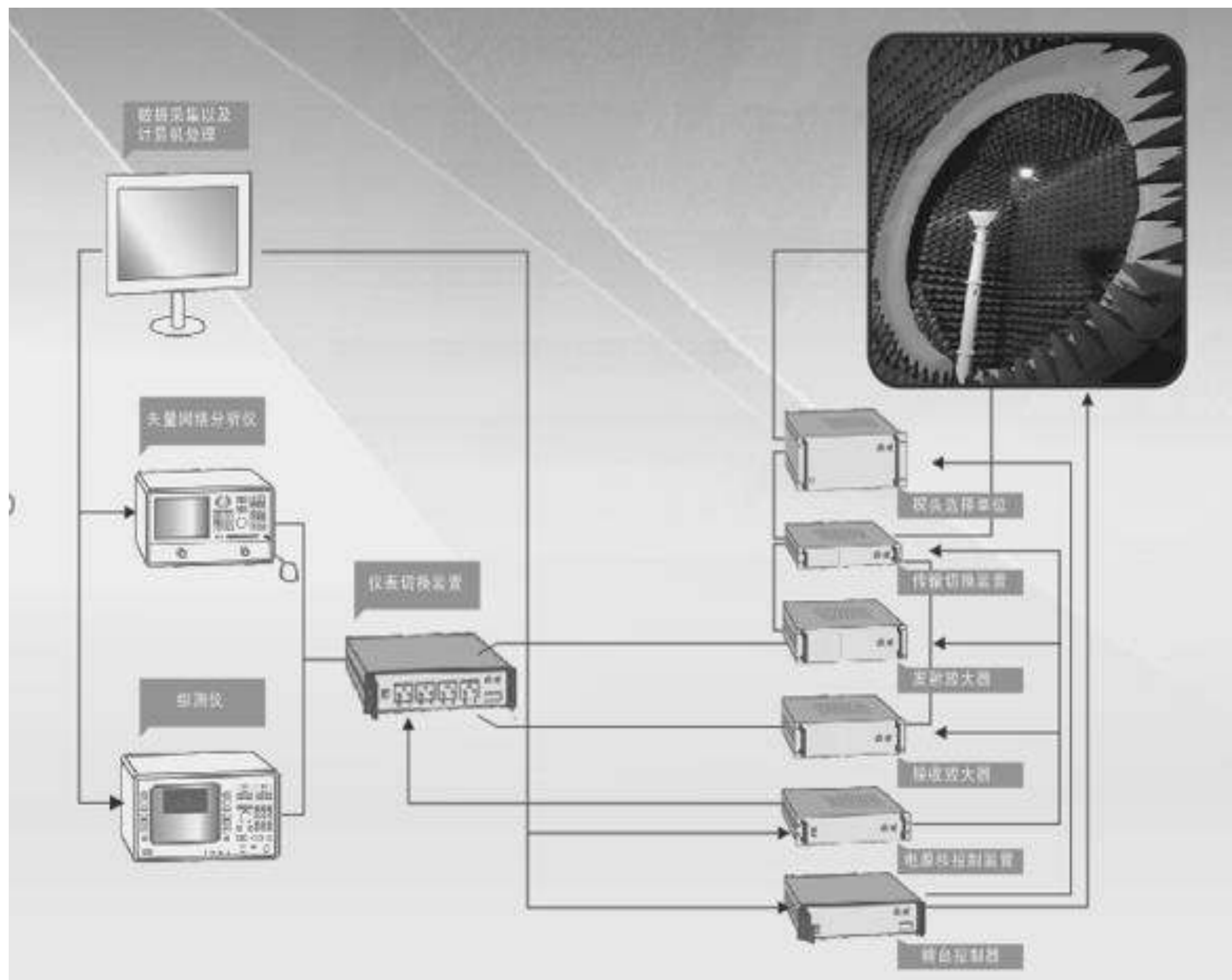
# 16Z90SP&17Z90SP

2023/11/22

Presented by: Luxshare Antenna Team



# 测试环境 시험환경

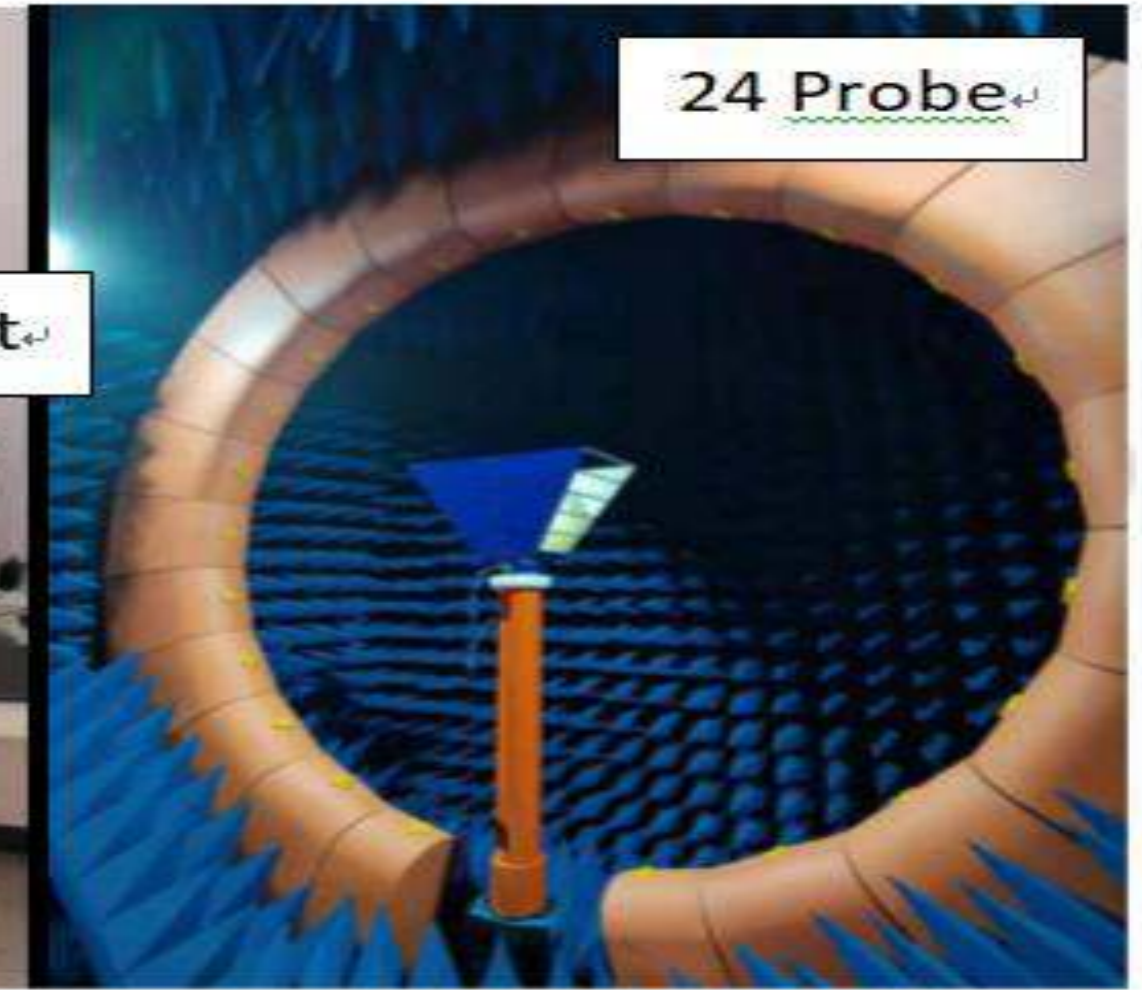
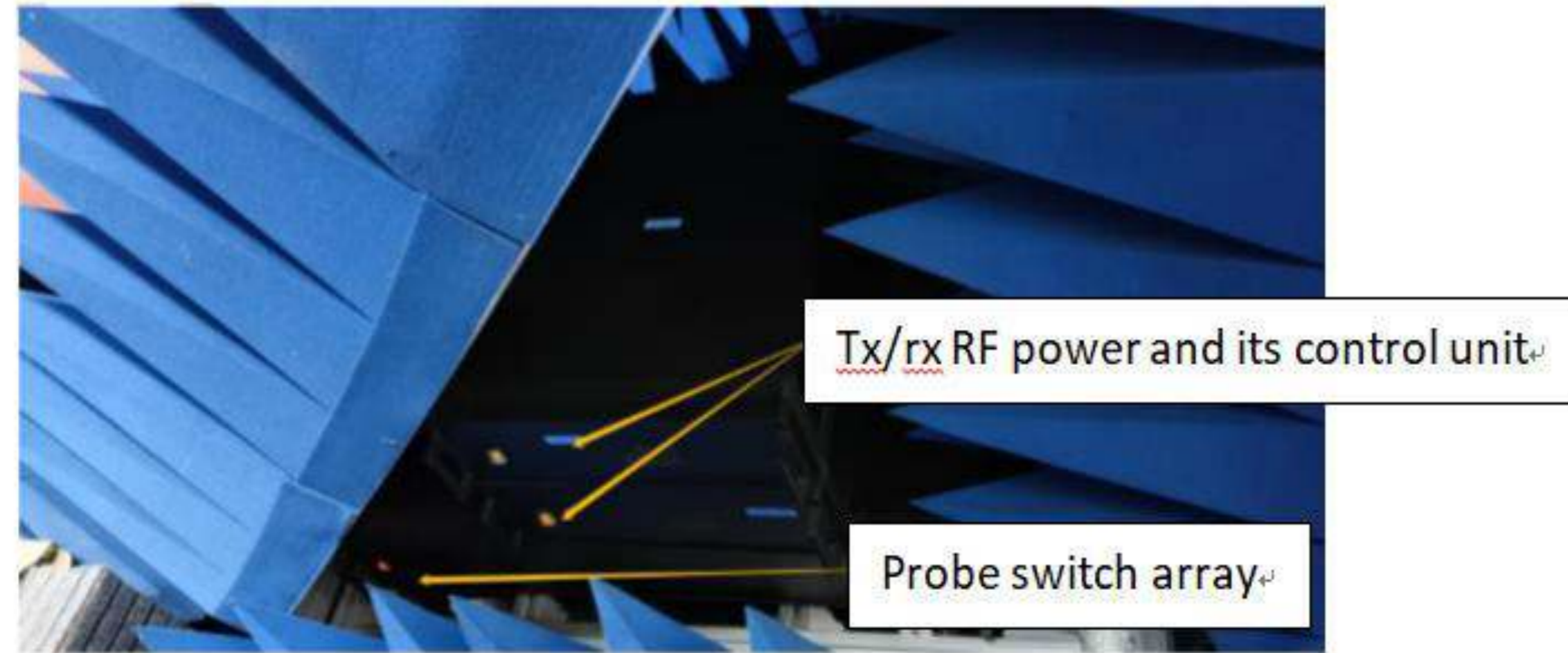
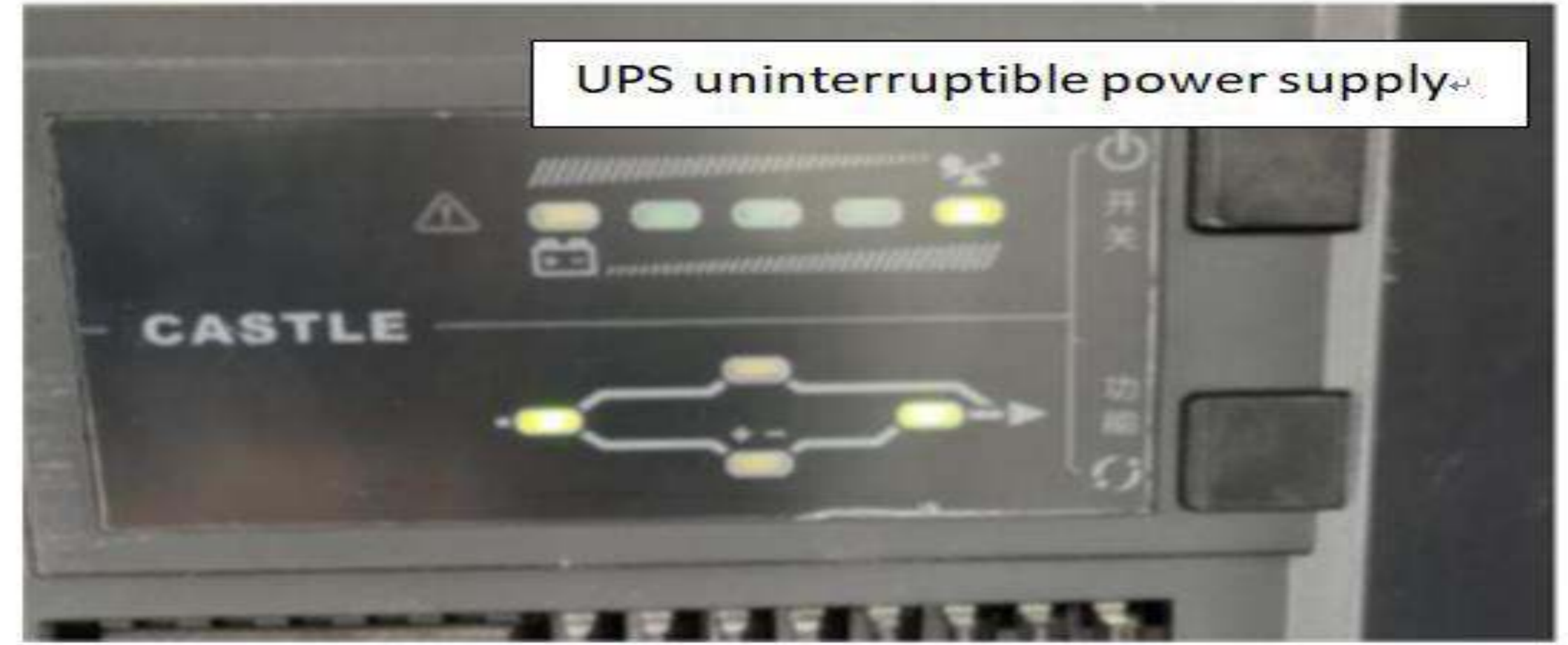
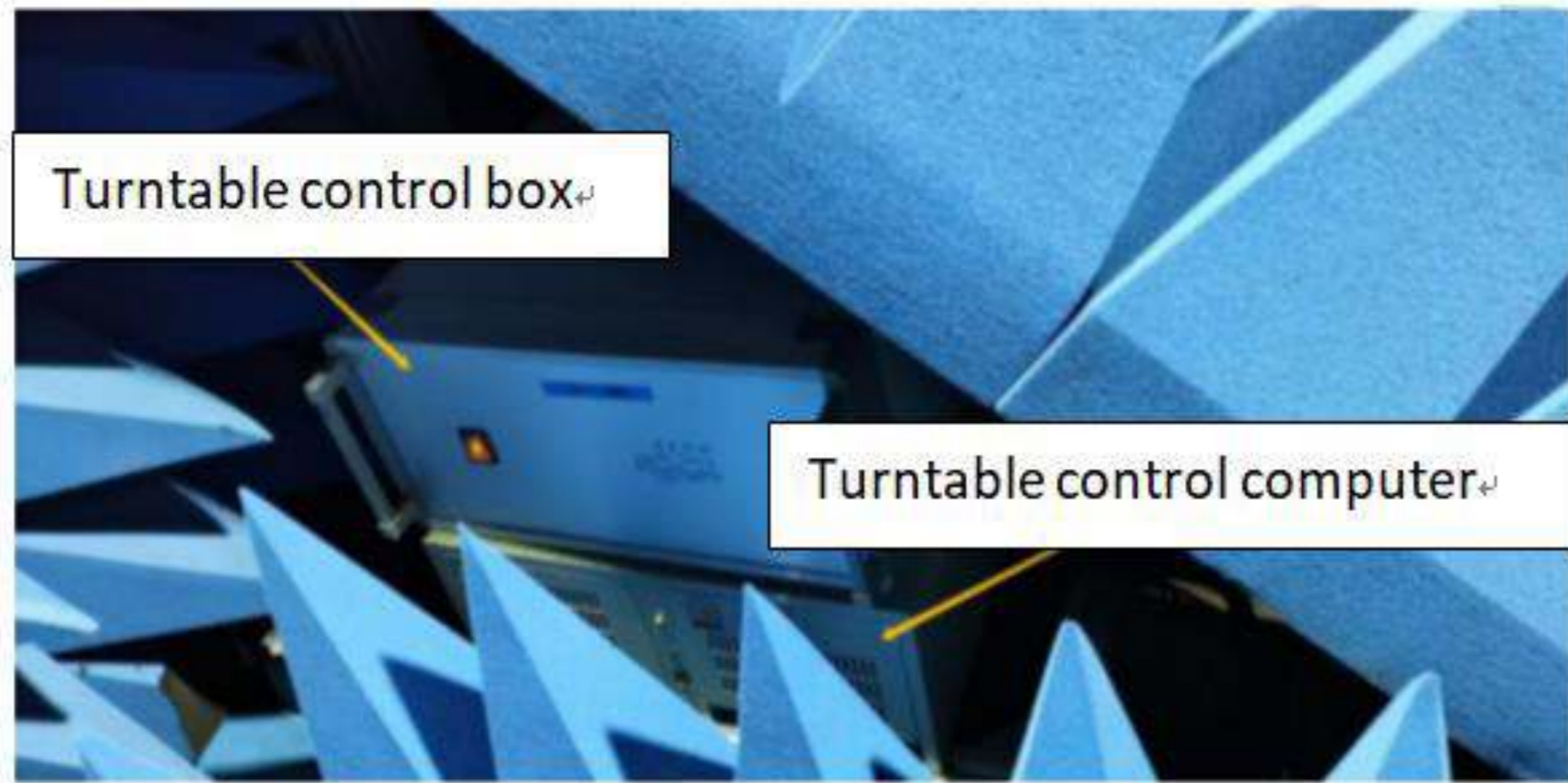


Test setup

| Number | Device                              | Type/Model | Serial     | Manufacturer | Cal.Date  | Cal.Due Date |
|--------|-------------------------------------|------------|------------|--------------|-----------|--------------|
| 1      | EMT24 Chamber                       | EM-testing | 1603000653 | EMT          | 2021/9/30 | 2023/12/31   |
| 2      | Turntable control box               | EM-testing | 1603000653 | EMT          | 2022/11/1 | 2023/11/1    |
| 3      | Turntable control computer          | EM-testing | 1603000653 | EMT          | 2022/11/1 | 2023/11/1    |
| 4      | Tx/rx RF power and its control unit | EM-testing | 1603000653 | EMT          | N/A       | N/A          |
| 5      | Tx/rx RF power and its control unit | EM-testing | 1603000653 | EMT          | N/A       | N/A          |
| 6      | Test system host                    | EM-testing | 1603000653 | EMT          | N/A       | N/A          |
| 7      | Network analyzer                    | E5071C     | 1603000653 | EMT          | 2022/11/1 | 2023/11/1    |
| 8      | RF line TX                          | EM-testing | 1603000653 | EMT          | N/A       | N/A          |
| 9      | RF line RX                          | EM-testing | 1603000653 | EMT          | N/A       | N/A          |
| 10     | UPS uninterruptible power supply    | Castle     | 1603000653 | EMT          | N/A       | N/A          |
| 11     | 24 Probe Antenna                    | EM-testing | 1603000653 | EMT          | 2022/11/1 | 2023/12/31   |
| 12     | Cable 3m 400MHz~8.5GHz              | EM-testing | 1603000653 | EMT          | 2021/9/30 | 2023/12/31   |

Equipment list

# 测试环境 시험환경



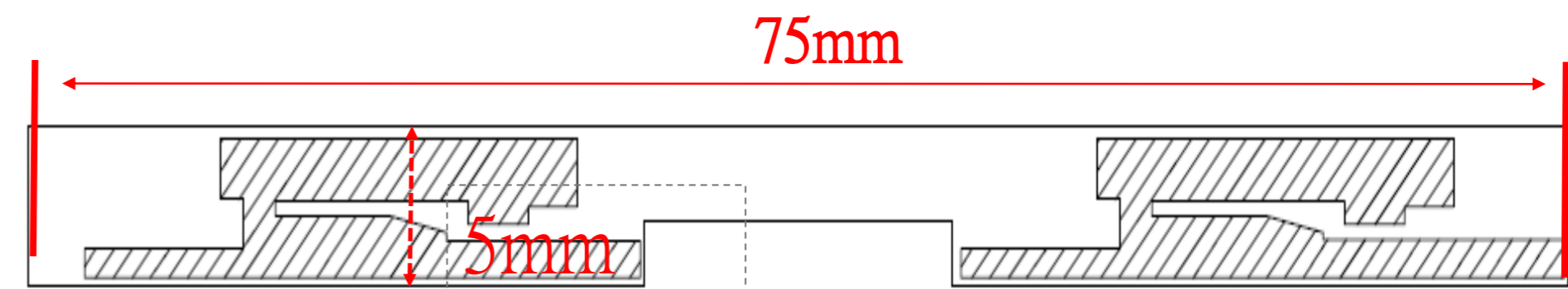
Setup photo

# 17Z90SP

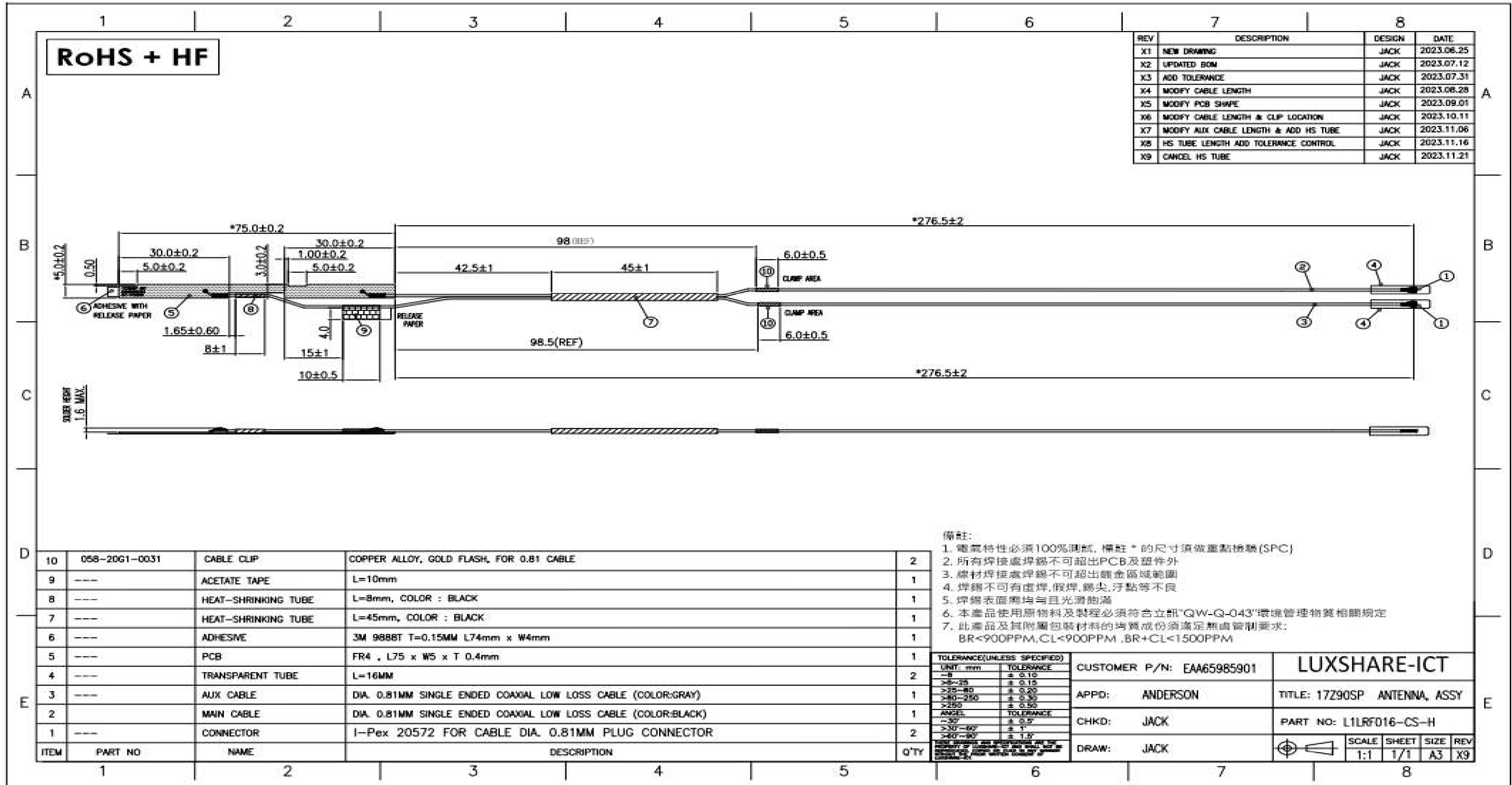
- 环境 환경



| Item  | Note                           | permittivity |
|-------|--------------------------------|--------------|
| PCB   | 75x 5 x0.4mm                   |              |
| Cable | OD: 0.81 mm<br>Length: 276.5mm |              |
| Cable | OD: 0.81 mm<br>Length: 276.5mm |              |



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# Thanks !

I hope you can select us as your preferred supplier!

