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# **Antenna Data Sheet**

## **Catalogue**

- 1. Capability Status**
- 2. Antenna Location**
- 3. Antenna Passive Efficiency**
- 4. Simple Antenna Pattern Plot**
- 5. Antenna return loss**

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## 1. Capability Status

### a. Main software and hardware facilities for antenna R&X

#### Equipment introduction

Shanghai: Satimo:2 GTS1800:3 NFC Micropross:1

SAR DASY 5:1

Shenzhen: GTS1800:1 GTS2800:1 NFC Micropross:1

Xian: GTS2800:1

Beijing: GTS1800:2 GTS2800:1

Kunshan: GTS2800:1 Satimo:2 GTS1800:3

SAR DASY 4:2



Satimo SG24



GTS2800



DASY4/5



NFC

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b. Full category testing capability

Support system

GSM/WCDMA/EVDO/TDSCDMA/TDD/FDD/5G-SA/5G-NSA/eMTC/NB-iot/GPS/WiFi/BT/

CA/ENDC

Common equipment

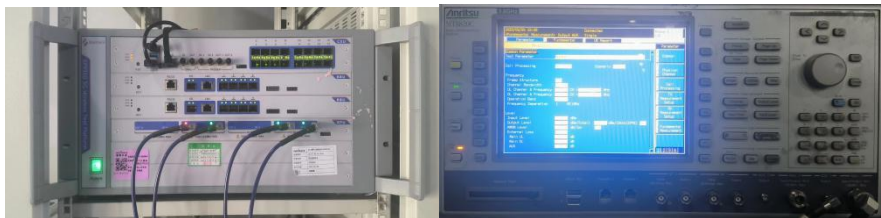
SP9500

Anritsu MT8820C

E5071C

CMW500

DASY4/5 SAR



**StarPoint SP9500**

**Anritsu MT8820C**

## 2. **Antenna Location**

**ANT1: LTE: B7/30/38/40/41 TRX**

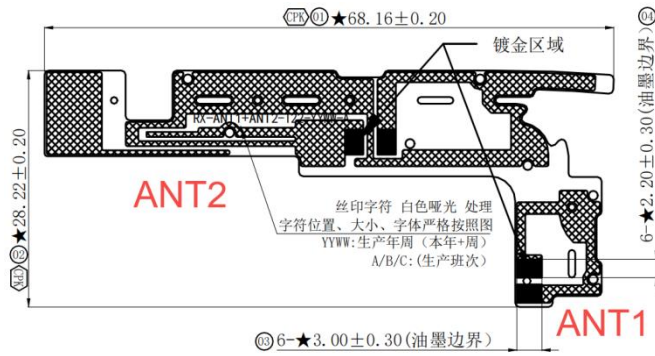
**NR:N30/41 TRX**

**N48/N77 DRX**

**ANT2: WCDMA :B1/2/5/8 TRX**

**LTE :B1/2/3/4/5/8/12/14/17/20/25/26/29/66/71 TRX**

**NR :N2/5/25/29/66/70/71 TRX**

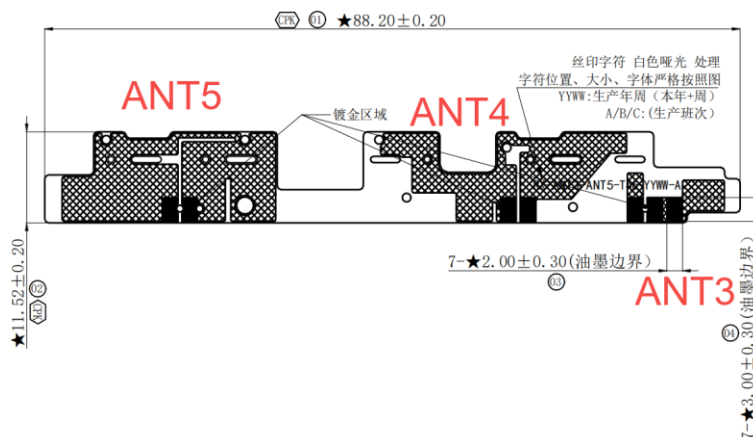


**ANT3: NR:N48/77 TRX**

**ANT4: GPS L1+WIFI 2.4G/WIFI 5G TRX**

**ANT5: LTE:B1/2/4/25/38/41/66 PRX MIMO**

**NR:N2/25/66/70/41/48/77 PRX MIMO**



**ANT6: ENDC: N2/66 TRX**

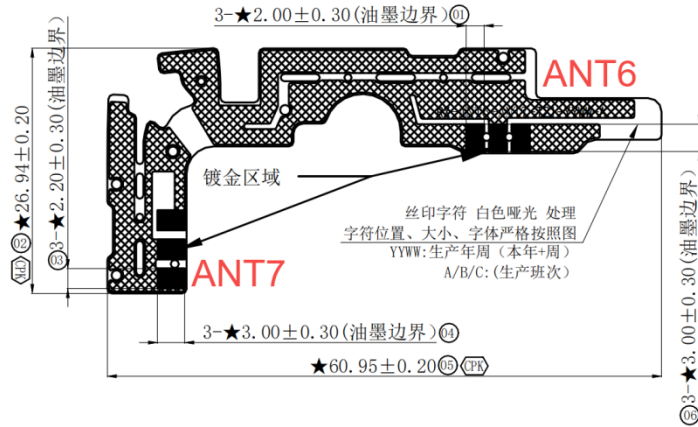
**WCDMA :B1/2/5/8 DRX**

**LTE:B1/2/3/4/5/7/8/12/14/17/20/25/26/29/30/38/40/41/66/71 DRX**

**NR:N2/5/25/29/30/41/66/70/71 DRX**

**ANT7:LTE:B1/2/4/25/38/41/66 DRX MIMO**

**NR:N2/25/66/70/41/48/77 DRX MIMO**



### 3. Antenna Passive Efficiency

#### a. Antenna1

| Band |         | Average Gain |         | Maximum Gain |         |
|------|---------|--------------|---------|--------------|---------|
|      |         | TX           | RX      | TX           | RX      |
| LTE  | Band 7  | -4.0dBi      | -5.3dBi | 1.1dBi       | 0.2dBi  |
|      | Band 30 | -3.5dBi      | -5.2dBi | 0.0dBi       | -0.8dBi |
|      | Band 38 | -4.1dBi      | -4.1dBi | 1.0dBi       | 1.0dBi  |
|      | Band 40 | -4.3dBi      | -4.7dBi | 1.0dBi       | 0.5dBi  |
|      | Band 41 | -3.8dBi      | -3.8dBi | 1.2dBi       | 1.2dBi  |
| NR   | Band 30 | -3.5dBi      | -5.2dBi | 0.0dBi       | -0.8dBi |
|      | Band 41 | -3.8dBi      | -3.8dBi | 1.2dBi       | 1.2dBi  |
|      | Band 48 | -7.4dBi      | -7.4dBi | -2.0dBi      | -2.0dBi |
|      | Band 77 | -8.0dBi      | -8.0dBi | -3.1dBi      | -3.1dBi |

#### c. Antenna2

| Band  |        | Average Gain |         | Maximum Gain |         |
|-------|--------|--------------|---------|--------------|---------|
|       |        | TX           | RX      | TX           | RX      |
| WCDMA | Band 1 | -4.6dBi      | -4.4dBi | 0.5dBi       | -0.1dBi |
|       | Band 2 | -5.8dBi      | -4.1dBi | 0.1dBi       | -0.7dBi |
|       | Band 5 | -4.4dBi      | -5.5dBi | 0.3dBi       | -0.3dBi |
|       | Band 8 | -6.0dBi      | -9.4dBi | -1.1dBi      | -4.6dBi |
| LTE   | Band 1 | -4.6dBi      | -4.4dBi | 0.5dBi       | -0.1dBi |
|       | Band 2 | -5.8dBi      | -4.1dBi | 0.1dBi       | -0.7dBi |
|       | Band 3 | -4.0dBi      | -5.3dBi | 2.2dBi       | -0.1dBi |
|       | Band 4 | -3.7dBi      | -5.2dBi | 1.6dBi       | -0.9dBi |
|       | Band 5 | -5.5dBi      | -5.5dBi | 0.3dBi       | -0.3dBi |
|       | Band 8 | -6.2dBi      | -9.4dBi | -1.1dBi      | -4.6dBi |

|    |         |         |         |         |         |
|----|---------|---------|---------|---------|---------|
|    | Band 12 | -4.9dBi | -4.2dBi | 0.8dBi  | -0.1dBi |
|    | Band 14 | -4.6dBi | -3.9dBi | 0.3dBi  | -0.2dBi |
|    | Band 17 | -4.9dBi | -8.4dBi | 0.8dBi  | -5.2dBi |
|    | Band 20 | -3.3dBi | -9.4dBi | 0.3dBi  | -6.6dBi |
|    | Band 25 | -5.8dBi | -4.1dBi | 0.1dBi  | -0.7dBi |
|    | Band 26 | -5.5dBi | -5.5dBi | 0.3dBi  | -0.3dBi |
|    | Band 29 | /       | -8.4dBi | /       | -5.2dBi |
|    | Band 66 | -3.5dBi | -5.4dBi | 1.6dBi  | -1.0dBi |
|    | Band 71 | -6.2dBi | -3.4dBi | -1.2dBi | 0.2dBi  |
| NR | Band 2  | -5.8dBi | -4.1dBi | 0.1dBi  | -0.7dBi |
|    | Band 5  | -5.5dBi | -5.5dBi | 0.3dBi  | -0.3dBi |
|    | Band 25 | -5.8dBi | -4.1dBi | 0.1dBi  | -0.7dBi |
|    | Band 29 | /       | -8.4dBi | /       | -5.2dBi |
|    | Band 66 | -3.5dBi | -5.4dBi | 1.6dBi  | -1.0dBi |
|    | Band 70 | -4.2dBi | -5.2dBi | 1.8dBi  | -0.7dBi |
|    | Band 71 | -6.2dBi | -3.4dBi | -1.2dBi | 0.2dBi  |

c. Antenna3

| Band |         | Average Gain |         | Maximum Gain |         |
|------|---------|--------------|---------|--------------|---------|
|      |         | TX           | RX      | TX           | RX      |
| NR   | Band 48 | -7.4dBi      | -7.4dBi | -2.0dBi      | -2.0dBi |
|      | Band 77 | -3.5dBi      | -3.5dBi | 1.1dBi       | 1.1dBi  |

d. Antenna4

| Band      |               | Average Gain |         | Maximum Gain |        |
|-----------|---------------|--------------|---------|--------------|--------|
|           |               | TX           | RX      | TX           | RX     |
| GPS       | L1 1575.5     | /            | -4.3dBi | /            | 0.0dBi |
| WIFI 2.4G | 2.4Ghz-2.5Ghz | -5.9dBi      | -5.9dBi | 0.8dBi       | 0.8dBi |
| WIFI 5G   | Band 1        | -4.2dBi      | -4.2dBi | 0.5dBi       | 0.5dBi |
|           | Band 2        | -4.8dBi      | -4.8dBi | 0.2dBi       | 0.2dBi |
|           | Band 3        | -4.0dBi      | -4.0dBi | 0.6dBi       | 0.6dBi |
|           | Band 4        | -4.9dBi      | -4.9dBi | 0.2dBi       | 0.2dBi |
| BT        | 2.4Ghz-2.5Ghz | -5.9dBi      | -5.9dBi | 0.8dBi       | 0.8dBi |

e. Antenna5

| Band |         | Average Gain |          | Maximum Gain |          |
|------|---------|--------------|----------|--------------|----------|
|      |         | TX           | RX       | TX           | RX       |
| LTE  | Band 1  | /            | -4.8dBi  | /            | 0.2dBi   |
|      | Band 2  | /            | -6.3dBi  | /            | -0.3dBi  |
|      | Band 4  | /            | -4.8dBi  | /            | 0.2dBi   |
|      | Band 25 | /            | -6.3dBi  | /            | -0.3dBi  |
|      | Band 38 | /            | -5.4dBi  | /            | -0.7dBi  |
|      | Band 41 | /            | -5.7dBi  | /            | -0.5dBi. |
|      | Band 66 | /            | -5.1dBi  | /            | 0.7dBi   |
| NR   | Band 2  | /            | -6.3dBi  | /            | -0.3dBi  |
|      | Band 25 | /            | -6.3dBi  | /            | -0.3dBi  |
|      | Band 41 | -5.7dBi      | -5.7dBi. | -0.5dBi      | -0.5dBi  |
|      | Band 48 | /            | -5.1dBi. | /            | 1.3dBi   |
|      | Band 66 | /            | -5.1dBi  | /            | 0.7dBi   |
|      | Band 70 | /            | -5.0dBi  | /            | 0.2dBi   |
|      | Band 77 | -5.2dBi      | -5.2dBi  | 0.3dBi       | 0.3dBi   |

f. Antenna6

| Band  |         | Average Gain |          | Maximum Gain |         |
|-------|---------|--------------|----------|--------------|---------|
|       |         | TX           | RX       | TX           | RX      |
| WCDMA | Band 1  | /            | -7.0dBi  | /            | -1.5dBi |
|       | Band 2  | /            | -4.4dBi  | /            | 0.6dBi  |
|       | Band 5  | /            | -5.6dBi  | /            | 0.1dBi  |
|       | Band 8  | /            | -11.2dBi | /            | -6.1dBi |
| LTE   | Band 1  | /            | -7.0dBi  | /            | -1.5dBi |
|       | Band 2  | /            | -4.4dBi  | /            | 0.6dBi  |
|       | Band 3  | /            | -4.0dBi  | /            | 0.2dBi  |
|       | Band 4  | /            | -7.0dBi  | /            | -1.5dBi |
|       | Band 5  | /            | -5.6dBi  | /            | 0.1dBi  |
|       | Band 7  | /            | -11.8dBi | /            | -6.5dBi |
|       | Band 8  | /            | -11.2dBi | /            | -6.1dBi |
|       | Band 12 | /            | -6.6dBi  | /            | -1.7dBi |
|       | Band 14 | /            | -6.3dBi  | /            | -1.5dBi |
|       | Band 17 | /            | -6.6dBi  | /            | -1.7dBi |
|       | Band 20 | /            | -7.0dBi  | /            | -1.8dBi |
|       | Band 25 | /            | -4.4dBi  | /            | 0.6dBi  |
|       | Band 26 | /            | -5.6dBi  | /            | 0.1dBi  |
|       | Band 29 | /            | -6.6dBi  | /            | -1.7dBi |
|       | Band 30 | /            | -9.7dBi  | /            | -5.4dBi |
|       | Band 38 | /            | -11.2dBi | /            | -6.5dBi |
|       | Band 40 | /            | -9.6dBi  | /            | -5.2dBi |
|       | Band 41 | /            | -11.8dBi | /            | -6.5dBi |

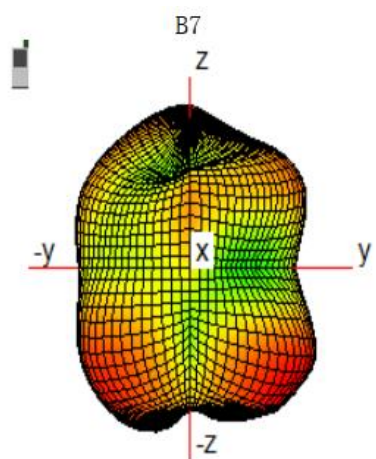
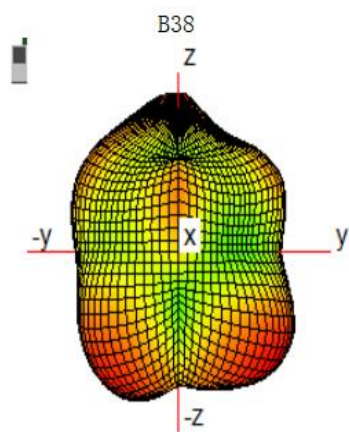
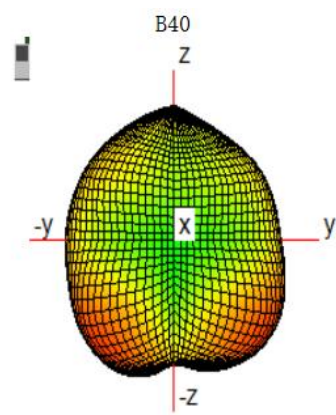
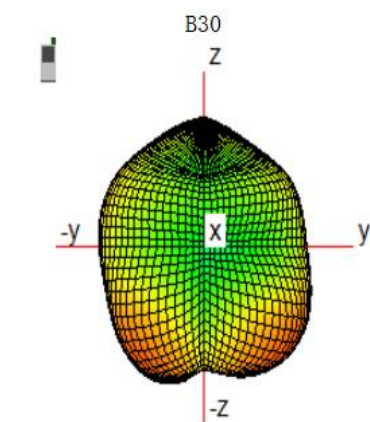
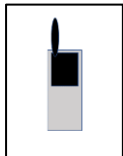
|    |         |          |          |         |         |
|----|---------|----------|----------|---------|---------|
|    | Band 66 | /        | -7.2dBi  | /       | -1.1dBi |
|    | Band 71 | /        | -10.0dBi | /       | -5.3dBi |
| NR | Band 2  | -6.3dBi  | -4.4dBi  | -0.3dBi | 0.6dBi  |
|    | Band 5  | /        | -5.6dBi  | /       | 0.1dBi  |
|    | Band 25 | /        | -4.4dBi  | /       | 0.6dBi  |
|    | Band 29 | /        | -6.6dBi  | /       | -1.7dBi |
|    | Band 30 | /        | -9.7dBi  | /       | -5.4dBi |
|    | Band 41 | -11.8dBi | -11.8dBi | -6.5dBi | -6.5dBi |
|    | Band 66 | -4.8dBi  | -7.2dBi  | 1.3dBi  | -1.1dBi |
|    | Band 70 | /        | -5.2dBi  | /       | 0.4dBi  |
|    | Band 71 | /        | -10.0dBi | /       | -5.3dBi |

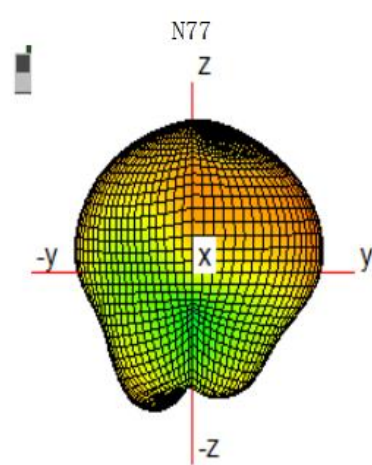
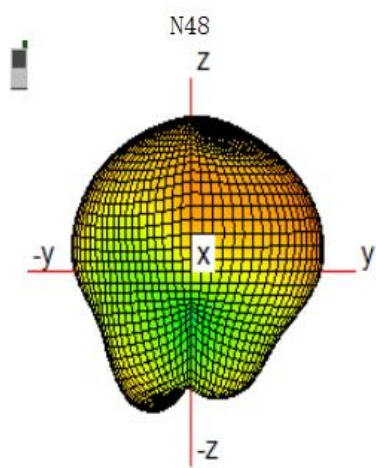
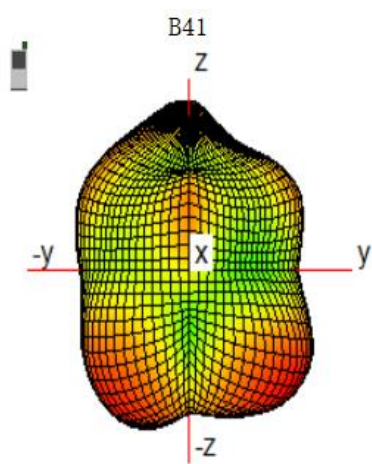
g. Antenna7

| Band |         | Average Gain |         | Maximum Gain |         |
|------|---------|--------------|---------|--------------|---------|
|      |         | TX           | RX      | TX           | RX      |
| LTE  | Band 1  | /            | -4.8dBi | /            | -0.3dBi |
|      | Band 2  | /            | -5.6dBi | /            | -0.2dBi |
|      | Band 4  | /            | -4.8dBi | /            | -0.3dBi |
|      | Band 25 | /            | -5.6dBi | /            | -0.2dBi |
|      | Band 38 | /            | -6.5dBi | /            | -0.2dBi |
|      | Band 41 | /            | -5.2dBi | /            | 0.7dBi  |
|      | Band 66 | /            | -5.0dBi | /            | -0.2dBi |
| NR   | Band 2  | /            | -5.6dBi | /            | -0.2dBi |
|      | Band 25 | /            | -5.6dBi | /            | -0.2dBi |
|      | Band 41 | -5.2dBi      | -5.2dBi | 0.7dBi       | 0.7dBi  |
|      | Band 48 | /            | -4.1dBi | /            | 1.1dBi  |
|      | Band 66 | /            | -5.0dBi | /            | -0.2dBi |
|      | Band 70 | /            | -5.0dBi | /            | 0.1dBi  |
|      | Band 77 | -3.3dBi      | -3.3dBi | 1.2dBi       | 1.2dBi  |

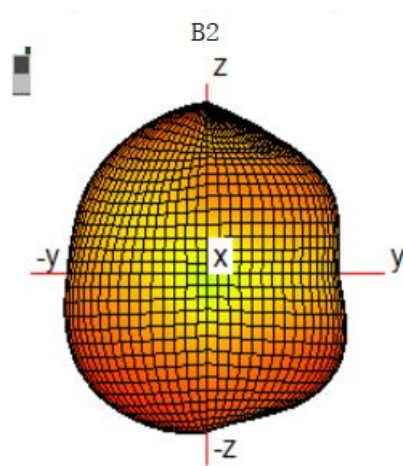
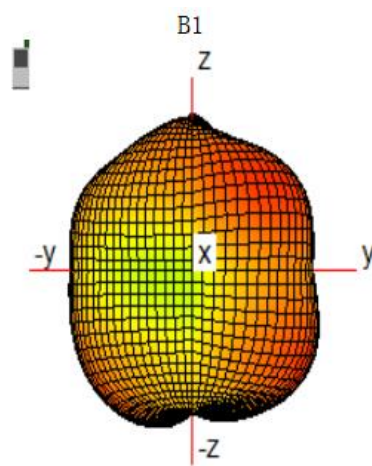
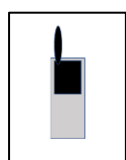
## 4.Simple Antenna Pattern Plot

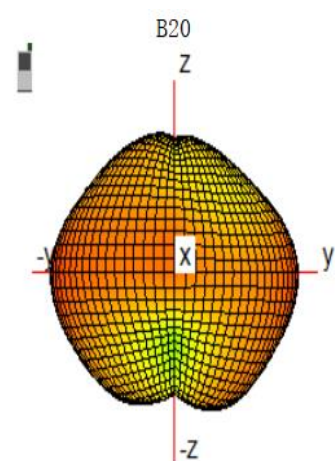
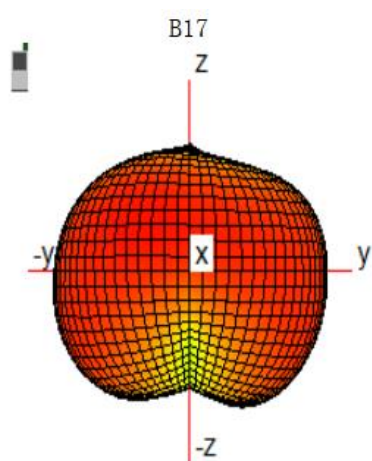
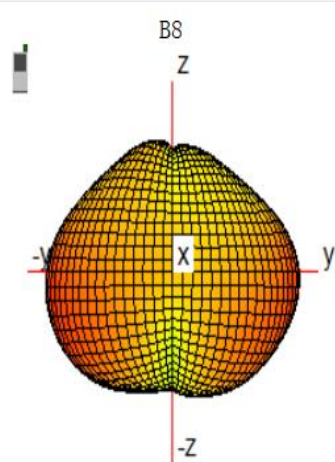
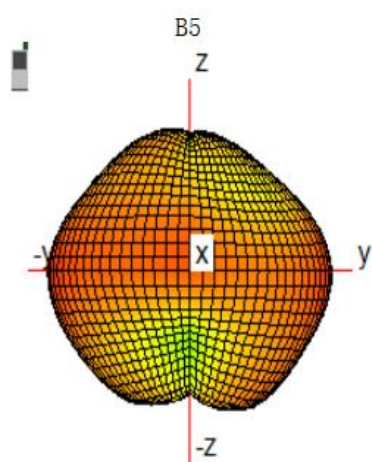
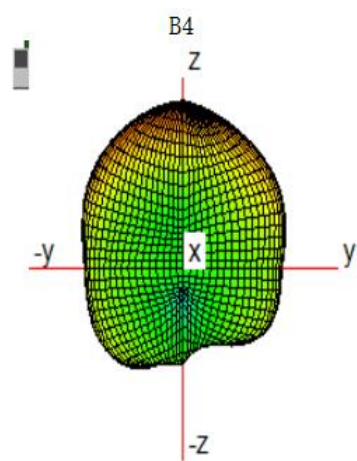
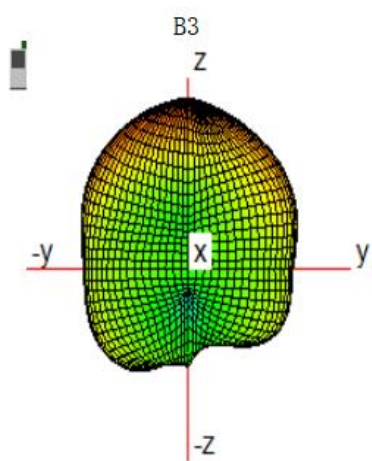
Antenna 1

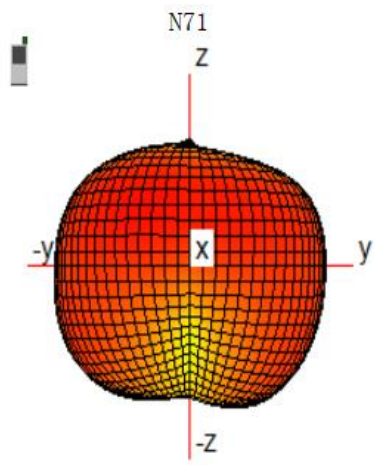
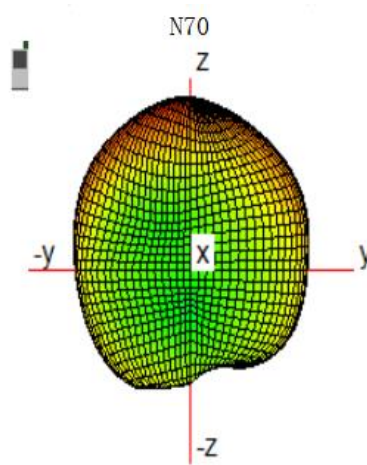
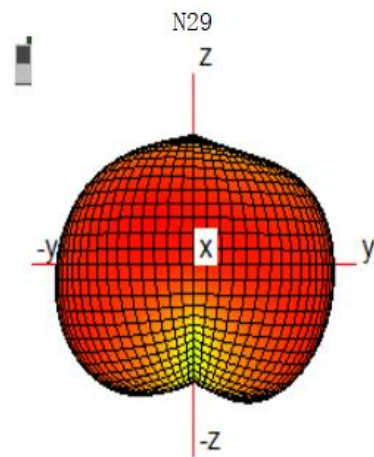
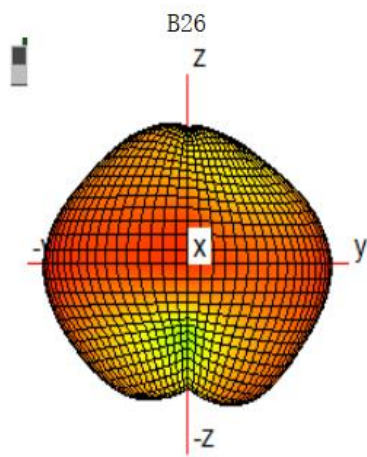




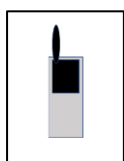
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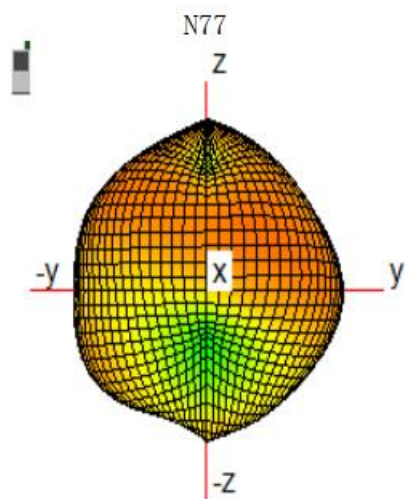
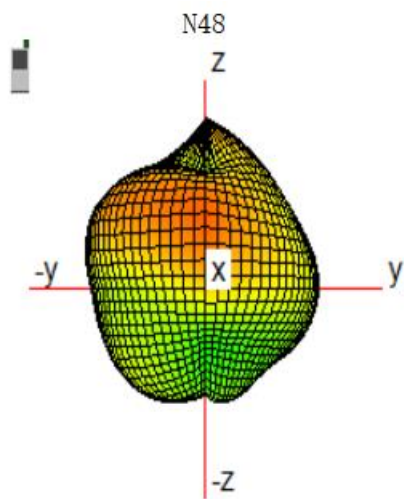




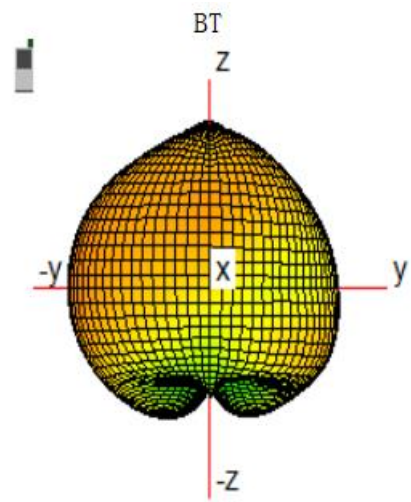
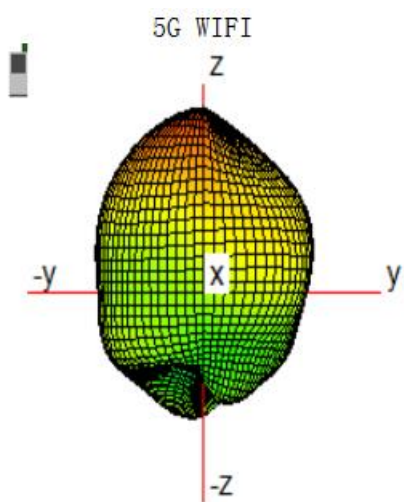
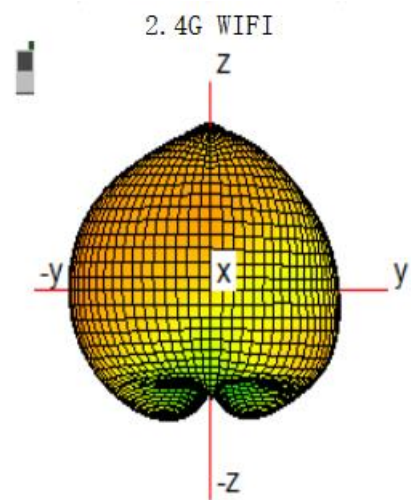
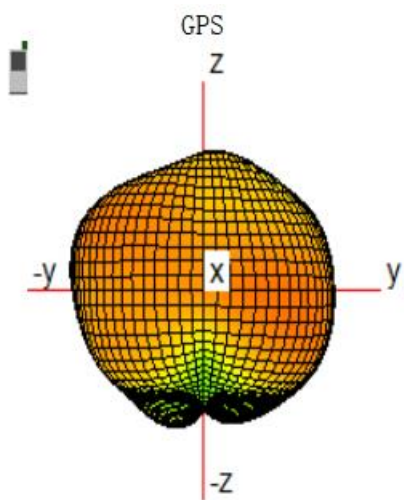
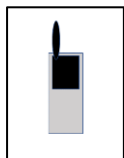


Antenna3

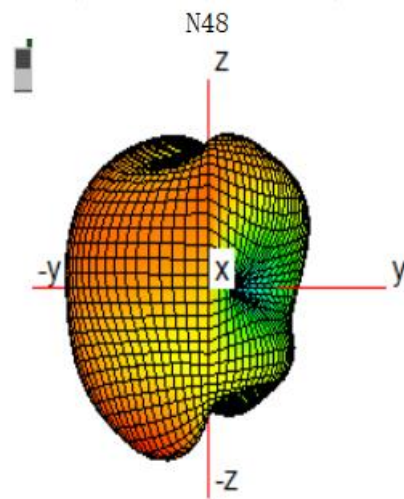
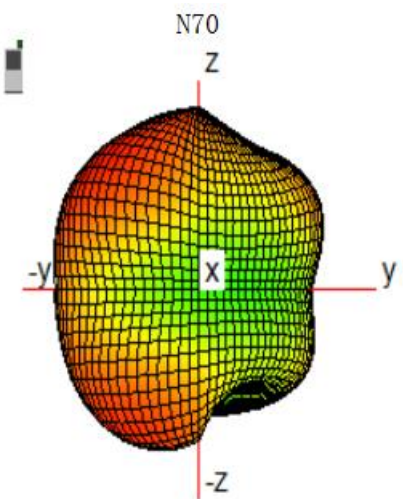
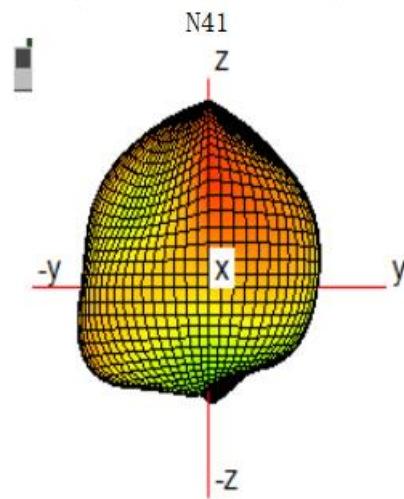
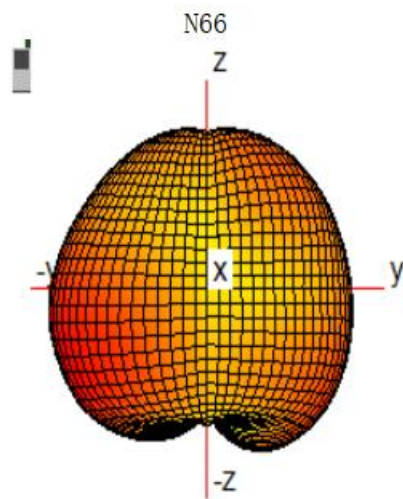
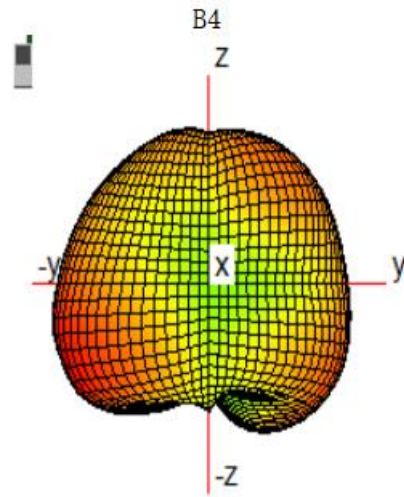
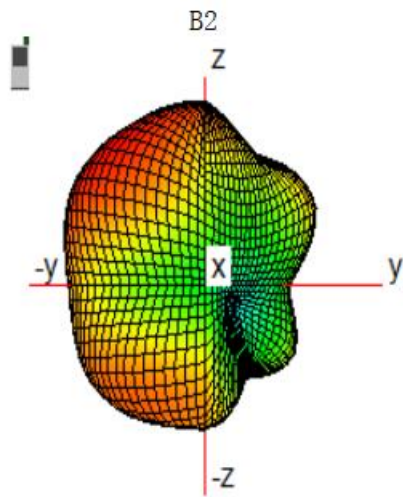
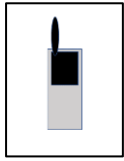


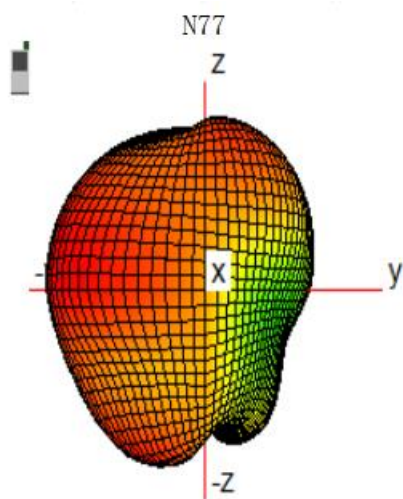


Antenna 4

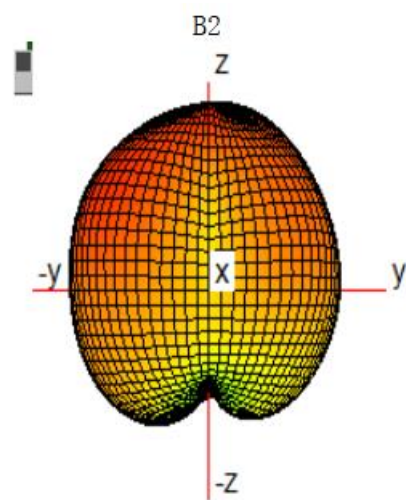
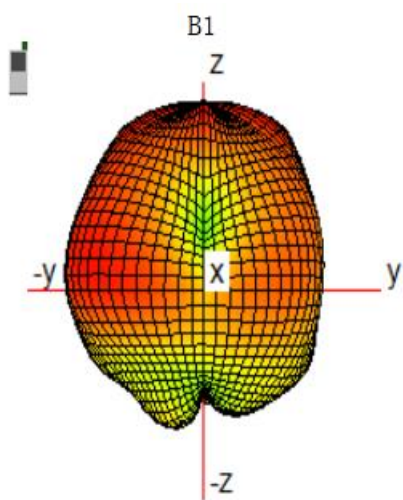
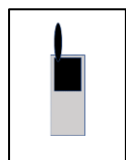


## Antenna 5

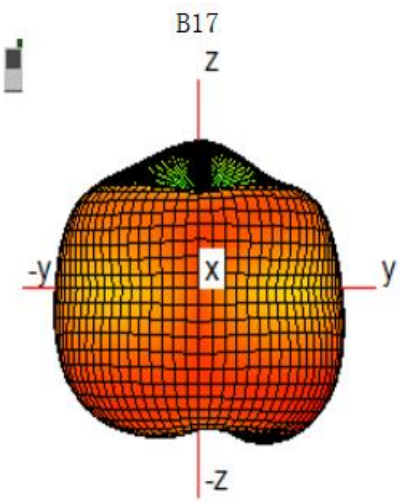
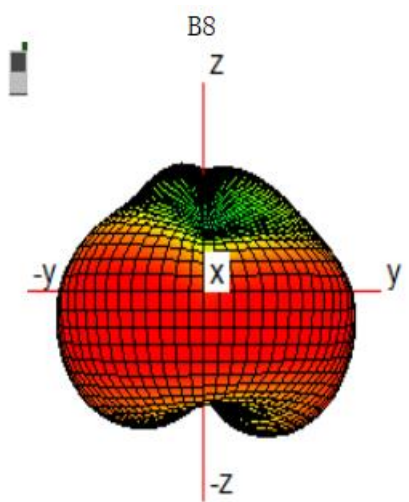
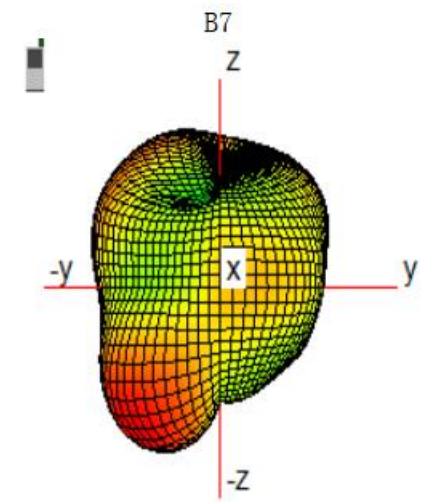
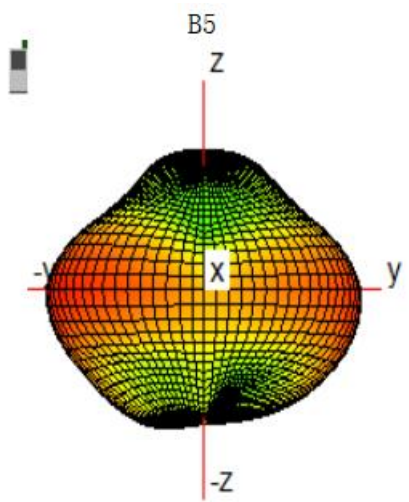
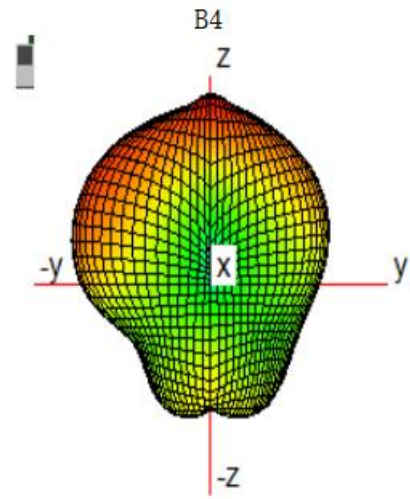
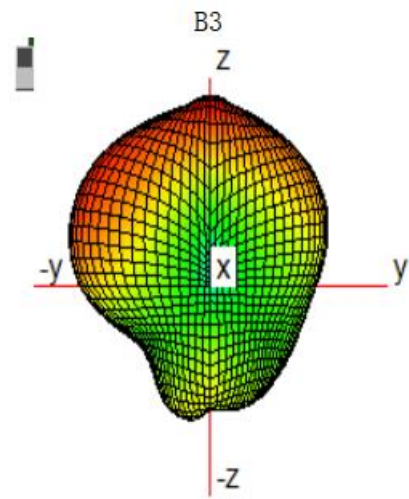


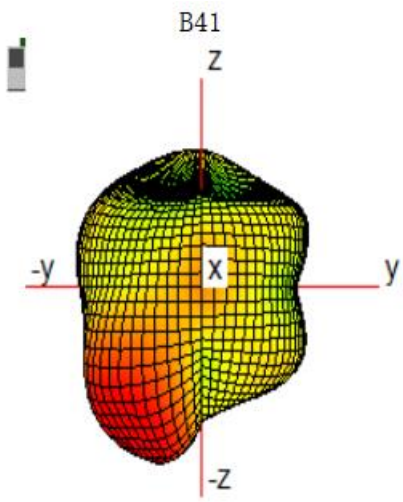
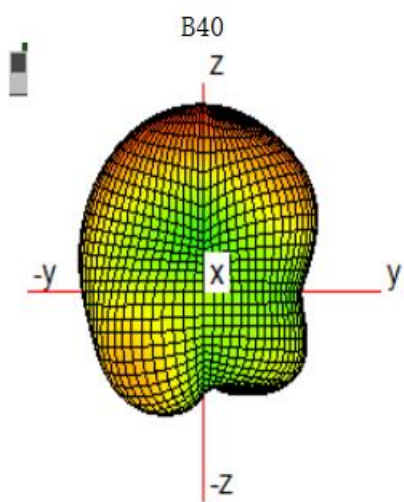
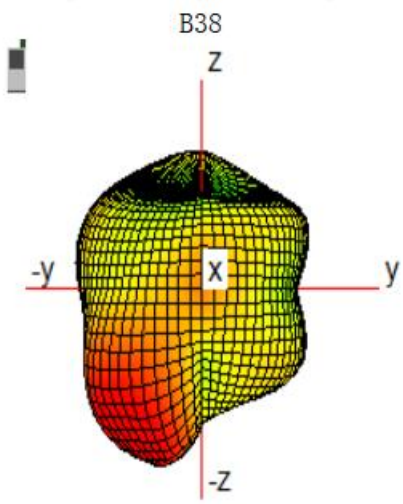
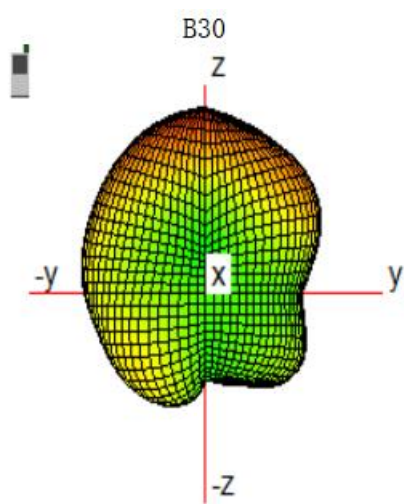
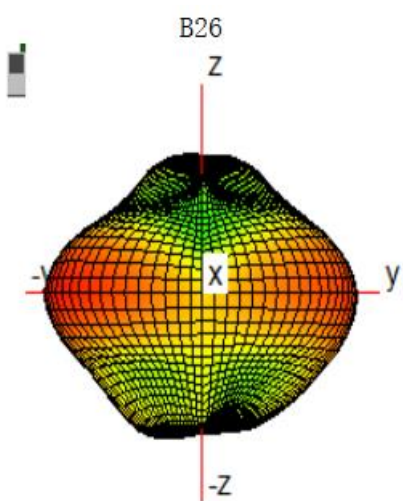
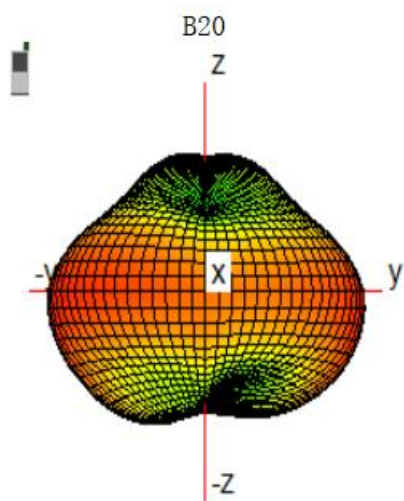


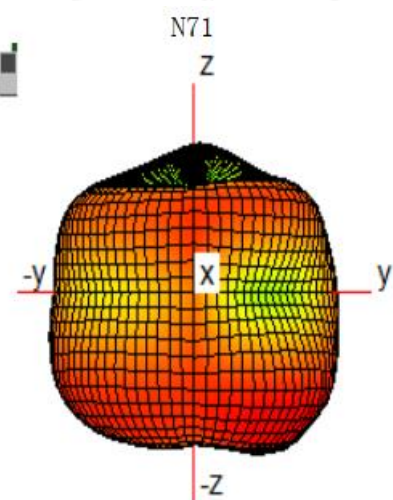
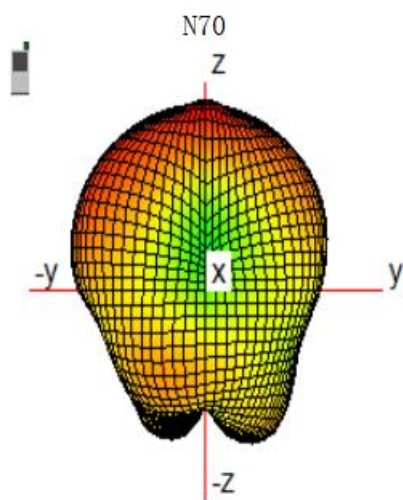
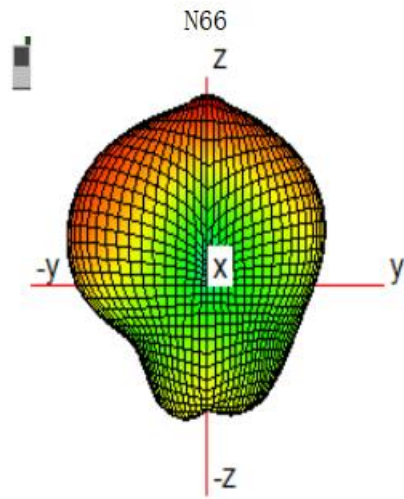
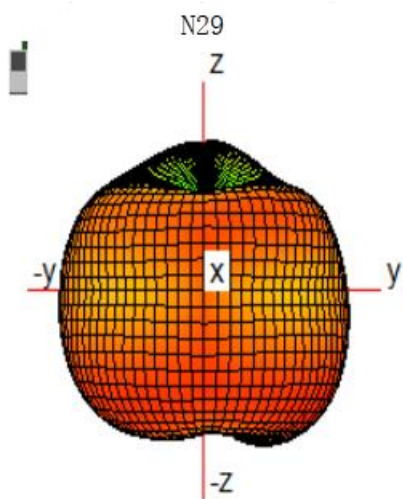
Antenna 6



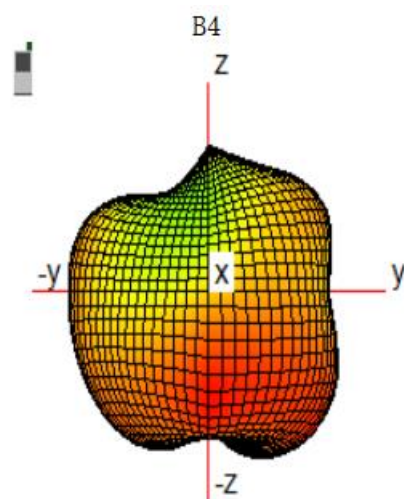
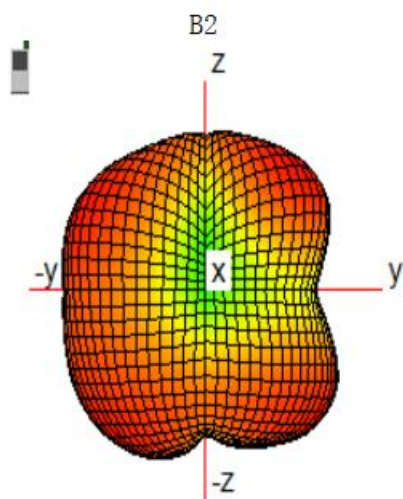
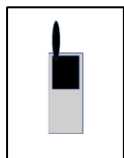
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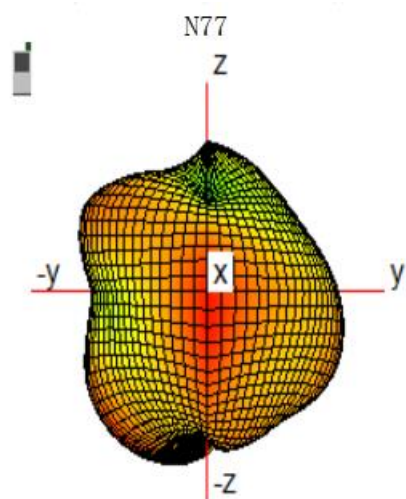
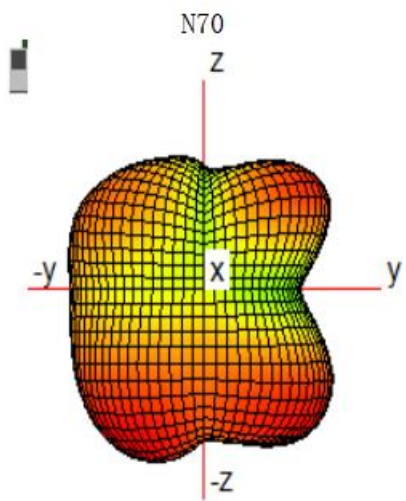
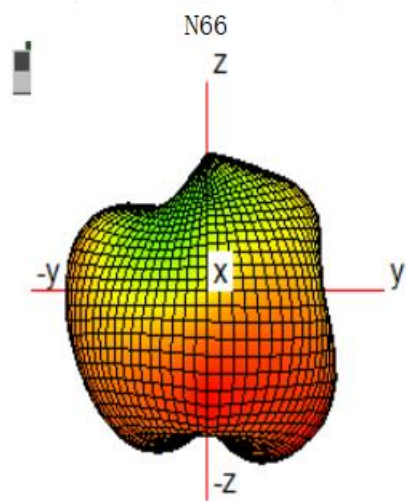
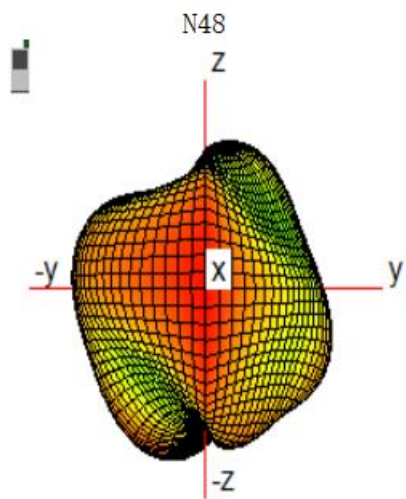
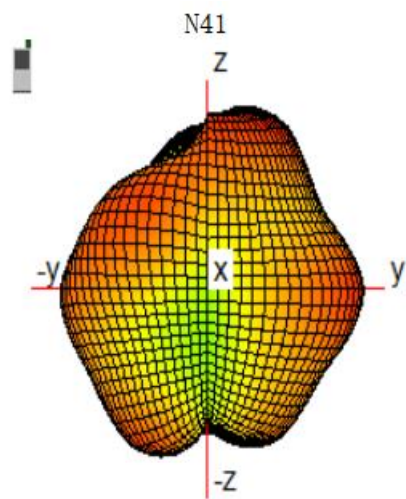






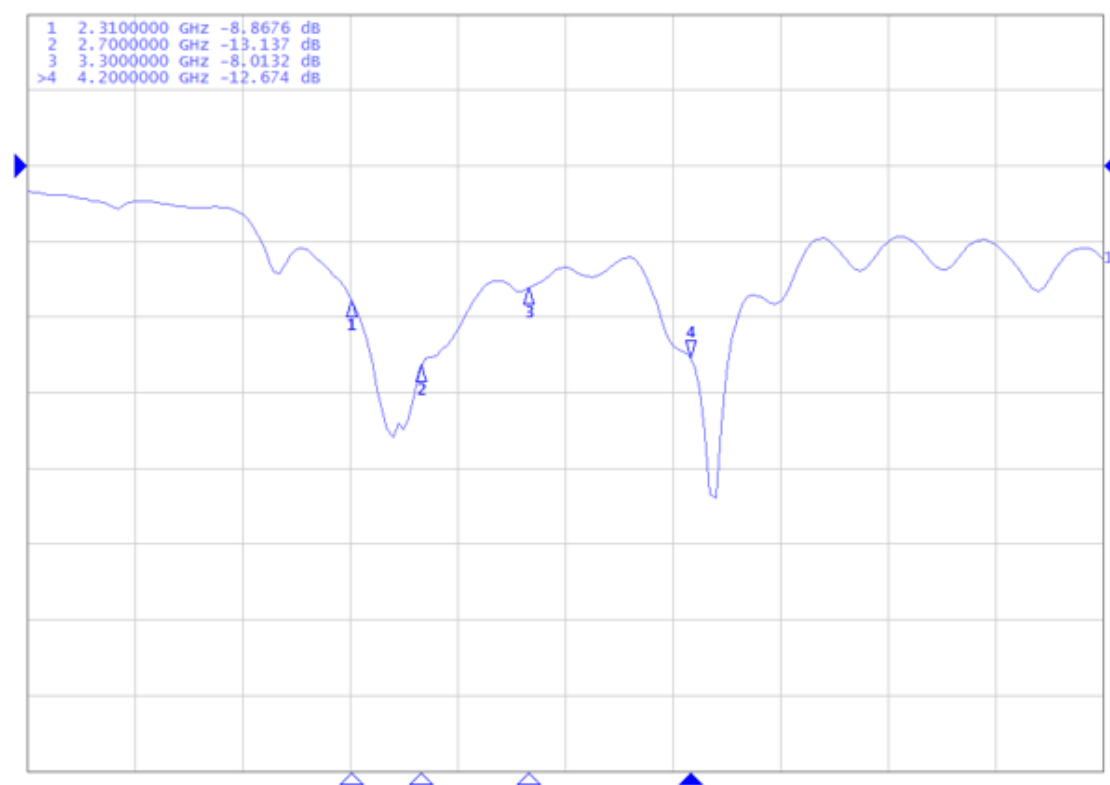
Antenna 7



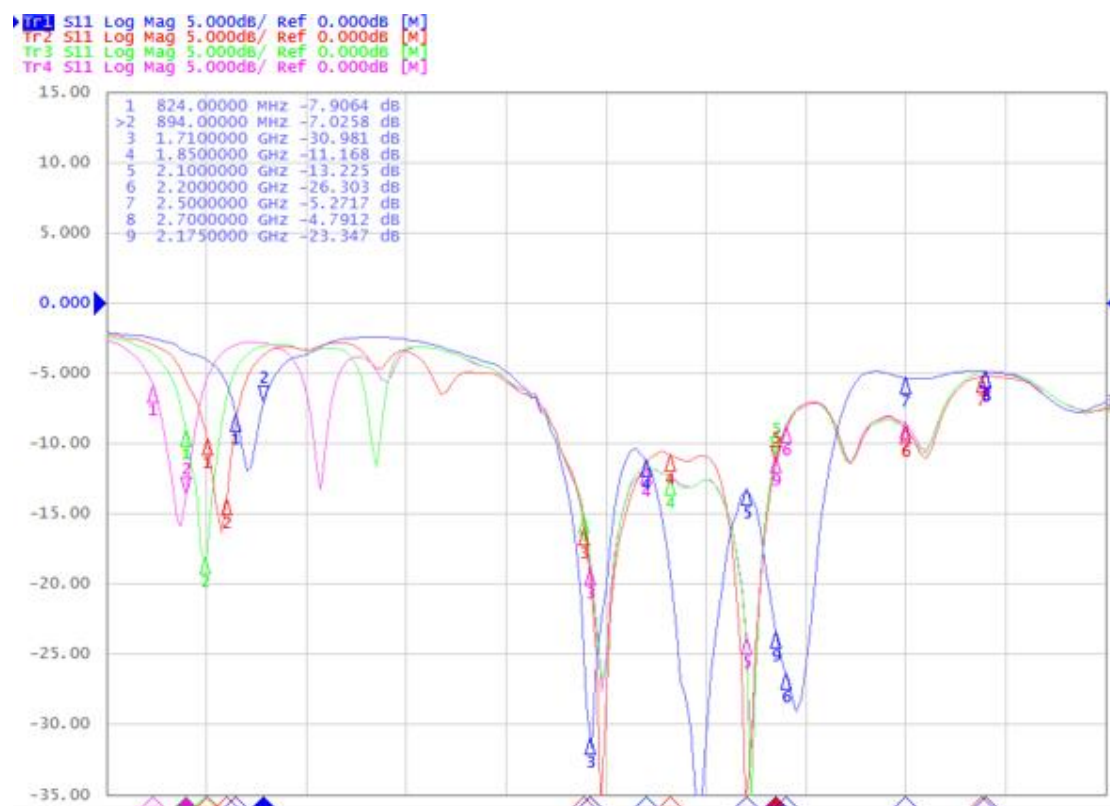


#### 4. Antenna return loss

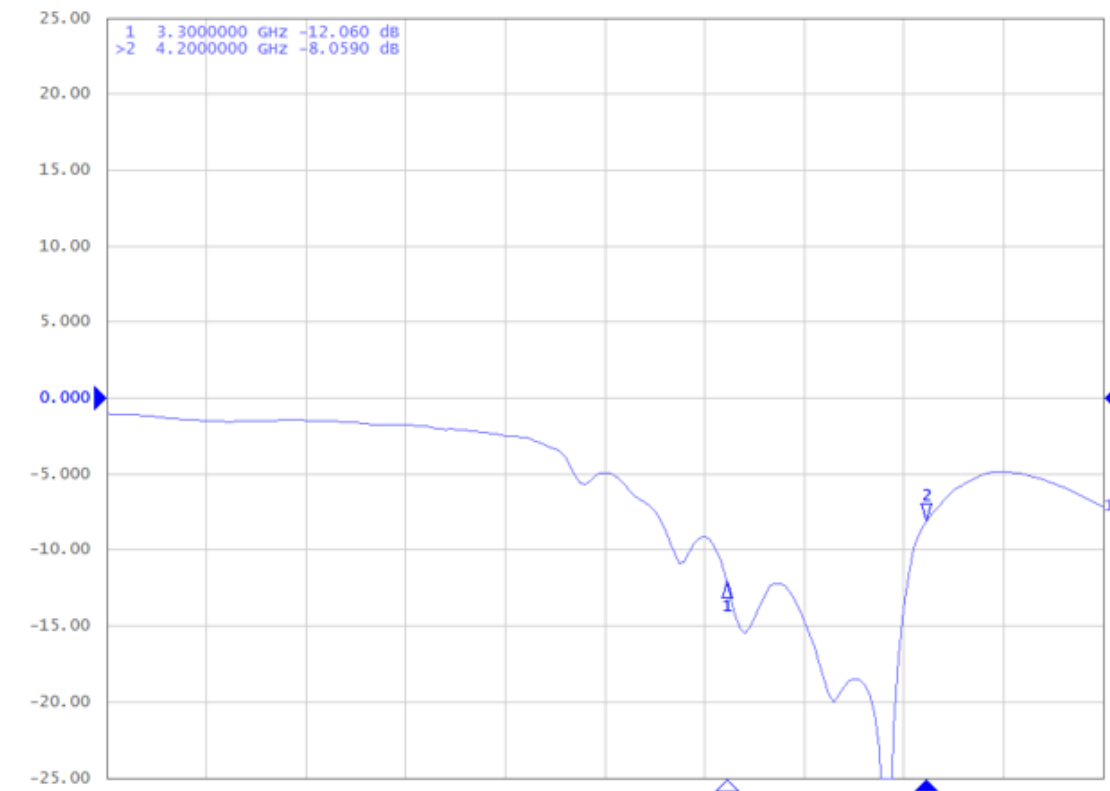
## Antenna 1



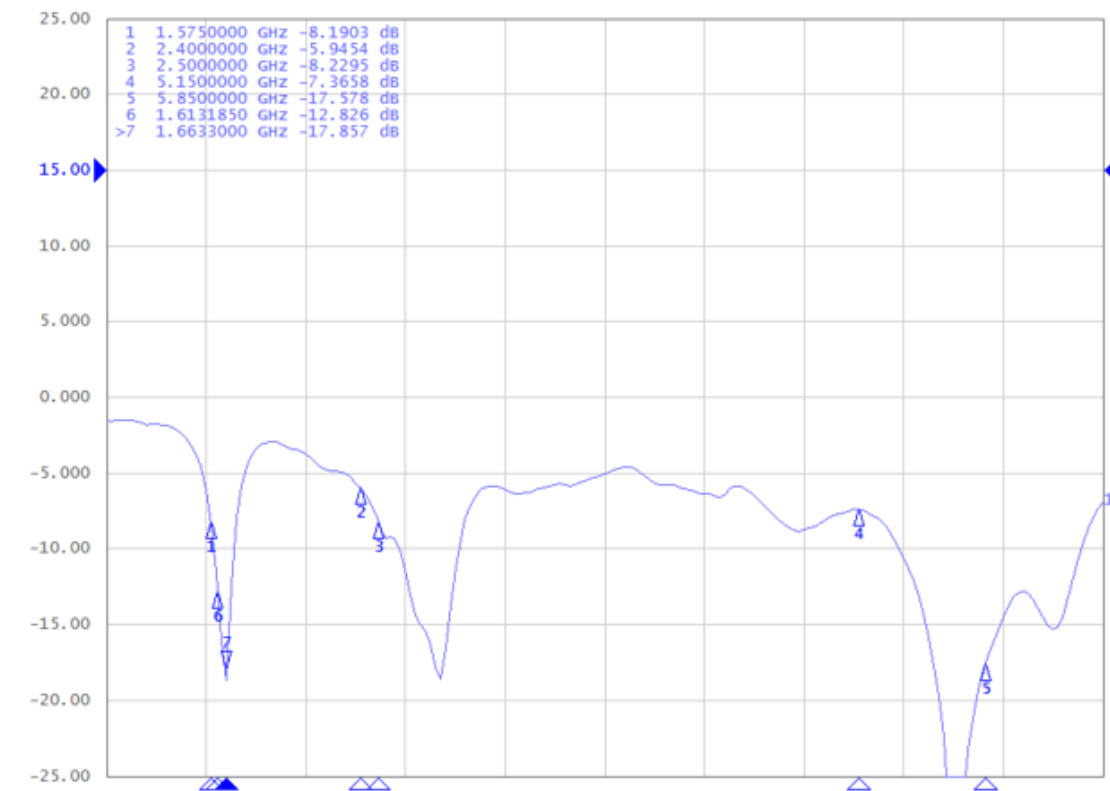
## Antenna 2



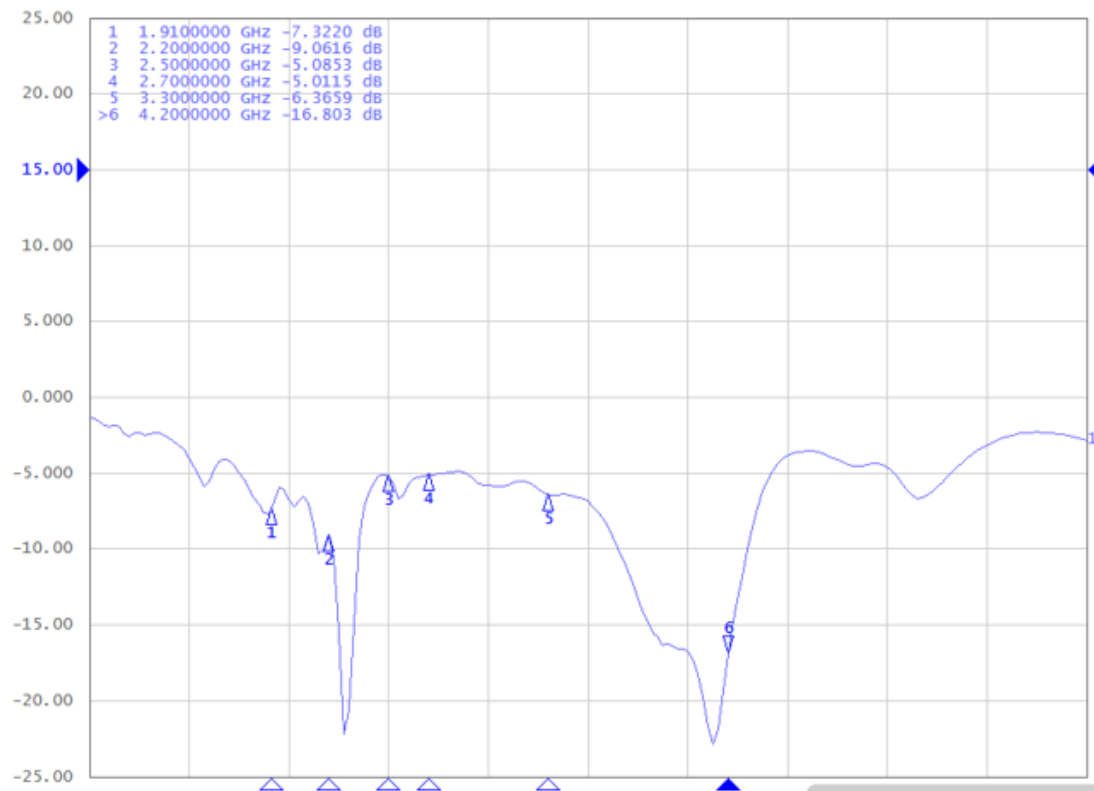
## Antenna3



Antenna 4

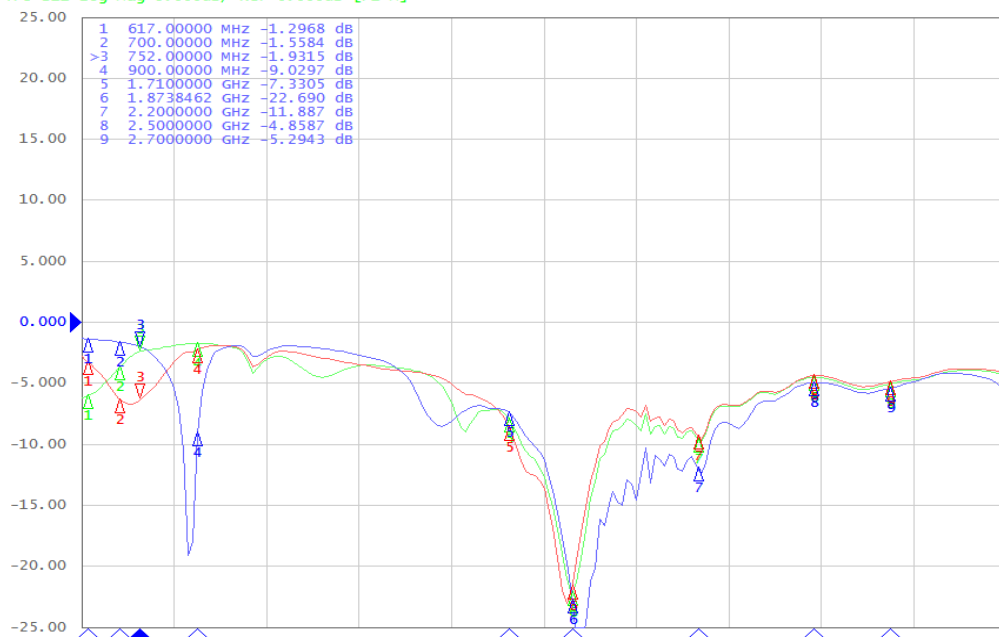


Antenna 5



Antenna 6

Tr1 S11 Log Mag 5.000dB/ Ref 0.000dB [F1 M]  
 Tr2 S11 Log Mag 5.000dB/ Ref 0.000dB [F1 M]  
 Tr3 S11 Log Mag 5.000dB/ Ref 0.000dB [F1 M]



Antenna 7

