

Project introduction

| | | | | | |
|---------------------|-------------------------------|---|----------------------|----------|-----|
| Product type | Tablet | | | | |
| Board type | Main board | | | | |
| Bands and material | main antenna | Bands | | material | |
| | | 2G | GSM850/900/1800/1900 | | FPC |
| | | 3G | WCDMA B1/2/5/8 | | |
| | 4G | LTE B1/2/3/4/5/7/8/12/13/17/25/26/28AB B66 | | | |
| | others | GWB | 1575.42MHz/2.450GHz | | FPC |
| | | DRX | 824MHz-2700MHz | | FPC |
| Performance request | carry out as customer request | | | | |

Active parameters of the main antenna

| Test | GSM 850 | | | EGSM 900 | | |
|-----------|---------|---------|---------|----------|--------|--------|
| Channel | 128 | 190 | 251 | 1 | 62 | 124 |
| TRP (dBm) | 26.43 | 26.03 | 25.78 | 25.77 | 23.98 | 23.32 |
| TIS (dBm) | -102.67 | -102.36 | -102.25 | -99.14 | -98.63 | -98.75 |

| Test | DCS 1800 | | | PCS 1900 | | |
|-----------|----------|---------|---------|----------|---------|---------|
| Channel | 512 | 698 | 885 | 512 | 661 | 810 |
| TRP (dBm) | 24.68 | 25.23 | 25.11 | 25.36 | 25.01 | 24.78 |
| TIS (dBm) | -103.11 | -102.88 | -102.45 | -103.46 | -102.65 | -102.27 |

Active parameters of the main antenna

| Test | WCDMA_I | | | WCDMA_II | | |
|-----------|---------|---------|---------|----------|---------|---------|
| Channel | 10562 | 10700 | 10838 | 9662 | 9800 | 9938 |
| TRP (dBm) | 17.13 | 17.09 | 16.88 | 18.24 | 17.66 | 17.32 |
| TIS (dBm) | -103.17 | -103.04 | -102.89 | -103.55 | -103.29 | -103.14 |

| Test | WCDMA_V | | | WCDMA_VIII | | |
|-----------|---------|---------|---------|------------|--------|--------|
| Channel | 4357 | 4408 | 4458 | 2937 | 3013 | 3088 |
| TRP (dBm) | 15.66 | 16.23 | 16.04 | 15.44 | 13.89 | 13.21 |
| TIS (dBm) | -103.09 | -102.56 | -102.26 | -99.77 | -98.22 | -97.71 |



Active parameters of the main antenna

| Test | FDD B1 | | | FDD B2 | | |
|-----------|--------|--------|--------|--------|--------|--------|
| Channel | 18050 | 18300 | 18550 | 18650 | 18900 | 19150 |
| TRP (dBm) | 18.22 | 17.78 | 17.44 | 17.55 | 18.14 | 18.26 |
| TIS (dBm) | -93.46 | -93.25 | -92.89 | -93.13 | -93.27 | -93.18 |

| Test | FDD B3 | | | FDD B4 | | |
|-----------|--------|--------|--------|--------|--------|--------|
| Channel | 19250 | 19575 | 19900 | 20050 | 20175 | 20350 |
| TRP (dBm) | 16.67 | 17.25 | 17.88 | 16.55 | 17.45 | 17.23 |
| TIS (dBm) | -93.44 | -93.32 | -92.55 | -93.51 | -93.28 | -93.04 |

| Test | FDD B5 | | | FDD B7 | | |
|-----------|--------|--------|--------|--------|--------|--------|
| Channel | 20450 | 20525 | 20600 | 20800 | 21100 | 21400 |
| TRP (dBm) | 15.77 | 16.13 | 16.04 | 18.22 | 18.11 | 18.05 |
| TIS (dBm) | -92.3 | -92.14 | -90.88 | -93.46 | -93.17 | -92.79 |

| Test | FDD B8 | | |
|-----------|--------|--------|--------|
| Channel | 21500 | 21650 | 21750 |
| TRP (dBm) | 15.32 | 14.09 | 13.26 |
| TIS (dBm) | -88.64 | -87.23 | -87.42 |

Active parameters of the main antenna

| Test | FDD B12 | | | FDD B13 | | |
|-----------|---------|--------|--------|---------|--------|--------|
| Channel | 23035 | 23095 | 23155 | 23130 | 23230 | 23330 |
| TRP (dBm) | 15.66 | 16.03 | 16.22 | 15.75 | 16.28 | 16.29 |
| TIS (dBm) | -91.11 | -91.45 | -90.48 | -91.43 | -90.89 | -90.65 |

| Test | FDD B17 | | | FDD B26 | | |
|-----------|---------|--------|--------|---------|--------|--------|
| Channel | 23780 | 23790 | 23800 | 26740 | 26865 | 26990 |
| TRP (dBm) | 15.74 | 16.11 | 16.31 | 15.63 | 16.22 | 16.14 |
| TIS (dBm) | -91.53 | -91.08 | -90.82 | -91.22 | -91.07 | -90.53 |

| Test | FDD B66 | | |
|-----------|---------|--------|--------|
| Channel | 132033 | 132322 | 132622 |
| TRP (dBm) | 17.32 | 17.55 | 17.66 |
| TIS (dBm) | -93.42 | -92.78 | -92.28 |

Active parameters of the main antenna

| Test | FDD B28A | | | FDD B28B | | |
|-----------|----------|--------|--------|----------|--------|--------|
| Channel | 27260 | 27360 | 27460 | 27410 | 27510 | 27610 |
| TRP (dBm) | 15.69 | 15.88 | 16.14 | 15.51 | 16.04 | 16.32 |
| TIS (dBm) | -91.43 | -90.89 | -90.52 | -90.75 | -90.66 | -90.22 |

| Test | FDD B25 | | |
|-----------|---------|--------|--------|
| Channel | 26365 | 26640 | 26090 |
| TRP (dBm) | 17.56 | 18.14 | 18.23 |
| TIS (dBm) | -92.27 | -92.66 | -92.29 |








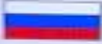










customer standard

| 2G | TRP | TIS |
|---------|-----|------|
| GSM850 | 26 | -102 |
| EGSM900 | 26 | -102 |
| DCS1800 | 24 | -102 |
| PCS1900 | 24 | -102 |

| 3G | TRP | TIS |
|----|-----|------|
| B1 | 17 | -103 |
| B2 | 17 | -103 |
| B5 | 16 | -102 |
| B8 | 16 | -102 |

| FDD LTE | TRP | TIS |
|---------|-----|-----|
| B1 | 16 | -93 |
| B2 | 16 | -93 |
| B3 | 16 | -93 |
| B4 | 16 | -93 |
| B5 | 16 | -91 |
| B7 | 16 | -93 |
| B8 | 16 | -91 |
| B12 | 16 | -91 |
| B13 | 16 | -91 |
| B17 | 16 | -91 |
| B28 | 16 | -91 |
| B66 | 16 | -91 |

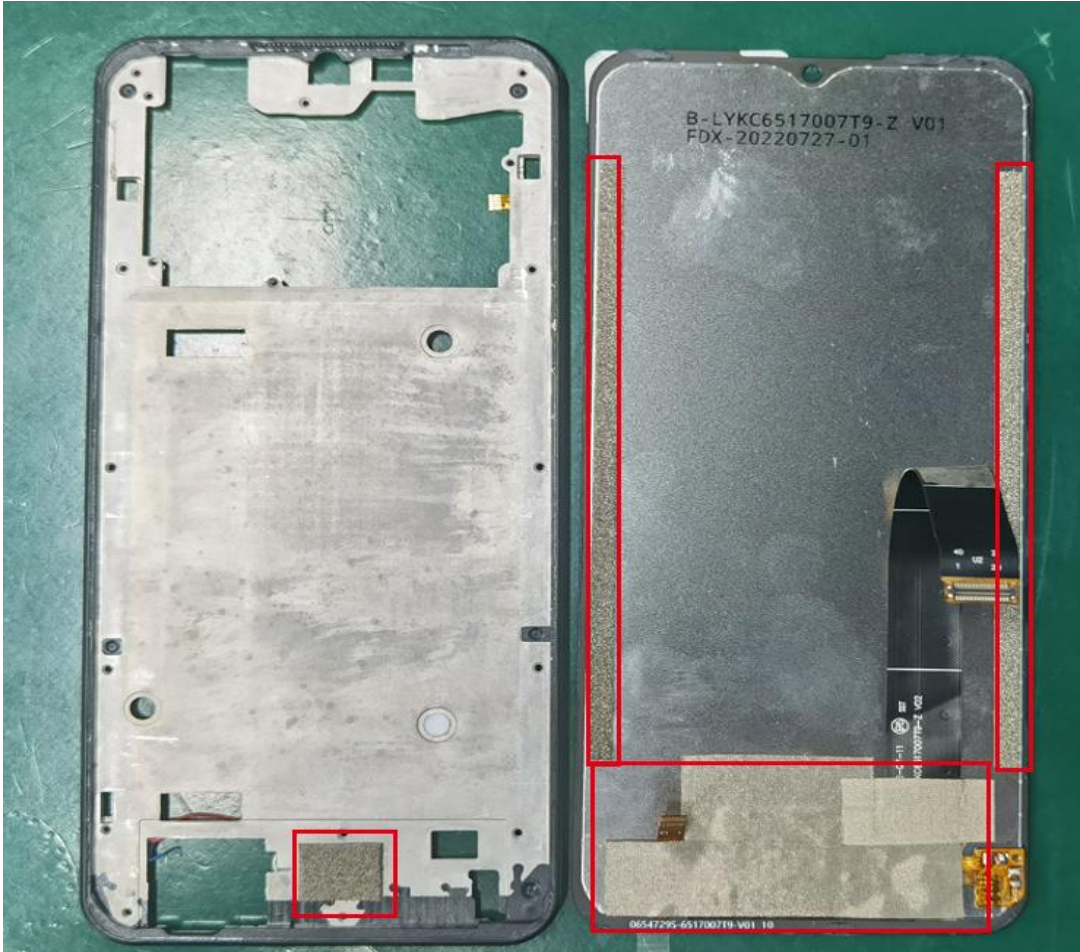
GPS testing

| | | | | | |
|---|----|----|------|-------|--------|
|  | 22 | L1 | 31.2 | 38.00 | 148.00 |
|  | 26 | L1 | 40.6 | 47.00 | 21.00 |
|  | 27 | L1 | 32.1 | 55.00 | 171.00 |
|  | 31 | L1 | 22.6 | 35.00 | 76.00 |
|  | 32 | L1 | 18.6 | 8.00 | 148.00 |
|  | 65 | L1 | 0.0 | 54.00 | 273.00 |
|  | 66 | L1 | 23.1 | 15.00 | 327.00 |
|  | 72 | L1 | 29.9 | 37.00 | 194.00 |
|  | 75 | L1 | 35.7 | 37.00 | 356.00 |
|  | 76 | L1 | 36.9 | 21.00 | 292.00 |
|  | 84 | L1 | 22.1 | 15.00 | 50.00 |
|  | 85 | L1 | 40.2 | 30.00 | 112.00 |
|  | 1 | L1 | 35.0 | 46.00 | 125.00 |
|  | 2 | L1 | 0.0 | 47.00 | 236.00 |
|  | 3 | L1 | 0.0 | 61.00 | 189.00 |
|  | 4 | L1 | 28.2 | 32.00 | 111.00 |

switch logic

| | | |
|-------------|-------|----------------|
| RF1 (0欧) | GSM | 900/1800 |
| | WCDMA | B8 |
| | LTE | B3/4/8/66 |
| RF2 (4.7NH) | GSM | 850 |
| | WCDMA | B5 |
| | LTE | B5/26 |
| RF3 (NC) | LTE | B12/13/17/28AB |
| RF4 (3.9PF) | GSM | 1900 |
| | WCDMA | B1/2 |
| | LTE | B1/2/7/25 |

Antenna environment treatment and improvement

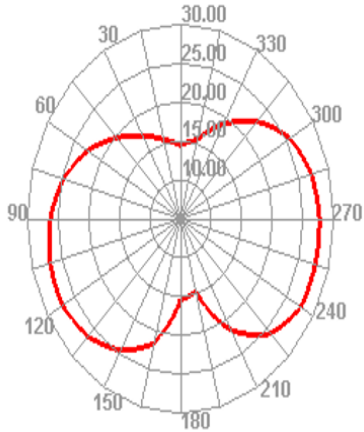


antenna gain

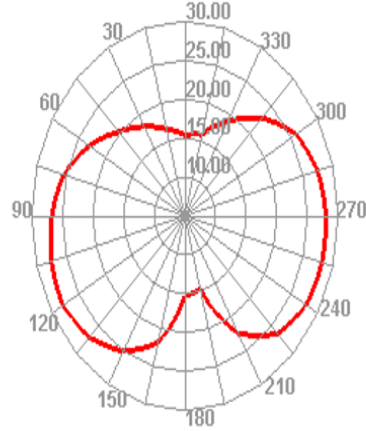
| Band | Gain (MAX) | | |
|-----------------|--------------|----------------|-------------|
| GSM850 | 0.53 | LTE B8 | 0.49 |
| EGSM900 | 0.49 | LTE B12 | 0.42 |
| DCS1800 | 0.41 | LTE B13 | 0.42 |
| PCS1900 | 0.38 | LTE B17 | 0.42 |
| WCDMA B1 | 0.44 | LTE B25 | 0.38 |
| WCDMA B2 | 0.38 | LTE B26 | 0.53 |
| WCDMA B5 | 0.53 | LTE B28 | 0.42 |
| WCDMA B8 | 0.49 | LTE B66 | 0.41 |
| LTE B1 | 0.44 | GPS | 1.22 |
| LTE B2 | 0.38 | WiFi | 1.11 |
| LTE B3 | 0.41 | BT | 1.11 |
| LTE B4 | 0.42 | | |
| LTE B5 | 0.53 | | |
| LTE B7 | 0.47 | | |

data graph

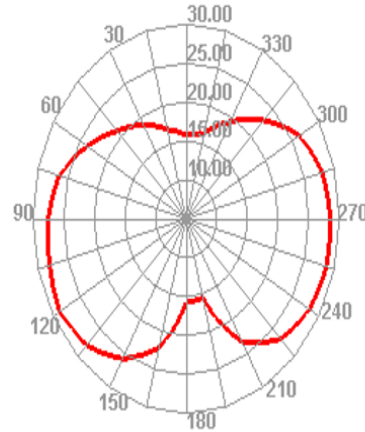
GSM850 128 TRP Phi=45



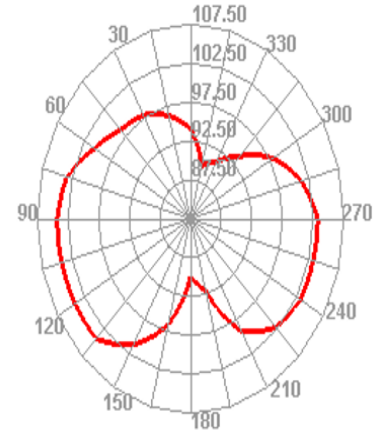
GSM850 190 TRP Phi=45



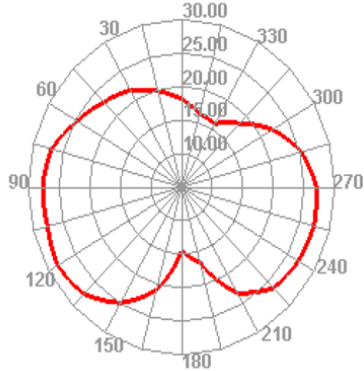
GSM850 251 TRP Phi=45



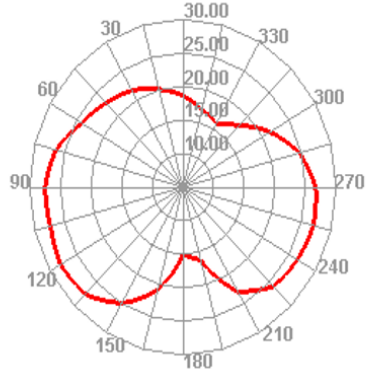
GSM850 251 TIS Phi=45



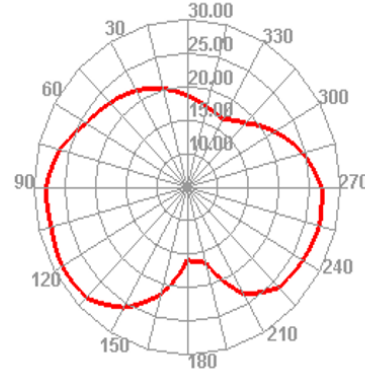
EGSM 1 TRP Phi=45



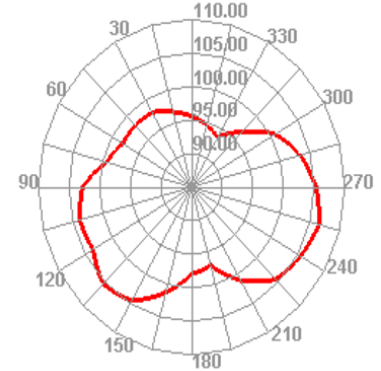
EGSM 62 TRP Phi=45



EGSM 124 TRP Phi=45

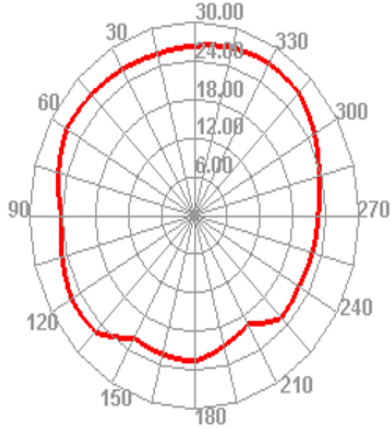


EGSM 124 TIS Phi=45

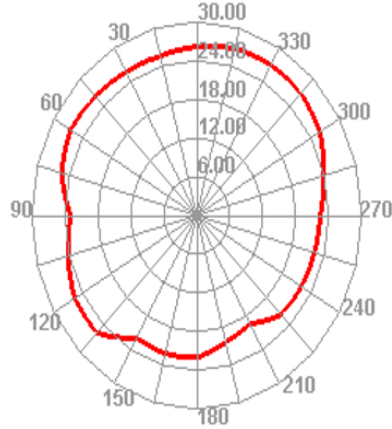


data graph

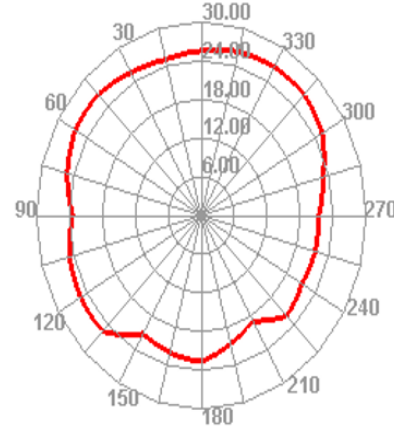
DCS 512 TRP Phi=45



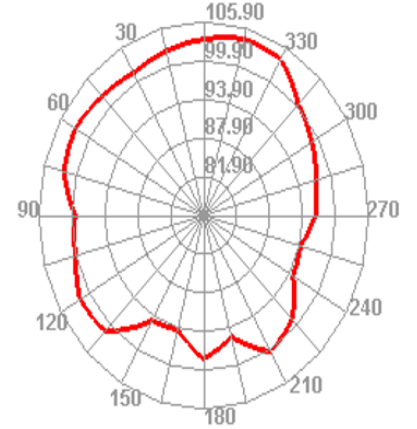
DCS 698 TRP Phi=45



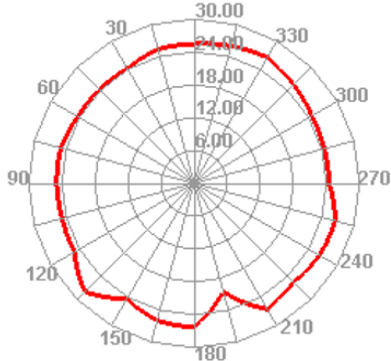
DCS 885 TRP Phi=45



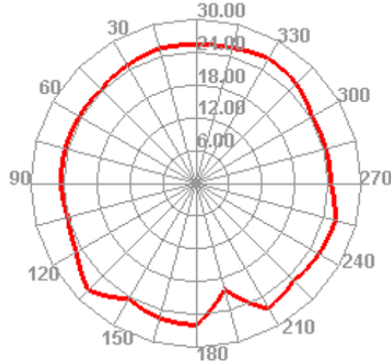
DCS 885 TIS Phi=45



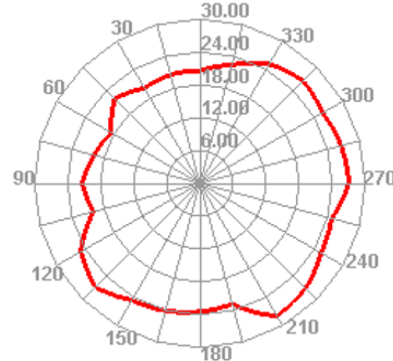
PCS 512 TRP Phi=45



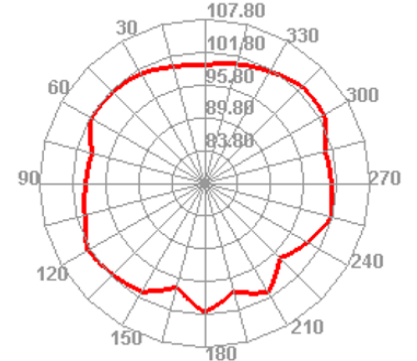
PCS 661 TRP Phi=45



PCS 810 TRP Phi=45

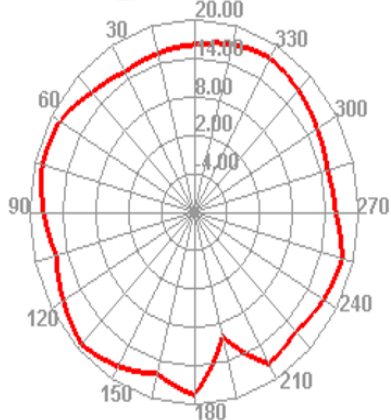


PCS 810 TIS Phi=45

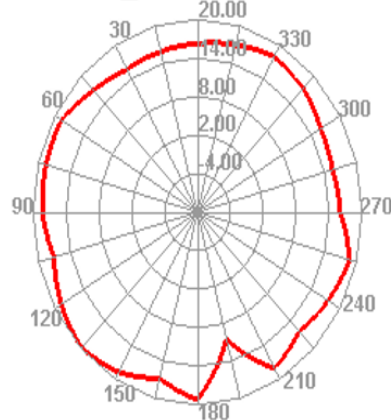


data graph

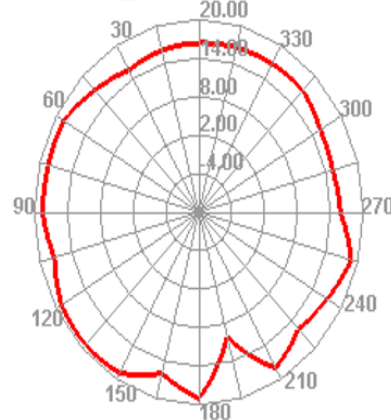
WCDMA_I 9612 TRP Phi=45



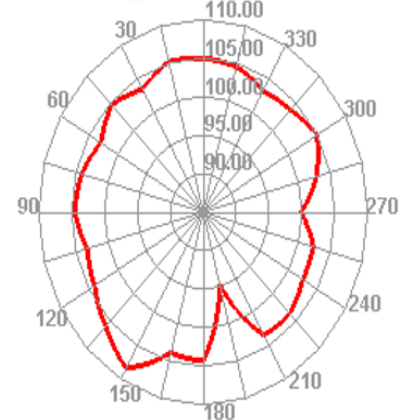
WCDMA_I 9750 TRP Phi=45



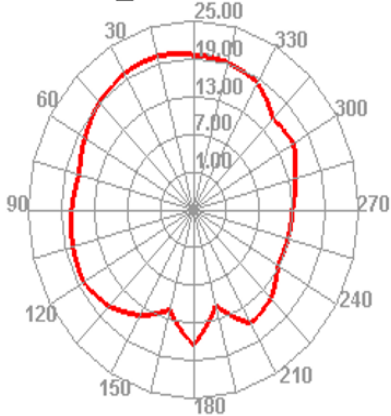
WCDMA_I 9888 TRP Phi=45



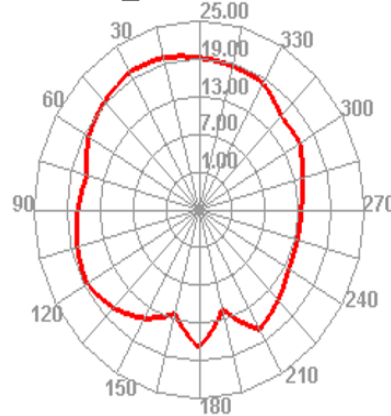
WCDMA_I 10838 TIS Phi=45



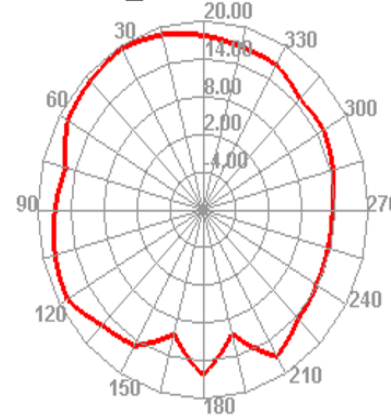
WCDMA_II 9262 TRP Phi=45



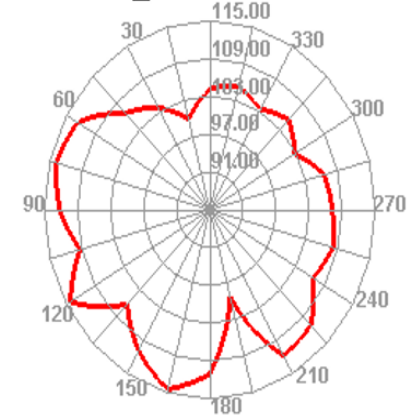
WCDMA_II 9400 TRP Phi=45



WCDMA_II 9538 TRP Phi=45

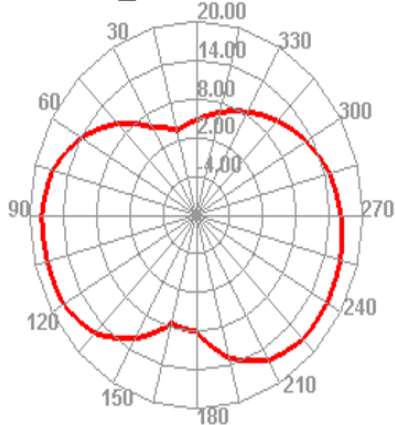


WCDMA_II 9938 TIS Phi=45

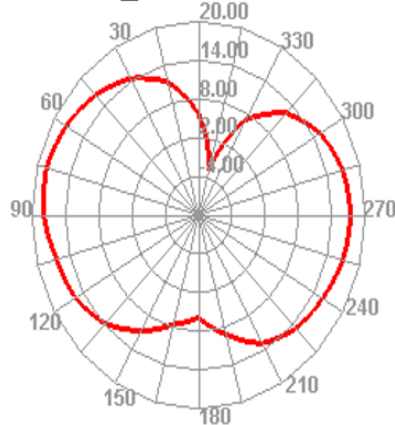


data graph

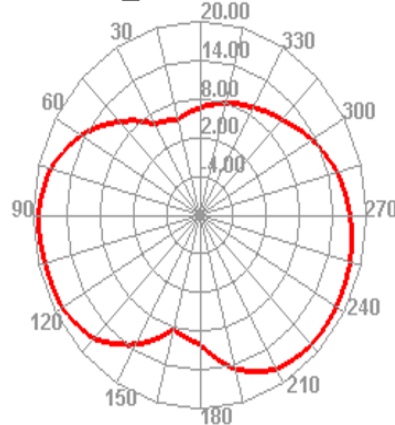
WCDMA_V 4132 TRP Phi=45



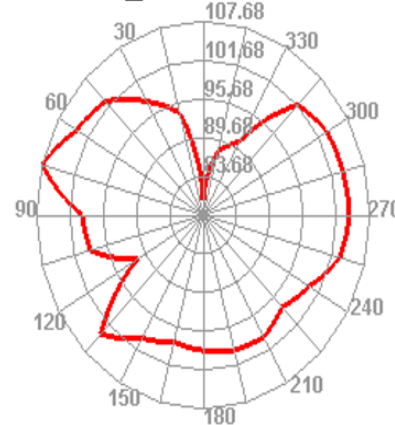
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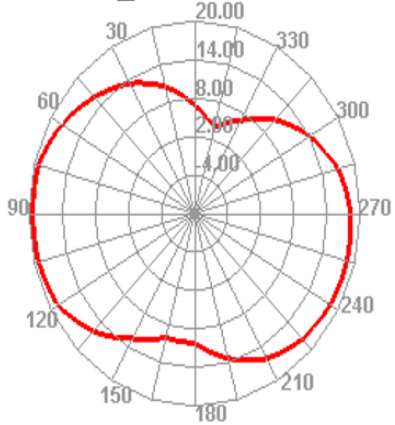
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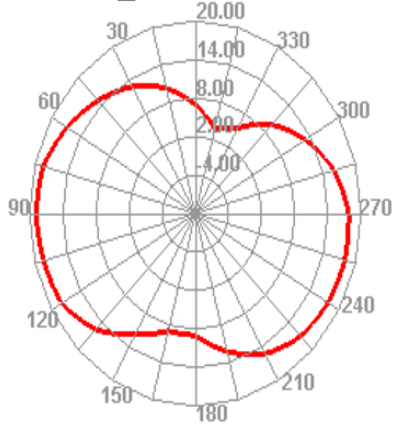
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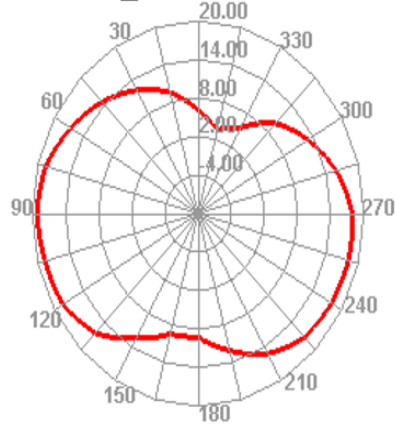
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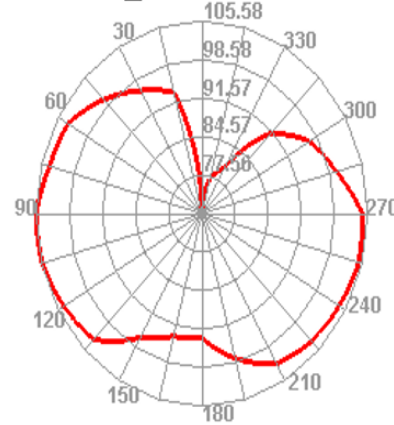
WCDMA_VIII 2788 TRP Phi=45



WCDMA_VIII 2863 TRP Phi=45

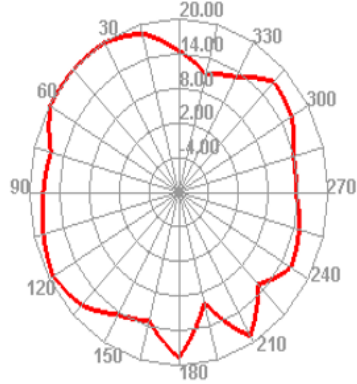


WCDMA_VIII 3088 TIS Phi=45

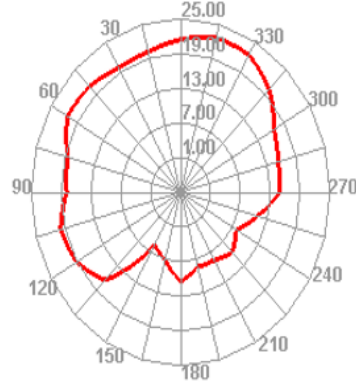


data graph

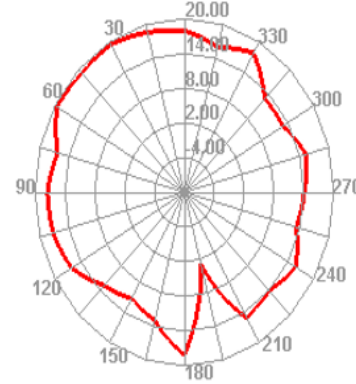
LTE1 18050 TRP Phi=45



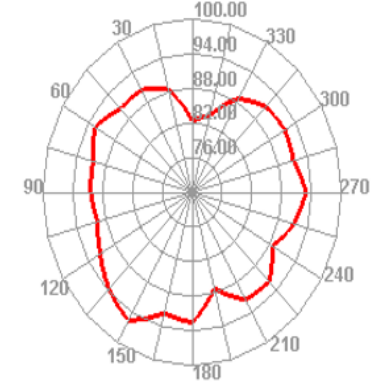
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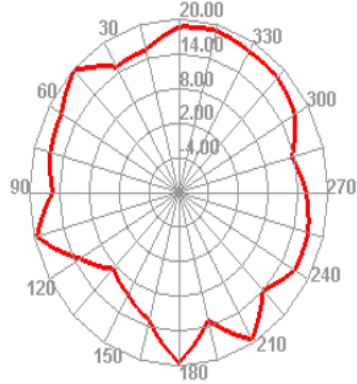
LTE1 18550 TRP Phi=45



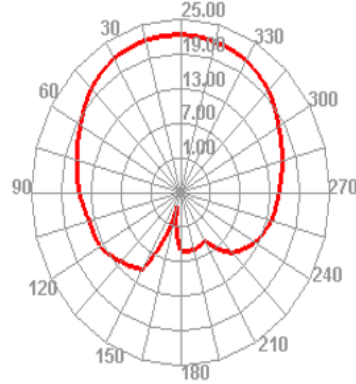
LTE1 550 TIS Phi=45



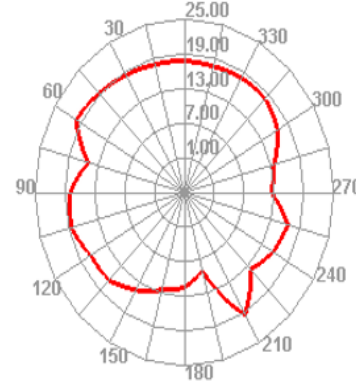
LTE2 18650 TRP Phi=45



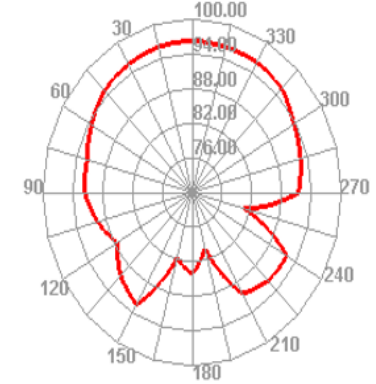
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LTE2 19150 TRP Phi=45

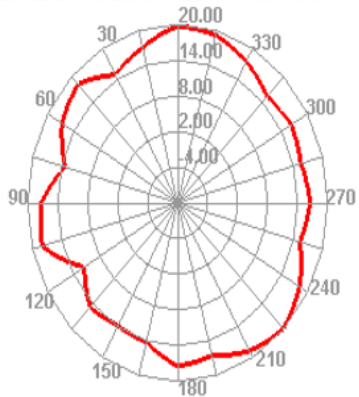


LTE2 1150 TIS Phi=45

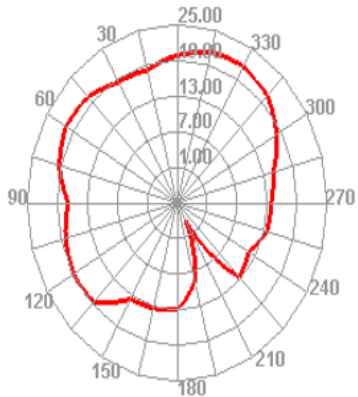


data graph

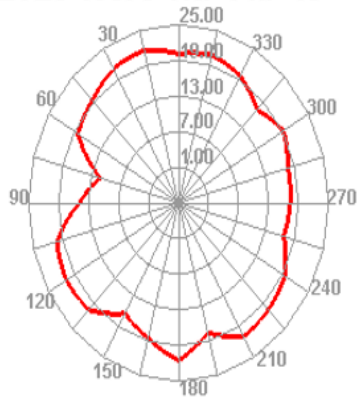
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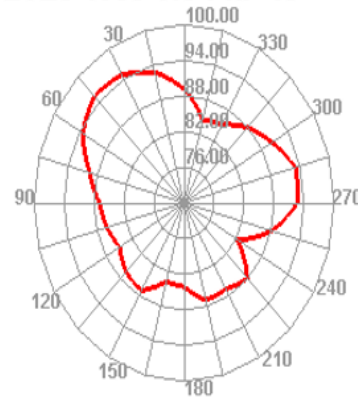
LTE3 19575 TRP Phi=45



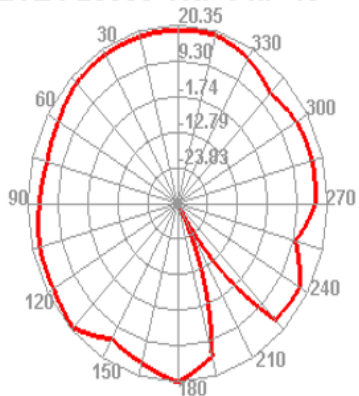
LTE3 19575 TRP Phi=45



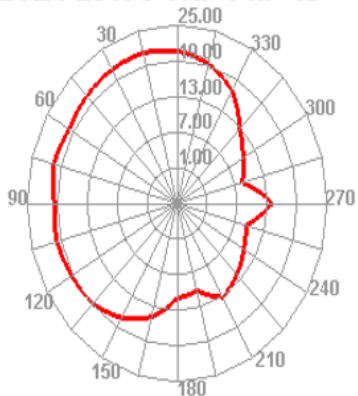
LTE3 1900 TIS Phi=45



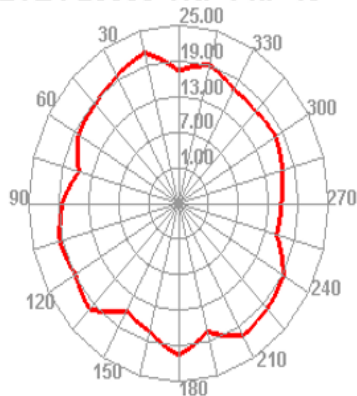
LTE4 20000 TRP Phi=45



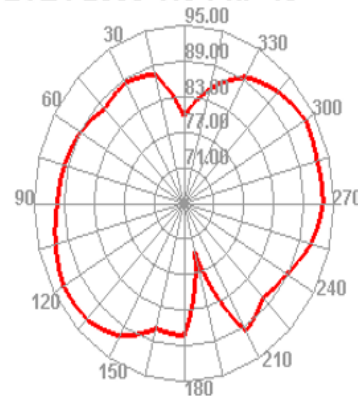
LTE4 20175 TRP Phi=45



LTE4 20350 TRP Phi=45

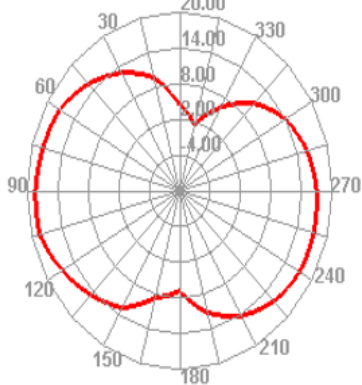


LTE4 2350 TIS Phi=45

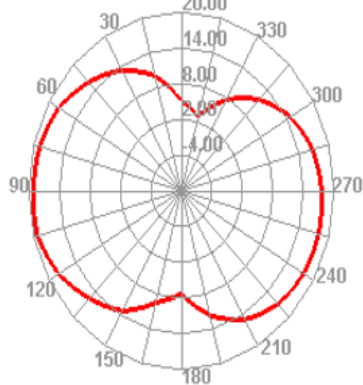


data graph

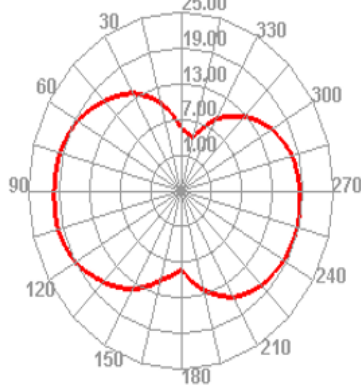
LTE5 20450 TRP Phi=45



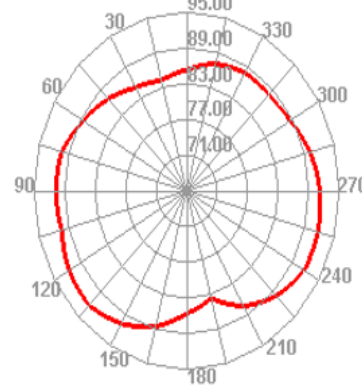
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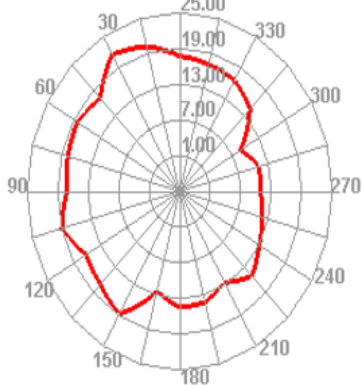
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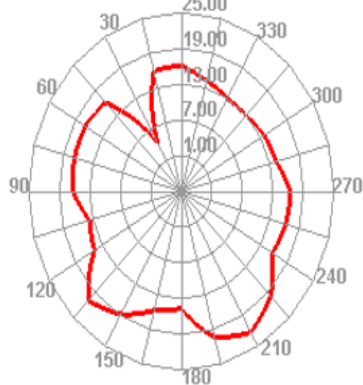
LTE5 2600 TIS Phi=45



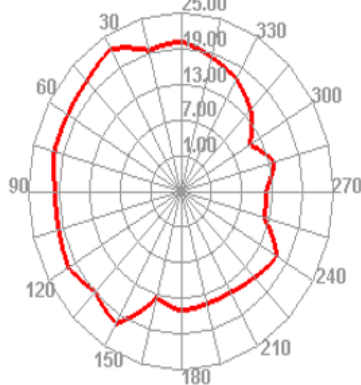
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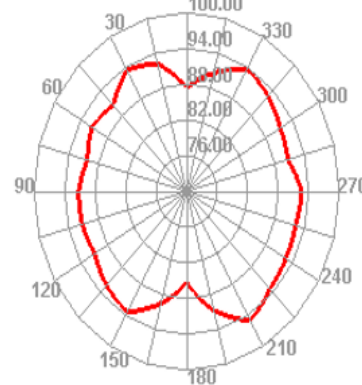
LTE7 21100 TRP Phi=45



LTE7 21400 TRP Phi=45

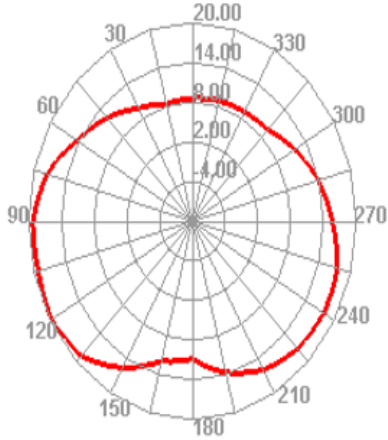


LTE7 3400 TIS Phi=45

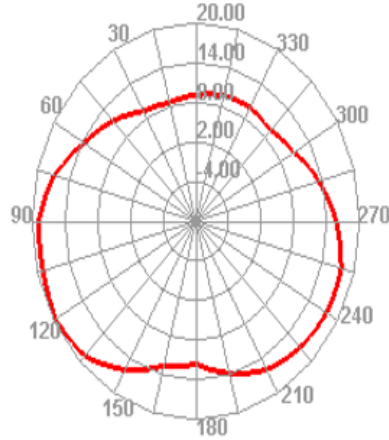


data graph

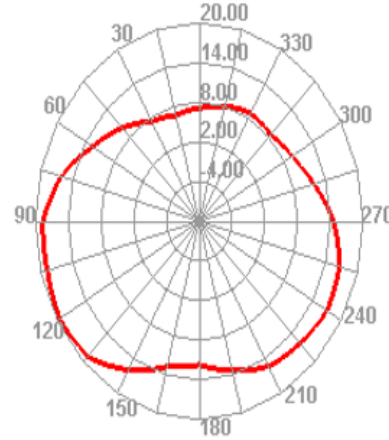
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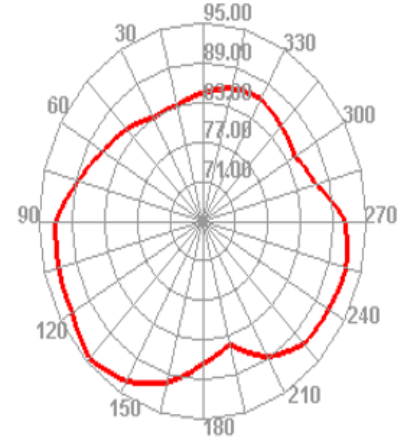
LTE8 21625 TRP Phi=45



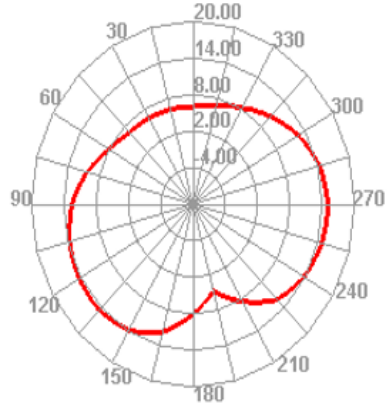
LTE8 21750 TRP Phi=45



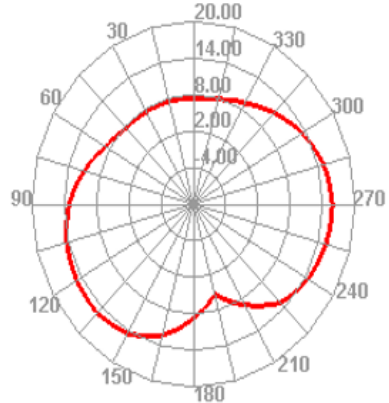
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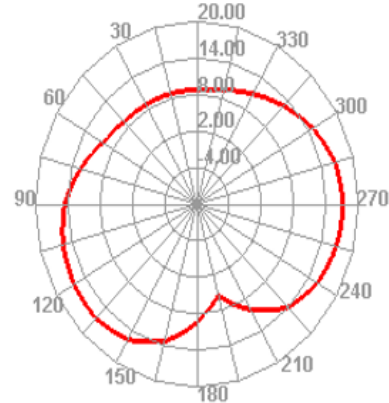
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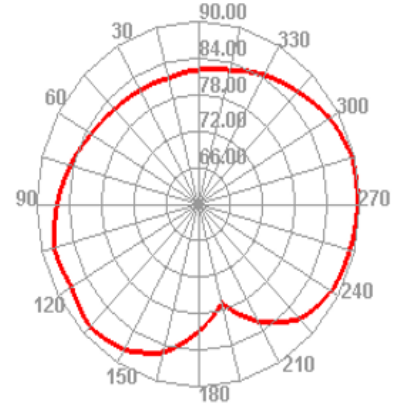
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LTE12 23130 TRP Phi=45

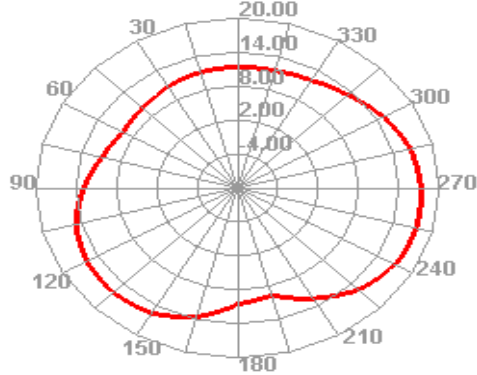


LTE12 5130 TIS Phi=45

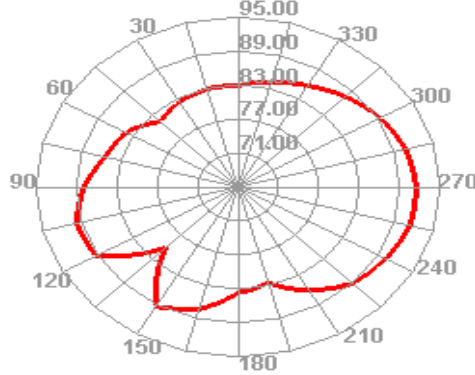


data graph

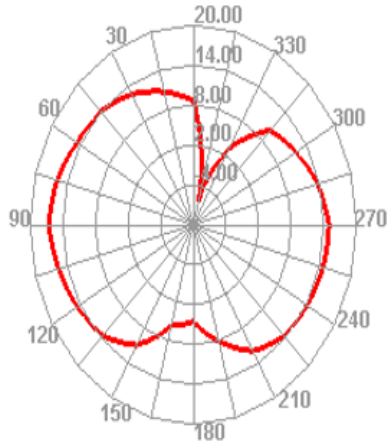
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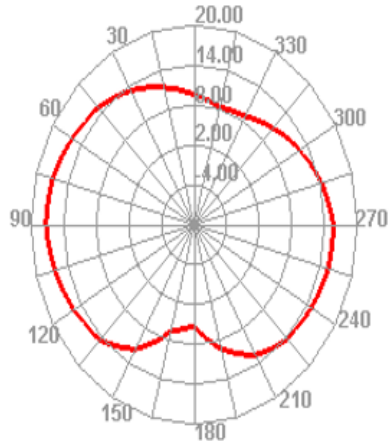
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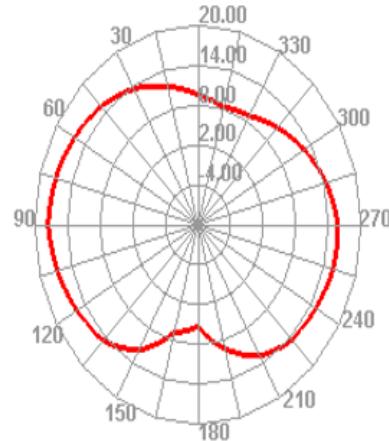
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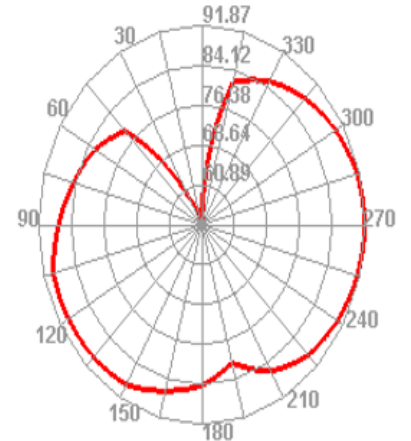
LTE17 23790 TRP Phi=45



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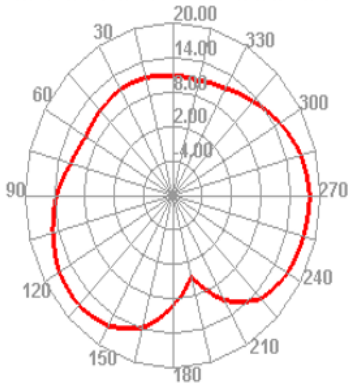


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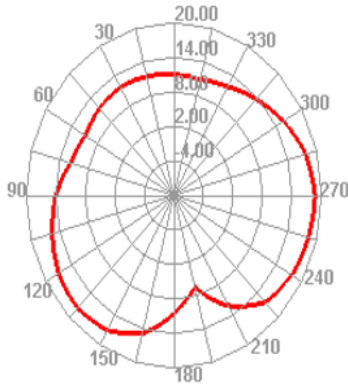


data graph

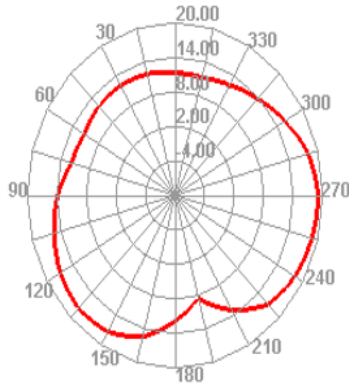
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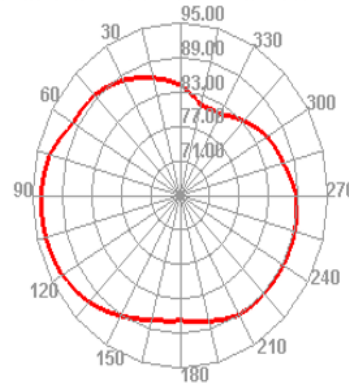
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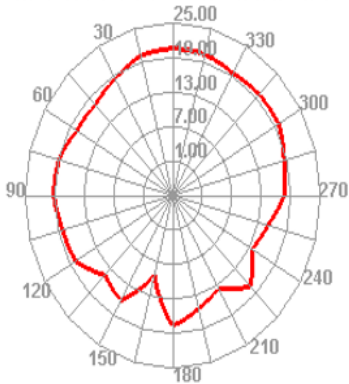
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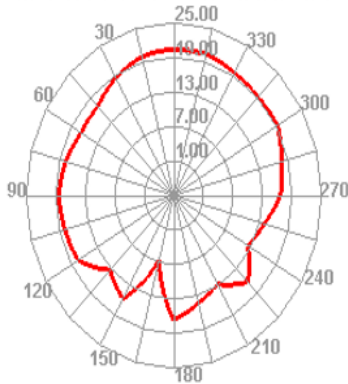
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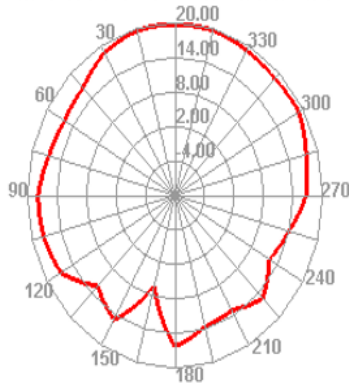
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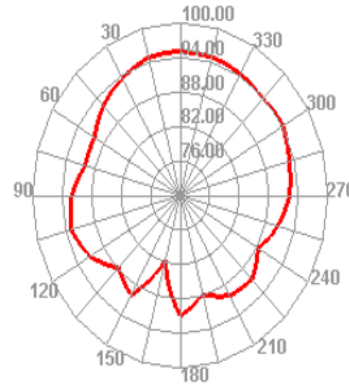
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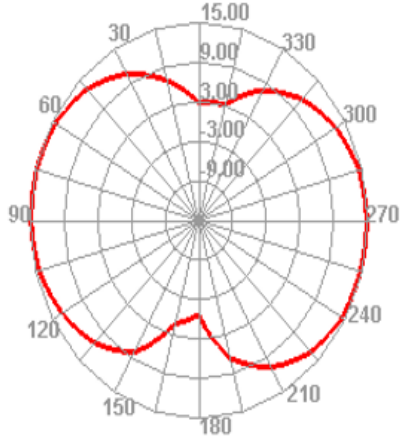


LTE25 8640 TIS Phi=45

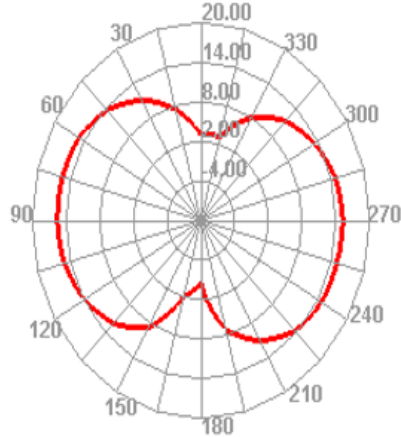


data graph

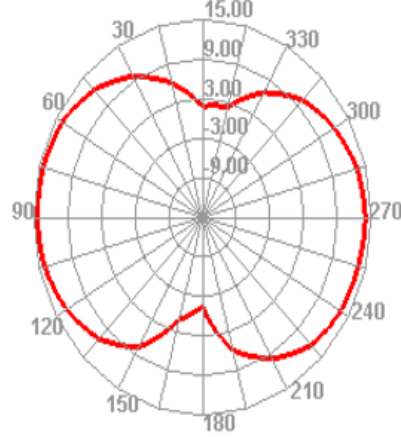
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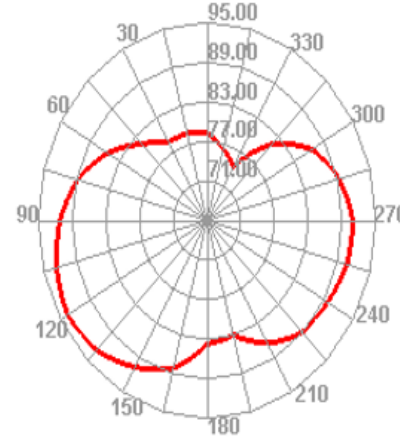
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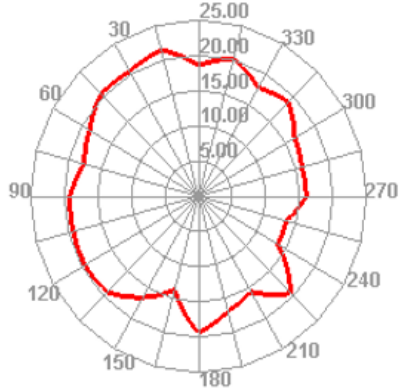
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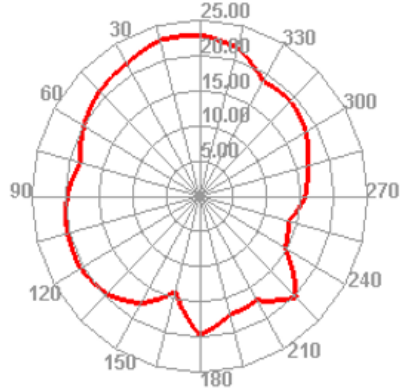
LTE28 9610 TIS Phi=45



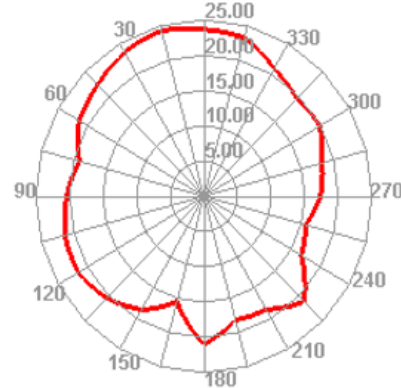
LTE66 132022 TRP Phi=45



LTE66 132322 TRP Phi=45



LTE66 132622 TRP Phi=45



LTE66 67086 TIS Phi=45

