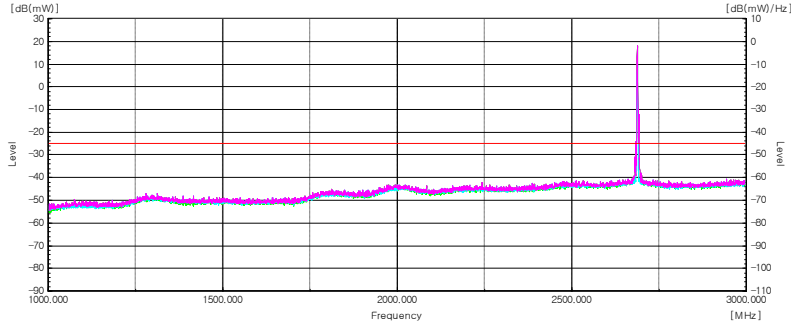
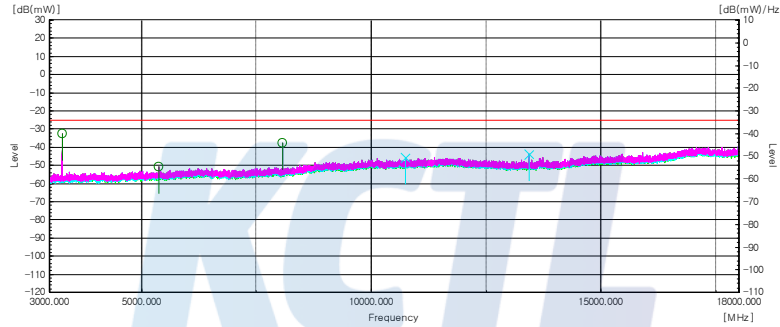


Test mode : LTE Band41
Frequency(MHz) : 2 687.5
Channel : 41565

1 000 MHz to 3 000 MHz



Above 3 000 MHz



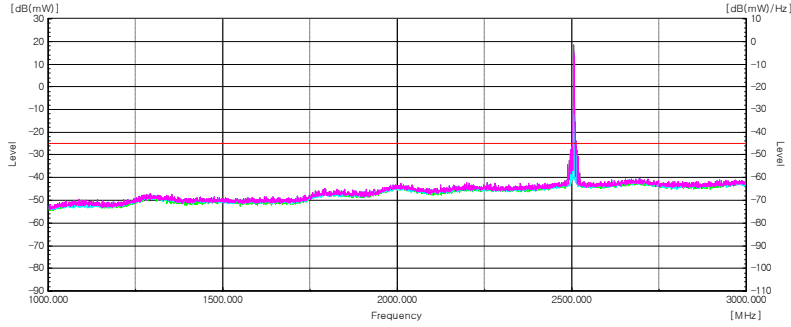
| Mode | Bandwidth | Frequency | Pol. | Antenna Gain | Cable loss | Substitute Level | Level | Limit | Margin |
|-------|-----------|------------|-------|--------------|------------|------------------|--------|--------|--------|
| | [MHz] | [MHz] | [V/H] | [dBi] | [dB] | [dBm] | [dB] | [dBm] | [dB] |
| 16QAM | 5 | 3 278.019 | H | 9.3 | 7.65 | -34.45 | -32.80 | -25.00 | 7.80 |
| | | 5 375.158 | H | 11.1 | 10.88 | -51.22 | -51.00 | -25.00 | 26.00 |
| | | 8 063.337 | H | 11.5 | 13.75 | -35.45 | -37.70 | -25.00 | 12.70 |
| | | 10 749.516 | V | 12.8 | 15.40 | -42.90 | -45.50 | -25.00 | 20.50 |
| | | 13 437.695 | V | 12.7 | 17.11 | -39.49 | -43.90 | -25.00 | 18.90 |

Note.

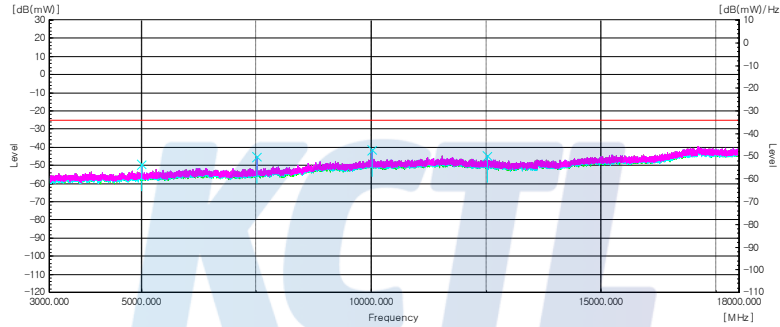
1. Limit Calculation(dBm)= 55 + 10log(P_[watts]) [dBc]
2. No spurious emission were detected 1 000 MHz to 3 000 MHz.

Test mode : LTE Band41
Frequency(MHz) : 2 501.0
Channel : 39700

1 000 MHz to 3 000 MHz



Above 3 000 MHz



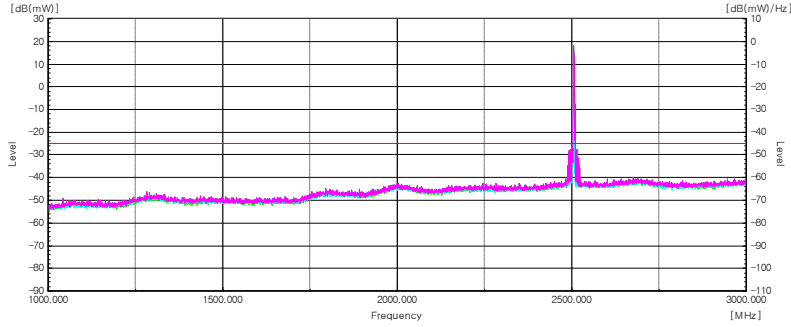
| Mode | Bandwidth | Frequency | Pol. | Antenna Gain | Cable loss | Substitute Level | Level | Limit | Margin |
|------|-----------|------------|-------|--------------|------------|------------------|--------|--------|--------|
| | [MHz] | [MHz] | [V/H] | [dBi] | [dB] | [dBm] | [dB] | [dBm] | [dB] |
| QPSK | 10 | 5 011.134 | V | 10.9 | 10.46 | -49.94 | -49.50 | -25.00 | 24.50 |
| | | 7 516.301 | V | 11.0 | 13.24 | -43.16 | -45.40 | -25.00 | 20.40 |
| | | 10 021.467 | V | 12.2 | 14.88 | -38.82 | -41.50 | -25.00 | 16.50 |
| | | 12 526.634 | V | 13.5 | 16.52 | -41.88 | -44.90 | -25.00 | 19.90 |

Note.

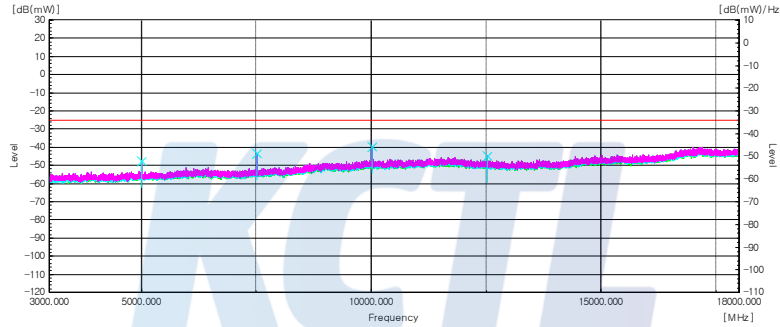
1. Limit Calculation(dBm)= 55 + 10log(P_[Watts]) [dBc]
2. No spurious emission were detected 1 000 MHz to 3 000 MHz.

Test mode : LTE Band41
Frequency(MHz) : 2 501.0
Channel : 39700

1 000 MHz to 3 000 MHz



Above 3 000 MHz



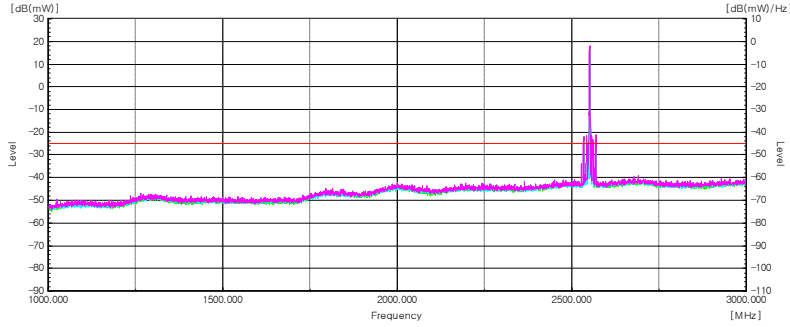
| Mode | Bandwidth | Frequency | Pol. | Antenna Gain | Cable loss | Substitute Level | Level | Limit | Margin |
|-------|-----------|------------|-------|--------------|------------|------------------|--------|--------|--------|
| | [MHz] | [MHz] | [V/H] | [dBi] | [dB] | [dBm] | [dB] | [dBm] | [dB] |
| 16QAM | 10 | 5 011.134 | V | 10.9 | 10.46 | -48.24 | -47.80 | -25.00 | 22.80 |
| | | 7 516.301 | V | 11.0 | 13.24 | -41.16 | -43.40 | -25.00 | 18.40 |
| | | 10 021.467 | V | 12.2 | 14.88 | -37.02 | -39.70 | -25.00 | 14.70 |
| | | 12 526.634 | V | 13.5 | 16.52 | -41.78 | -44.80 | -25.00 | 19.80 |

Note.

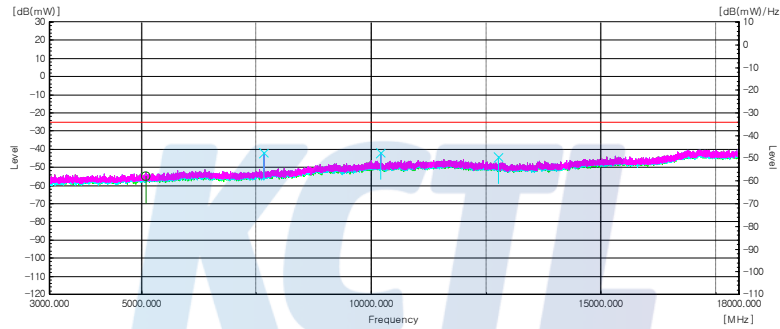
1. Limit Calculation(dBm)= 55 + 10log(P_[Watts]) [dBc]
2. No spurious emission were detected 1 000 MHz to 3 000 MHz.

Test mode : LTE Band41
Frequency(MHz) : 2 547.0
Channel : 40160

1 000 MHz to 3 000 MHz



Above 3 000 MHz



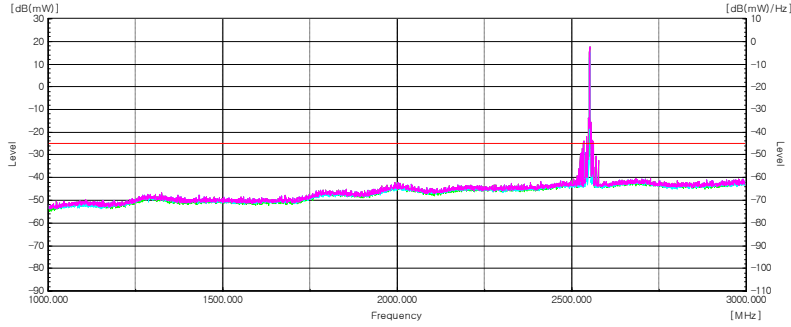
| Mode | Bandwidth | Frequency | Pol. | Antenna Gain | Cable loss | Substitute Level | Level | Limit | Margin |
|------|-----------|------------|-------|--------------|------------|------------------|--------|--------|--------|
| | [MHz] | [MHz] | [V/H] | [dBi] | [dB] | [dBm] | [dB] | [dBm] | [dB] |
| QPSK | 10 | 5 094.140 | H | 10.8 | 10.46 | -55.44 | -55.10 | -25.00 | 30.10 |
| | | 7 654.310 | V | 11.3 | 13.25 | -39.85 | -41.80 | -25.00 | 16.80 |
| | | 10 205.480 | V | 12.3 | 14.85 | -39.25 | -41.80 | -25.00 | 16.80 |
| | | 12 756.649 | V | 13.6 | 16.74 | -41.06 | -44.20 | -25.00 | 19.20 |

Note.

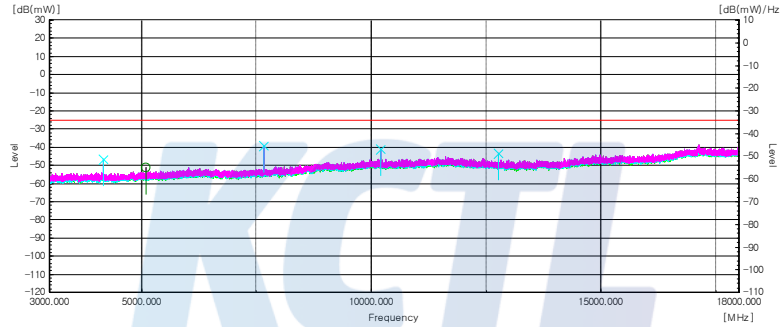
1. Limit Calculation(dBm)= 55 + 10log(P_[Watts]) [dBc]
2. No spurious emission were detected 1 000 MHz to 3 000 MHz.

Test mode : LTE Band41
Frequency(MHz) : 2 547.0
Channel : 40160

1 000 MHz to 3 000 MHz



Above 3 000 MHz



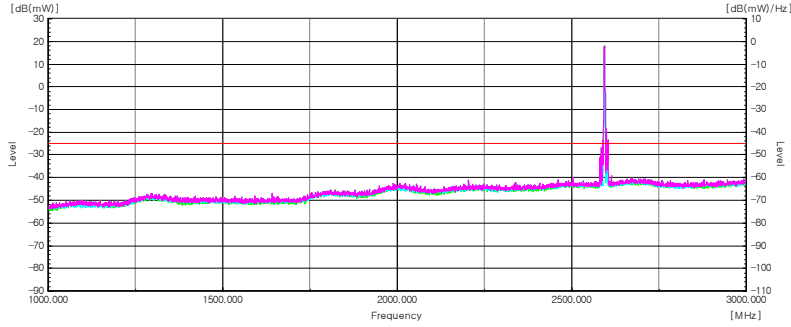
| Mode | Bandwidth | Frequency | Pol. | Antenna Gain | Cable loss | Substitute Level | Level | Limit | Margin |
|-------|-----------|------------|-------|--------------|------------|------------------|-------|--------|--------|
| | [MHz] | [MHz] | [V/H] | [dBi] | [dB] | [dBm] | [dB] | [dBm] | [dB] |
| 16QAM | 10 | 4 169.078 | V | 10.1 | 9.35 | -47.45 | -46.7 | -25.00 | 21.70 |
| | | 5 103.140 | H | 10.8 | 10.46 | -51.74 | -51.4 | -25.00 | 26.00 |
| | | 7 654.310 | V | 11.3 | 13.25 | -37.05 | -39.0 | -25.00 | 14.00 |
| | | 10 205.480 | V | 12.3 | 14.85 | -38.45 | -41.0 | -25.00 | 16.00 |
| | | 12 756.649 | V | 13.6 | 16.74 | -40.16 | -43.3 | -25.00 | 18.30 |

Note.

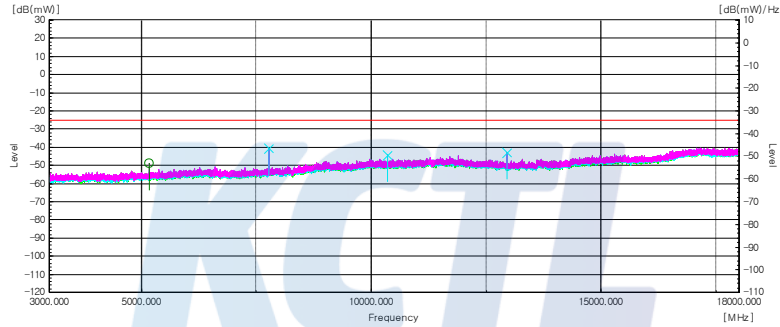
1. Limit Calculation(dBm)= 55 + 10log(P_[Watts]) [dBc]
2. No spurious emission were detected 1 000 MHz to 3 000 MHz.

Test mode : LTE Band41
Frequency(MHz) : 2 593.0
Channel : 40620

1 000 MHz to 3 000 MHz



Above 3 000 MHz



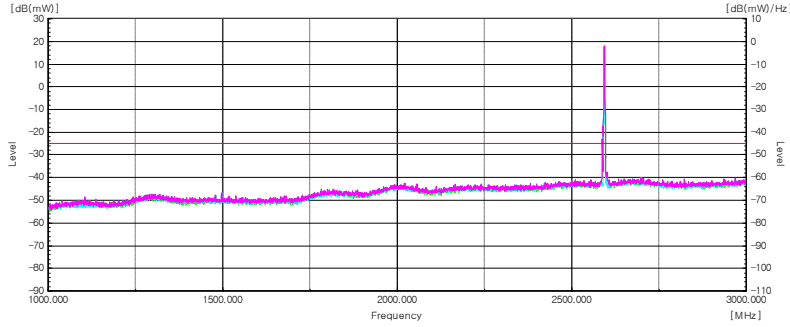
| Mode | Bandwidth | Frequency | Pol. | Antenna Gain | Cable loss | Substitute Level | Level | Limit | Margin |
|------|-----------|------------|-------|--------------|------------|------------------|--------|--------|--------|
| | [MHz] | [MHz] | [V/H] | [dBi] | [dB] | [dBm] | [dB] | [dBm] | [dB] |
| QPSK | 10 | 5 177.145 | H | 10.9 | 10.63 | -49.07 | -48.80 | -25.00 | 23.8 |
| | | 7 766.317 | V | 11.6 | 13.31 | -38.99 | -40.70 | -25.00 | 15.7 |
| | | 10 354.490 | V | 12.6 | 15.06 | -41.74 | -44.20 | -25.00 | 19.2 |
| | | 12 942.662 | V | 13.4 | 17.05 | -39.35 | -43.00 | -25.00 | 18.0 |

Note.

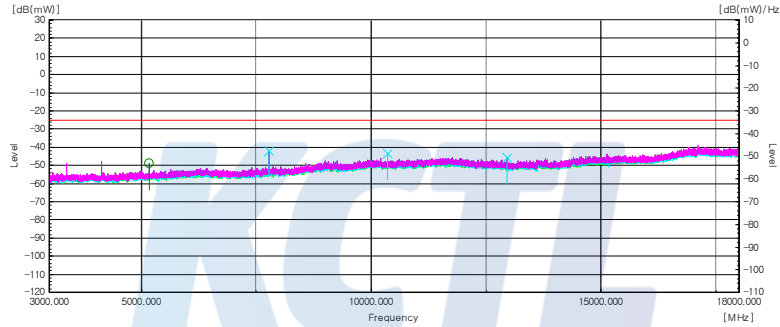
1. Limit Calculation(dBm)= 55 + 10log(P_[Watts]) [dBc]
2. No spurious emission were detected 1 000 MHz to 3 000 MHz.

Test mode : LTE Band41
Frequency(MHz) : 2 593.0
Channel : 40620

1 000 MHz to 3 000 MHz



Above 3 000 MHz



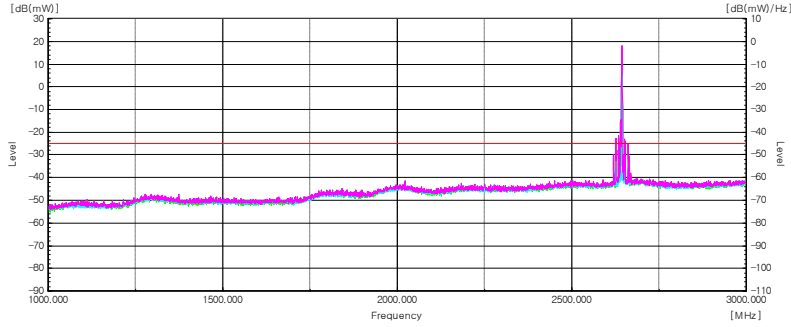
| Mode | Bandwidth | Frequency | Pol. | Antenna Gain | Cable loss | Substitute Level | Level | Limit | Margin |
|-------|-----------|------------|-------|--------------|------------|------------------|--------|--------|--------|
| | [MHz] | [MHz] | [V/H] | [dBi] | [dB] | [dBm] | [dB] | [dBm] | [dB] |
| 16QAM | 10 | 5 177.145 | H | 10.9 | 10.63 | -48.97 | -48.70 | -25.00 | 23.70 |
| | | 7 766.317 | V | 11.6 | 13.31 | -40.39 | -42.10 | -25.00 | 17.10 |
| | | 10 354.49 | V | 12.6 | 15.06 | -40.94 | -43.40 | -25.00 | 18.40 |
| | | 12 943.662 | V | 13.4 | 17.05 | -42.05 | -45.70 | -25.00 | 20.70 |

Note.

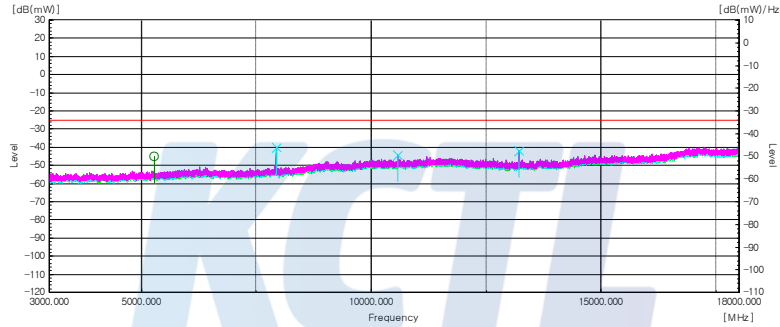
1. Limit Calculation(dBm)= 55 + 10log(P_[Watts]) [dBc]
2. No spurious emission were detected 1 000 MHz to 3 000 MHz.

Test mode : LTE Band41
Frequency(MHz) : 2 639.0
Channel : 41080

1 000 MHz to 3 000 MHz



Above 3 000 MHz



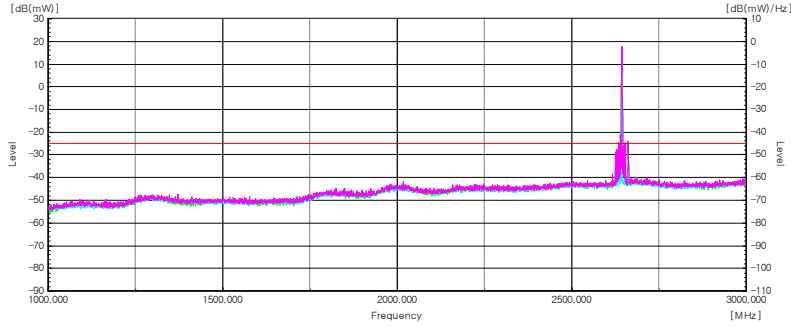
| Mode | Bandwidth | Frequency | Pol. | Antenna Gain | Cable loss | Substitute Level | Level | Limit | Margin |
|------|-----------|------------|-------|--------------|------------|------------------|--------|--------|--------|
| | [MHz] | [MHz] | [V/H] | [dBi] | [dB] | [dBm] | [dB] | [dBm] | [dB] |
| QPSK | 10 | 5 286.152 | H | 11.3 | 10.73 | -45.77 | -45.20 | -25.00 | 20.20 |
| | | 7 930.328 | V | 11.5 | 13.59 | -38.21 | -40.30 | -25.00 | 15.30 |
| | | 10 573.504 | V | 12.6 | 15.28 | -41.42 | -44.10 | -25.00 | 19.10 |
| | | 13 216.68 | V | 13.0 | 17.14 | -37.66 | -41.80 | -25.00 | 16.80 |

Note.

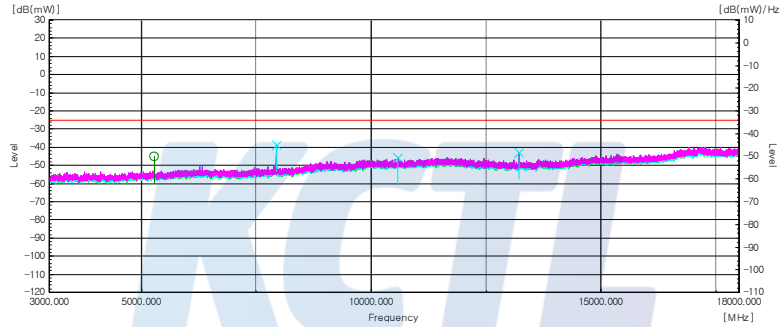
1. Limit Calculation(dBm)= 55 + 10log(P_[Watts]) [dBc]
2. No spurious emission were detected 1 000 MHz to 3 000 MHz.

Test mode : LTE Band41
Frequency(MHz) : 2 639.0
Channel : 41080

1 000 MHz to 3 000 MHz



Above 3 000 MHz



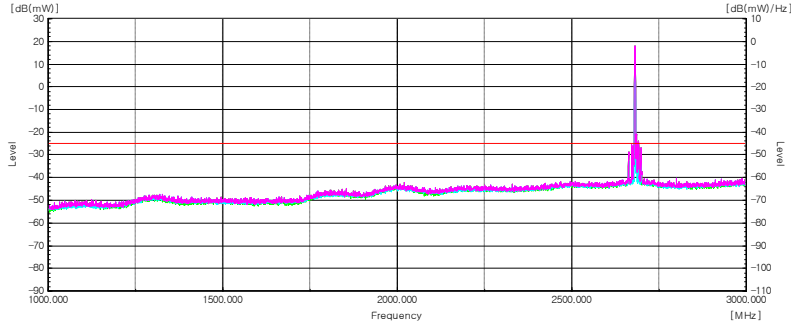
| Mode | Bandwidth | Frequency | Pol. | Antenna Gain | Cable loss | Substitute Level | Level | Limit | Margin |
|-------|-----------|------------|-------|--------------|------------|------------------|-------|--------|--------|
| | [MHz] | [MHz] | [V/H] | [dBi] | [dB] | [dBm] | [dB] | [dBm] | [dB] |
| 16QAM | 10 | 5 286.152 | H | 11.3 | 10.73 | -45.97 | -45.4 | -25.00 | 20.40 |
| | | 7 930.328 | V | 11.5 | 13.59 | -36.61 | -38.7 | -25.00 | 13.70 |
| | | 10 573.504 | V | 12.6 | 15.28 | -42.92 | -45.6 | -25.00 | 20.60 |
| | | 13 216.680 | V | 13.0 | 17.14 | -38.86 | -43.0 | -25.00 | 18.00 |

Note.

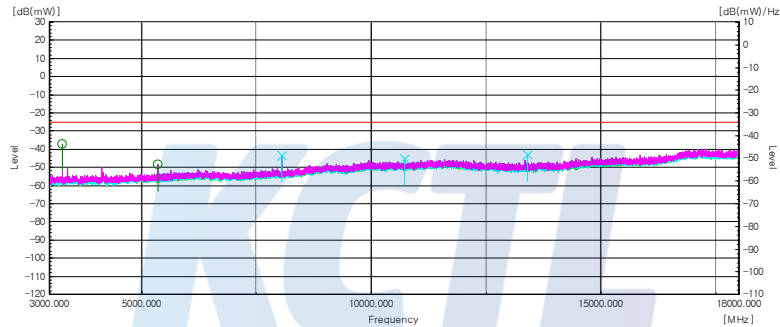
1. Limit Calculation(dBm)= 55 + 10log(P_[Watts]) [dBc]
2. No spurious emission were detected 1 000 MHz to 3 000 MHz.

Test mode : LTE Band41
Frequency(MHz) : 2 685.0
Channel : 41540

1 000 MHz to 3 000 MHz



Above 3 000 MHz



| Mode | Bandwidth | Frequency | Pol. | Antenna Gain | Cable loss | Substitute Level | Level | Limit | Margin |
|------|-----------|------------|-------|--------------|------------|------------------|--------|--------|--------|
| | [MHz] | [MHz] | [V/H] | [dBi] | [dB] | [dBm] | [dB] | [dBm] | [dB] |
| QPSK | 10 | 3 277.019 | H | 9.3 | 7.65 | -39.05 | -37.40 | -25.00 | 12.40 |
| | | 5 361.157 | H | 11.1 | 10.88 | -48.62 | -48.40 | -25.00 | 23.40 |
| | | 8 041.336 | V | 11.5 | 13.75 | -40.95 | -43.20 | -25.00 | 18.20 |
| | | 10 722.514 | V | 12.8 | 15.40 | -42.70 | -45.30 | -25.00 | 20.30 |
| | | 13 402.692 | V | 12.7 | 17.11 | -38.39 | -42.80 | -25.00 | 17.80 |

Note.

1. Limit Calculation(dBm)= 55 + 10log(P_[Watts]) [dBc]
2. No spurious emission were detected 1 000 MHz to 3 000 MHz.

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR19-SRF0009-B

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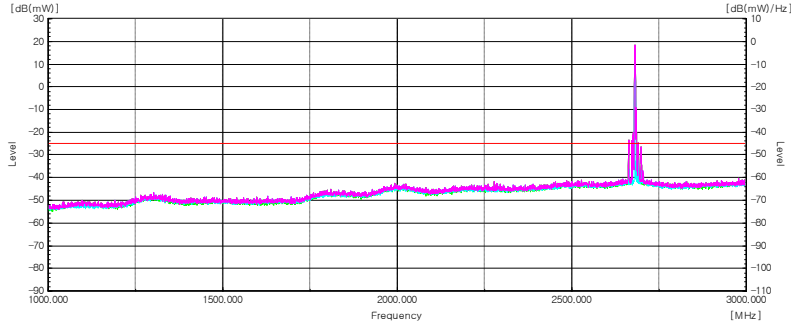


Test mode : LTE Band41

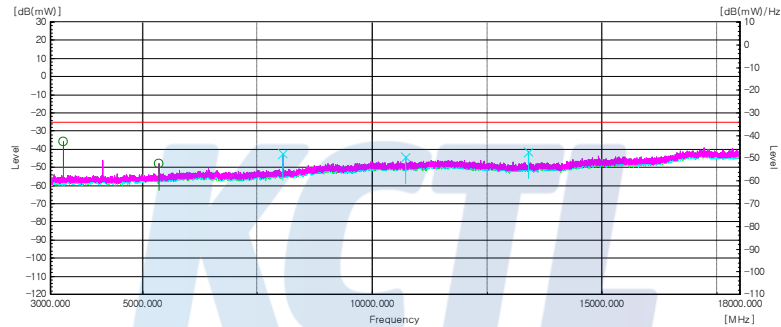
Frequency(MHz) : 2 685.0

Channel : 41540

1 000 MHz to 3 000 MHz



Above 3 000 MHz



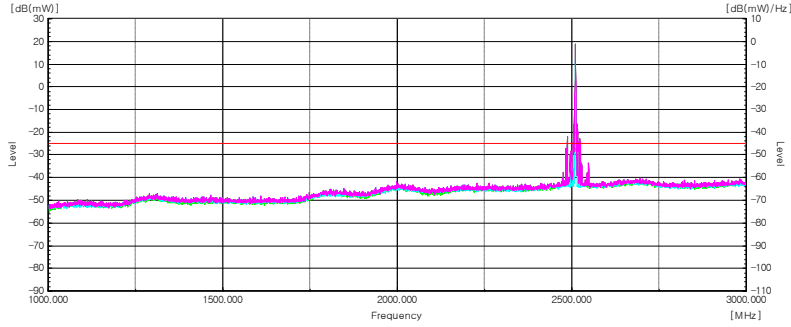
| Mode | Bandwidth | Frequency | Pol. | Antenna Gain | Cable loss | Substitute Level | Level | Limit | Margin |
|-------|-----------|------------|-------|--------------|------------|------------------|--------|--------|--------|
| | [MHz] | [MHz] | [V/H] | [dBi] | [dB] | [dBm] | [dB] | [dBm] | [dB] |
| 16QAM | 10 | 3 276.019 | H | 9.3 | 7.65 | -37.45 | -35.80 | -25.00 | 10.80 |
| | | 5 361.157 | H | 11.1 | 10.88 | -48.42 | -48.20 | -25.00 | 23.20 |
| | | 8 041.336 | V | 11.5 | 13.75 | -40.25 | -42.50 | -25.00 | 17.50 |
| | | 10 722.514 | V | 12.8 | 15.40 | -41.70 | -44.30 | -25.00 | 19.30 |
| | | 13 402.692 | V | 12.7 | 17.11 | -36.99 | -41.40 | -25.00 | 16.40 |

Note.

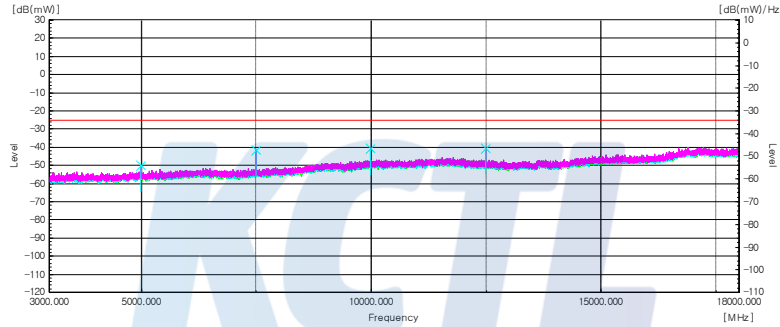
- Limit Calculation(dBm)= 55 + 10log(P_[watts]) [dBc]
- No spurious emission were detected 1 000 MHz to 3 000 MHz.

Test mode : LTE Band41
Frequency(MHz) : 2 503.5
Channel : 39725

1 000 MHz to 3 000 MHz



Above 3 000 MHz



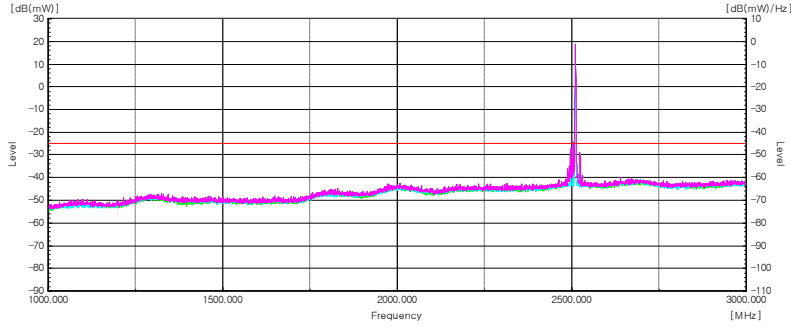
| Mode | Bandwidth | Frequency | Pol. | Antenna Gain | Cable loss | Substitute Level | Level | Limit | Margin |
|------|-----------|------------|-------|--------------|------------|------------------|--------|--------|--------|
| | [MHz] | [MHz] | [V/H] | [dBi] | [dB] | [dBm] | [dB] | [dBm] | [dB] |
| QPSK | 15 | 4 993.133 | V | 10.9 | 10.46 | -50.44 | -50.00 | -25.00 | 25.00 |
| | | 7 490.299 | V | 11.0 | 13.24 | -39.36 | -41.60 | -25.00 | 16.60 |
| | | 9 987.465 | V | 12.2 | 14.88 | -37.82 | -40.50 | -25.00 | 15.50 |
| | | 12 484.631 | V | 13.5 | 16.52 | -37.58 | -40.60 | -25.00 | 15.60 |

Note.

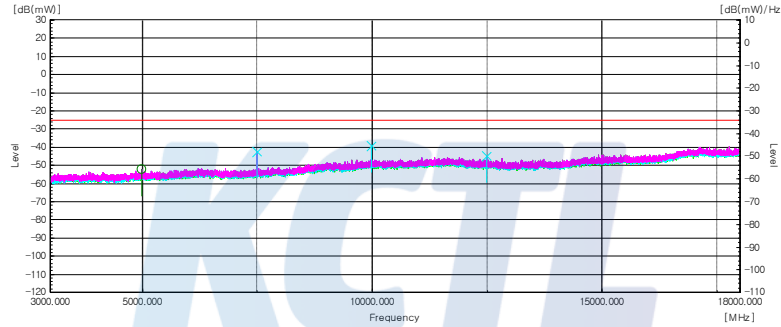
1. Limit Calculation(dBm)= 55 + 10log(P_[Watts]) [dBc]
2. No spurious emission were detected 1 000 MHz to 3 000 MHz.

Test mode : LTE Band41
Frequency(MHz) : 2 503.5
Channel : 39725

1 000 MHz to 3 000 MHz



Above 3 000 MHz



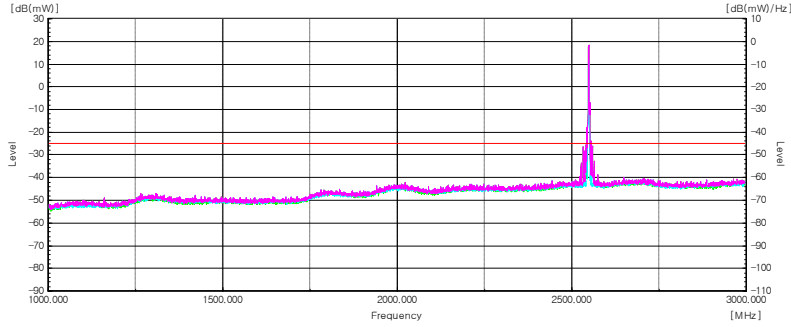
| Mode | Bandwidth | Frequency | Pol. | Antenna Gain | Cable loss | Substitute Level | Level | Limit | Margin |
|-------|-----------|------------|-------|--------------|------------|------------------|--------|--------|--------|
| | [MHz] | [MHz] | [V/H] | [dBi] | [dB] | [dBm] | [dB] | [dBm] | [dB] |
| 16QAM | 15 | 4 994.133 | H | 10.9 | 10.46 | -52.54 | -52.10 | -25.00 | 27.10 |
| | | 7 490.299 | V | 11.0 | 13.24 | -40.36 | -42.60 | -25.00 | 17.60 |
| | | 9 987.465 | V | 12.2 | 14.88 | -36.52 | -39.20 | -25.00 | 14.20 |
| | | 12 484.631 | V | 13.5 | 16.52 | -41.88 | -44.90 | -25.00 | 19.90 |

Note.

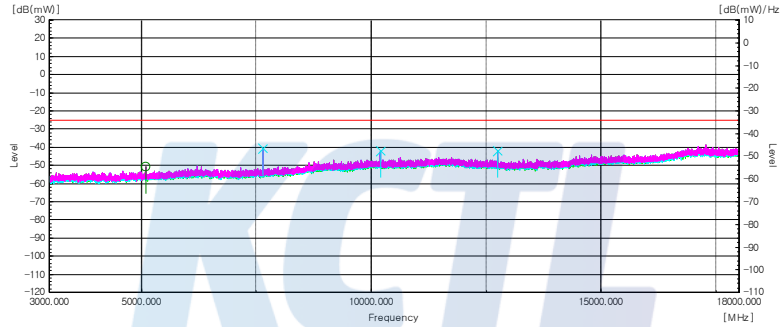
1. Limit Calculation(dBm)= 55 + 10log(P_[Watts]) [dBc]
2. No spurious emission were detected 1 000 MHz to 3 000 MHz.

Test mode : LTE Band41
Frequency(MHz) : 2 548.3
Channel : 40173

1 000 MHz to 3 000 MHz



Above 3 000 MHz



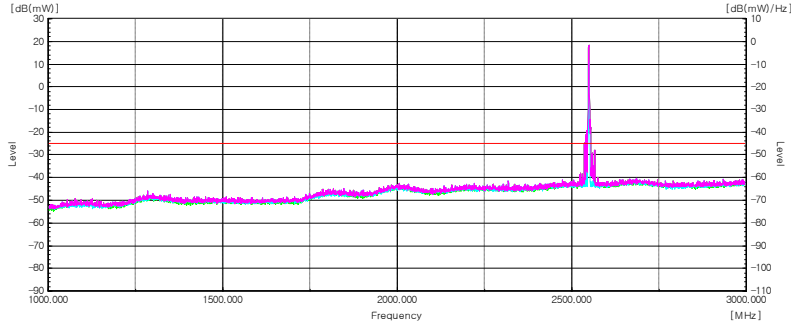
| Mode | Bandwidth | Frequency | Pol. | Antenna Gain | Cable loss | Substitute Level | Level | Limit | Margin |
|------|-----------|------------|-------|--------------|------------|------------------|--------|--------|--------|
| | [MHz] | [MHz] | [V/H] | [dBi] | [dB] | [dBm] | [dB] | [dBm] | [dB] |
| QPSK | 15 | 5 097.14 | H | 10.8 | 10.46 | -51.24 | -50.90 | -25.00 | 25.90 |
| | | 7 644.309 | V | 11.3 | 13.24 | -38.46 | -40.40 | -25.00 | 15.40 |
| | | 10 194.478 | V | 12.3 | 14.85 | -39.55 | -42.10 | -25.00 | 17.10 |
| | | 12 741.648 | V | 13.6 | 16.74 | -38.66 | -41.80 | -25.00 | 16.80 |

Note.

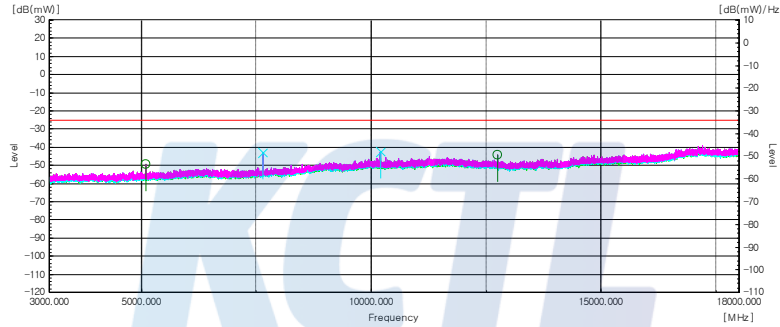
1. Limit Calculation(dBm)= 55 + 10log(P_[Watts]) [dBc]
2. No spurious emission were detected 1 000 MHz to 3 000 MHz.

Test mode : LTE Band41
Frequency(MHz) : 2 548.3
Channel : 40173

1 000 MHz to 3 000 MHz



Above 3 000 MHz



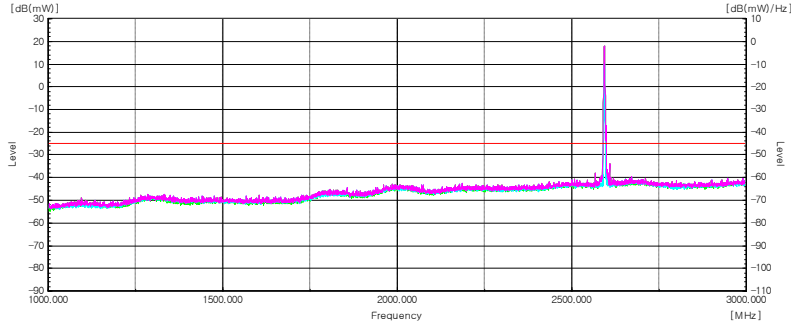
| Mode | Bandwidth | Frequency | Pol. | Antenna Gain | Cable loss | Substitute Level | Level | Limit | Margin |
|-------|-----------|------------|-------|--------------|------------|------------------|--------|--------|--------|
| | [MHz] | [MHz] | [V/H] | [dBi] | [dB] | [dBm] | [dB] | [dBm] | [dB] |
| 16QAM | 15 | 5 097.14 | H | 10.8 | 10.46 | -49.74 | -49.40 | -25.00 | 24.40 |
| | | 7 645.309 | V | 11.3 | 13.24 | -40.96 | -42.90 | -25.00 | 17.90 |
| | | 10 194.478 | V | 12.3 | 14.85 | -39.75 | -42.30 | -25.00 | 17.30 |
| | | 12 741.648 | H | 13.6 | 16.74 | -41.36 | -44.50 | -25.00 | 19.50 |

Note.

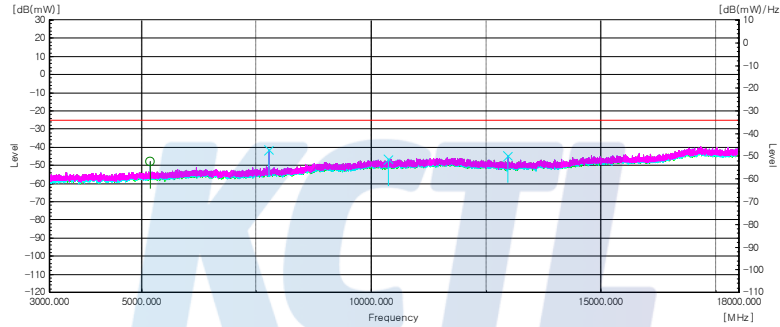
1. Limit Calculation(dBm)= 55 + 10log(P_[Watts]) [dBc]
2. No spurious emission were detected 1 000 MHz to 3 000 MHz.

Test mode : LTE Band41
Frequency(MHz) : 2 593.0
Channel : 40620

1 000 MHz to 3 000 MHz



Above 3 000 MHz



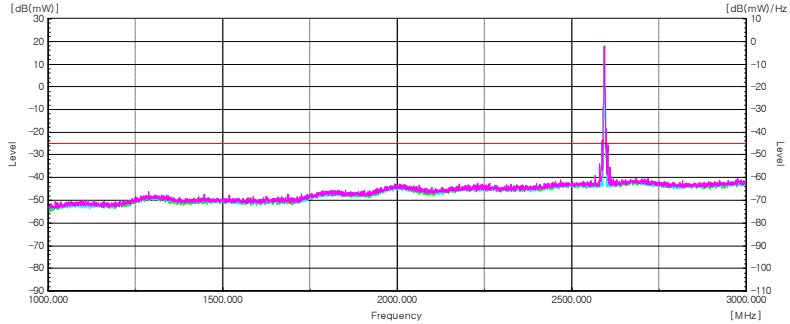
| Mode | Bandwidth | Frequency | Pol. | Antenna Gain | Cable loss | Substitute Level | Level | Limit | Margin |
|------|-----------|------------|-------|--------------|------------|------------------|--------|--------|--------|
| | [MHz] | [MHz] | [V/H] | [dBi] | [dB] | [dBm] | [dB] | [dBm] | [dB] |
| QPSK | 15 | 5 186.146 | H | 10.9 | 10.63 | -48.17 | -47.90 | -25.00 | 22.90 |
| | | 7 779.318 | V | 11.6 | 13.31 | -39.69 | -41.40 | -25.00 | 16.40 |
| | | 10 372.49 | V | 12.6 | 15.06 | -44.04 | -46.50 | -25.00 | 21.50 |
| | | 12 966.663 | V | 13.4 | 17.05 | -41.25 | -44.90 | -25.00 | 19.90 |

Note.

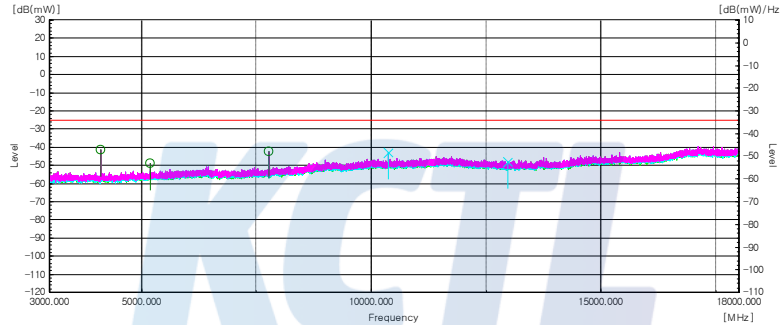
1. Limit Calculation(dBm)= 55 + 10log(P_[Watts]) [dBc]
2. No spurious emission were detected 1 000 MHz to 3 000 MHz.

Test mode : LTE Band41
Frequency(MHz) : 2 593.0
Channel : 40620

1 000 MHz to 3 000 MHz



Above 3 000 MHz



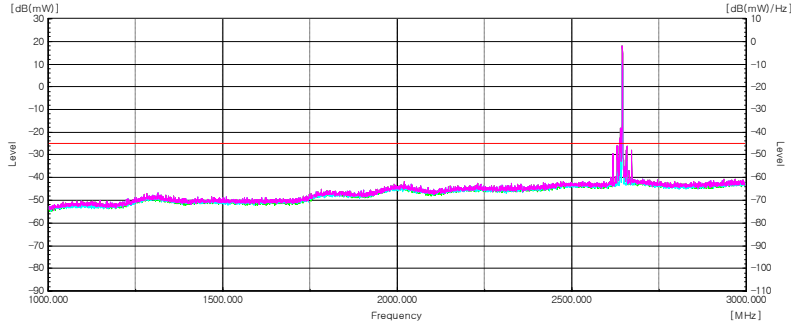
| Mode | Bandwidth | Frequency | Pol. | Antenna Gain | Cable loss | Substitute Level | Level | Limit | Margin |
|-------|-----------|------------|-------|--------------|------------|------------------|--------|--------|--------|
| | [MHz] | [MHz] | [V/H] | [dBi] | [dB] | [dBm] | [dB] | [dBm] | [dB] |
| 16QAM | 15 | 4 110.074 | H | 9.9 | 9.35 | -42.25 | -41.70 | -25.00 | 16.70 |
| | | 5 186.146 | H | 10.9 | 10.63 | -49.37 | -49.10 | -25.00 | 24.10 |
| | | 7 780.318 | H | 11.6 | 13.31 | -40.79 | -42.50 | -25.00 | 17.50 |
| | | 10 372.49 | V | 12.6 | 15.06 | -40.44 | -42.90 | -25.00 | 17.90 |
| | | 12 966.663 | V | 13.4 | 17.05 | -44.65 | -48.30 | -25.00 | 23.30 |

Note.

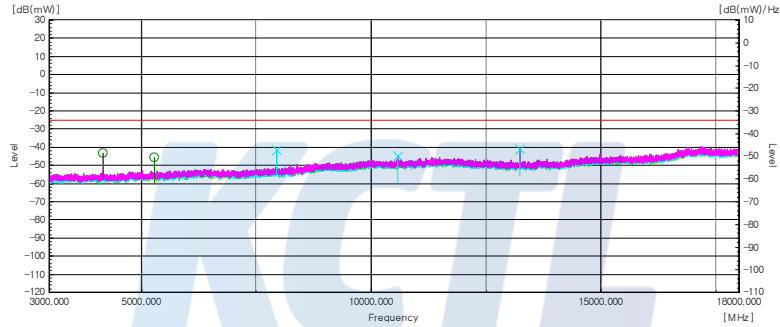
1. Limit Calculation(dBm)= 55 + 10log(P_[watts]) [dBc]
2. No spurious emission were detected 1 000 MHz to 3 000 MHz.

Test mode : LTE Band41
Frequency(MHz) : 2 637.8
Channel : 41068

1 000 MHz to 3 000 MHz



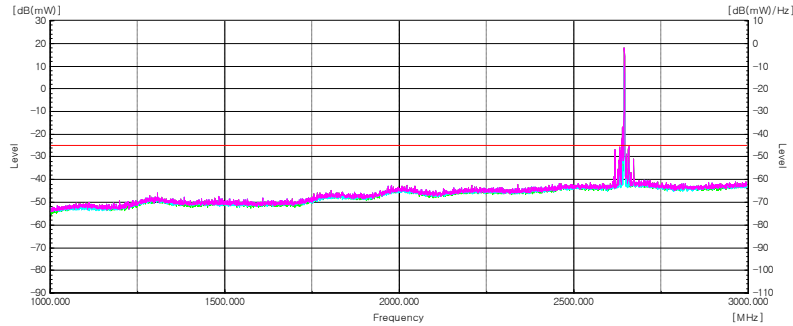
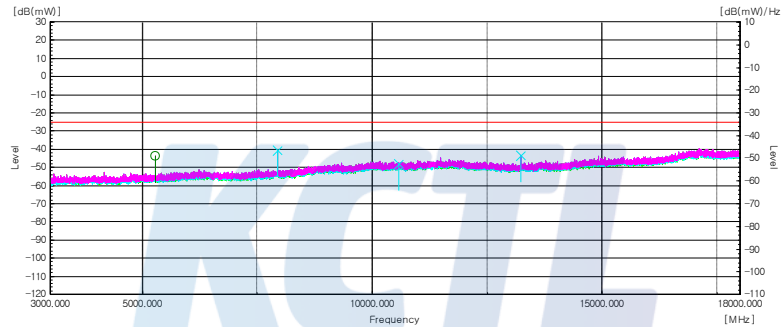
Above 3 000 MHz



| Mode | Bandwidth | Frequency | Pol. | Antenna Gain | Cable loss | Substitute Level | Level | Limit | Margin |
|------|-----------|------------|-------|--------------|------------|------------------|--------|--------|--------|
| | [MHz] | [MHz] | [V/H] | [dBi] | [dB] | [dBm] | [dB] | [dBm] | [dB] |
| QPSK | 15 | 4 168.078 | H | 10.1 | 9.35 | -44.05 | -43.30 | -25.00 | 18.30 |
| | | 5 289.152 | H | 11.3 | 10.73 | -46.07 | -45.50 | -25.00 | 20.50 |
| | | 7 933.329 | V | 11.5 | 13.59 | -39.61 | -41.70 | -25.00 | 16.70 |
| | | 10 578.504 | V | 12.6 | 15.28 | -42.12 | -44.80 | -25.00 | 19.80 |
| | | 13 221.680 | V | 13.0 | 17.14 | -36.96 | -41.10 | -25.00 | 16.10 |

Note.

1. Limit Calculation(dBm)= 55 + 10log(P_[Watts]) [dBc]
2. No spurious emission were detected 1 000 MHz to 3 000 MHz.

Test mode : LTE Band41Frequency(MHz) : 2 637.8Channel : 410681 000 MHz to 3 000 MHzAbove 3 000 MHz

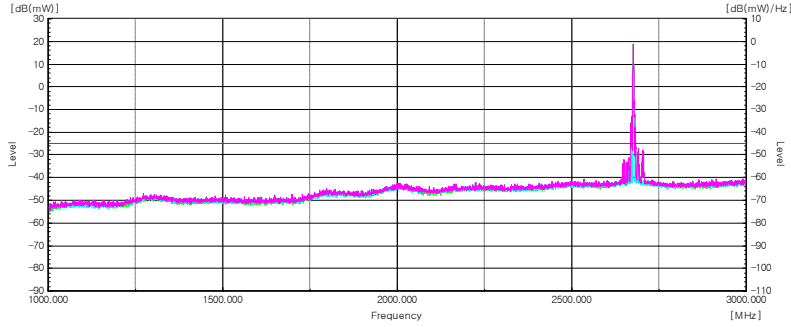
| Mode | Bandwidth | Frequency | Pol. | Antenna Gain | Cable loss | Substitute Level | Level | Limit | Margin |
|-------|-----------|------------|-------|--------------|------------|------------------|--------|--------|--------|
| | [MHz] | [MHz] | [V/H] | [dBi] | [dB] | [dBm] | [dB] | [dBm] | [dB] |
| 16QAM | 15 | 5 289.152 | H | 11.3 | 10.73 | -44.47 | -43.90 | -25.00 | 18.90 |
| | | 7 933.329 | V | 11.5 | 13.59 | -38.51 | -40.60 | -25.00 | 15.60 |
| | | 10 578.504 | V | 12.6 | 15.28 | -45.52 | -48.20 | -25.00 | 23.20 |
| | | 13 221.680 | V | 13.0 | 17.14 | -39.46 | -43.60 | -25.00 | 18.60 |

Note.

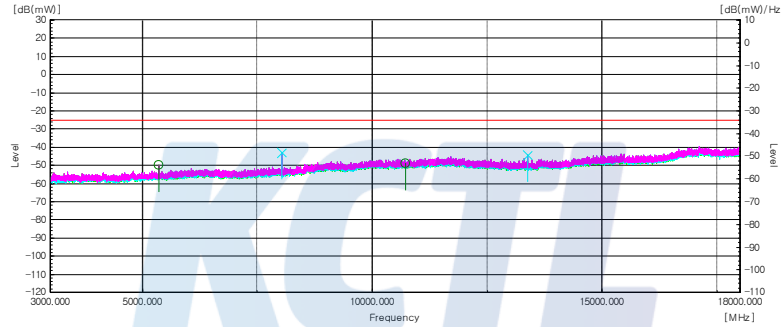
- Limit Calculation(dBm)= 55 + 10log(P_[Watts]) [dBc]
- No spurious emission were detected 1 000 MHz to 3 000 MHz.

Test mode : LTE Band41
Frequency(MHz) : 2 682.5
Channel : 41515

1 000 MHz to 3 000 MHz



Above 3 000 MHz



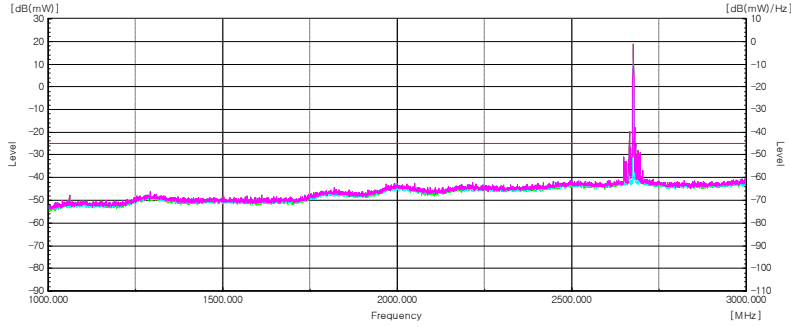
| Mode | Bandwidth | Frequency | Pol. | Antenna Gain | Cable loss | Substitute Level | Level | Limit | Margin |
|------|-----------|------------|-------|--------------|------------|------------------|--------|--------|--------|
| | [MHz] | [MHz] | [V/H] | [dBi] | [dB] | [dBm] | [dB] | [dBm] | [dB] |
| QPSK | 15 | 5 351.157 | H | 11.1 | 10.88 | -50.12 | -49.90 | -25.00 | 24.90 |
| | | 8 027.335 | V | 11.4 | 13.75 | -40.75 | -43.10 | -25.00 | 18.10 |
| | | 10 730.514 | H | 12.8 | 15.40 | -46.30 | -48.90 | -25.00 | 23.90 |
| | | 13 379.691 | V | 12.7 | 17.11 | -39.69 | -44.10 | -25.00 | 19.10 |

Note.

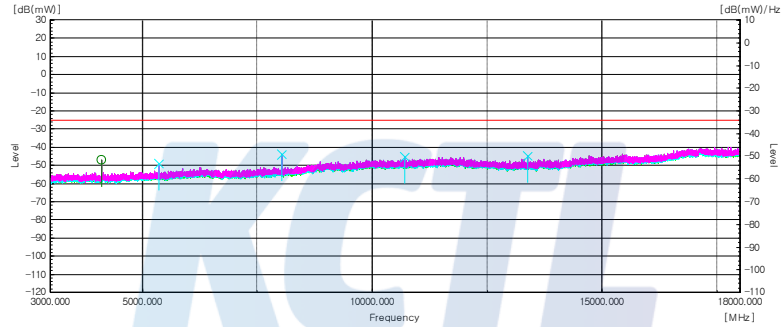
1. Limit Calculation(dBm)= 55 + 10log(P_[Watts]) [dBc]
2. No spurious emission were detected 1 000 MHz to 3 000 MHz.

Test mode : LTE Band41
Frequency(MHz) : 2 682.5
Channel : 41515

1 000 MHz to 3 000 MHz



Above 3 000 MHz



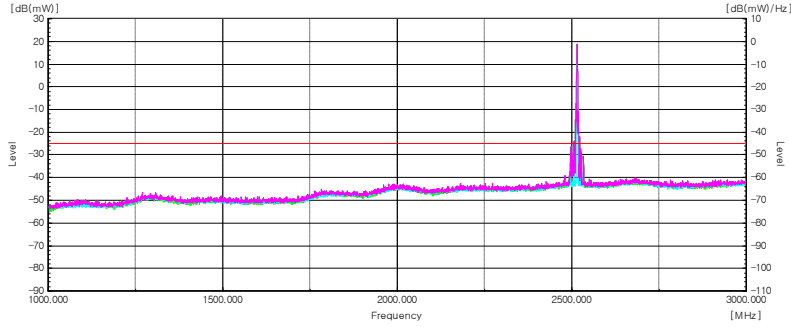
| Mode | Bandwidth | Frequency | Pol. | Antenna Gain | Cable loss | Substitute Level | Level | Limit | Margin |
|-------|-----------|------------|-------|--------------|------------|------------------|--------|--------|--------|
| | [MHz] | [MHz] | [V/H] | [dBi] | [dB] | [dBm] | [dB] | [dBm] | [dB] |
| 16QAM | 15 | 4 109.074 | H | 9.9 | 9.35 | -47.45 | -46.90 | -25.00 | 21.90 |
| | | 5 351.157 | V | 11.1 | 10.88 | -49.32 | -49.10 | -25.00 | 24.10 |
| | | 8 027.335 | V | 11.4 | 13.75 | -41.25 | -43.60 | -25.00 | 18.60 |
| | | 10 703.512 | V | 12.8 | 15.40 | -42.70 | -45.30 | -25.00 | 20.30 |
| | | 13 379.691 | V | 12.7 | 17.11 | -40.59 | -45.00 | -25.00 | 20.00 |

Note.

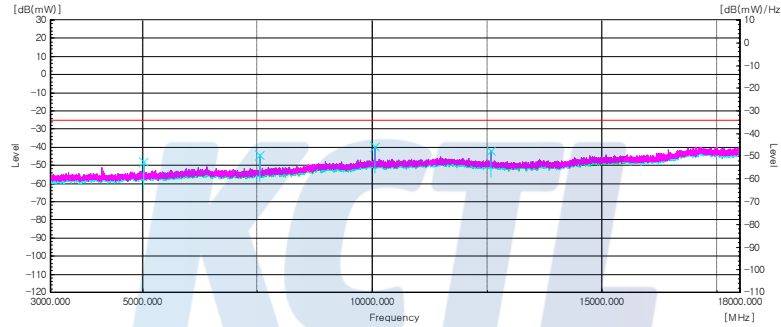
- Limit Calculation(dBm)= 55 + 10log(P_[Watts]) [dBc]
- No spurious emission were detected 1 000 MHz to 3 000 MHz.

Test mode : LTE Band41
Frequency(MHz) : 2 506.0
Channel : 39750

1 000 MHz to 3 000 MHz



Above 3 000 MHz



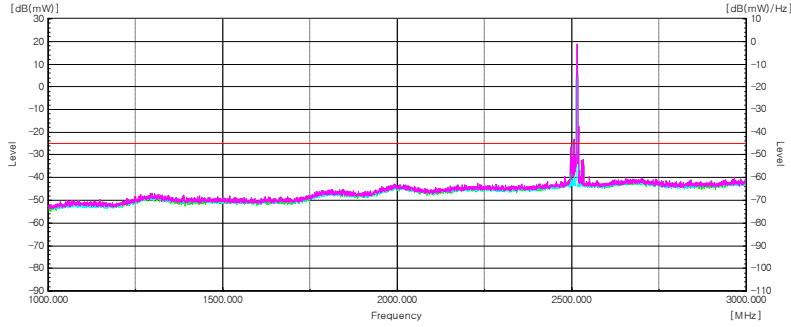
| Mode | Bandwidth | Frequency | Pol. | Antenna Gain | Cable loss | Substitute Level | Level | Limit | Margin |
|------|-----------|------------|-------|--------------|------------|------------------|--------|--------|--------|
| | [MHz] | [MHz] | [V/H] | [dBi] | [dB] | [dBm] | [dB] | [dBm] | [dB] |
| QPSK | 20 | 5 030.135 | V | 10.9 | 10.46 | -48.24 | -47.80 | -25.00 | 22.80 |
| | | 7 544.303 | V | 11.0 | 13.24 | -42.16 | -44.40 | -25.00 | 19.40 |
| | | 10 059.470 | V | 12.2 | 14.88 | -37.02 | -39.70 | -25.00 | 14.70 |
| | | 12 574.637 | V | 13.5 | 16.52 | -38.98 | -42.00 | -25.00 | 17.00 |

Note.

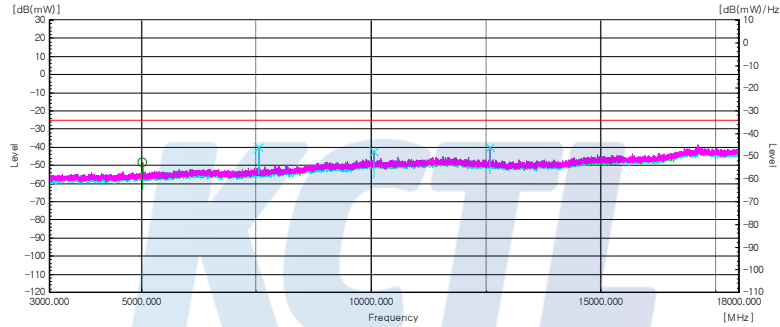
1. Limit Calculation(dBm)= 55 + 10log(P_[Watts]) [dBc]
2. No spurious emission were detected 1 000 MHz to 3 000 MHz.

Test mode : LTE Band41
Frequency(MHz) : 2 506.0
Channel : 39750

1 000 MHz to 3 000 MHz



Above 3 000 MHz



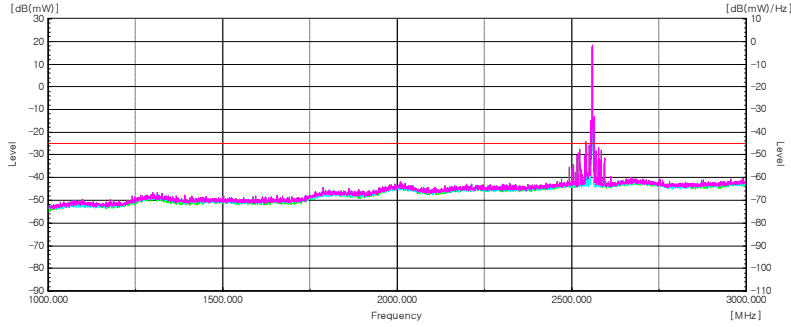
| Mode | Bandwidth | Frequency | Pol. | Antenna Gain | Cable loss | Substitute Level | Level | Limit | Margin |
|-------|-----------|------------|-------|--------------|------------|------------------|--------|--------|--------|
| | [MHz] | [MHz] | [V/H] | [dBi] | [dB] | [dBm] | [dB] | [dBm] | [dB] |
| 16QAM | 20 | 5 030.135 | H | 10.9 | 10.46 | -49.04 | -48.60 | -25.00 | 23.60 |
| | | 7 545.303 | V | 11.0 | 13.24 | -37.86 | -40.10 | -25.00 | 15.10 |
| | | 10 059.470 | V | 12.2 | 14.88 | -39.62 | -42.30 | -25.00 | 17.30 |
| | | 12 574.637 | V | 13.5 | 16.52 | -37.18 | -40.20 | -25.00 | 15.20 |

Note.

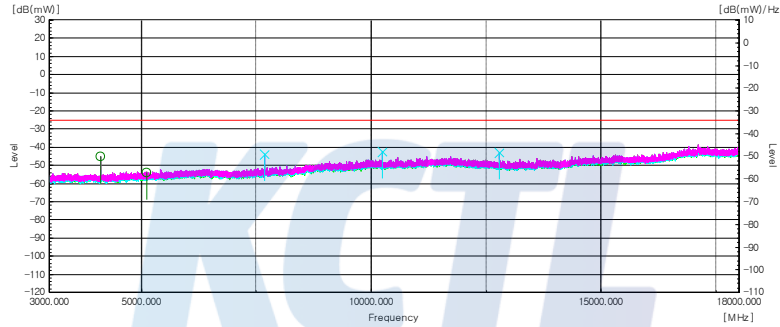
1. Limit Calculation(dBm)= 55 + 10log(P_[Watts]) [dBc]
2. No spurious emission were detected 1 000 MHz to 3 000 MHz.

Test mode : LTE Band41
Frequency(MHz) : 2 549.5
Channel : 40185

1 000 MHz to 3 000 MHz



Above 3 000 MHz



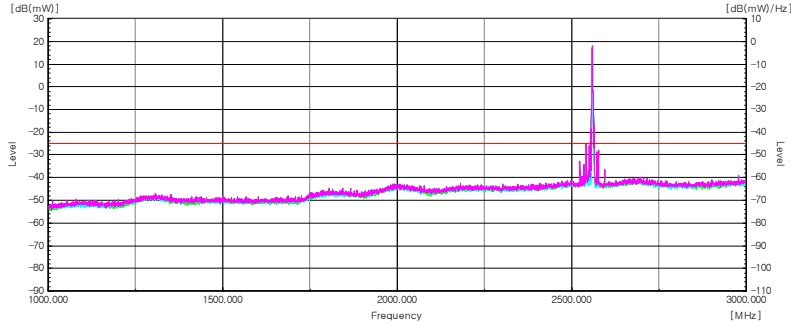
| Mode | Bandwidth | Frequency | Pol. | Antenna Gain | Cable loss | Substitute Level | Level | Limit | Margin |
|------|-----------|------------|-------|--------------|------------|------------------|--------|--------|--------|
| | [MHz] | [MHz] | [V/H] | [dBi] | [dB] | [dBm] | [dB] | [dBm] | [dB] |
| QPSK | 20 | 4 116.074 | H | 10.1 | 9.35 | -45.95 | -45.20 | -25.00 | 20.20 |
| | | 5 117.141 | H | 10.8 | 10.46 | -54.64 | -54.30 | -25.00 | 29.30 |
| | | 7 675.311 | V | 11.3 | 13.24 | -41.66 | -43.60 | -25.00 | 18.60 |
| | | 10 233.480 | V | 12.3 | 14.85 | -39.65 | -42.20 | -25.00 | 17.20 |
| | | 12 791.650 | V | 13.6 | 16.74 | -39.76 | -42.90 | -25.00 | 17.90 |

Note.

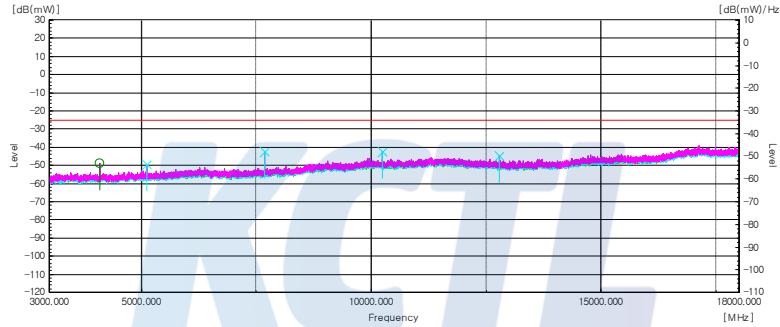
1. Limit Calculation(dBm)= 55 + 10log(P_[Watts]) [dBc]
2. No spurious emission were detected 1 000 MHz to 3 000 MHz.

Test mode : LTE Band41
Frequency(MHz) : 2 549.5
Channel : 40185

1 000 MHz to 3 000 MHz



Above 3 000 MHz



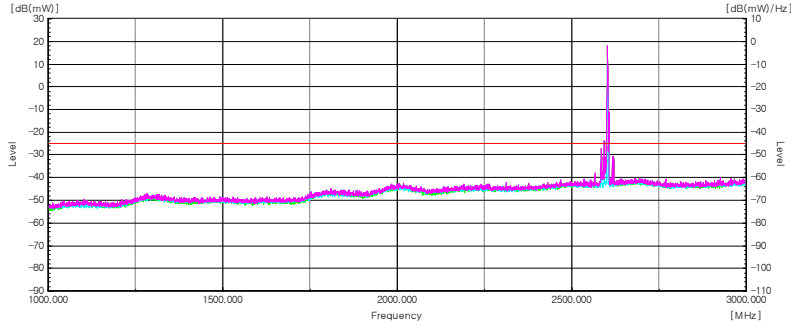
| Mode | Bandwidth | Frequency | Pol. | Antenna Gain | Cable loss | Substitute Level | Level | Limit | Margin |
|-------|-----------|------------|-------|--------------|------------|------------------|--------|--------|--------|
| | [MHz] | [MHz] | [V/H] | [dBi] | [dB] | [dBm] | [dB] | [dBm] | [dB] |
| 16QAM | 20 | 4 103.074 | H | 9.9 | 9.35 | -49.75 | -49.20 | -25.00 | 24.20 |
| | | 5 117.141 | V | 10.8 | 10.46 | -49.64 | -49.30 | -25.00 | 24.30 |
| | | 7 675.311 | V | 11.3 | 13.24 | -40.46 | -42.40 | -25.00 | 17.40 |
| | | 10 233.482 | V | 12.3 | 14.85 | -39.85 | -42.40 | -25.00 | 17.40 |
| | | 12 791.652 | V | 13.6 | 16.74 | -41.66 | -44.80 | -25.00 | 19.80 |

Note.

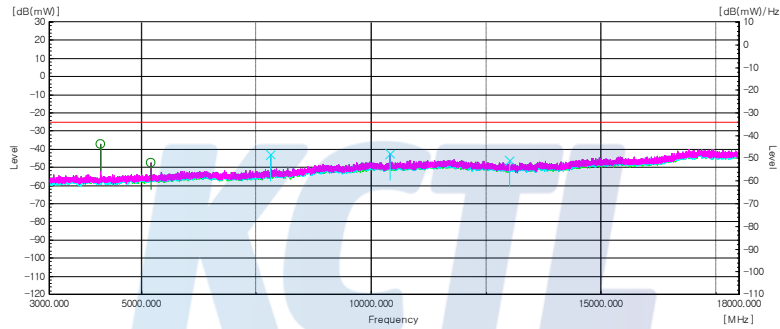
1. Limit Calculation(dBm)= 55 + 10log(P_[Watts]) [dBc]
2. No spurious emission were detected 1 000 MHz to 3 000 MHz.

Test mode : LTE Band41
Frequency(MHz) : 2 593.0
Channel : 40620

1 000 MHz to 3 000 MHz



Above 3 000 MHz



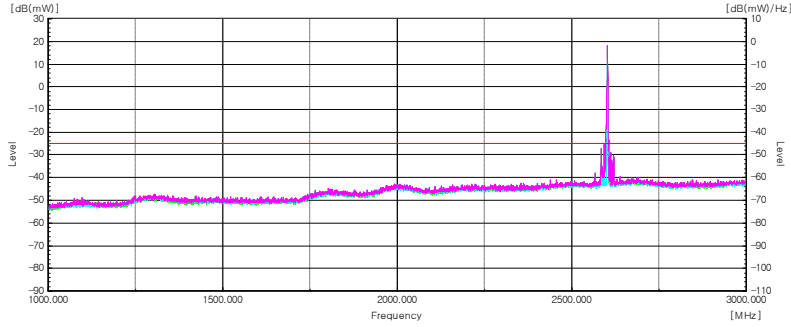
| Mode | Bandwidth | Frequency | Pol. | Antenna Gain | Cable loss | Substitute Level | Level | Limit | Margin |
|------|-----------|------------|-------|--------------|------------|------------------|--------|--------|--------|
| | [MHz] | [MHz] | [V/H] | [dBi] | [dB] | [dBm] | [dB] | [dBm] | [dB] |
| QPSK | 20 | 4 107.074 | H | 9.9 | 9.35 | -37.75 | -37.20 | -25.00 | 12.20 |
| | | 5 203.147 | H | 10.9 | 10.63 | -47.67 | -47.40 | -25.00 | 22.40 |
| | | 7 805.320 | V | 11.6 | 13.31 | -41.39 | -43.10 | -25.00 | 18.10 |
| | | 10 407.493 | V | 12.6 | 15.06 | -40.04 | -42.50 | -25.00 | 17.50 |
| | | 13 009.666 | V | 13.4 | 17.05 | -42.35 | -46.00 | -25.00 | 21.00 |

Note.

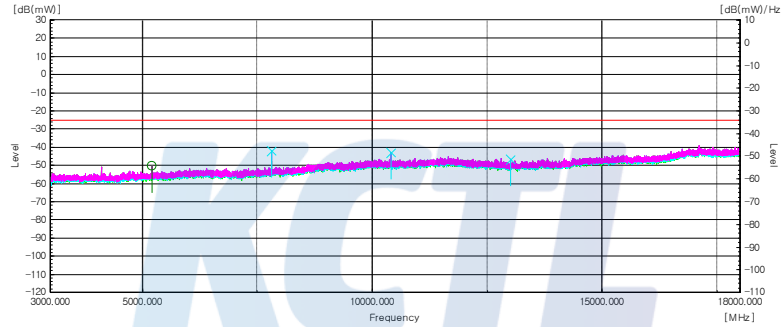
1. Limit Calculation(dBm)= 55 + 10log(P_[Watts]) [dBc]
2. No spurious emission were detected 1 000 MHz to 3 000 MHz.

Test mode : LTE Band41
Frequency(MHz) : 2 593.0
Channel : 40620

1 000 MHz to 3 000 MHz



Above 3 000 MHz



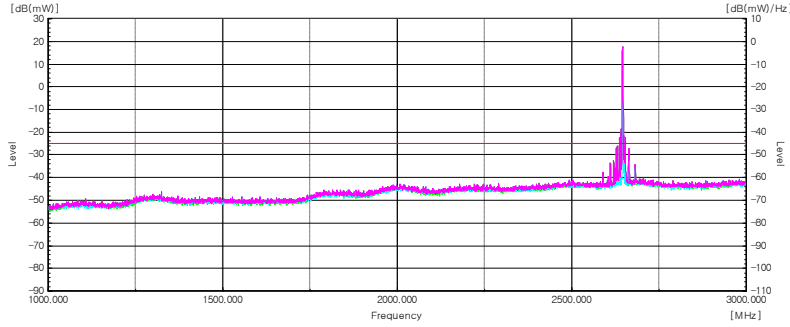
| Mode | Bandwidth | Frequency | Pol. | Antenna Gain | Cable loss | Substitute Level | Level | Limit | Margin |
|-------|-----------|------------|-------|--------------|------------|------------------|--------|--------|--------|
| | [MHz] | [MHz] | [V/H] | [dBi] | [dB] | [dBm] | [dB] | [dBm] | [dB] |
| 16QAM | 20 | 5 204.147 | H | 10.9 | 10.63 | -50.67 | -50.40 | -25.00 | 25.40 |
| | | 7 805.320 | V | 11.6 | 13.31 | -39.99 | -41.70 | -25.00 | 16.70 |
| | | 10 407.493 | V | 12.6 | 15.06 | -40.34 | -42.80 | -25.00 | 17.80 |
| | | 13 009.666 | V | 13.4 | 17.05 | -42.75 | -46.40 | -25.00 | 21.40 |

Note.

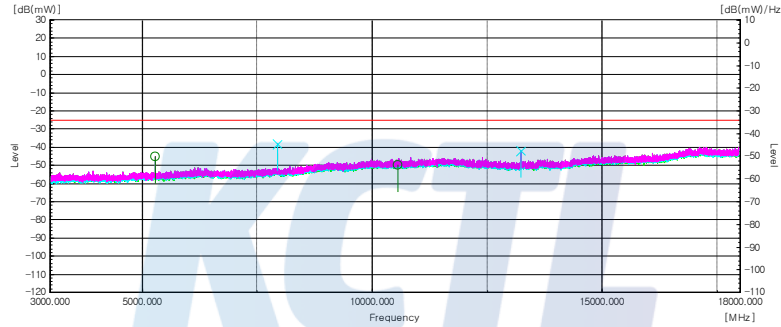
- Limit Calculation(dBm)= 55 + 10log(P_[Watts]) [dBc]
- No spurious emission were detected 1 000 MHz to 3 000 MHz.

Test mode : LTE Band41
Frequency(MHz) : 2 636.5
Channel : 41055

1 000 MHz to 3 000 MHz



Above 3 000 MHz



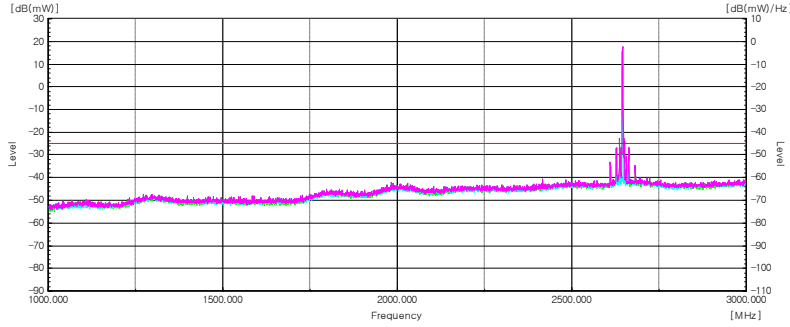
| Mode | Bandwidth | Frequency | Pol. | Antenna Gain | Cable loss | Substitute Level | Level | Limit | Margin |
|------|-----------|------------|-------|--------------|------------|------------------|--------|--------|--------|
| | [MHz] | [MHz] | [V/H] | [dBi] | [dB] | [dBm] | [dB] | [dBm] | [dB] |
| QPSK | 20 | 5 291.153 | H | 11.3 | 10.73 | -46.07 | -45.50 | -25.00 | 20.50 |
| | | 7 936.329 | V | 11.5 | 13.59 | -36.21 | -38.30 | -25.00 | 13.30 |
| | | 13 226.681 | V | 12.6 | 15.28 | -39.52 | -42.20 | -25.00 | 17.20 |
| | | 10 546.502 | H | 13.0 | 17.14 | -45.96 | -50.10 | -25.00 | 25.10 |

Note.

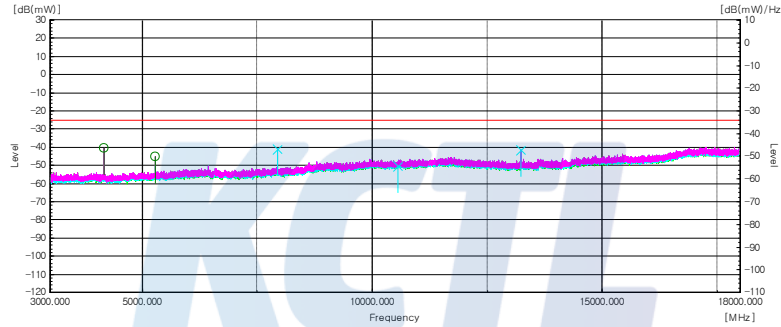
1. Limit Calculation(dBm)= 55 + 10log(P_[Watts]) [dBc]
2. No spurious emission were detected 1 000 MHz to 3 000 MHz.

Test mode : LTE Band41
Frequency(MHz) : 2 636.5
Channel : 41055

1 000 MHz to 3 000 MHz



Above 3 000 MHz



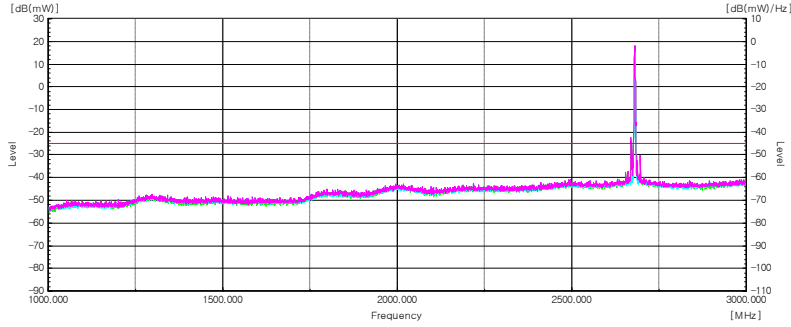
| Mode | Bandwidth | Frequency | Pol. | Antenna Gain | Cable loss | Substitute Level | Level | Limit | Margin |
|-------|-----------|------------|-------|--------------|------------|------------------|--------|--------|--------|
| | [MHz] | [MHz] | [V/H] | [dBi] | [dB] | [dBm] | [dB] | [dBm] | [dB] |
| 16QAM | 20 | 4 167.078 | H | 10.1 | 9.35 | -41.35 | -40.60 | -25.00 | 15.60 |
| | | 5 291.153 | H | 11.3 | 10.73 | -45.77 | -45.20 | -25.00 | 20.20 |
| | | 7 936.329 | V | 11.5 | 13.59 | -39.11 | -41.20 | -25.00 | 16.20 |
| | | 10 546.502 | V | 12.6 | 15.28 | -47.82 | -50.50 | -25.00 | 25.50 |
| | | 13 226.681 | V | 13.0 | 17.14 | -37.26 | -41.40 | -25.00 | 16.40 |

Note.

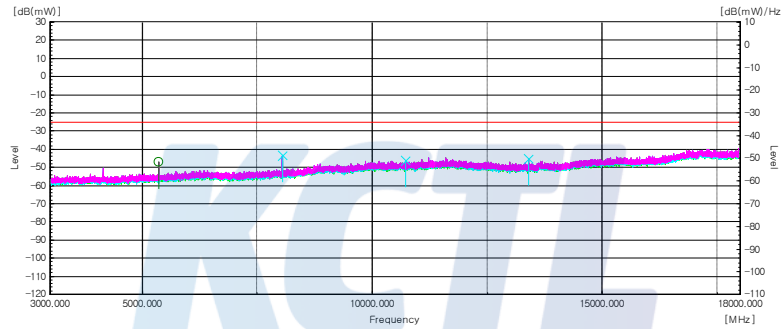
1. Limit Calculation(dBm)= 55 + 10log(P_[Watts]) [dBc]
2. No spurious emission were detected 1 000 MHz to 3 000 MHz.

Test mode : LTE Band41
Frequency(MHz) : 2 680.0
Channel : 41490

1 000 MHz to 3 000 MHz



Above 3 000 MHz



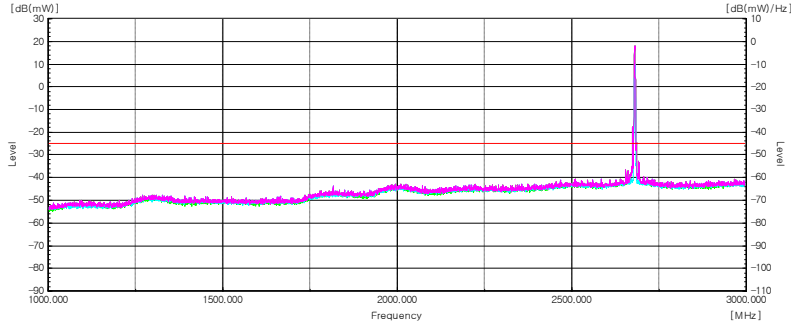
| Mode | Bandwidth | Frequency | Pol. | Antenna Gain | Cable loss | Substitute Level | Level | Limit | Margin |
|------|-----------|------------|-------|--------------|------------|------------------|--------|--------|--------|
| | [MHz] | [MHz] | [V/H] | [dBi] | [dB] | [dBm] | [dB] | [dBm] | [dB] |
| QPSK | 20 | 5 360.157 | H | 11.1 | 10.88 | -47.12 | -46.90 | -25.00 | 21.90 |
| | | 8 040.336 | V | 11.4 | 13.75 | -40.95 | -43.30 | -25.00 | 18.30 |
| | | 10 720.514 | V | 12.8 | 15.40 | -43.70 | -46.30 | -25.00 | 21.30 |
| | | 13 400.692 | V | 12.7 | 17.11 | -40.79 | -45.20 | -25.00 | 20.20 |

Note.

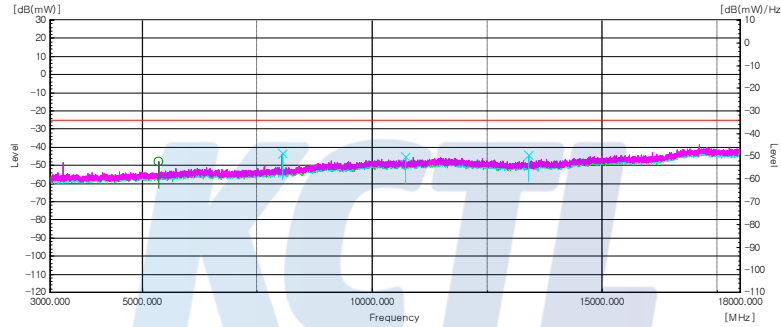
1. Limit Calculation(dBm)= 55 + 10log(P_[Watts]) [dBc]
2. No spurious emission were detected 1 000 MHz to 3 000 MHz.

Test mode : LTE Band41
Frequency(MHz) : 2 680.0
Channel : 41490

1 000 MHz to 3 000 MHz



Above 3 000 MHz



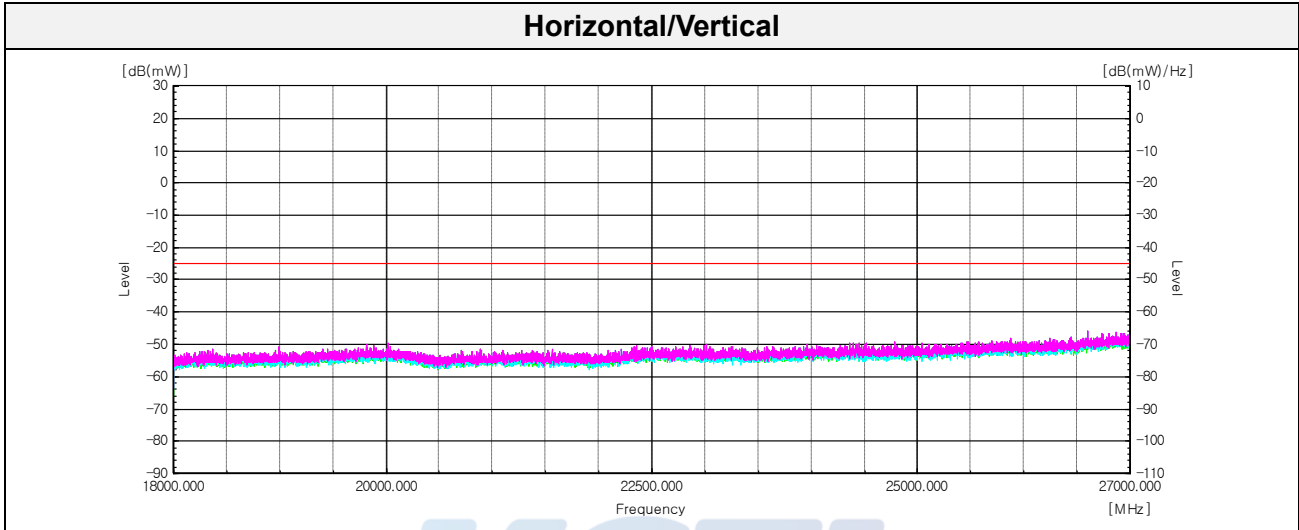
| Mode | Bandwidth | Frequency | Pol. | Antenna Gain | Cable loss | Substitute Level | Level | Limit | Margin |
|-------|-----------|------------|-------|--------------|------------|------------------|--------|--------|--------|
| | [MHz] | [MHz] | [V/H] | [dBi] | [dB] | [dBm] | [dB] | [dBm] | [dB] |
| 16QAM | 20 | 5 360.157 | H | 11.1 | 10.88 | -48.12 | -47.90 | -25.00 | 22.90 |
| | | 8 040.336 | V | 11.4 | 13.75 | -40.95 | -43.30 | -25.00 | 18.30 |
| | | 10 720.514 | V | 12.8 | 15.40 | -42.70 | -45.30 | -25.00 | 20.30 |
| | | 13 399.692 | V | 12.7 | 17.11 | -40.09 | -44.50 | -25.00 | 19.50 |

Note.

1. Limit Calculation(dBm)= 55 + 10log(P_[Watts]) [dBc]
2. No spurious emission were detected 1 000 MHz to 3 000 MHz.

Test results (Above 18 GHz to 40 GHz) – Worst case

Test mode : LTE Band41
Frequency (MHz) : 2 593.0
Channel : 40620



Note.

1. No spurious emissions were detected above 18GHz.

8. Geo-location mechanism

The device uses a geo-location mechanism based on the cellular MCC codes in order to only enable certain LTE bands when the device is not in the USA.

The validation of this mechanism is provided below.

The device was configured for cellular communications to a test set and the MCC code was adjusted on the test set between the US MCC and then an MCC code valid for a country where the LTE band is supported.

| Mode | MCC = USA | MCC = Non US |
|--------|-----------------|----------------------|
| LTE 7 | Did not connect | Connected (Ghana) |
| LTE 38 | Did not connect | Connected (Ghana) |
| LTE 40 | Did not connect | Connected (Nigeria) |
| LTE 41 | Connected (USA) | Connected (Cameroon) |

Note.

1. The verification tests confirmed the operational of the geo-location mechanism.

Test results

| Mode | MCC = USA | MCC = Non US |
|------------|-----------|--------------|
| LTE Band7 | | |
| LTE Band38 | | |
| LTE Band40 | | |

KCTL Inc.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-31-285-0894 FAX: 82-505-299-8311
www.kctl.co.kr

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| Mode | MCC = USA | MCC = Non US |
|---------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| LTE Band41 |  |  |



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9. Measurement equipment

| Equipment Name | Manufacturer | Model No. | Serial No. | Next Cal. Date |
|----------------------------------------|--------------------------------|--------------------------|-------------|----------------|
| Spectrum Analyzer | R & S | FSW50 | 101013 | 19.05.14 |
| Spectrum Analyzer | AGILENT | N9040B | MY57010132 | 19.10.12 |
| Power Divider | Aeroflex/ Weinschel, Inc. | 1580-1 | NX380 | 19.08.02 |
| Wideband Radio Communication Tester | R & S | CMW500 | 102159 | 19.08.08 |
| Wideband Radio Communication Tester | R & S | CMW500 | 106840 | 20.01.25 |
| Radio Communication Analyzer | Anritsu | MT8820C | 6201010005 | 19.08.02 |
| High pass Filter | Wainwright Instruments GmbH | WHKX3.0/18G- 12SS | 44 | 20.01.25 |
| High pass Filter | Wainwright Instruments GmbH | WHKX1.0/1.5S- 10SS | 14 | 20.01.25 |
| Attenuator | Weinschel ENGINEERING | 10 | AJ1239 | 19.05.14 |
| ATTENUATOR | API Inmet | 40AH2W-10 | 15 | 19.05.17 |
| Biconical VHF-UHF Broadband Antenna | SCHWARZBECK | VUBA9117 | 275 | 20.04.13 |
| Horn Antenna | ETS.lindgren | 3115 | 62589 | 19.08.24 |
| Horn Antenna | ETS.lindgren | 3116 | 00086635 | 19.05.10 |
| Horn Antenna | Steatite Antennas | QMS-00225 | 17790 | 19.08.24 |
| Bilog Antenna | Teseq GmbH | CBL 6143A | 35039 | 19.05.19 |
| Horn Antenna | ETS.lindgren | 3117 | 161225 | 19.05.18 |
| Amplifier | SONOMA INSTRUMENT | 317 | 321041 | 20.01.04 |
| Amplifier | L-3 Narda-MITEQ | AFS5-00101800-25- S-5 | 2054570 | 19.10.18 |
| Amplifier | L-3 Narda-MITEQ | JS44-18004000-33- 8P | 2000997 | 19.08.02 |
| RF Selector | TOYO Corporation | NS5800 | 1003-010 | N/A |
| Band Selector | TOYO Corporation | NS5800 | 1003-135 | N/A |
| Band Selector | TOYO Corporation | NS5800 | 1003-320 | N/A |
| Antenna Mast | MATURO | EAS 1.5 | 042/8941211 | N/A |
| Antenna Mast | MATURO | EAS 1.5 | 043/8941211 | N/A |
| Turn Table | MATURO | TT 0.8 PF | 041/8941211 | N/A |
| Cable Assembly | Radiall | R286303620 | 1649.241 | |
| Cable Assembly | Radiall | TESTPRO 3 | - | |

End of test report