

# 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](http://www.kctl.co.kr)

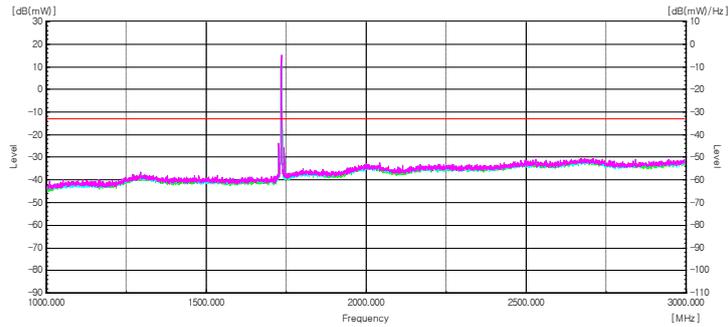
Report No.:  
KR19-SRF0016-A

Page (219) of (279)

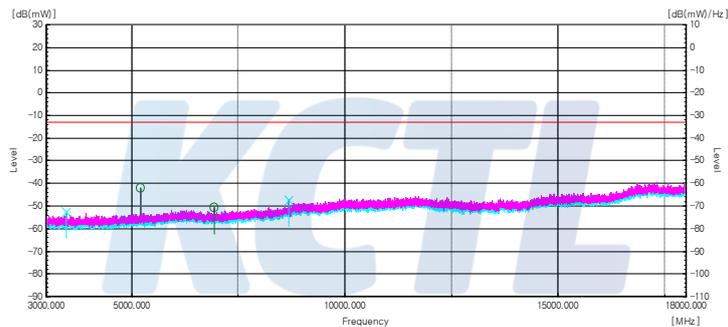


Test mode : LTE Band4  
Frequency(MHz) : 1 732.5  
Channel : 20175  
Bandwidth(MHz) : 5

### 1 000 MHz to 3 000 MHz



### Above 3 000 MHz



Mode	Frequency	Pol.	Antenna Gain	Cable loss	Substitute Level	Level	Limit	Margin
	[MHz]	[V/H]	[dBi]	[dB]	[dBm]	[dBm]	[dBm]	[dB]
16QAM	3 469.03	V	9.8	9.06	-53.24	-52.50	-13.00	39.50
	5 204.15	H	10.9	11.20	-41.80	-42.10	-13.00	29.10
	6 938.26	H	10.8	13.31	-48.09	-50.60	-13.00	37.60
	8 673.38	V	11.9	14.41	-44.99	-47.50	-13.00	34.50

Note.

1. Limit Calculation(dBm)= 43 + 10log(P<sub>[Watts]</sub>) [dBc]
2. No spurious emission were detected 1 000 MHz to 3 000 MHz.

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Page (220) of (279)



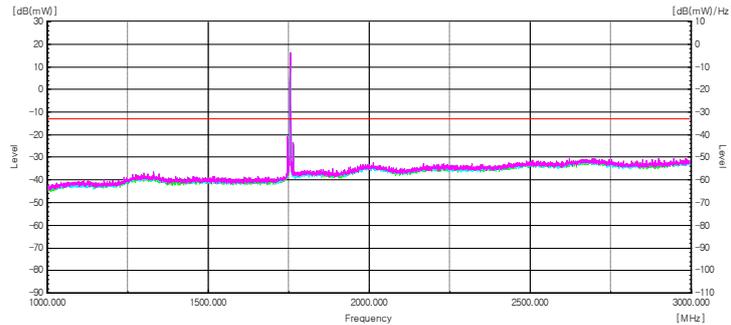
Test mode : LTE Band4

Frequency(MHz) : 1 752.5

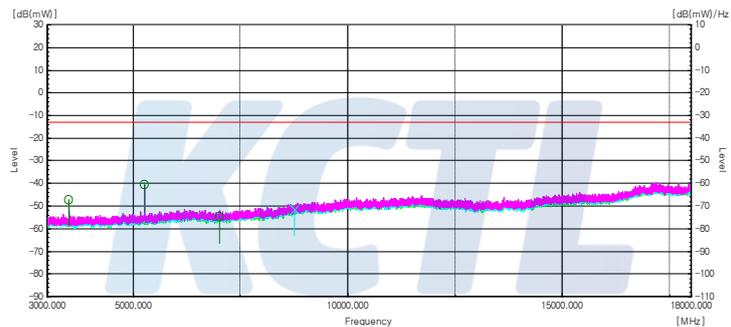
Channel : 20375

Bandwidth(MHz) : 5

## 1 000 MHz to 3 000 MHz



## Above 3 000 MHz



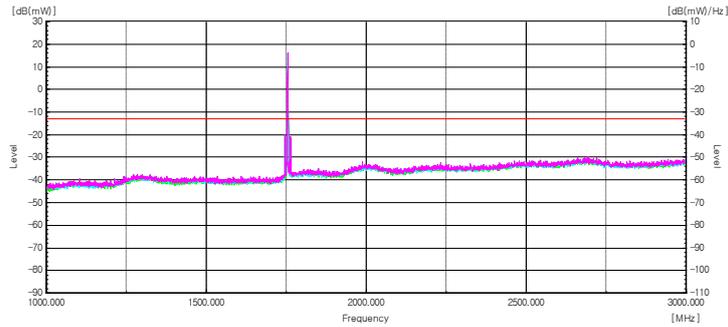
Mode	Frequency	Pol.	Antenna Gain	Cable loss	Substitute Level	Level	Limit	Margin
	[MHz]	[V/H]	[dBi]	[dB]	[dBm]	[dBm]	[dBm]	[dB]
QPSK	3 509.03	H	9.7	9.06	-47.84	-47.20	-13.00	34.20
	5 264.15	H	10.8	11.20	-40.20	-40.60	-13.00	27.60
	7 010.27	H	10.9	13.24	-52.46	-54.80	-13.00	41.80
	8 762.38	V	11.9	14.50	-49.00	-51.60	-13.00	38.60

Note.

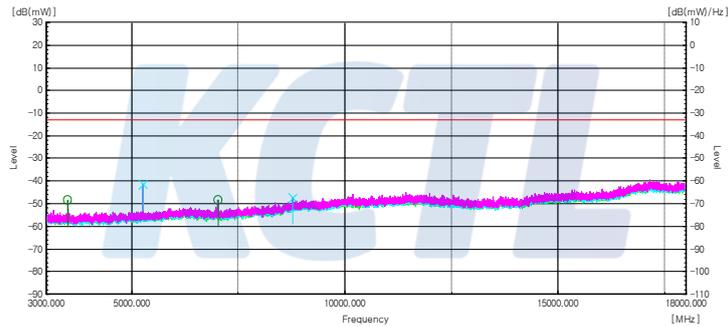
1. Limit Calculation(dBm)=  $43 + 10\log(P_{\text{Watts}})$  [dBc]
2. No spurious emission were detected 1 000 MHz to 3 000 MHz.

Test mode : LTE Band4  
 Frequency(MHz) : 1 752.5  
 Channel : 20375  
 Bandwidth(MHz) : 5

1 000 MHz to 3 000 MHz



Above 3 000 MHz



Mode	Frequency	Pol.	Antenna Gain	Cable loss	Substitute Level	Level	Limit	Margin
	[MHz]	[V/H]	[dBi]	[dB]	[dBm]	[dBm]	[dBm]	[dB]
16QAM	3 509.03	H	9.7	9.06	-49.24	-48.60	-13.00	35.60
	5 264.15	V	10.8	11.20	-41.10	-41.50	-13.00	28.50
	7 019.27	H	10.9	13.24	-46.06	-48.40	-13.00	35.40
	8 773.38	V	11.9	14.50	-44.90	-47.50	-13.00	34.50

Note.

- Limit Calculation(dBm)= 43 + 10log(P<sub>Watts</sub>) [dBc]
- No spurious emission were detected 1 000 MHz to 3 000 MHz.

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Page (222) of (279)



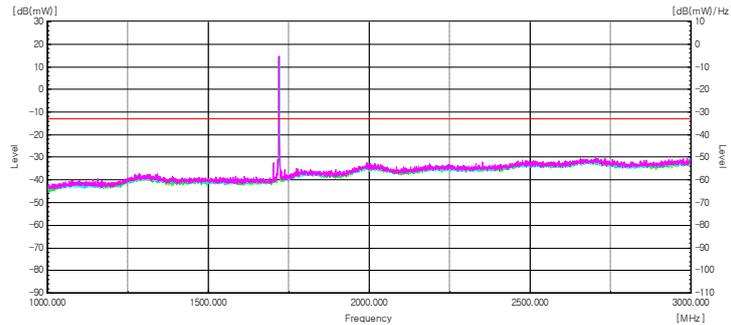
Test mode : LTE Band4

Frequency(MHz) : 1 715.0

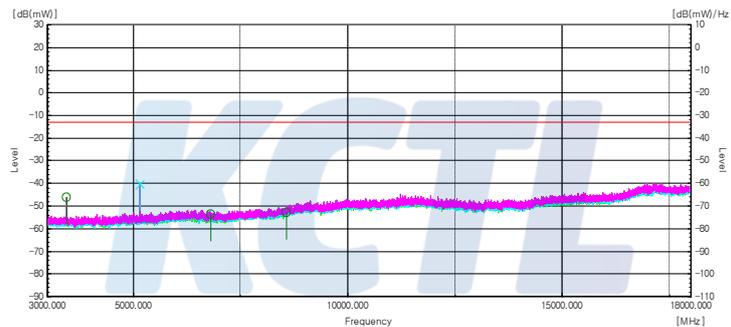
Channel : 20000

Bandwidth(MHz) : 10

## 1 000 MHz to 3 000 MHz



## Above 3 000 MHz



Mode	Frequency	Pol.	Antenna Gain	Cable loss	Substitute Level	Level	Limit	Margin
	[MHz]	[V/H]	[dBi]	[dB]	[dBm]	[dBm]	[dBm]	[dB]
QPSK	3 439.03	H	9.8	8.05	-48.15	-46.40	-13.00	33.40
	5 158.14	V	10.9	11.07	-40.23	-40.40	-13.00	27.40
	6 808.25	H	10.9	13.21	-51.49	-53.80	-13.00	40.80
	8 575.37	H	11.8	14.36	-50.44	-53.00	-13.00	40.00

Note.

1. Limit Calculation(dBm)= 43 + 10log(P<sub>[Watts]</sub>) [dBc]
2. No spurious emission were detected 1 000 MHz to 3 000 MHz.

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Page (223) of (279)



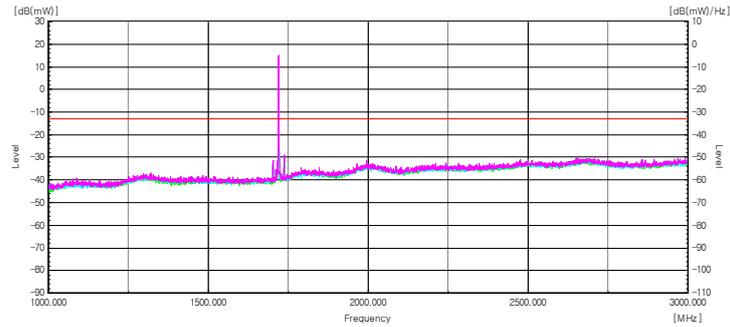
Test mode : LTE Band4

Frequency(MHz) : 1 715.0

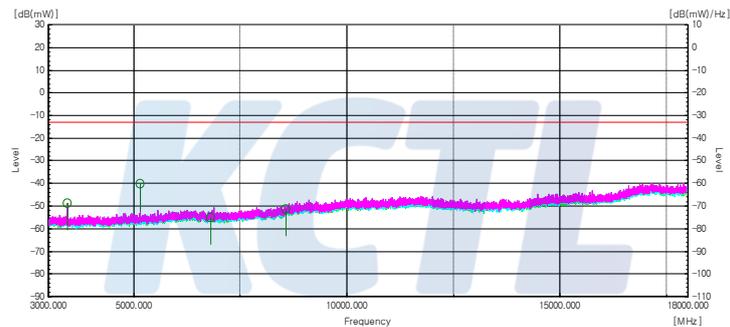
Channel : 20000

Bandwidth(MHz) : 10

## 1 000 MHz to 3 000 MHz



## Above 3 000 MHz



Mode	Frequency	Pol.	Antenna Gain	Cable loss	Substitute Level	Level	Limit	Margin
	[MHz]	[V/H]	[dBi]	[dB]	[dBm]	[dBm]	[dBm]	[dB]
16QAM	3 439.03	H	9.8	8.05	-50.75	-49.00	-13.00	36.00
	5 158.14	H	10.9	11.07	-40.23	-40.40	-13.00	27.40
	6 808.25	H	10.9	13.21	-53.09	-55.40	-13.00	42.40
	8 575.37	H	11.8	14.36	-49.14	-51.70	-13.00	38.70

Note.

1. Limit Calculation(dBm)= 43 + 10log(P<sub>[Watts]</sub>) [dBc]
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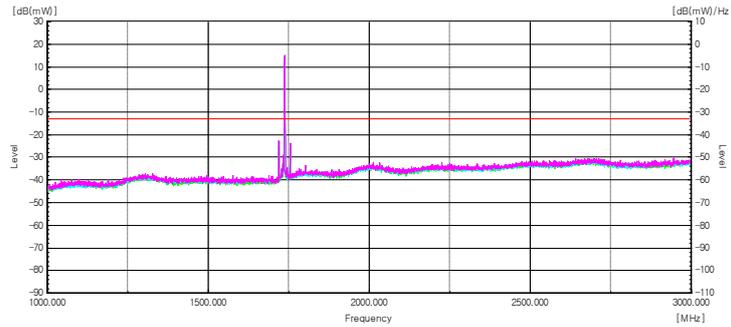
Report No.:  
KR19-SRF0016-A

Page (224) of (279)

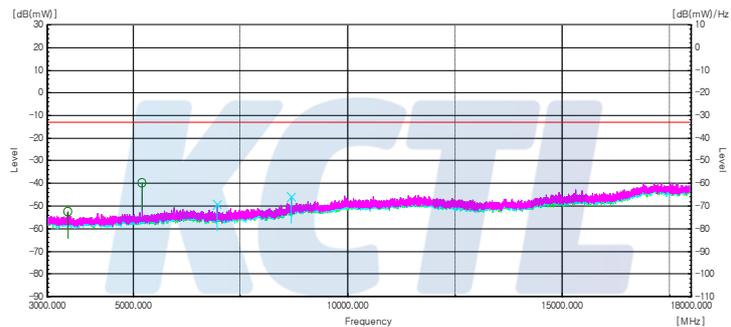


Test mode : LTE Band4  
Frequency(MHz) : 1 732.5  
Channel : 20175  
Bandwidth(MHz) : 10

### 1 000 MHz to 3 000 MHz



### Above 3 000 MHz



Mode	Frequency	Pol.	Antenna Gain	Cable loss	Substitute Level	Level	Limit	Margin
	[MHz]	[V/H]	[dBi]	[dB]	[dBm]	[dBm]	[dBm]	[dB]
QPSK	3 474.03	H	9.8	9.06	-53.54	-52.80	-13.00	39.80
	5 211.15	H	10.9	11.20	-39.50	-39.80	-13.00	26.80
	6 947.26	V	10.8	13.31	-46.69	-49.20	-13.00	36.20
	8 684.38	V	11.9	14.41	-43.59	-46.10	-13.00	33.10

Note.

- Limit Calculation(dBm)= 43 + 10log(P<sub>Watts</sub>) [dBc]
- No spurious emission were detected 1 000 MHz to 3 000 MHz.

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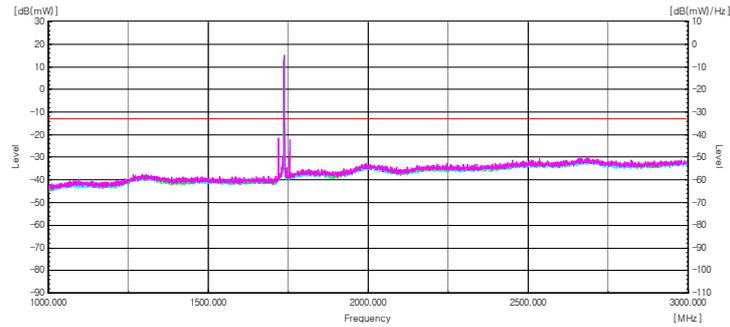
Report No.:  
KR19-SRF0016-A

Page (225) of (279)

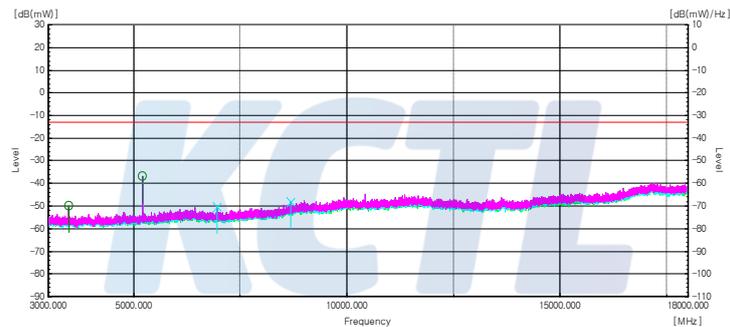


Test mode : LTE Band4  
Frequency(MHz) : 1 732.5  
Channel : 20175  
Bandwidth(MHz) : 10

### 1 000 MHz to 3 000 MHz



### Above 3 000 MHz



Mode	Frequency	Pol.	Antenna Gain	Cable loss	Substitute Level	Level	Limit	Margin
	[MHz]	[V/H]	[dBi]	[dB]	[dBm]	[dBm]	[dBm]	[dB]
16QAM	3 474.03	H	9.8	9.06	-50.84	-50.10	-13.00	37.10
	5 211.15	H	10.9	11.20	-36.60	-36.90	-13.00	23.90
	6 947.26	V	10.8	13.31	-47.79	-50.30	-13.00	37.30
	8 684.38	V	11.9	14.41	-45.49	-48.00	-13.00	35.00

Note.

1. Limit Calculation(dBm)= 43 + 10log(P<sub>[Watts]</sub>) [dBc]
2. No spurious emission were detected 1 000 MHz to 3 000 MHz.

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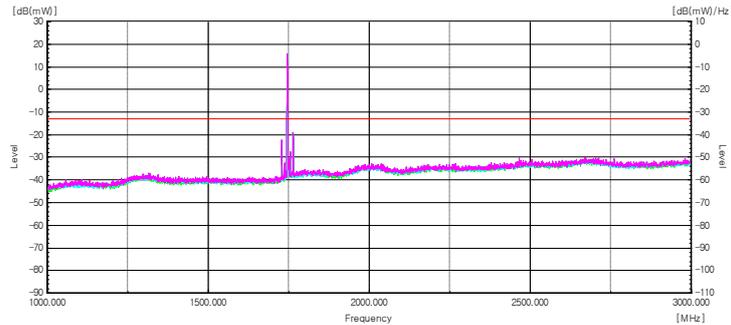
Report No.:  
KR19-SRF0016-A

Page (226) of (279)

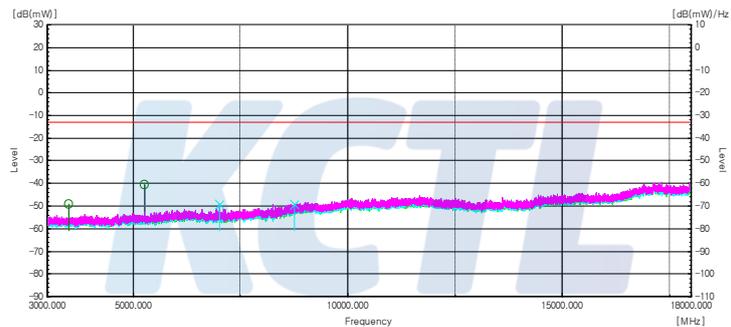


Test mode : LTE Band4  
Frequency(MHz) : 1 750.0  
Channel : 20350  
Bandwidth(MHz) : 10

## 1 000 MHz to 3 000 MHz



## Above 3 000 MHz



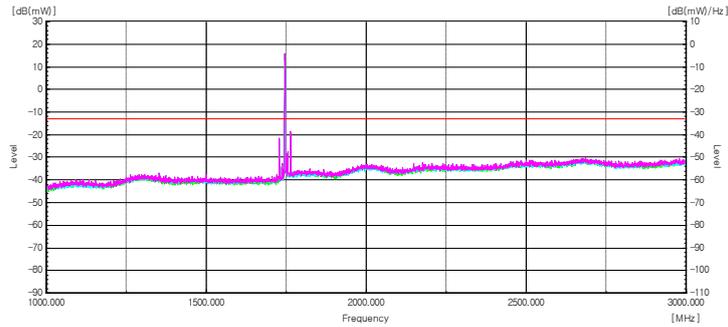
Mode	Frequency	Pol.	Antenna Gain	Cable loss	Substitute Level	Level	Limit	Margin
	[MHz]	[V/H]	[dBi]	[dB]	[dBm]	[dBm]	[dBm]	[dB]
QPSK	3 509.03	H	9.7	9.06	-49.84	-49.20	-13.00	36.20
	5 263.15	H	10.8	11.20	-40.30	-40.70	-13.00	27.70
	7 017.27	V	10.9	13.24	-47.06	-49.40	-13.00	36.40
	8 750.38	V	11.9	14.50	-46.60	-49.20	-13.00	36.20

Note.

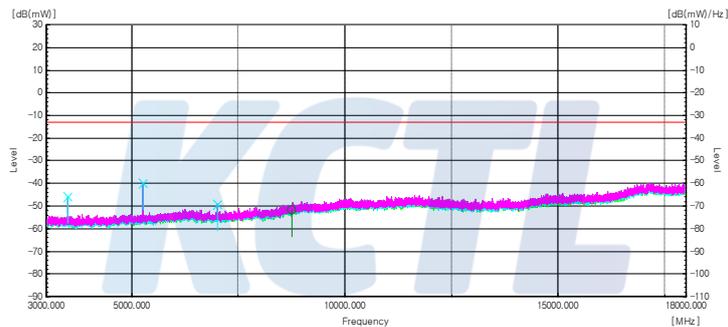
- Limit Calculation(dBm)= 43 + 10log(P<sub>[Watts]</sub>) [dBc]
- No spurious emission were detected 1 000 MHz to 3 000 MHz.

Test mode : LTE Band4  
 Frequency(MHz) : 1 750.0  
 Channel : 20350  
 Bandwidth(MHz) : 10

1 000 MHz to 3 000 MHz



Above 3 000 MHz



Mode	Frequency	Pol.	Antenna Gain	Cable loss	Substitute Level	Level	Limit	Margin
	[MHz]	[V/H]	[dBi]	[dB]	[dBm]	[dBm]	[dBm]	[dB]
.16QAM	3 509.03	V	9.7	9.06	-46.64	-46.00	-13.00	33.00
	5 263.15	V	10.8	11.20	-39.60	-40.00	-13.00	27.00
	7 017.27	V	10.9	13.24	-46.96	-49.30	-13.00	36.30
	8 750.38	H	11.9	14.50	-49.30	-51.90	-13.00	38.90

Note.

1. Limit Calculation(dBm)= 43 + 10log(P<sub>[Watts]</sub>) [dBc]
2. No spurious emission were detected 1 000 MHz to 3 000 MHz.

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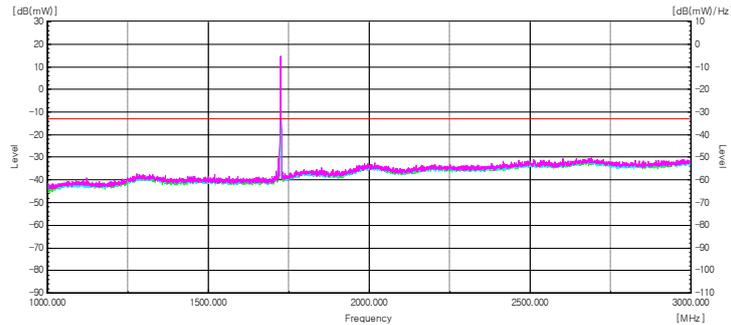
Report No.:  
KR19-SRF0016-A

Page (228) of (279)

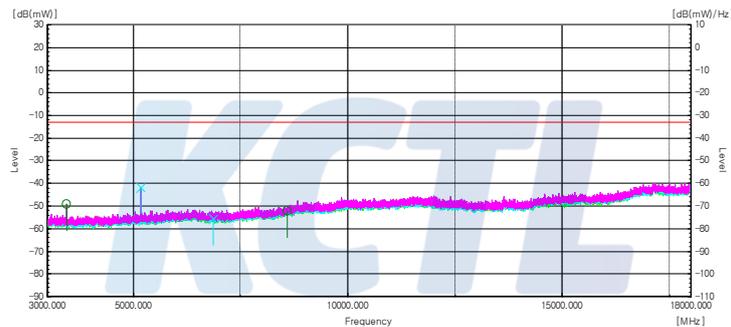


Test mode : LTE Band4  
Frequency(MHz) : 1 717.5  
Channel : 20025  
Bandwidth(MHz) : 15

### 1 000 MHz to 3 000 MHz



### Above 3 000 MHz



Mode	Frequency	Pol.	Antenna Gain	Cable loss	Substitute Level	Level	Limit	Margin
	[MHz]	[V/H]	[dBi]	[dB]	[dBm]	[dBm]	[dBm]	[dB]
QPSK	3 448.03	H	9.8	8.05	-50.95	-49.20	-13.00	36.20
	5 172.15	V	10.9	11.07	-41.73	-41.90	-13.00	28.90
	6 870.26	V	10.9	13.21	-53.19	-55.50	-13.00	42.50
	8 587.37	H	11.8	14.36	-49.64	-52.20	-13.00	39.20

Note.

- Limit Calculation(dBm)= 43 + 10log(P<sub>Watts</sub>) [dBc]
- No spurious emission were detected 1 000 MHz to 3 000 MHz.

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Report No.:  
KR19-SRF0016-A

Page (229) of (279)



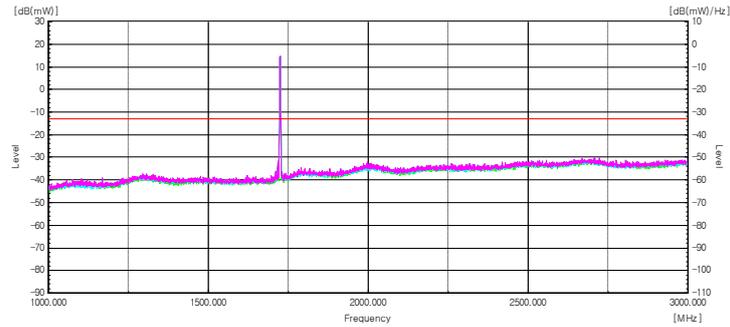
Test mode : LTE Band4

Frequency(MHz) : 1 717.5

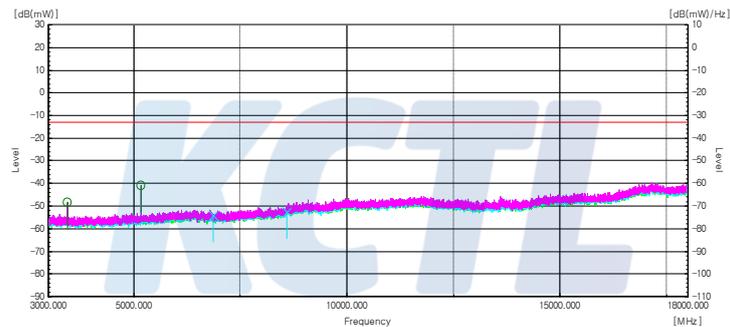
Channel : 20025

Bandwidth(MHz) : 15

## 1 000 MHz to 3 000 MHz



## Above 3 000 MHz



Mode	Frequency	Pol.	Antenna Gain	Cable loss	Substitute Level	Level	Limit	Margin
	[MHz]	[V/H]	[dBi]	[dB]	[dBm]	[dBm]	[dBm]	[dB]
16QAM	3 448.03	H	9.8	8.05	-50.15	-48.40	-13.00	35.40
	5 172.15	H	10.9	11.07	-40.93	-41.10	-13.00	28.10
	6 870.26	V	10.9	13.21	-51.79	-54.10	-13.00	41.10
	8 587.37	V	11.8	14.36	-50.04	-52.60	-13.00	39.60

Note.

1. Limit Calculation(dBm)= 43 + 10log(P<sub>[Watts]</sub>) [dBc]
2. No spurious emission were detected 1 000 MHz to 3 000 MHz.

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KR19-SRF0016-A

Page (230) of (279)



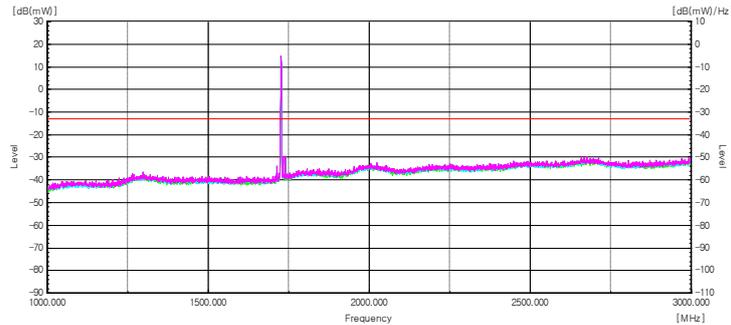
Test mode : LTE Band4

Frequency(MHz) : 1 732.5

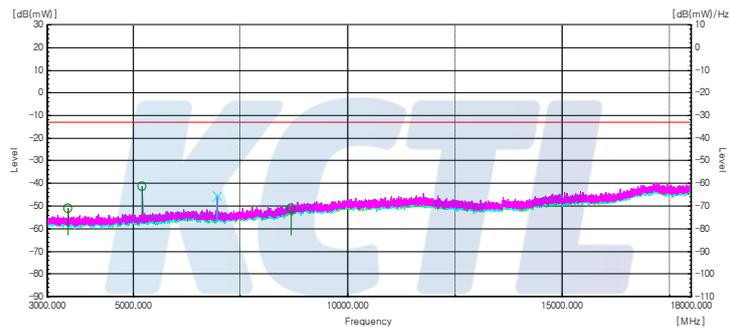
Channel : 20175

Bandwidth(MHz) : 15

## 1 000 MHz to 3 000 MHz



## Above 3 000 MHz



Mode	Frequency	Pol.	Antenna Gain	Cable loss	Substitute Level	Level	Limit	Margin
	[MHz]	[V/H]	[dBi]	[dB]	[dBm]	[dBm]	[dBm]	[dB]
QPSK	3 478.03	H	9.8	9.06	-51.94	-51.20	-13.00	38.20
	5 217.15	H	10.9	11.20	-41.10	-41.40	-13.00	28.40
	6 956.26	V	10.8	13.31	-42.99	-45.50	-13.00	32.50
	8 684.38	H	11.9	14.41	-48.49	-51.00	-13.00	38.00

Note.

- Limit Calculation(dBm)= 43 + 10log(P<sub>Watts</sub>) [dBc]
- No spurious emission were detected 1 000 MHz to 3 000 MHz.

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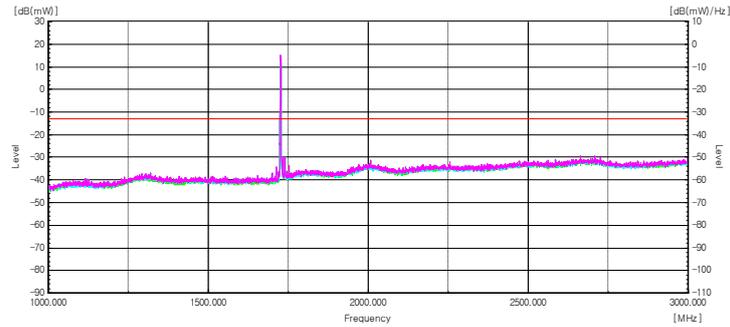
Report No.:  
KR19-SRF0016-A

Page (231) of (279)

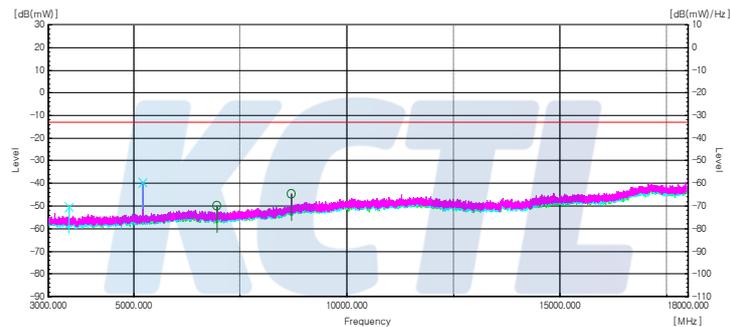


Test mode : LTE Band4  
Frequency(MHz) : 1 732.5  
Channel : 20175  
Bandwidth(MHz) : 15

### 1 000 MHz to 3 000 MHz



### Above 3 000 MHz



Mode	Frequency	Pol.	Antenna Gain	Cable loss	Substitute Level	Level	Limit	Margin
	[MHz]	[V/H]	[dBi]	[dB]	[dBm]	[dBm]	[dBm]	[dB]
16QAM	3 478.03	V	9.8	9.06	-51.14	-50.40	-13.00	37.40
	5 217.15	V	10.9	11.20	-39.20	-39.50	-13.00	26.50
	6 956.26	H	10.8	13.31	-47.39	-49.90	-13.00	36.90
	8 695.38	H	11.9	14.41	-42.39	-44.90	-13.00	31.90

Note.

1. Limit Calculation(dBm)= 43 + 10log(P<sub>[Watts]</sub>) [dBc]
2. No spurious emission were detected 1 000 MHz to 3 000 MHz.

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Report No.:  
KR19-SRF0016-A

Page (232) of (279)



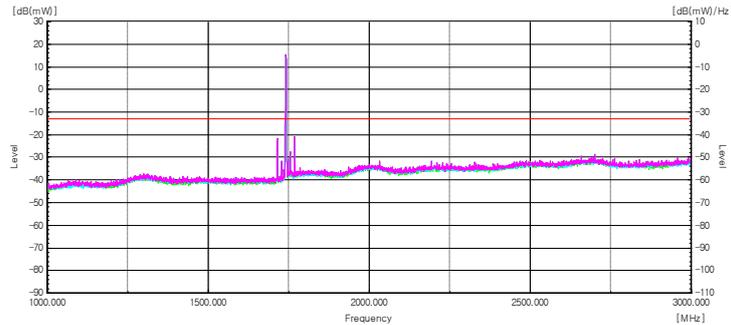
Test mode : LTE Band4

Frequency(MHz) : 1 747.5

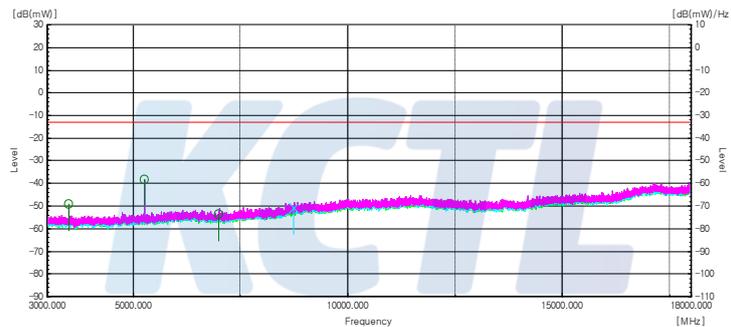
Channel : 20325

Bandwidth(MHz) : 15

## 1 000 MHz to 3 000 MHz



## Above 3 000 MHz



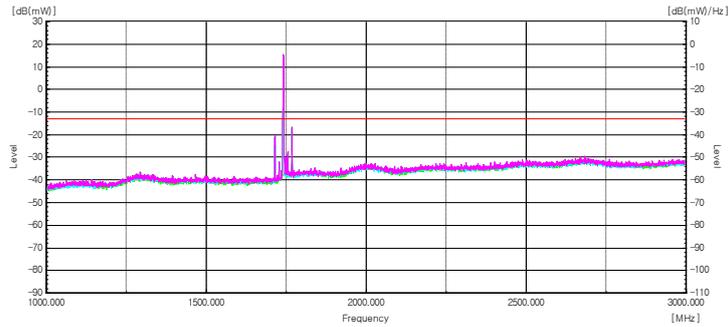
Mode	Frequency	Pol.	Antenna Gain	Cable loss	Substitute Level	Level	Limit	Margin
	[MHz]	[V/H]	[dBi]	[dB]	[dBm]	[dBm]	[dBm]	[dB]
QPSK	3 508.03	H	9.7	9.06	-49.84	-49.20	-13.00	36.20
	5 262.15	H	10.8	11.20	-38.10	-38.50	-13.00	25.50
	6 990.27	H	10.9	13.24	-51.46	-53.80	-13.00	40.80
	8 737.38	V	11.9	14.40	-48.10	-50.60	-13.00	37.60

Note.

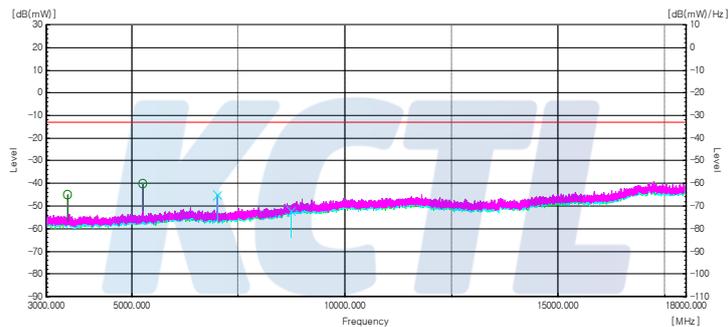
- Limit Calculation(dBm)=  $43 + 10\log(P_{\text{Watts}})$  [dBc]
- No spurious emission were detected 1 000 MHz to 3 000 MHz.

Test mode : LTE Band4  
 Frequency(MHz) : 1 747.5  
 Channel : 20325  
 Bandwidth(MHz) : 15

1 000 MHz to 3 000 MHz



Above 3 000 MHz



Mode	Frequency	Pol.	Antenna Gain	Cable loss	Substitute Level	Level	Limit	Margin
	[MHz]	[V/H]	[dBi]	[dB]	[dBm]	[dBm]	[dBm]	[dB]
16QAM	3 508.03	H	9.7	9.06	-45.74	-45.10	-13.00	32.10
	5 262.15	H	10.8	11.20	-40.00	-40.40	-13.00	27.40
	7 016.27	V	10.9	13.24	-42.76	-45.10	-13.00	32.10
	8 737.38	V	11.9	14.40	-49.90	-52.40	-13.00	39.40

Note.

1. Limit Calculation(dBm)= 43 + 10log(P<sub>Watts</sub>) [dBc]
2. No spurious emission were detected 1 000 MHz to 3 000 MHz.

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[www.kctl.co.kr](http://www.kctl.co.kr)

Report No.:  
KR19-SRF0016-A

Page (234) of (279)



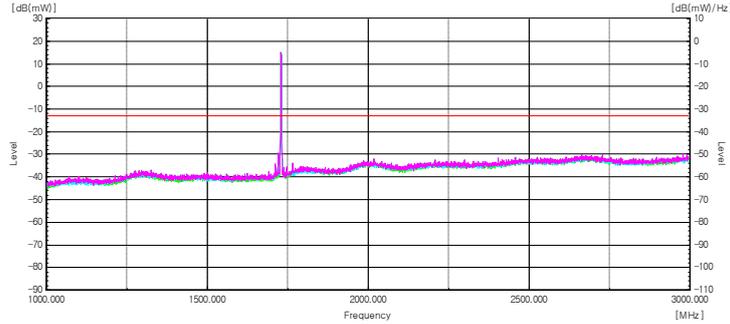
Test mode : LTE Band4

Frequency(MHz) : 1 720.0

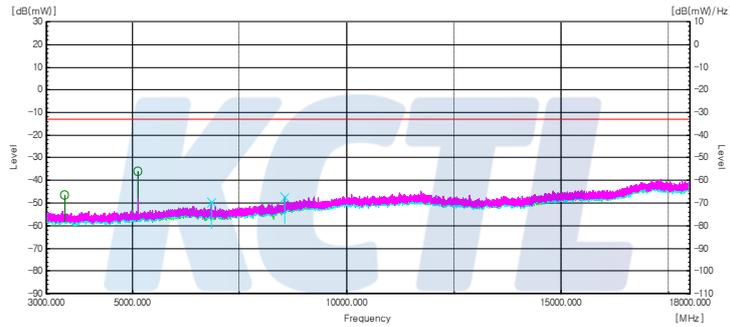
Channel : 20050

Bandwidth(MHz) : 20

## 1 000 MHz to 3 000 MHz



## Above 3 000 MHz



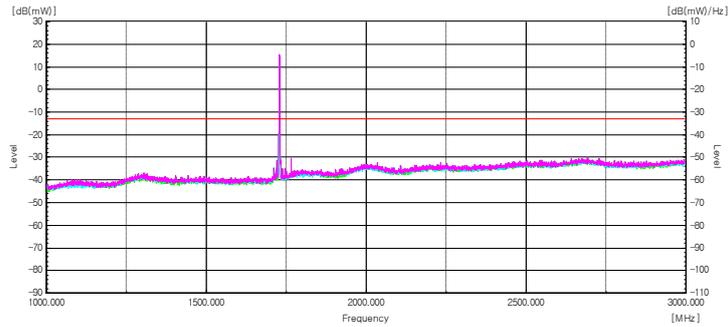
Mode	Frequency	Pol.	Antenna Gain	Cable loss	Substitute Level	Level	Limit	Margin
	[MHz]	[V/H]	[dBi]	[dB]	[dBm]	[dBm]	[dBm]	[dB]
QPSK	3 422.03	H	9.8	8.05	-48.35	-46.60	-13.00	33.60
	5 133.14	H	10.9	11.07	-35.93	-36.10	-13.00	23.10
	6 844.26	V	10.8	13.31	-47.29	-49.80	-13.00	36.80
	8 555.37	V	11.9	14.36	-44.74	-47.20	-13.00	34.20

Note.

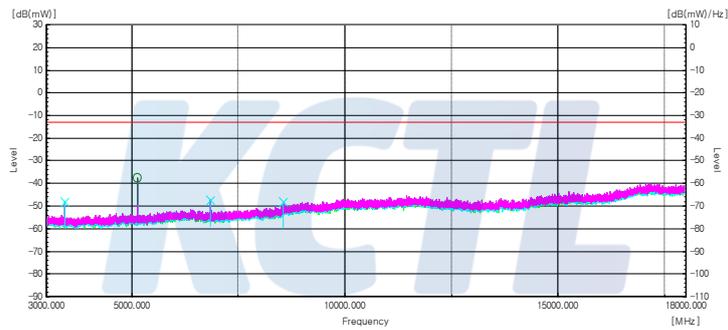
1. Limit Calculation(dBm)= 43 + 10log(P<sub>[Watts]</sub>) [dBc]
2. No spurious emission were detected 1 000 MHz to 3 000 MHz.

Test mode : LTE Band4  
 Frequency(MHz) : 1 720.0  
 Channel : 20050  
 Bandwidth(MHz) : 20

1 000 MHz to 3 000 MHz



Above 3 000 MHz



Mode	Frequency	Pol.	Antenna Gain	Cable loss	Substitute Level	Level	Limit	Margin
	[MHz]	[V/H]	[dBi]	[dB]	[dBm]	[dBm]	[dBm]	[dB]
16QAM	3 422.03	V	9.8	8.05	-49.85	-48.10	-13.00	35.10
	5 133.14	H	10.9	11.07	-37.33	-37.50	-13.00	24.50
	6 843.26	V	10.8	13.31	-44.79	-47.30	-13.00	34.30
	8 555.37	V	11.9	14.36	-45.74	-48.20	-13.00	35.20

Note.

1. Limit Calculation(dBm)= 43 + 10log(P<sub>[Watts]</sub>) [dBc]
2. No spurious emission were detected 1 000 MHz to 3 000 MHz.

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Report No.:  
KR19-SRF0016-A

Page (236) of (279)



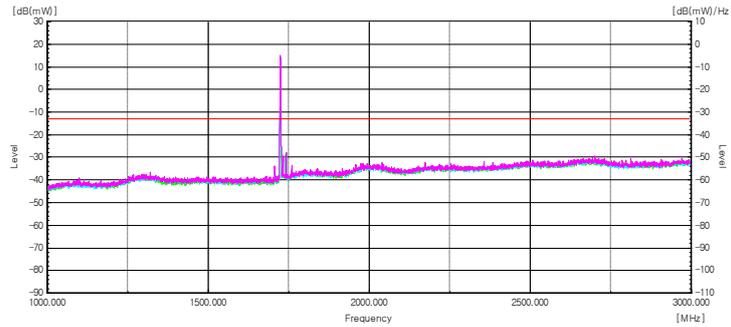
Test mode : LTE Band4

Frequency(MHz) : 1 732.5

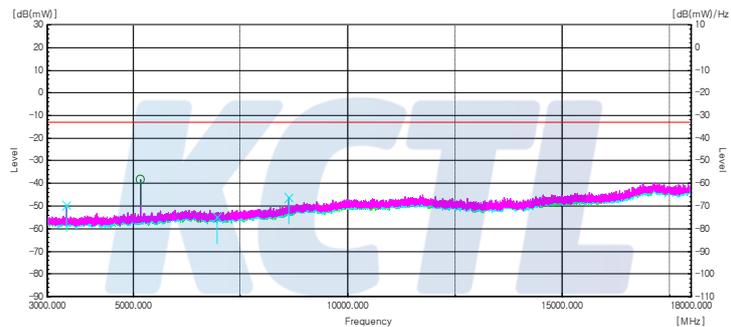
Channel : 20175

Bandwidth(MHz) : 20

## 1 000 MHz to 3 000 MHz



## Above 3 000 MHz



Mode	Frequency	Pol.	Antenna Gain	Cable loss	Substitute Level	Level	Limit	Margin
	[MHz]	[V/H]	[dBi]	[dB]	[dBm]	[dBm]	[dBm]	[dB]
QPSK	3 447.03	V	9.8	9.06	-50.24	-49.5	-13.00	36.50
	5 171.15	H	10.9	11.20	-38.10	-38.4	-13.00	25.40
	6 956.26	V	10.8	13.31	-52.49	-55.00	-13.00	42.00
	8 617.37	V	11.9	14.41	-43.79	-46.3	-13.00	33.30

Note.

- Limit Calculation(dBm)=  $43 + 10\log(P_{\text{Watts}})$  [dBc]
- No spurious emission were detected 1 000 MHz to 3 000 MHz.

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Report No.:  
KR19-SRF0016-A

Page (237) of (279)



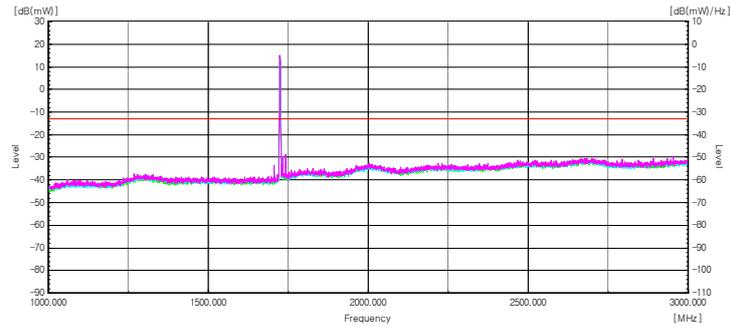
Test mode : LTE Band4

Frequency(MHz) : 1 732.5

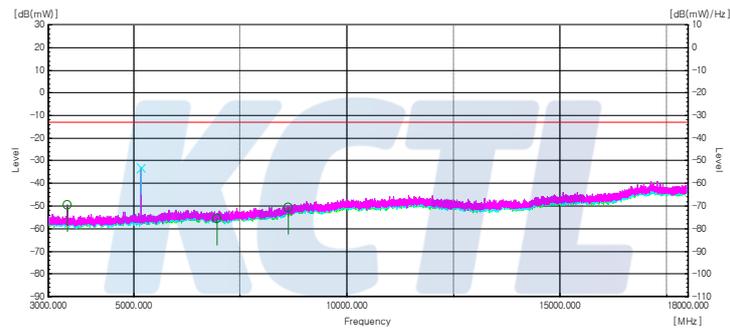
Channel : 20175

Bandwidth(MHz) : 20

## 1 000 MHz to 3 000 MHz



## Above 3 000 MHz



Mode	Frequency	Pol.	Antenna Gain	Cable loss	Substitute Level	Level	Limit	Margin
	[MHz]	[V/H]	[dBi]	[dB]	[dBm]	[dBm]	[dBm]	[dB]
QPSK	3 447.03	H	9.8	9.06	-50.44	-49.70	-13.00	36.70
	5 170.15	V	10.9	11.20	-32.90	-33.20	-13.00	20.20
	6 956.26	H	10.8	13.31	-53.19	-55.70	-13.00	42.70
	8 617.37	H	11.9	14.41	-48.19	-50.70	-13.00	37.70

Note.

1. Limit Calculation(dBm)=  $43 + 10\log(P_{\text{Watts}})$  [dBc]
2. No spurious emission were detected 1 000 MHz to 3 000 MHz.

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Report No.:  
KR19-SRF0016-A

Page (238) of (279)



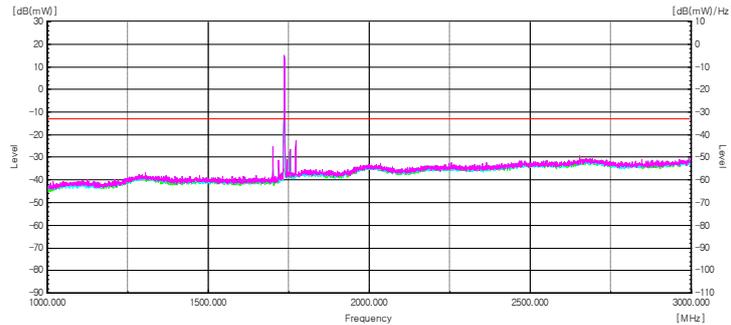
Test mode : LTE Band4

Frequency(MHz) : 1 745.0

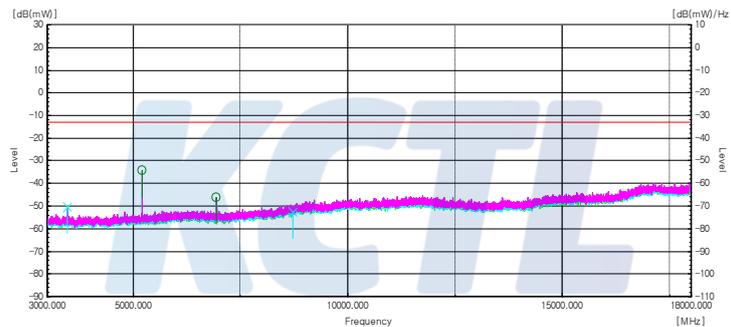
Channel : 20300

Bandwidth(MHz) : 20

## 1 000 MHz to 3 000 MHz



## Above 3 000 MHz



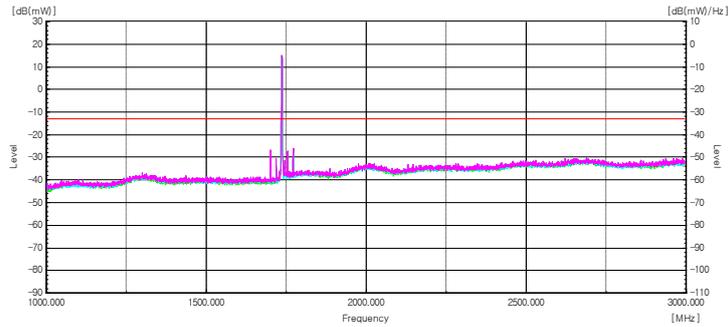
Mode	Frequency	Pol.	Antenna Gain	Cable loss	Substitute Level	Level	Limit	Margin
	[MHz]	[V/H]	[dBi]	[dB]	[dBm]	[dBm]	[dBm]	[dB]
QPSK	3 472.03	V	9.7	9.06	-51.14	-50.50	-13.00	37.50
	5 208.15	H	10.8	11.20	-33.90	-34.30	-13.00	21.30
	6 944.26	H	10.9	13.24	-44.06	-46.40	-13.00	33.40
	8 725.38	V	11.9	14.40	-50.20	-52.70	-13.00	39.70

Note.

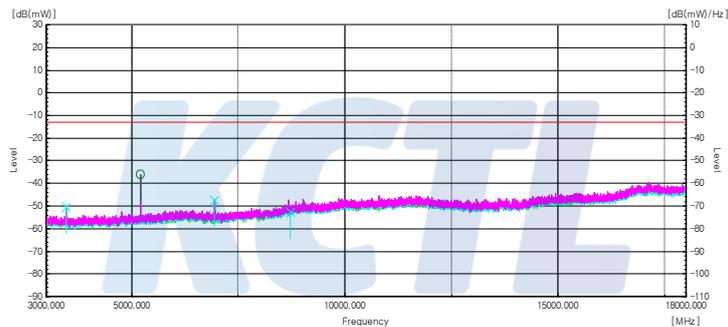
1. Limit Calculation(dBm)=  $43 + 10\log(P_{\text{Watts}})$  [dBc]
2. No spurious emission were detected 1 000 MHz to 3 000 MHz.

Test mode : LTE Band4  
 Frequency(MHz) : 1 745.0  
 Channel : 20300  
 Bandwidth(MHz) : 20

1 000 MHz to 3 000 MHz



Above 3 000 MHz



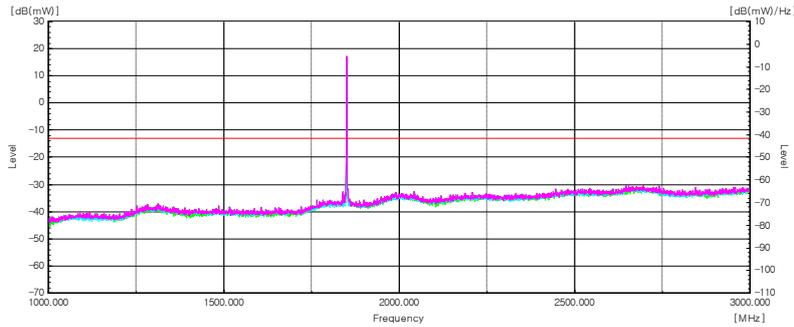
Mode	Frequency	Pol.	Antenna Gain	Cable loss	Substitute Level	Level	Limit	Margin
	[MHz]	[V/H]	[dBi]	[dB]	[dBm]	[dBm]	[dBm]	[dB]
16QAM	3 472.03	V	9.7	9.06	-50.94	-50.30	-13.00	37.30
	5 208.15	H	10.8	11.20	-35.60	-36.00	-13.00	23.00
	6 944.26	V	10.9	13.24	-45.06	-47.40	-13.00	34.40
	8 725.38	V	11.9	14.40	-50.00	-52.50	-13.00	39.50

Note.

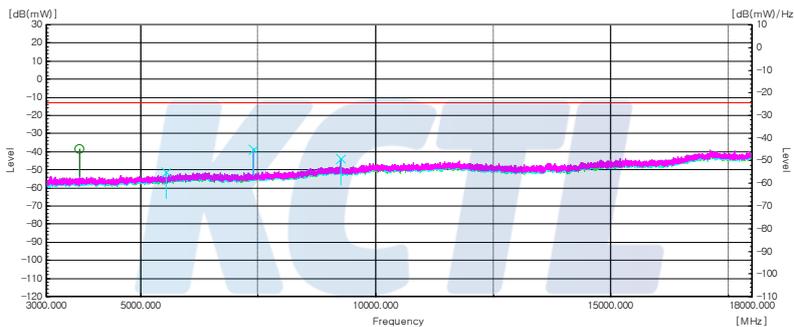
1. Limit Calculation(dBm)= 43 + 10log(P<sub>[Watts]</sub>) [dBc]
2. No spurious emission were detected 1 000 MHz to 3 000 MHz.

Test mode : LTE Band2  
Frequency(MHz) : 1 850.7  
Channel : 18607  
Bandwidth(MHz) : 1.4

1 000 MHz to 3 000 MHz



Above 3 000 MHz



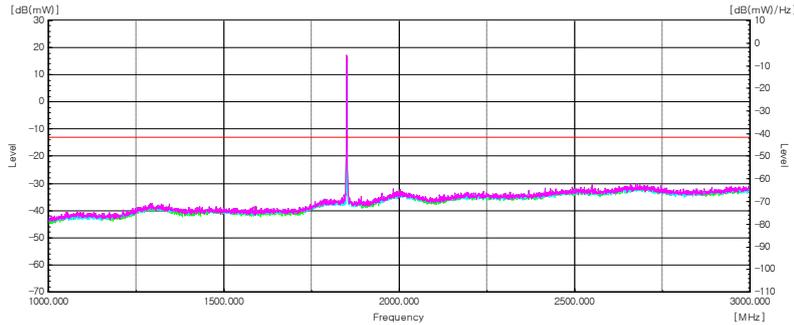
Mode	Frequency	Pol.	Antenna Gain	Cable loss	Substitute Level	Level	Limit	Margin
	[MHz]	[V/H]	[dBi]	[dB]	[dBm]	[dBm]	[dBm]	[dB]
QPSK	3 700.05	H	9.6	8.92	-39.48	-38.80	-13.00	25.80
	5 550.17	V	10.8	11.20	-50.70	-51.10	-13.00	38.10
	7 401.29	V	10.8	13.24	-36.36	-38.80	-13.00	25.80
	9 251.42	V	11.9	14.41	-41.29	-43.80	-13.00	30.80

Note.

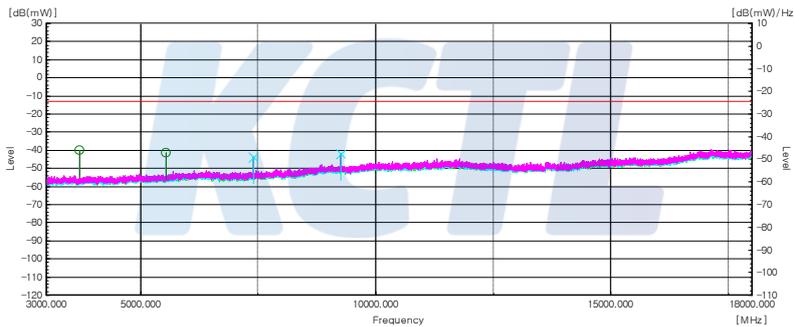
1. Limit Calculation(dBm)= 43 + 10log(P<sub>watts</sub>) [dBc]
2. No spurious emission were detected 1 000 MHz to 3 000 MHz.

Test mode : LTE Band2  
 Frequency(MHz) : 1 850.7  
 Channel : 18607  
 Bandwidth(MHz) : 1.4

1 000 MHz to 3 000 MHz



Above 3 000 MHz



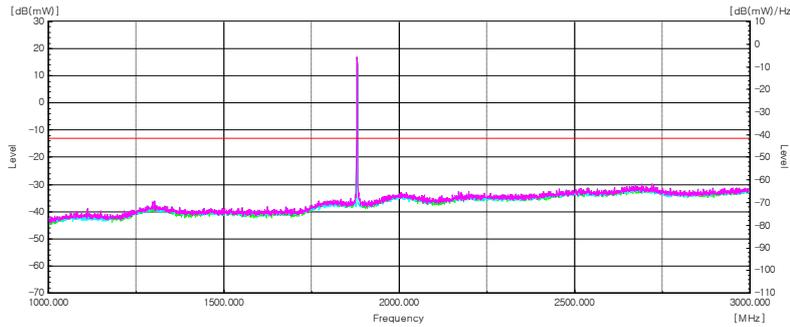
Mode	Frequency	Pol.	Antenna Gain	Cable loss	Substitute Level	Level	Limit	Margin
	[MHz]	[V/H]	[dBi]	[dB]	[dBm]	[dBm]	[dBm]	[dB]
16QAM	3 700.05	H	9.6	8.92	-40.78	-40.10	-13.00	27.10
	5 551.17	H	10.8	11.2	-41.2	-41.60	-13.00	28.60
	7 400.29	V	10.8	13.24	-41.26	-43.70	-13.00	30.70
	9 251.42	V	11.9	14.41	-39.39	-41.90	-13.00	28.90

Note.

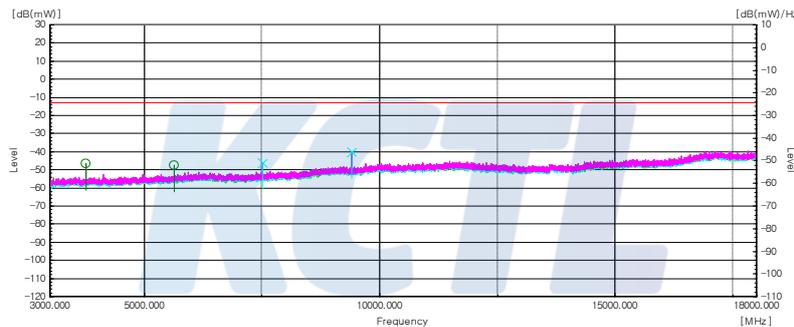
1. Limit Calculation(dBm)= 43 + 10log(P<sub>Watts</sub>) [dBc]
2. No spurious emission were detected 1 000 MHz to 3 000 MHz.

**Test mode** : LTE Band2  
**Frequency(MHz)** : 1 880.0  
**Channel** : 18900  
**Bandwidth(MHz)** : 1.4

1 000 MHz to 3 000 MHz



Above 3 000 MHz



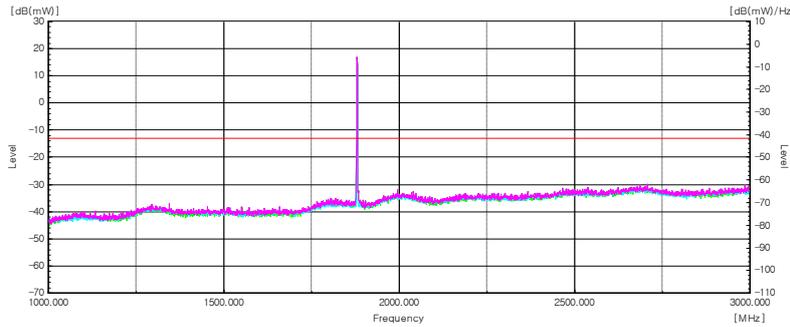
Mode	Frequency	Pol.	Antenna Gain	Cable loss	Substitute Level	Level	Limit	Margin
	[MHz]	[V/H]	[dBi]	[dB]	[dBm]	[dBm]	[dBm]	[dB]
QPSK	3 759.05	H	9.3	8.92	-46.88	-46.50	-13.00	33.50
	5 638.18	H	10.8	11.27	-46.93	-47.40	-13.00	34.40
	7 518.30	V	11.0	13.24	-43.76	-46.00	-13.00	33.00
	9 398.43	V	12.0	14.50	-37.40	-39.90	-13.00	26.90

Note.

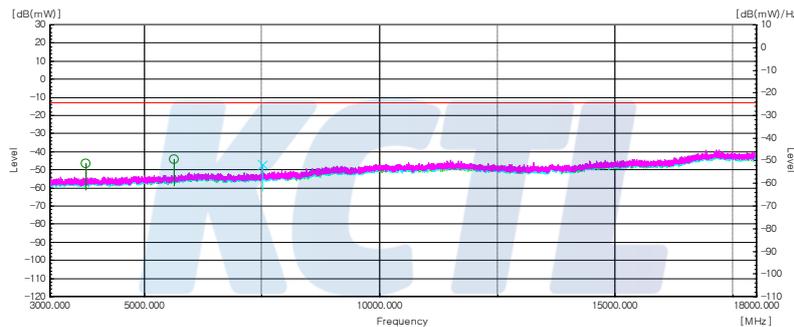
1. Limit Calculation(dBm)= 43 + 10log(P<sub>watts</sub>) [dBc]
2. No spurious emission were detected 1 000 MHz to 3 000 MHz.

Test mode : LTE Band2  
 Frequency(MHz) : 1 880.0  
 Channel : 18900  
 Bandwidth(MHz) : 1.4

1 000 MHz to 3 000 MHz



Above 3 000 MHz



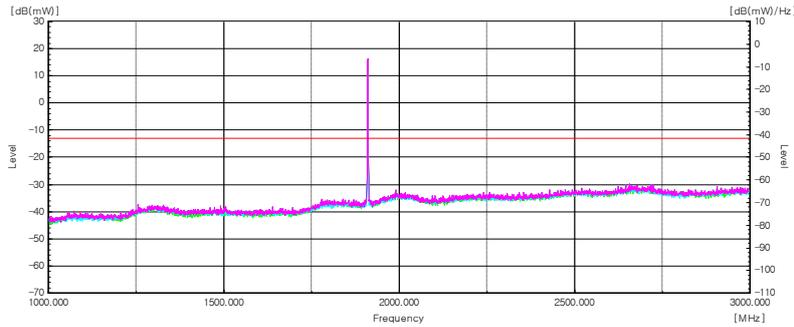
Mode	Frequency	Pol.	Antenna Gain	Cable loss	Substitute Level	Level	Limit	Margin
	[MHz]	[V/H]	[dBi]	[dB]	[dBm]	[dBm]	[dBm]	[dB]
16QAM	3 759.05	H	9.3	8.92	-47.18	-46.80	-13.00	33.80
	5 639.17	H	10.8	11.27	-44.03	-44.50	-13.00	31.50
	7 517.30	V	11.0	13.24	-45.06	-47.30	-13.00	34.30

Note.

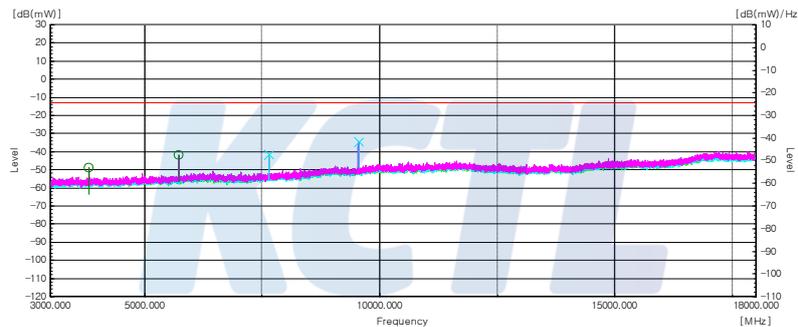
1. Limit Calculation(dBm)= 43 + 10log(P<sub>[Watts]</sub>) [dBc]
2. No spurious emission were detected 1 000 MHz to 3 000 MHz.

Test mode : LTE Band2  
 Frequency(MHz) : 1 909.3  
 Channel : 18900  
 Bandwidth(MHz) : 1.4

1 000 MHz to 3 000 MHz



Above 3 000 MHz



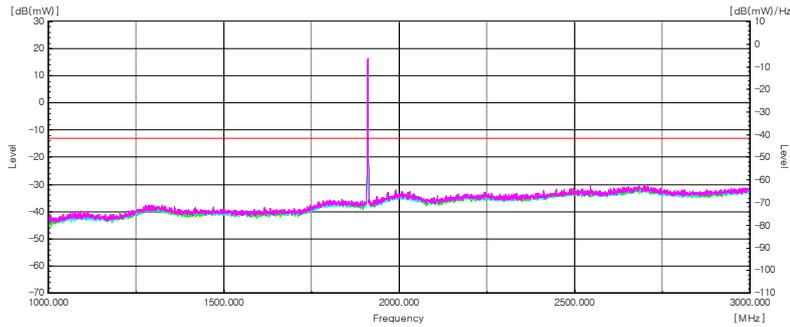
Mode	Frequency	Pol.	Antenna Gain	Cable loss	Substitute Level	Level	Limit	Margin
	[MHz]	[V/H]	[dBi]	[dB]	[dBm]	[dBm]	[dBm]	[dB]
QPSK	3 817.06	H	9.1	9.04	-48.86	-48.80	-13.00	35.80
	5 726.18	H	10.9	11.16	-41.74	-42.00	-13.00	29.00
	7 635.31	V	11.3	13.24	-39.66	-41.60	-13.00	28.60
	9 544.44	V	12.0	14.65	-31.85	-34.50	-13.00	21.50

Note.

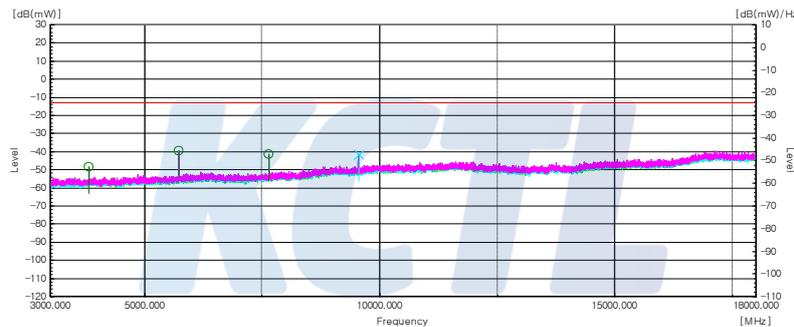
1. Limit Calculation(dBm)= 43 + 10log(P<sub>watts</sub>) [dBc]
2. No spurious emission were detected 1 000 MHz to 3 000 MHz.

**Test mode** : LTE Band2  
**Frequency(MHz)** : 1 909.3  
**Channel** : 18900  
**Bandwidth(MHz)** : 1.4

1 000 MHz to 3 000 MHz



Above 3 000 MHz



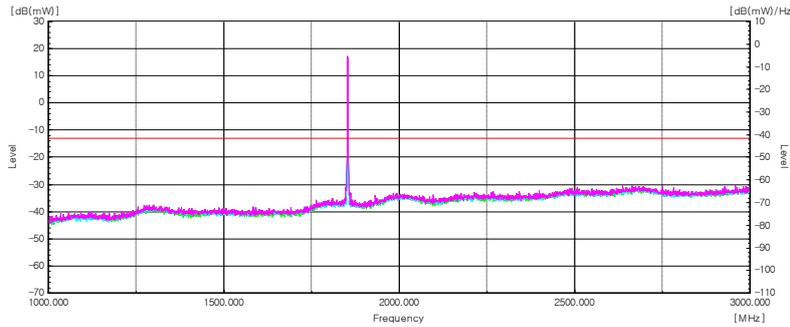
Mode	Frequency	Pol.	Antenna Gain	Cable loss	Substitute Level	Level	Limit	Margin
	[MHz]	[V/H]	[dBi]	[dB]	[dBm]	[dBm]	[dBm]	[dB]
16QAM	3 817.06	H	9.1	9.04	-48.56	-48.50	-13.00	35.50
	5 726.18	H	10.9	11.16	-39.14	-39.40	-13.00	26.40
	7 635.31	H	11.3	13.24	-39.46	-41.40	-13.00	28.40
	9 544.44	V	12.0	14.65	-38.95	-41.60	-13.00	28.60

Note.

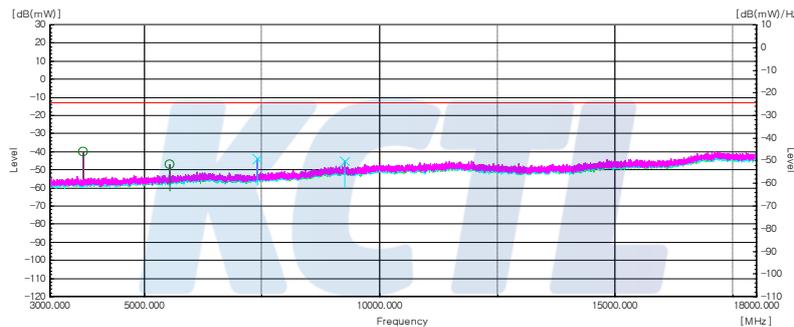
1. Limit Calculation(dBm)= 43 + 10log(P<sub>watts</sub>) [dBc]
2. No spurious emission were detected 1 000 MHz to 3 000 MHz.

Test mode : LTE Band2  
Frequency(MHz) : 1 851.5  
Channel : 18615  
Bandwidth(MHz) : 3

1 000 MHz to 3 000 MHz



Above 3 000 MHz



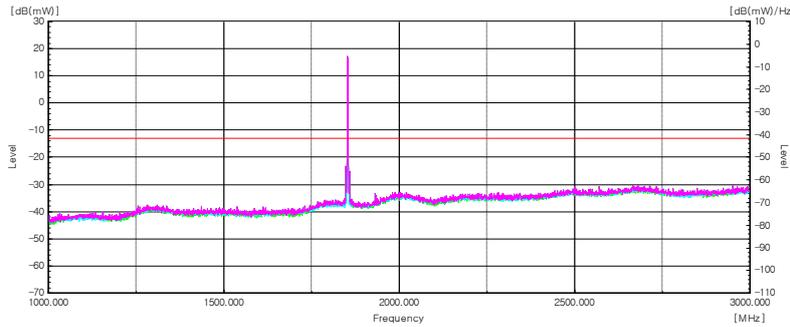
Mode	Frequency	Pol.	Antenna Gain	Cable loss	Substitute Level	Level	Limit	Margin
	[MHz]	[V/H]	[dBi]	[dB]	[dBm]	[dBm]	[dBm]	[dB]
QPSK	3 700.05	H	9.6	8.92	-40.88	-40.20	-13.00	27.20
	5 551.17	H	10.8	11.2	-46.70	-47.10	-13.00	34.10
	7 401.29	V	10.8	13.24	-41.26	-43.70	-13.00	30.70
	9 250.42	V	11.9	14.41	-42.69	-45.20	-13.00	32.20

Note.

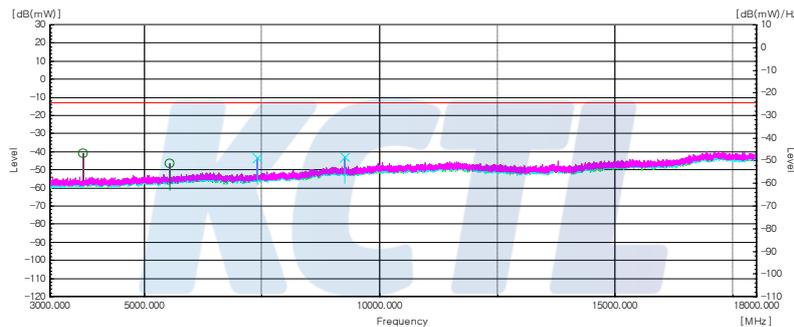
1. Limit Calculation(dBm)= 43 + 10log(P<sub>watts</sub>) [dBc]
2. No spurious emission were detected 1 000 MHz to 3 000 MHz.

Test mode : LTE Band2  
Frequency(MHz) : 1 851.5  
Channel : 18615  
Bandwidth(MHz) : 3

1 000 MHz to 3 000 MHz



Above 3 000 MHz



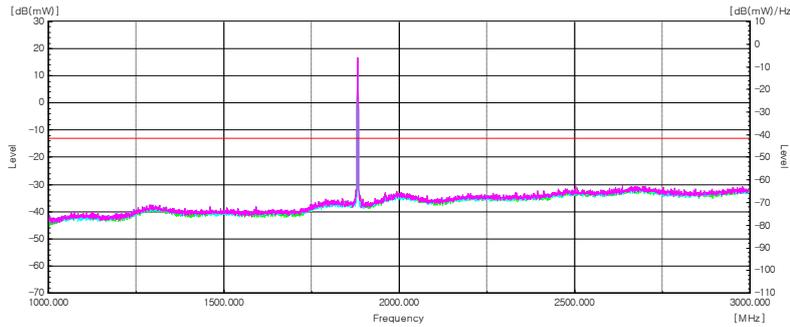
Mode	Frequency	Pol.	Antenna Gain	Cable loss	Substitute Level	Level	Limit	Margin
	[MHz]	[V/H]	[dBi]	[dB]	[dBm]	[dBm]	[dBm]	[dB]
16QAM	3 700.05	H	9.6	8.92	-41.88	-41.20	-13.00	28.20
	5 550.17	H	10.8	11.20	-46.30	-46.70	-13.00	33.70
	7 400.29	V	10.8	13.24	-40.76	-43.20	-13.00	30.20
	9 251.42	V	11.9	14.41	-40.59	-43.10	-13.00	30.10

Note.

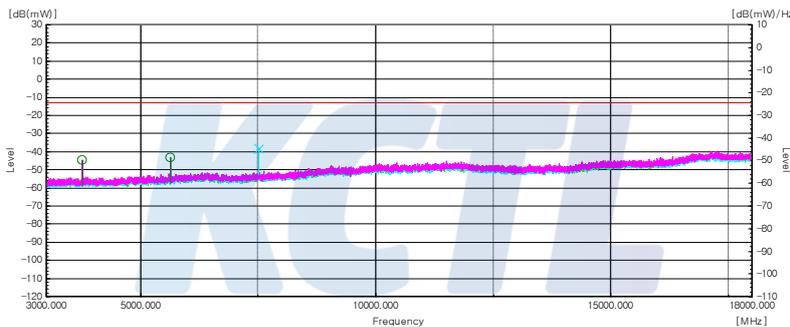
1. Limit Calculation(dBm)= 43 + 10log(P<sub>watts</sub>) [dBc]
2. No spurious emission were detected 1 000 MHz to 3 000 MHz.

Test mode : LTE Band2  
Frequency(MHz) : 1 880.0  
Channel : 18900  
Bandwidth(MHz) : 3

1 000 MHz to 3 000 MHz



Above 3 000 MHz



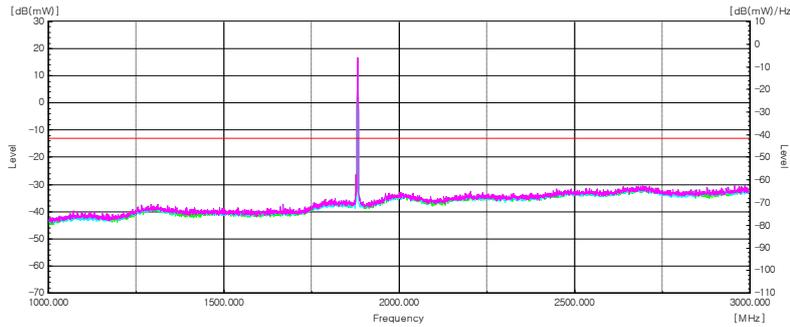
Mode	Frequency	Pol.	Antenna Gain	Cable loss	Substitute Level	Level	Limit	Margin
	[MHz]	[V/H]	[dBi]	[dB]	[dBm]	[dBm]	[dBm]	[dB]
QPSK	3 757.05	H	9.3	8.92	-45.08	-44.70	-13.00	31.70
	5 636.18	H	10.8	11.27	-42.73	-43.20	-13.00	30.20
	7 515.30	V	11.0	13.24	-35.96	-38.20	-13.00	25.20

Note.

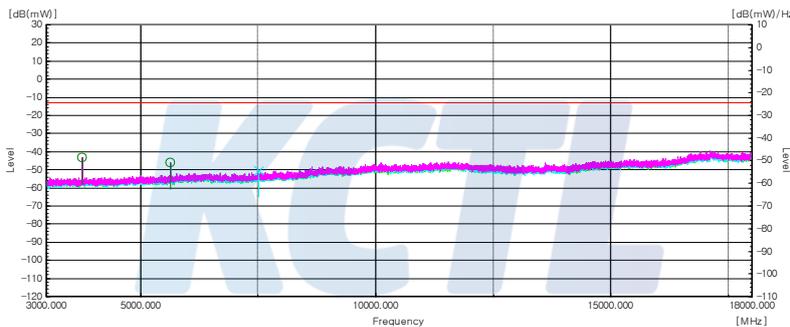
- Limit Calculation(dBm)= 43 + 10log(P<sub>watts</sub>) [dBc]
- No spurious emission were detected 1 000 MHz to 3 000 MHz.

Test mode : LTE Band2  
Frequency(MHz) : 1 880.0  
Channel : 18900  
Bandwidth(MHz) : 3

1 000 MHz to 3 000 MHz



Above 3 000 MHz



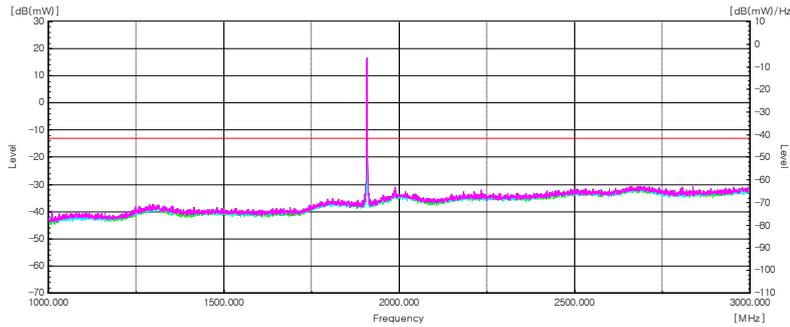
Mode	Frequency	Pol.	Antenna Gain	Cable loss	Substitute Level	Level	Limit	Margin
	[MHz]	[V/H]	[dBi]	[dB]	[dBm]	[dBm]	[dBm]	[dB]
16QAM	3 757.05	H	9.3	8.92	-43.98	-43.60	-13.00	30.60
	5 636.18	H	10.8	11.27	-45.63	-46.10	-13.00	33.10
	7 515.30	V	11.0	13.24	-48.36	-50.60	-13.00	37.60

Note.

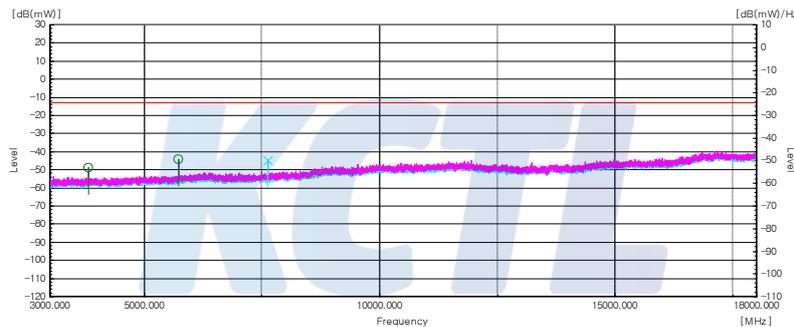
- Limit Calculation(dBm)= 43 + 10log(P<sub>[Watts]</sub>) [dBc]
- No spurious emission were detected 1 000 MHz to 3 000 MHz.

Test mode : LTE Band2  
Frequency(MHz) : 1 908.5  
Channel : 19185  
Bandwidth(MHz) : 3

1 000 MHz to 3 000 MHz



Above 3 000 MHz



Mode	Frequency	Pol.	Antenna Gain	Cable loss	Substitute Level	Level	Limit	Margin
	[MHz]	[V/H]	[dBi]	[dB]	[dBm]	[dBm]	[dBm]	[dB]
QPSK	3 814.05	H	9.1	9.04	-49.16	-49.10	-13.00	36.10
	5 721.18	H	10.9	11.16	-44.04	-44.30	-13.00	31.30
	7 629.31	V	11.3	13.24	-42.66	-44.60	-13.00	31.60

Note.

- Limit Calculation(dBm)= 43 + 10log(P<sub>watts</sub>) [dBc]
- 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](http://www.kctl.co.kr)

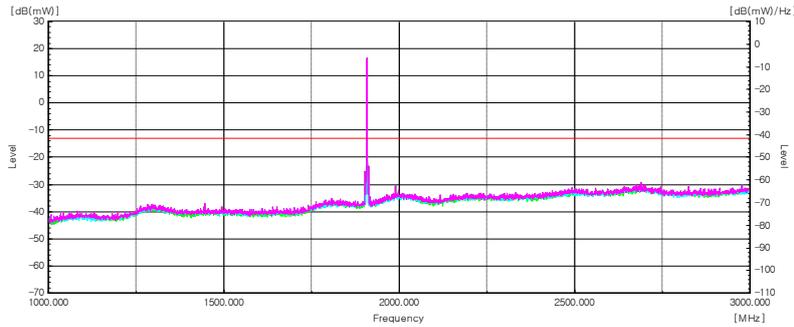
Report No.:  
KR19-SRF0016-A

Page (251) of (279)

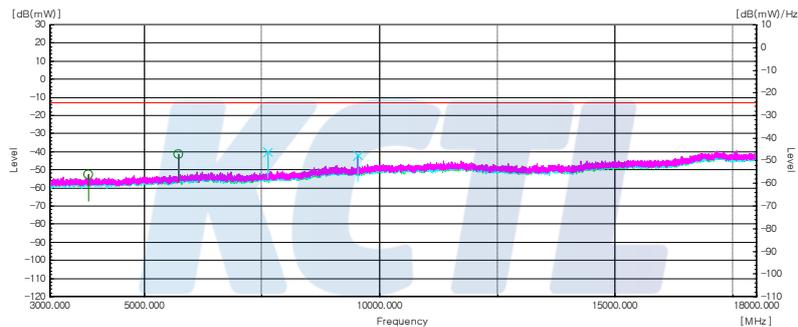


Test mode : LTE Band2  
Frequency(MHz) : 1 908.5  
Channel : 19185  
Bandwidth(MHz) : 3

### 1 000 MHz to 3 000 MHz



### Above 3 000 MHz



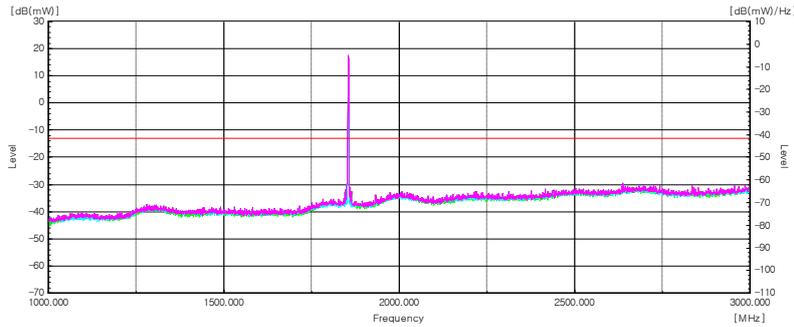
Mode	Frequency	Pol.	Antenna Gain	Cable loss	Substitute Level	Level	Limit	Margin
	[MHz]	[V/H]	[dBi]	[dB]	[dBm]	[dBm]	[dBm]	[dB]
16QAM	3 814.05	H	9.1	9.04	-52.56	-52.50	-13.00	39.50
	5 721.18	H	10.9	11.16	-41.14	-41.40	-13.00	28.40
	7 629.31	V	11.3	13.24	-38.36	-40.30	-13.00	27.30
	9 536.44	V	12.0	14.65	-39.45	-42.10	-13.00	29.10

#### Note.

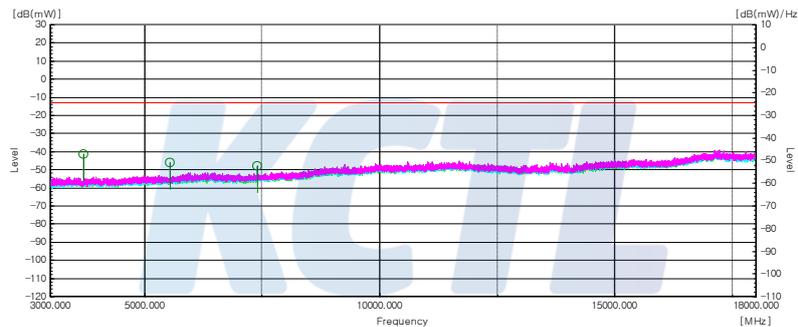
1. Limit Calculation(dBm)= 43 + 10log(P<sub>watts</sub>) [dBc]
2. No spurious emission were detected 1 000 MHz to 3 000 MHz.

Test mode : LTE Band2  
Frequency(MHz) : 1 852.5  
Channel : 18625  
Bandwidth(MHz) : 5

1 000 MHz to 3 000 MHz



Above 3 000 MHz



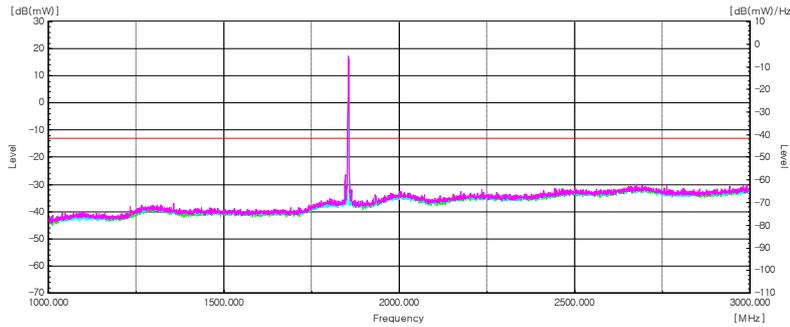
Mode	Frequency	Pol.	Antenna Gain	Cable loss	Substitute Level	Level	Limit	Margin
	[MHz]	[V/H]	[dBi]	[dB]	[dBm]	[dBm]	[dBm]	[dB]
QPSK	3 701.05	H	9.6	8.92	-42.08	-41.40	-13.00	28.40
	5 551.17	H	10.8	11.20	-45.90	-46.30	-13.00	33.30
	7 401.29	H	10.8	13.24	-45.36	-47.80	-13.00	34.80

Note.

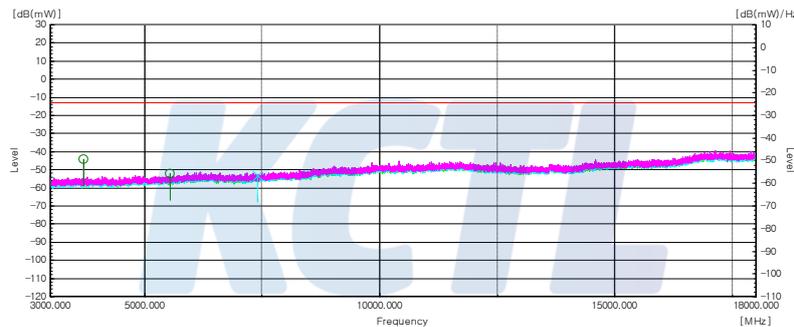
- Limit Calculation(dBm)= 43 + 10log(P<sub>[watts]</sub>) [dBc]
- No spurious emission were detected 1 000 MHz to 3 000 MHz.

Test mode : LTE Band2  
 Frequency(MHz) : 1 852.5  
 Channel : 18625  
 Bandwidth(MHz) : 5

1 000 MHz to 3 000 MHz



Above 3 000 MHz



Mode	Frequency	Pol.	Antenna Gain	Cable loss	Substitute Level	Level	Limit	Margin
	[MHz]	[V/H]	[dBi]	[dB]	[dBm]	[dBm]	[dBm]	[dB]
16QAM	3 701.05	H	9.6	8.92	-44.78	-44.10	-13.00	31.10
	5 551.17	H	10.8	11.20	-51.90	-52.30	-13.00	39.30
	7 401.29	V	10.8	13.24	-50.96	-53.40	-13.00	40.40

Note.

- Limit Calculation(dBm)= 43 + 10log(P<sub>[Watts]</sub>) [dBc]
- No spurious emission were detected 1 000 MHz to 3 000 MHz.