

# 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-SRF0017

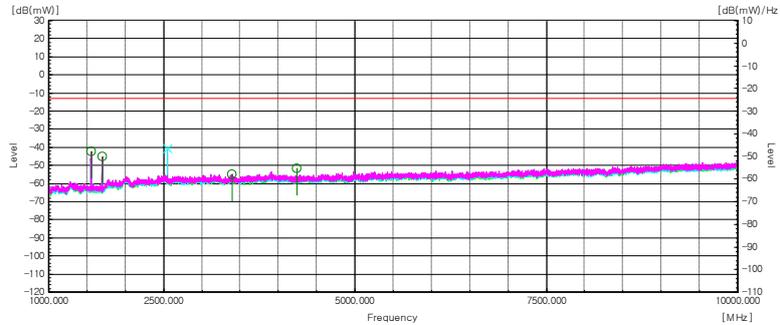
Page (91) of (123)



Test mode : GPRS850

Frequency(MHz) : 848.8

Channel : 251

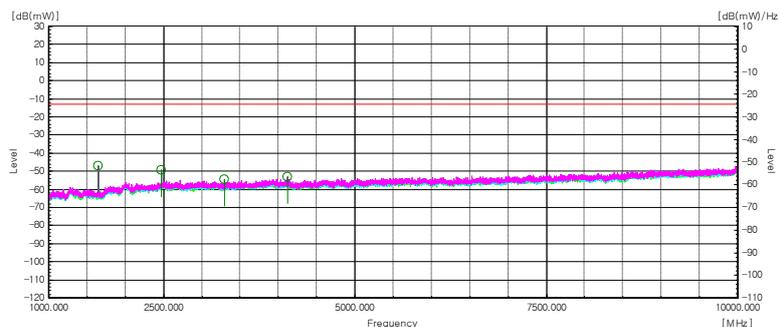


Mode	Frequency	Pol.	Antenna Gain	Cable loss	Substitute Level	Level	Limit	Margin
	[MHz]	[V/H]	[dBi]	[dB]	[dBm]	[dBm]	[dBm]	[dB]
GMSK	1 553.06	H	8.0	5.17	-45.23	-42.40	-13.00	29.40
	1 697.08	H	8.6	5.51	-48.39	-45.30	-13.00	32.30
	2 546.17	V	9.7	6.74	-43.66	-40.70	-13.00	27.70
	3 395.27	H	9.2	7.78	-56.32	-54.90	-13.00	41.90
	4 243.36	H	10.3	9.61	-52.29	-51.60	-13.00	38.60

Test mode : EDGE850

Frequency(MHz) : 824.2

Channel : 128



Mode	Frequency	Pol.	Antenna Gain	Cable loss	Substitute Level	Level	Limit	Margin
	[MHz]	[V/H]	[dBi]	[dB]	[dBm]	[dBm]	[dBm]	[dB]
8-PSK	1 553.06	H	8.0	5.17	-45.23	-42.40	-13.00	29.40
	1 697.08	H	8.6	5.51	-48.39	-45.30	-13.00	32.30
	2 546.17	V	9.7	6.74	-43.66	-40.70	-13.00	27.70
	3 395.27	H	9.2	7.78	-56.32	-54.90	-13.00	41.90
	4 243.36	H	10.3	9.61	-52.29	-51.60	-13.00	38.60

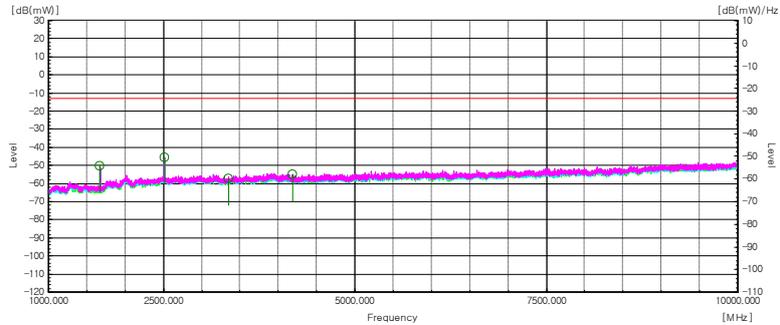
Note.

1. Limit Calculation(dBm)= 43 + 10log(P<sub>Watts</sub>) [dBc]

Test mode : EDGE850

Frequency(MHz) : 836.6

Channel : 190

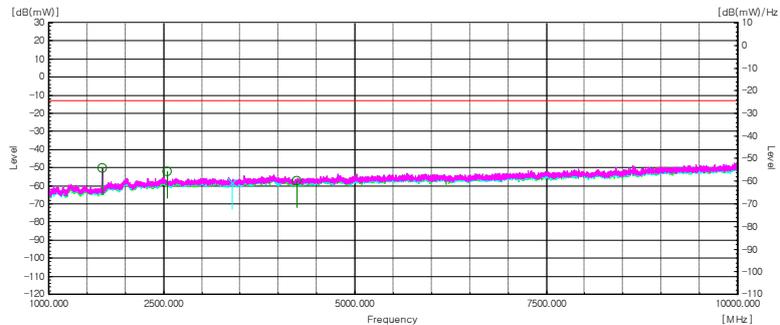


Mode	Frequency	Pol.	Antenna Gain	Cable loss	Substitute Level	Level	Limit	Margin
	[MHz]	[V/H]	[dBi]	[dB]	[dBm]	[dBm]	[dBm]	[dB]
8-PSK	1 673.08	H	8.5	5.45	-53.25	-50.20	-13.00	37.20
	2 510.17	H	9.8	6.74	-48.66	-45.60	-13.00	32.60
	3 346.26	H	9.3	7.78	-58.82	-57.30	-13.00	44.30
	4 182.35	H	10.1	9.35	-55.65	-54.90	-13.00	41.90

Test mode : EDGE850

Frequency(MHz) : 848.8

Channel : 251



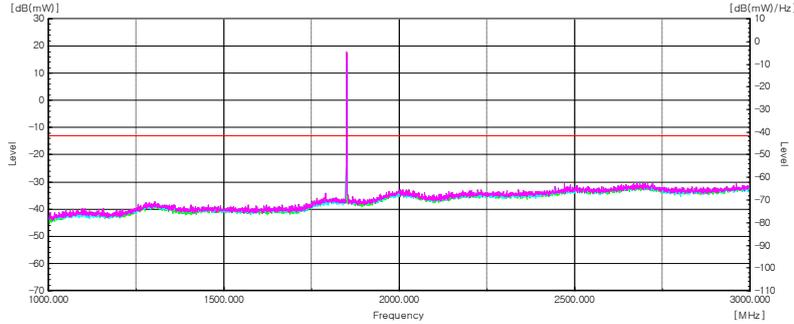
Mode	Frequency	Pol.	Antenna Gain	Cable loss	Substitute Level	Level	Limit	Margin
	[MHz]	[V/H]	[dBi]	[dB]	[dBm]	[dBm]	[dBm]	[dB]
8-PSK	1 697.08	H	8.6	5.51	-53.29	-50.20	-13.00	37.20
	2 546.17	H	9.7	6.74	-55.16	-52.20	-13.00	39.20
	3 395.27	V	9.2	7.78	-59.72	-58.30	-13.00	45.30
	4 243.36	H	10.3	9.61	-58.09	-57.40	-13.00	44.40

Note.

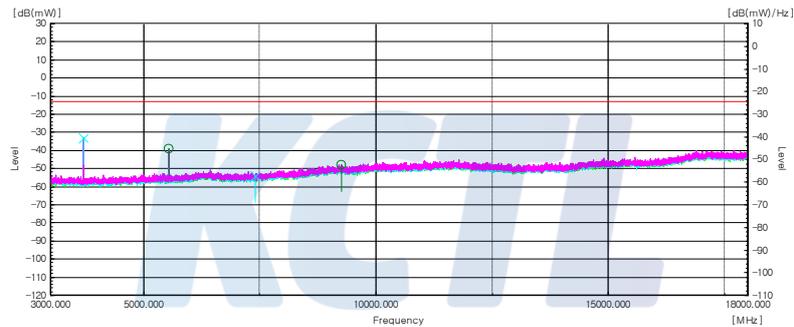
1. Limit Calculation(dBm)= 43 + 10log(P<sub>[Watts]</sub>) [dBc]

Test mode : GPRS1900  
Frequency(MHz) : 1 850.2  
Channel : 512

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]
GMSK	3 700.05	V	9.6	8.92	-33.98	-33.30	-13.00	20.30
	5 550.17	H	10.8	11.20	-38.70	-39.10	-13.00	26.10
	7 400.29	V	10.8	13.24	-51.46	-53.90	-13.00	40.90
	9 250.42	H	11.9	14.41	-45.79	-48.30	-13.00	35.30

Note.

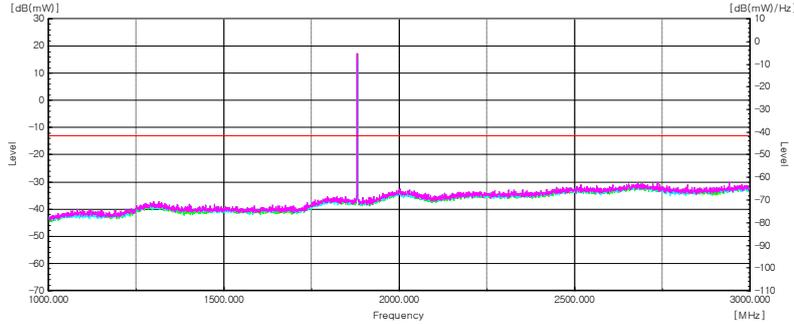
1. Limit Calculation(dBm)= 43 + 10log(P<sub>Watts</sub>) [dBc]
2. No spurious emission were detected 1 000 MHz to 3 000 MHz.

Test mode : GPRS1900

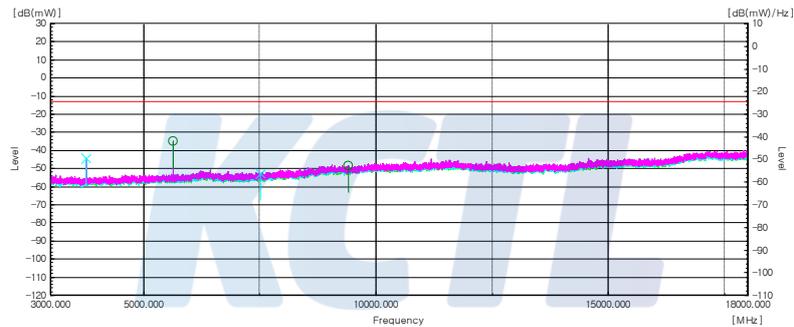
Frequency(MHz) : 1 880.0

Channel : 661

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]
GMSK	3 760.05	V	9.3	8.92	-44.68	-44.30	-13.00	31.30
	5 640.18	H	10.9	11.27	-34.53	-34.90	-13.00	21.90
	7 520.30	V	11.0	13.24	-50.36	-52.60	-13.00	39.60
	9 399.43	H	12.0	14.50	-45.90	-48.40	-13.00	35.40

Note.

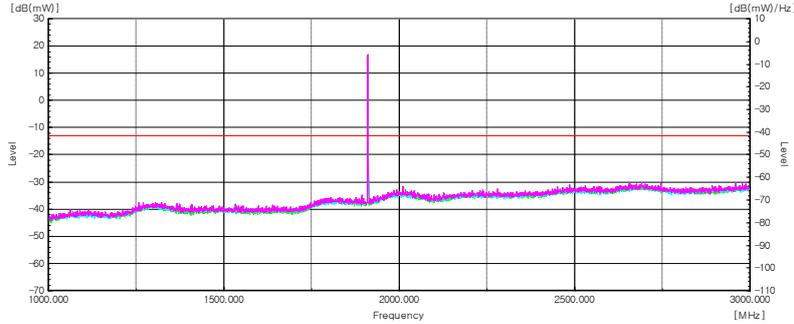
1. Limit Calculation(dBm)= 43 + 10log(P<sub>Watts</sub>) [dBc]
2. No spurious emission were detected 1 000 MHz to 3 000 MHz.

Test mode : GPRS1900

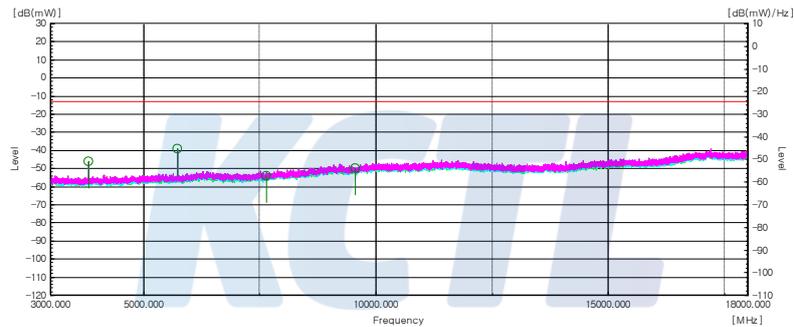
Frequency(MHz) : 1 909.8

Channel : 810

1 000 MHz to 3 000 MHz



Above 3 000 MHz



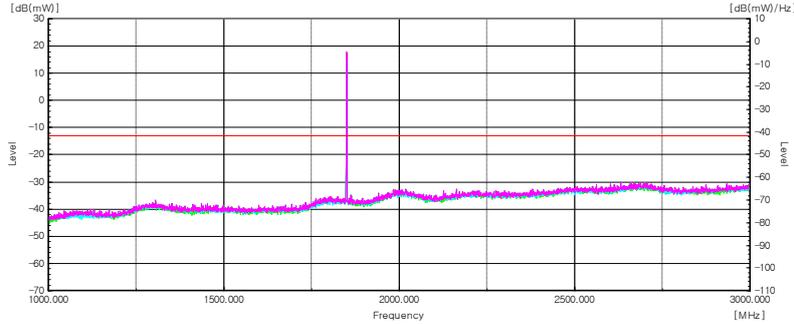
Mode	Frequency	Pol.	Antenna Gain	Cable loss	Substitute Level	Level	Limit	Margin
	[MHz]	[V/H]	[dBi]	[dB]	[dBm]	[dBm]	[dBm]	[dB]
GMSK	3 820.06	H	9.1	9.04	-46.10	-13.00	33.10	30.30
	5 729.18	H	10.9	11.16	-39.00	-13.00	26.00	30.00
	7 639.31	H	11.3	13.25	-54.00	-13.00	41.00	40.60
	9 549.44	H	12.0	14.65	-49.90	-13.00	36.90	34.00

Note.

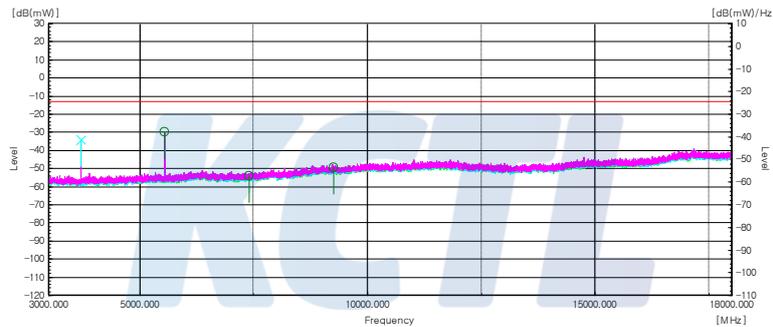
1. Limit Calculation(dBm)= 43 + 10log(P<sub>[Watts]</sub>) [dBc]
2. No spurious emission were detected 1 000 MHz to 3 000 MHz.

Test mode : EDGE1900  
Frequency(MHz) : 1 850.2  
Channel : 512

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]
8-PSK	3 700.05	V	9.6	8.92	-34.48	-33.80	-13.00	20.80
	5 550.17	H	10.8	11.20	-29.40	-29.80	-13.00	16.80
	7 400.29	H	10.8	13.24	-51.46	-53.90	-13.00	40.90
	9 251.42	H	11.9	14.41	-46.89	-49.40	-13.00	36.40

Note.

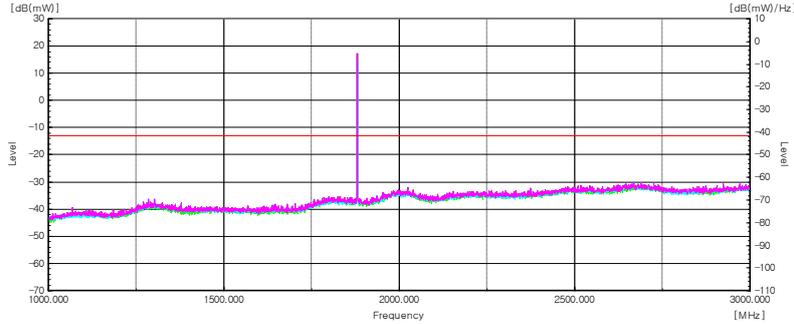
1. Limit Calculation(dBm)= 43 + 10log(P<sub>Watts</sub>) [dBc]
2. No spurious emission were detected 1 000 MHz to 3 000 MHz.

Test mode : EDGE1900

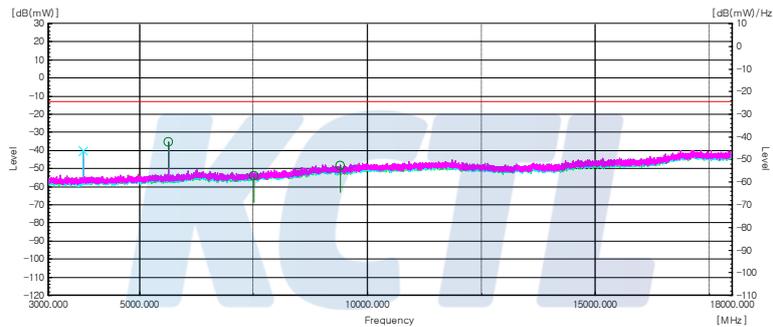
Frequency(MHz) : 1 880.0

Channel : 661

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]
8-PSK	3 760.05	V	9.3	8.92	-40.28	-39.90	-13.00	26.90
	5 640.18	H	10.9	11.27	-35.23	-35.60	-13.00	22.60
	7 520.30	H	11.0	13.24	-52.06	-54.30	-13.00	41.30
	9 400.43	H	12.0	14.50	-46.10	-48.60	-13.00	35.60

Note.

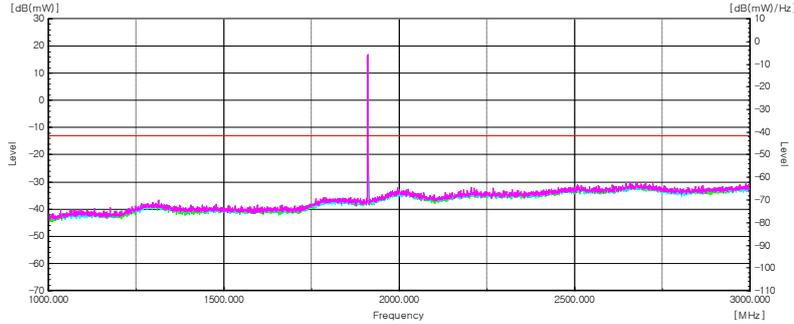
- Limit Calculation(dBm)= 43 + 10log(P<sub>[Watts]</sub>) [dBc]
- No spurious emission were detected 1 000 MHz to 3 000 MHz.

Test mode : EDGE1900

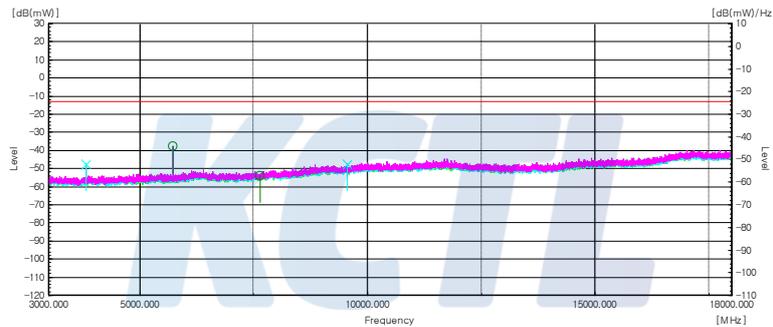
Frequency(MHz) : 1 909.8

Channel : 810

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]
8-PSK	3 820.06	V	9.1	9.04	-47.56	-47.50	-13.00	34.50
	5 729.18	H	10.9	11.16	-37.34	-37.60	-13.00	24.60
	7 639.31	H	11.3	13.25	-52.15	-54.10	-13.00	41.10
	9 548.44	V	12.0	14.65	-44.85	-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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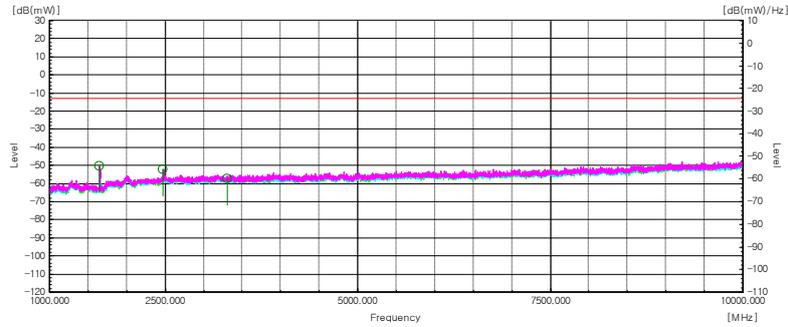
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Test mode : RMC850

Frequency(MHz) : 826.4

Channel : 4132

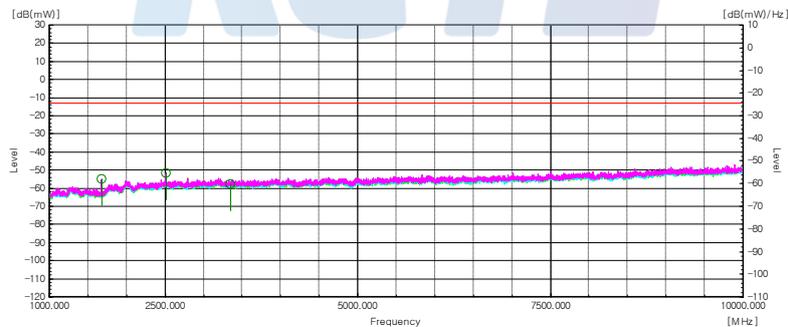


Mode	Frequency	Pol.	Antenna Gain	Cable loss	Substitute Level	Level	Limit	Margin
	[MHz]	[V/H]	[dBi]	[dB]	[dBm]	[dBm]	[dBm]	[dB]
QPSK	1 650.07	H	8.4	5.38	-53.32	-50.30	-13.00	37.30
	2 475.16	H	9.8	6.74	-55.46	-52.40	-13.00	39.40
	3 305.26	H	9.3	7.78	-58.82	-57.30	-13.00	44.30

Test mode : RMC850

Frequency(MHz) : 836.4

Channel : 4182



Mode	Frequency	Pol.	Antenna Gain	Cable loss	Substitute Level	Level	Limit	Margin
	[MHz]	[V/H]	[dBi]	[dB]	[dBm]	[dBm]	[dBm]	[dB]
QPSK	1 674.08	H	8.5	5.51	-57.99	-55.00	-13.00	42.00
	2 511.17	H	9.8	6.70	-55.10	-52.00	-13.00	39.00
	3 345.26	H	9.2	7.78	-59.32	-57.90	-13.00	44.90

Note.

1. Limit Calculation(dBm)= 43 + 10log(P<sub>T(watts)</sub>) [dBc]

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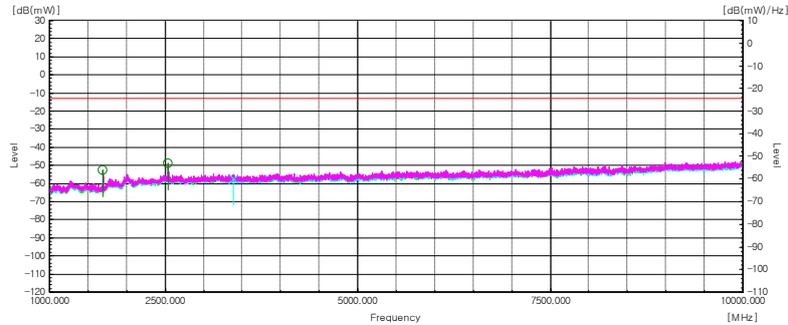
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Test mode : RMC850

Frequency(MHz) : 846.6

Channel : 4233

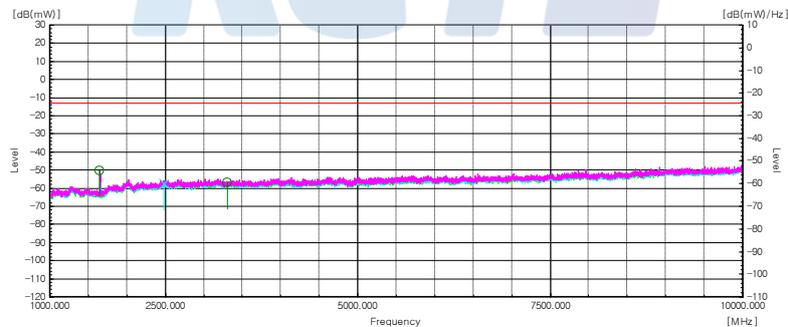


Mode	Frequency	Pol.	Antenna Gain	Cable loss	Substitute Level	Level	Limit	Margin
	[MHz]	[V/H]	[dBi]	[dB]	[dBm]	[dBm]	[dBm]	[dB]
QPSK	1 695.08	H	8.6	5.51	-55.99	-52.90	-13.00	39.90
	2 536.17	H	9.7	6.74	-52.16	-49.20	-13.00	36.20
	3 386.27	V	9.4	7.93	-58.67	-57.20	-13.00	44.20

Test mode : HSDPA850

Frequency(MHz) : 826.4

Channel : 4132



Mode	Frequency	Pol.	Antenna Gain	Cable loss	Substitute Level	Level	Limit	Margin
	[MHz]	[V/H]	[dBi]	[dB]	[dBm]	[dBm]	[dBm]	[dB]
QPSK	1 651.07	H	8.4	5.38	-53.32	-50.30	-13.00	37.30
	2 479.17	V	9.8	6.74	-60.66	-57.60	-13.00	44.60
	3 305.26	H	9.3	7.78	-58.22	-56.70	-13.00	43.70

Note.

1. Limit Calculation(dBm)= 43 + 10log(P<sub>[watts]</sub>) [dBc]

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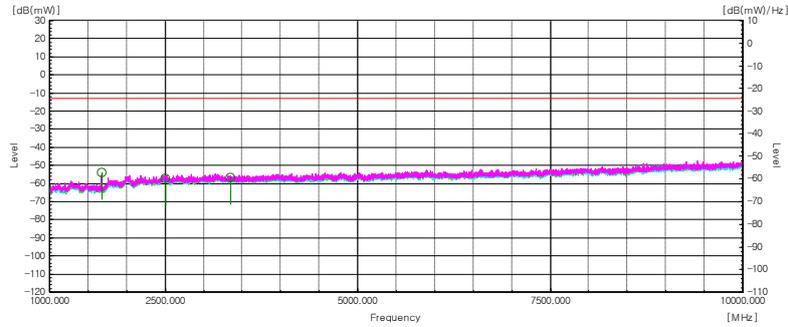
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Test mode : HSDPA850

Frequency(MHz) : 836.4

Channel : 4182

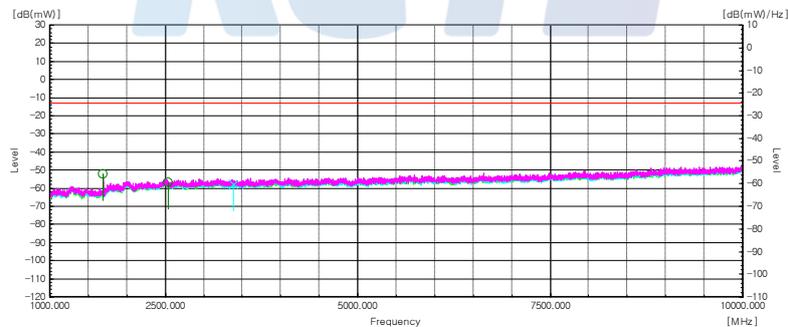


Mode	Frequency	Pol.	Antenna Gain	Cable loss	Substitute Level	Level	Limit	Margin
	[MHz]	[V/H]	[dBi]	[dB]	[dBm]	[dBm]	[dBm]	[dB]
QPSK	1 675.08	H	8.5	5.51	-57.19	-54.20	-13.00	41.20
	2 509.17	H	9.8	6.70	-60.50	-57.40	-13.00	44.40
	3 345.26	H	9.2	7.78	-58.42	-57.00	-13.00	44.00

Test mode : HSDPA850

Frequency(MHz) : 846.6

Channel : 4233



Mode	Frequency	Pol.	Antenna Gain	Cable loss	Substitute Level	Level	Limit	Margin
	[MHz]	[V/H]	[dBi]	[dB]	[dBm]	[dBm]	[dBm]	[dB]
QPSK	1 691.08	H	8.6	5.51	-55.39	-52.30	-13.00	39.30
	2 539.17	H	9.7	6.74	-59.66	-56.70	-13.00	43.70
	3 386.27	V	9.4	7.93	-59.17	-57.70	-13.00	44.70

Note.

1. Limit Calculation(dBm)= 43 + 10log(P<sub>[watts]</sub>) [dBc]

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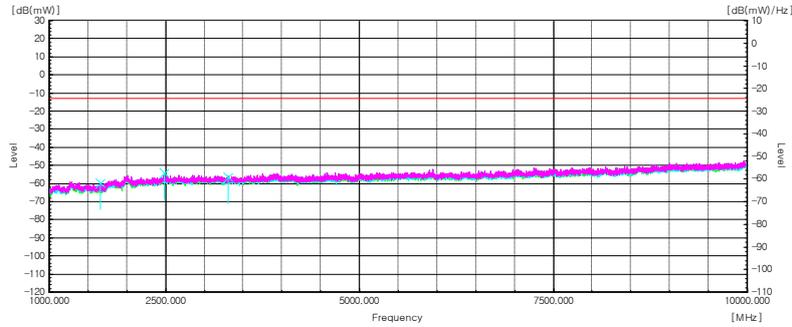
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Test mode : HSUPA850

Frequency(MHz) : 826.4

Channel : 4132

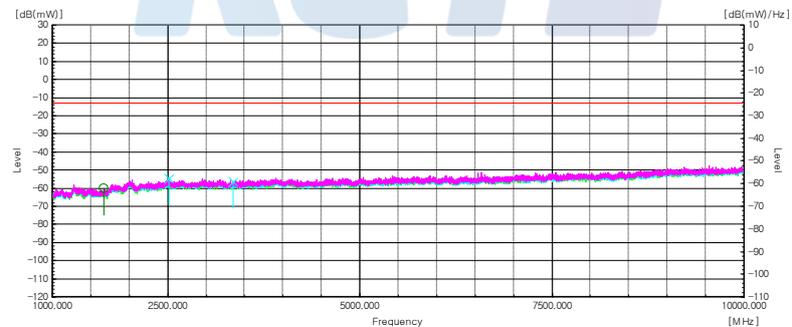


Mode	Frequency	Pol.	Antenna Gain	Cable loss	Substitute Level	Level	Limit	Margin
	[MHz]	[V/H]	[dBi]	[dB]	[dBm]	[dBm]	[dBm]	[dB]
QPSK	1 654.07	V	8.4	5.38	-62.92	-59.90	-13.00	46.90
	2 482.17	V	9.8	6.74	-56.96	-53.90	-13.00	40.90
	3 302.26	V	9.3	7.78	-57.82	-56.30	-13.00	43.30

Test mode : HSUPA850

Frequency(MHz) : 836.4

Channel : 4182



Mode	Frequency	Pol.	Antenna Gain	Cable loss	Substitute Level	Level	Limit	Margin
	[MHz]	[V/H]	[dBi]	[dB]	[dBm]	[dBm]	[dBm]	[dB]
QPSK	1 671.08	H	8.5	5.51	-63.29	-60.30	-13.00	47.30
	2 512.17	V	9.8	6.70	-57.80	-54.70	-13.00	41.70
	3 346.26	V	9.2	7.78	-57.82	-56.40	-13.00	43.40

Note.

1. Limit Calculation(dBm)= 43 + 10log(P<sub>watts</sub>) [dBc]

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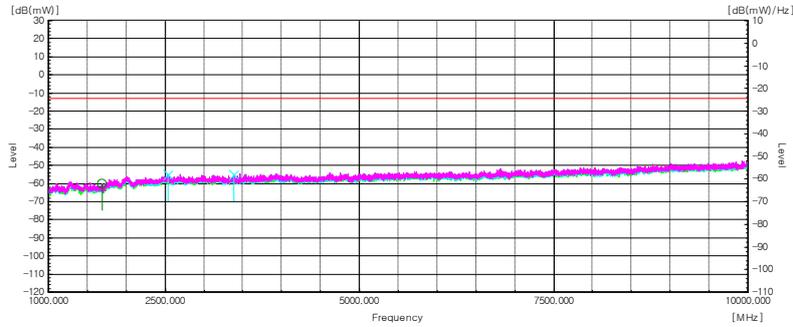
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# KCTL

Test mode : HSUPA850

Frequency(MHz) : 846.6

Channel : 4233



Mode	Frequency	Pol.	Antenna Gain	Cable loss	Substitute Level	Level	Limit	Margin
	[MHz]	[V/H]	[dBi]	[dB]	[dBm]	[dBm]	[dBm]	[dB]
QPSK	1 695.08	H	8.6	5.51	-63.29	-60.20	-13.00	47.20
	2 540.17	V	9.7	6.74	-58.06	-55.10	-13.00	42.10
	3 388.27	V	9.4	7.93	-56.77	-55.30	-13.00	42.30

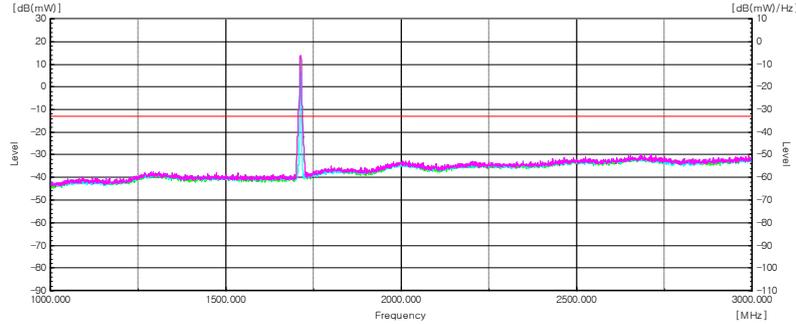
Note.

1. Limit Calculation(dBm)= 43 + 10log(P<sub>[Watts]</sub>) [dBc]

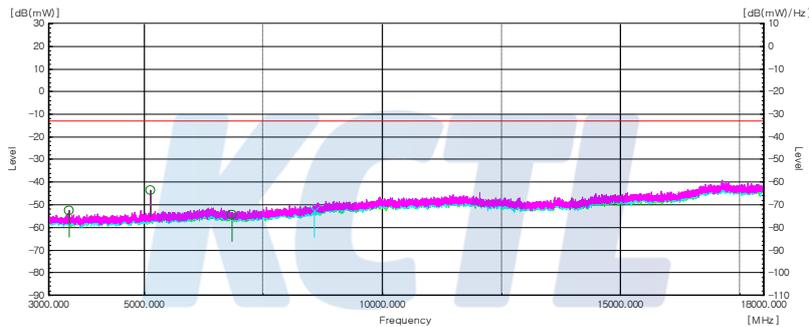
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Test mode : RMC1700  
Frequency(MHz) : 1 712.4  
Channel : 1312

1 000 MHz to 3 000 MHz



Above 3 000 MHz



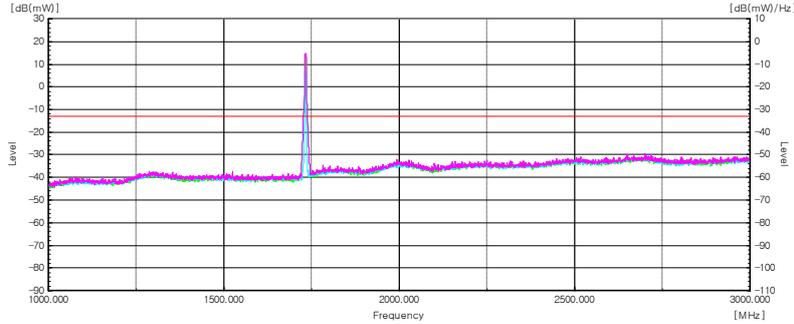
Mode	Frequency	Pol.	Antenna Gain	Cable loss	Substitute Level	Level	Limit	Margin
	[MHz]	[V/H]	[dBi]	[dB]	[dBm]	[dBm]	[dBm]	[dB]
QPSK	3 423.03	H	9.4	7.93	-53.97	-52.50	-13.00	39.50
	5 134.14	H	10.8	10.63	-43.97	-43.80	-13.00	30.80
	6 849.26	H	11.1	12.42	-53.08	-54.40	-13.00	41.40
	8 562.37	V	11.4	13.84	-50.36	-52.80	-13.00	39.80

Note.

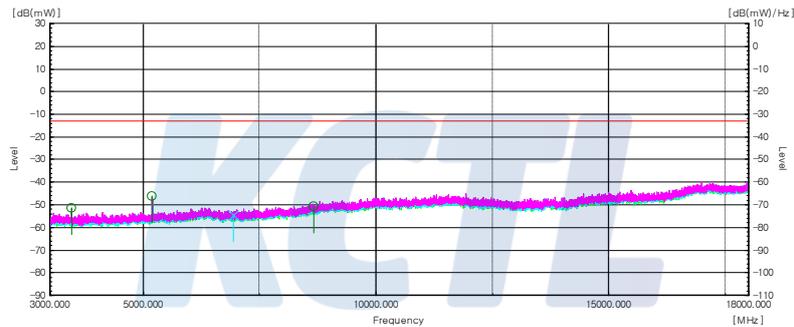
1. Limit Calculation(dBm)= 43 + 10log(P<sub>[Watts]</sub>) [dBc]
2. No spurious emission were detected 1 000 MHz to 3 000 MHz.

Test mode : RMC1700  
Frequency(MHz) : 1 732.4  
Channel : 1412

1 000 MHz to 3 000 MHz



Above 3 000 MHz



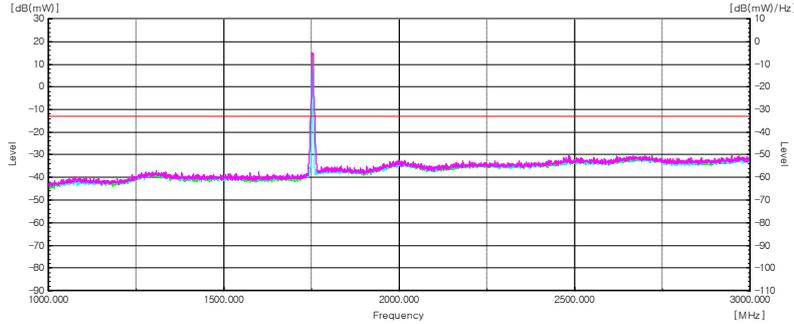
Mode	Frequency	Pol.	Antenna Gain	Cable loss	Substitute Level	Level	Limit	Margin
	[MHz]	[V/H]	[dBi]	[dB]	[dBm]	[dBm]	[dBm]	[dB]
QPSK	3 463.03	H	9.4	7.93	-53.07	-51.60	-13.00	38.60
	5 194.15	H	10.9	10.63	-46.67	-46.40	-13.00	33.40
	6 929.26	V	11.2	12.66	-53.14	-54.60	-13.00	41.60
	8 662.38	H	11.4	13.96	-48.34	-50.90	-13.00	37.90

Note.

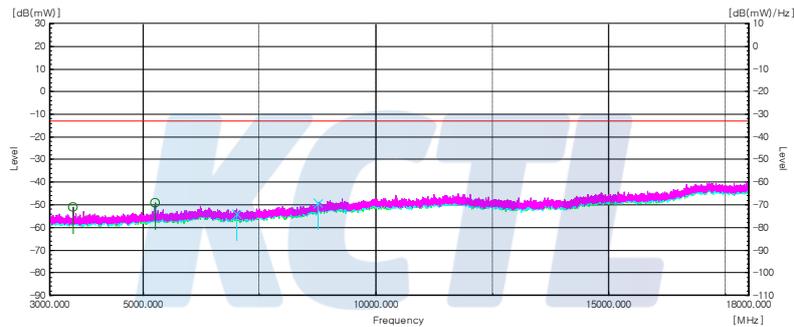
1. Limit Calculation(dBm)= 43 + 10log(P<sub>[Watts]</sub>) [dBc]
2. No spurious emission were detected 1 000 MHz to 3 000 MHz.

Test mode : RMC1700  
Frequency(MHz) : 1 752.6  
Channel : 1513

1 000 MHz to 3 000 MHz



Above 3 000 MHz



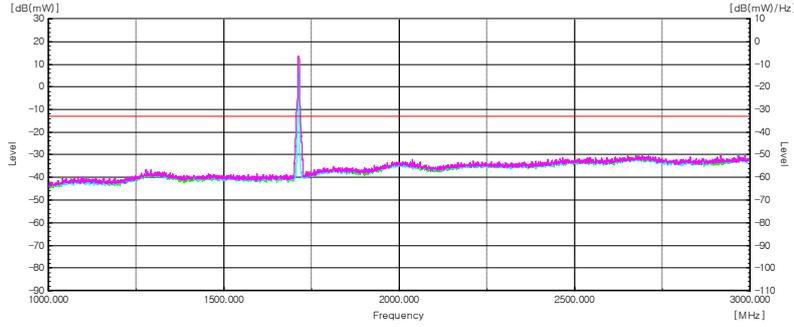
Mode	Frequency	Pol.	Antenna Gain	Cable loss	Substitute Level	Level	Limit	Margin
	[MHz]	[V/H]	[dBi]	[dB]	[dBm]	[dBm]	[dBm]	[dB]
QPSK	3 507.03	H	9.6	8.05	-52.55	-51.00	-13.00	38.00
	5 260.15	H	11.3	10.73	-49.97	-49.40	-13.00	36.40
	7 010.27	V	11.4	12.77	-52.93	-54.30	-13.00	41.30
	8 761.38	V	11.3	14.12	-46.28	-49.10	-13.00	36.10

Note.

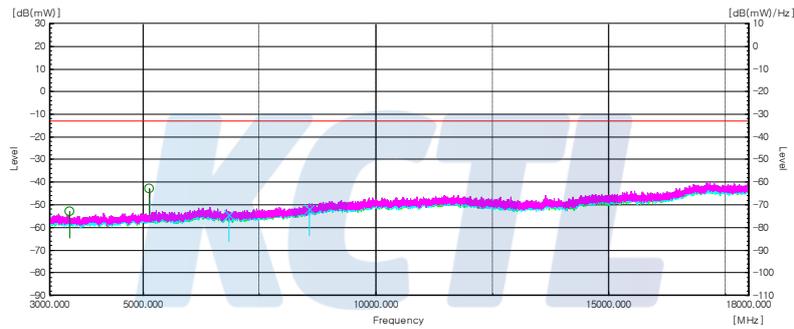
- Limit Calculation(dBm)= 43 + 10log(P<sub>[Watts]</sub>) [dBc]
- No spurious emission were detected 1 000 MHz to 3 000 MHz.

Test mode : HSDPA1700  
Frequency(MHz) : 1 712.4  
Channel : 1312

1 000 MHz to 3 000 MHz



Above 3 000 MHz



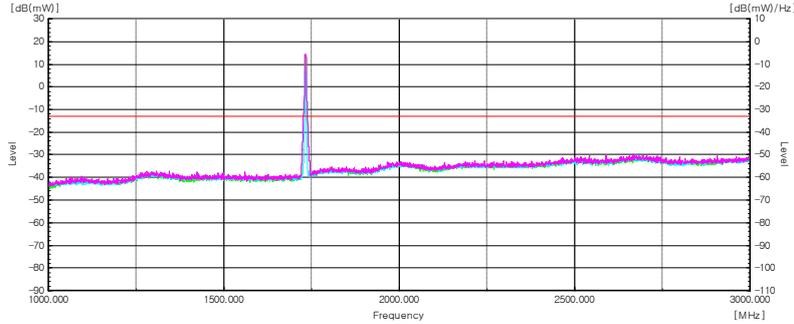
Mode	Frequency	Pol.	Antenna Gain	Cable loss	Substitute Level	Level	Limit	Margin
	[MHz]	[V/H]	[dBi]	[dB]	[dBm]	[dBm]	[dBm]	[dB]
QPSK	3 424.03	H	9.4	7.93	-54.47	-53.00	-13.00	40.00
	5 134.14	H	10.8	10.63	-43.17	-43.00	-13.00	30.00
	6 849.26	V	11.1	12.42	-53.18	-54.50	-13.00	41.50
	8 562.37	V	11.4	13.84	-49.26	-51.70	-13.00	38.70

Note.

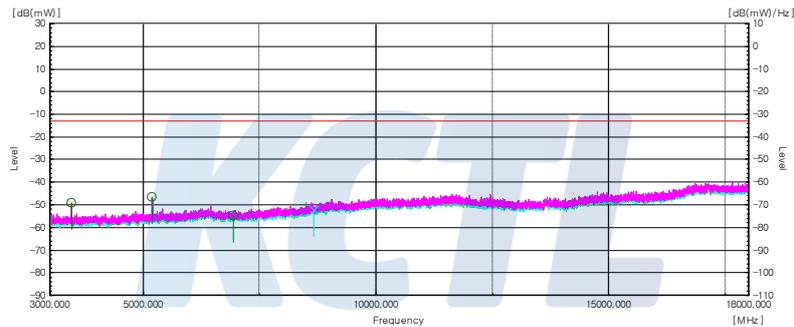
1. Limit Calculation(dBm)= 43 + 10log(P<sub>[Watts]</sub>) [dBc]
2. No spurious emission were detected 1 000 MHz to 3 000 MHz.

Test mode : HSDPA1700  
Frequency(MHz) : 1 732.4  
Channel : 1412

1 000 MHz to 3 000 MHz



Above 3 000 MHz



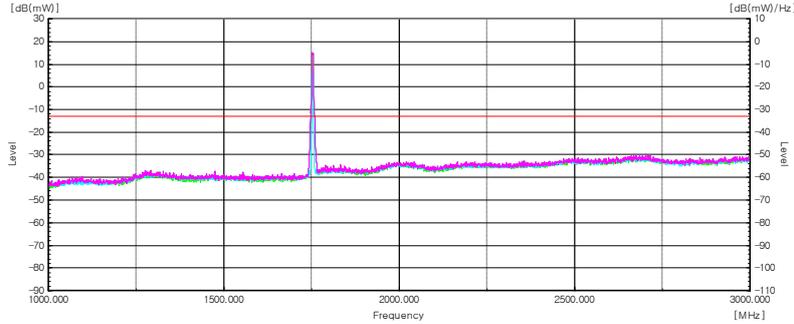
Mode	Frequency	Pol.	Antenna Gain	Cable loss	Substitute Level	Level	Limit	Margin
	[MHz]	[V/H]	[dBi]	[dB]	[dBm]	[dBm]	[dBm]	[dB]
QPSK	3 466.03	H	9.4	7.93	-50.87	-49.40	-13.00	36.40
	5 199.15	H	10.9	10.63	-46.87	-46.60	-13.00	33.60
	6 928.26	H	11.2	12.66	-53.34	-54.80	-13.00	41.80
	8 662.38	V	11.4	13.96	-49.54	-52.10	-13.00	39.10

Note.

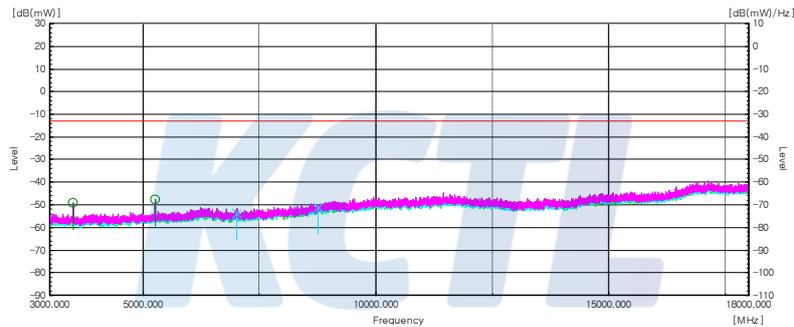
1. Limit Calculation(dBm)= 43 + 10log(P<sub>[Watts]</sub>) [dBc]
2. No spurious emission were detected 1 000 MHz to 3 000 MHz.

Test mode : HSDPA1700  
Frequency(MHz) : 1 752.6  
Channel : 1513

1 000 MHz to 3 000 MHz



Above 3 000 MHz



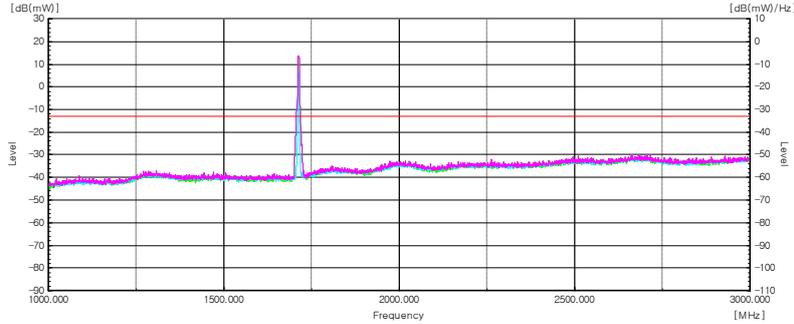
Mode	Frequency	Pol.	Antenna Gain	Cable loss	Substitute Level	Level	Limit	Margin
	[MHz]	[V/H]	[dBi]	[dB]	[dBm]	[dBm]	[dBm]	[dB]
QPSK	3 507.03	H	9.6	8.05	-50.65	-49.10	-13.00	36.10
	5 261.15	H	11.3	10.73	-48.47	-47.90	-13.00	34.90
	7 010.27	V	11.4	12.77	-52.53	-53.90	-13.00	40.90
	8 763.38	V	11.3	14.12	-48.08	-50.90	-13.00	37.90

Note.

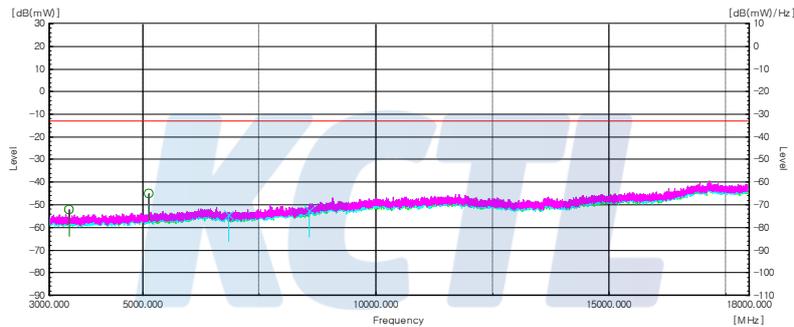
- Limit Calculation(dBm)= 43 + 10log(P<sub>[Watts]</sub>) [dBc]
- No spurious emission were detected 1 000 MHz to 3 000 MHz.

Test mode : HSUPA1700  
Frequency(MHz) : 1 712.4  
Channel : 1312

1 000 MHz to 3 000 MHz



Above 3 000 MHz



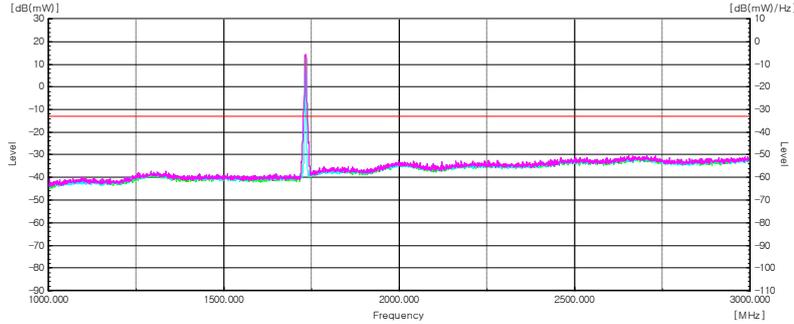
Mode	Frequency	Pol.	Antenna Gain	Cable loss	Substitute Level	Level	Limit	Margin
	[MHz]	[V/H]	[dBi]	[dB]	[dBm]	[dBm]	[dBm]	[dB]
QPSK	3 427.03	H	9.4	7.93	-53.77	-52.30	-13.00	39.30
	5 139.14	H	10.8	10.63	-45.47	-45.30	-13.00	32.30
	6 849.26	V	11.1	12.42	-53.18	-54.50	-13.00	41.50
	8 562.37	V	11.4	13.84	-50.36	-52.80	-13.00	39.80

Note.

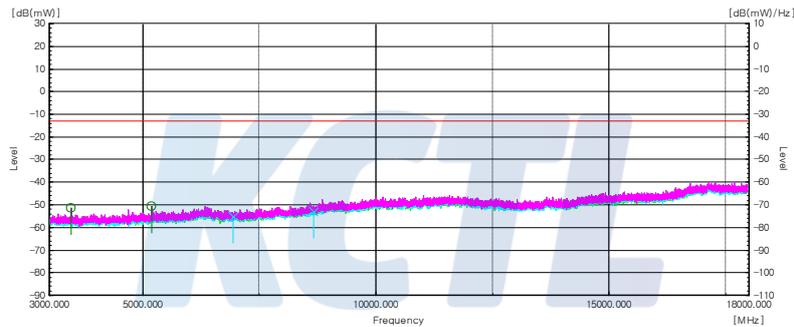
1. Limit Calculation(dBm)= 43 + 10log(P<sub>[Watts]</sub>) [dBc]
2. No spurious emission were detected 1 000 MHz to 3 000 MHz.

Test mode : HSUPA1700  
Frequency(MHz) : 1 732.4  
Channel : 1412

1 000 MHz to 3 000 MHz



Above 3 000 MHz



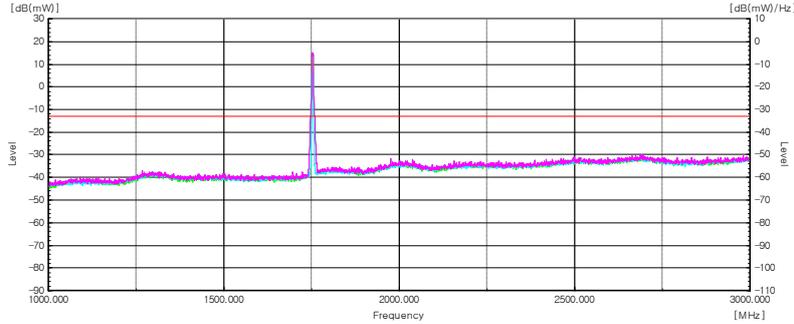
Mode	Frequency	Pol.	Antenna Gain	Cable loss	Substitute Level	Level	Limit	Margin
	[MHz]	[V/H]	[dBi]	[dB]	[dBm]	[dBm]	[dBm]	[dB]
QPSK	3 463.03	H	9.4	7.93	-53.17	-51.70	-13.00	38.70
	5 194.15	H	10.9	10.63	-51.07	-50.80	-13.00	37.80
	6 929.26	V	11.2	12.66	-53.94	-55.40	-13.00	42.40
	8 662.38	V	11.4	13.96	-50.34	-52.90	-13.00	39.90

Note.

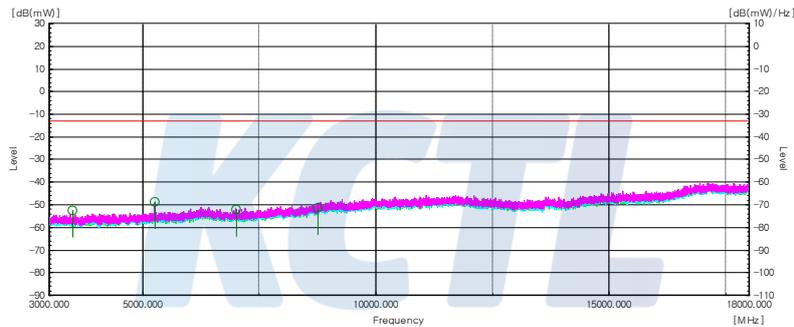
1. Limit Calculation(dBm)= 43 + 10log(P<sub>Watts</sub>) [dBc]
2. No spurious emission were detected 1 000 MHz to 3 000 MHz.

Test mode : HSUPA1700  
Frequency(MHz) : 1 752.6  
Channel : 1513

1 000 MHz to 3 000 MHz



Above 3 000 MHz



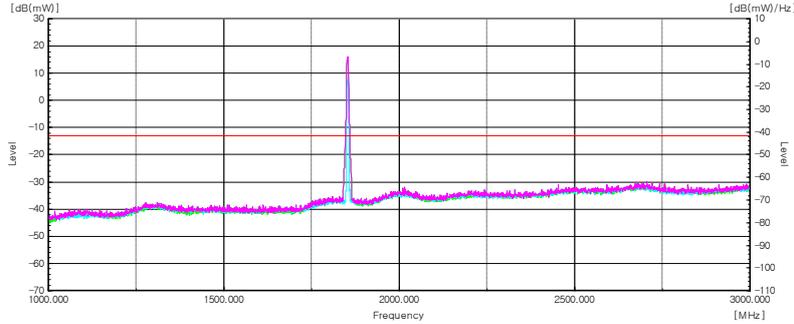
Mode	Frequency	Pol.	Antenna Gain	Cable loss	Substitute Level	Level	Limit	Margin
	[MHz]	[V/H]	[dBi]	[dB]	[dBm]	[dBm]	[dBm]	[dB]
QPSK	3 507.03	H	9.6	8.05	-54.25	-52.70	-13.00	39.70
	5 260.15	H	11.3	10.73	-49.67	-49.10	-13.00	36.10
	7 010.27	H	11.4	12.77	-50.73	-52.10	-13.00	39.10
	8 763.38	H	11.3	14.12	-48.68	-51.50	-13.00	38.50

Note.

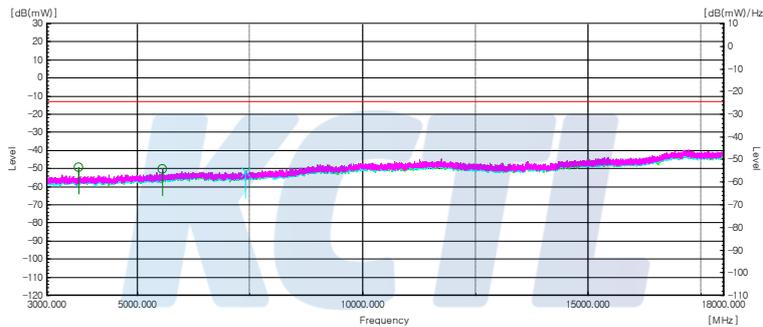
- Limit Calculation(dBm)= 43 + 10log(P<sub>[Watts]</sub>) [dBc]
- No spurious emission were detected 1 000 MHz to 3 000 MHz.

Test mode : RMC1900  
Frequency(MHz) : 1 852.4  
Channel : 9262

1 000 MHz to 3 000 MHz



Above 3 000 MHz



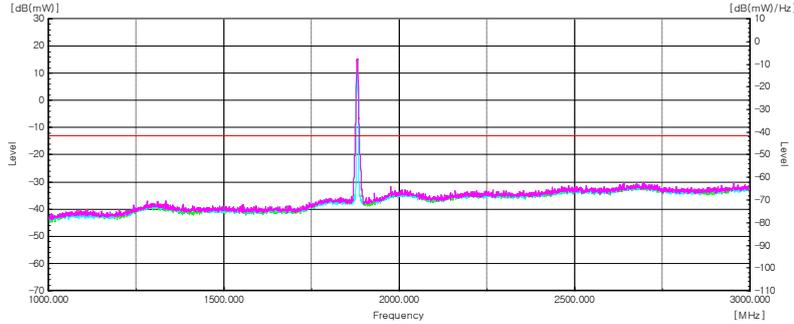
Mode	Frequency	Pol.	Antenna Gain	Cable loss	Substitute Level	Level	Limit	Margin
	[MHz]	[V/H]	[dBi]	[dB]	[dBm]	[dBm]	[dBm]	[dB]
QPSK	3 702.05	H	9.6	8.92	-49.88	-49.20	-13.00	36.20
	5 559.17	H	10.8	11.20	-50.00	-50.40	-13.00	37.40
	7 407.29	V	10.8	13.24	-49.56	-52.00	-13.00	39.00

Note.

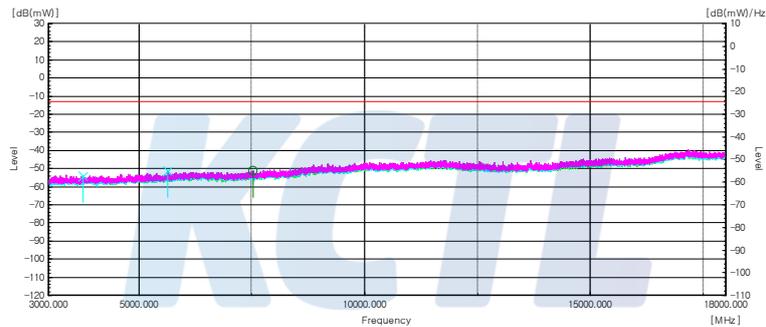
1. Limit Calculation(dBm)= 43 + 10log(P<sub>[Watts]</sub>) [dBc]
2. No spurious emission were detected 1 000 MHz to 3 000 MHz.

Test mode : RMC1900  
Frequency(MHz) : 1 880.0  
Channel : 9400

1 000 MHz to 3 000 MHz



Above 3 000 MHz



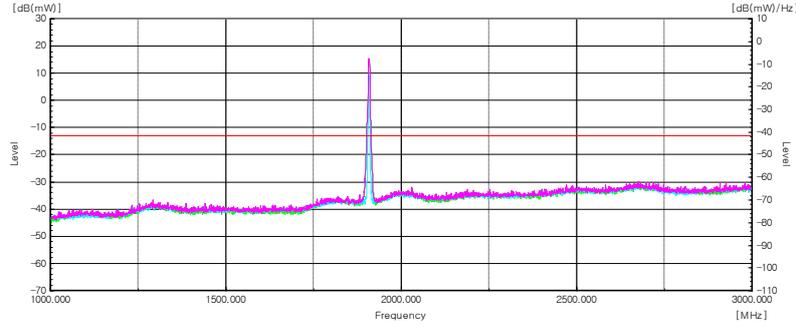
Mode	Frequency	Pol.	Antenna Gain	Cable loss	Substitute Level	Level	Limit	Margin
	[MHz]	[V/H]	[dBi]	[dB]	[dBm]	[dBm]	[dBm]	[dB]
QPSK	3 758.05	V	9.3	8.92	-54.58	-54.20	-13.00	41.20
	5 636.17	V	10.8	11.27	-50.83	-51.30	-13.00	38.30
	7 522.30	H	11.0	13.24	-48.86	-51.10	-13.00	38.10

Note.

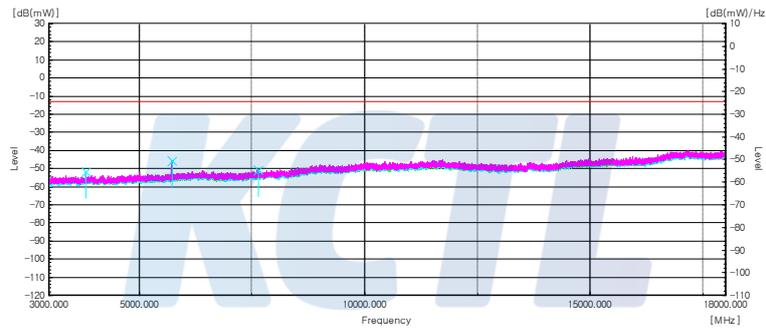
1. Limit Calculation(dBm)= 43 + 10log(P<sub>[Watts]</sub>) [dBc]
2. No spurious emission were detected 1 000 MHz to 3 000 MHz.

Test mode : RMC1900  
Frequency(MHz) : 1 907.6  
Channel : 9538

1 000 MHz to 3 000 MHz



Above 3 000 MHz



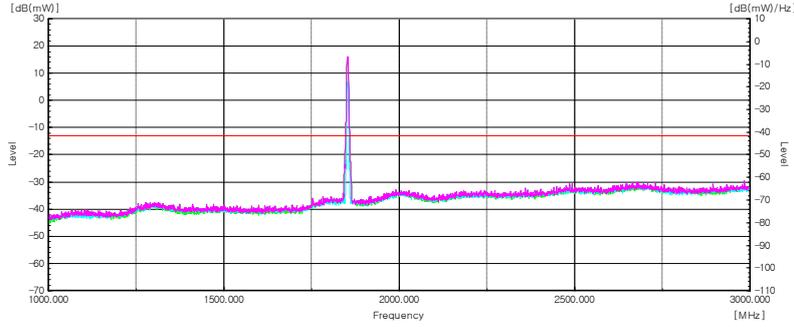
Mode	Frequency	Pol.	Antenna Gain	Cable loss	Substitute Level	Level	Limit	Margin
	[MHz]	[V/H]	[dBi]	[dB]	[dBm]	[dBm]	[dBm]	[dB]
QPSK	3 818.06	V	9.1	9.04	-51.86	-51.80	-13.00	38.80
	5 726.18	V	11.5	11.16	-46.14	-45.80	-13.00	32.80
	7 632.31	V	11.3	13.25	-48.75	-50.70	-13.00	37.70

Note.

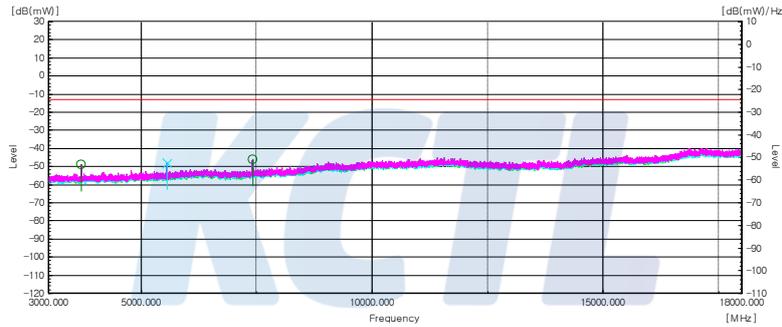
1. Limit Calculation(dBm)= 43 + 10log(P<sub>[Watts]</sub>) [dBc]
2. No spurious emission were detected 1 000 MHz to 3 000 MHz.

Test mode : RMC1900  
Frequency(MHz) : 1 852.4  
Channel : 9262

1 000 MHz to 3 000 MHz



Above 3 000 MHz



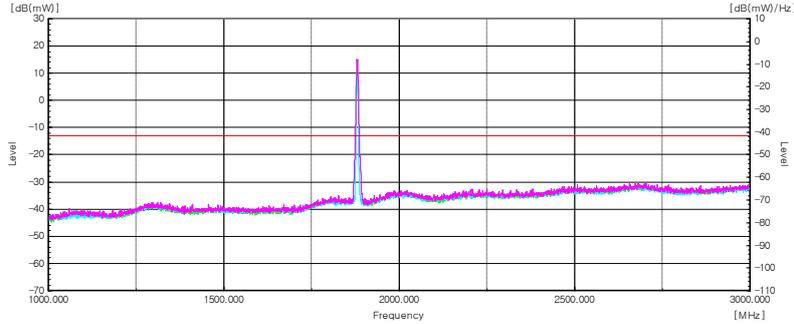
Mode	Frequency	Pol.	Antenna Gain	Cable loss	Substitute Level	Level	Limit	Margin
	[MHz]	[V/H]	[dBi]	[dB]	[dBm]	[dBm]	[dBm]	[dB]
QPSK	3 702.05	H	9.6	8.92	-49.58	-48.90	-13.00	35.90
	5 554.17	V	10.8	11.20	-47.50	-47.90	-13.00	34.90
	7 413.29	H	10.8	13.24	-43.86	-46.30	-13.00	33.30

Note.

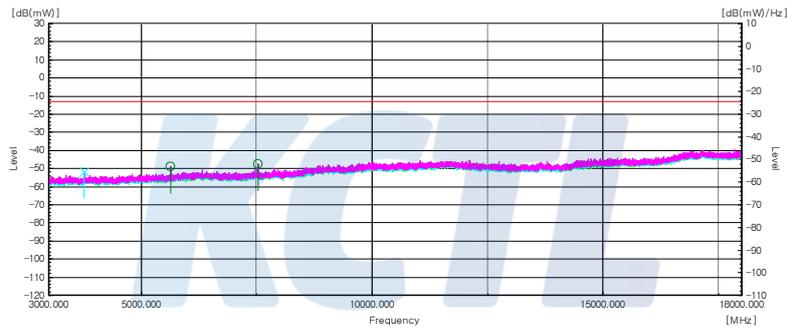
1. Limit Calculation(dBm)= 43 + 10log(P<sub>[Watts]</sub>) [dBc]
2. No spurious emission were detected 1 000 MHz to 3 000 MHz.

Test mode : HSDPA1900  
Frequency(MHz) : 1 880.0  
Channel : 9400

1 000 MHz to 3 000 MHz



Above 3 000 MHz



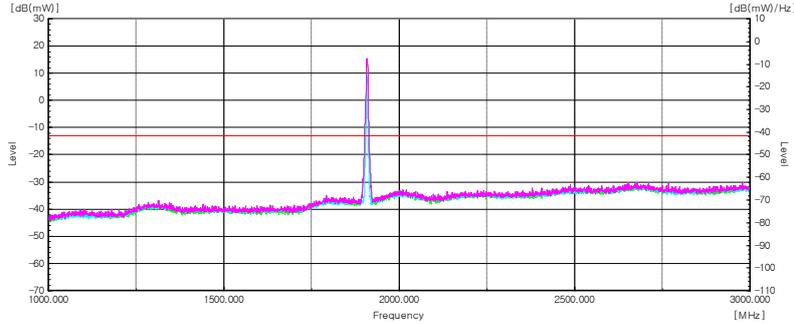
Mode	Frequency	Pol.	Antenna Gain	Cable loss	Substitute Level	Level	Limit	Margin
	[MHz]	[V/H]	[dBi]	[dB]	[dBm]	[dBm]	[dBm]	[dB]
QPSK	3 762.05	V	9.3	8.92	-51.98	-51.60	-13.00	38.60
	5 643.17	H	10.8	11.27	-48.53	-49.00	-13.00	36.00
	7 523.30	H	11.0	13.24	-45.36	-47.60	-13.00	34.60

Note.

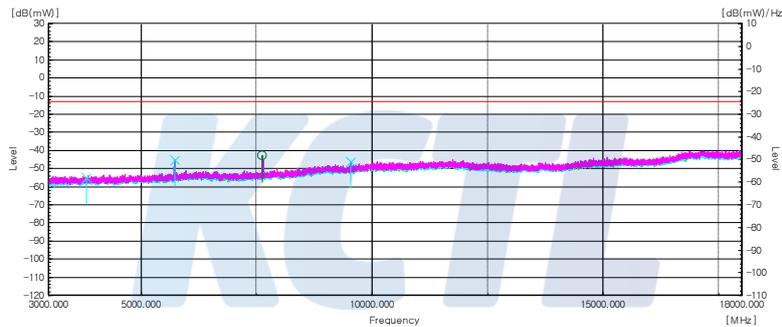
1. Limit Calculation(dBm)= 43 + 10log(P<sub>[Watts]</sub>) [dBc]
2. No spurious emission were detected 1 000 MHz to 3 000 MHz.

Test mode : HSDPA1900  
Frequency(MHz) : 1 907.6  
Channel : 9538

1 000 MHz to 3 000 MHz



Above 3 000 MHz



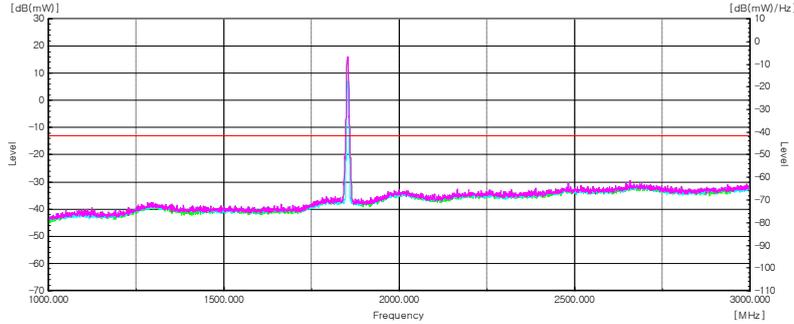
Mode	Frequency	Pol.	Antenna Gain	Cable loss	Substitute Level	Level	Limit	Margin
	[MHz]	[V/H]	[dBi]	[dB]	[dBm]	[dBm]	[dBm]	[dB]
QPSK	3 814.05	V	9.1	9.04	-54.96	-54.90	-13.00	41.90
	5 725.18	V	11.5	11.16	-45.64	-45.30	-13.00	32.30
	7 626.31	H	11.3	13.25	-40.95	-42.90	-13.00	29.90
	9 533.5	V	12.0	14.65	-43.45	-46.10	-13.00	33.10

Note.

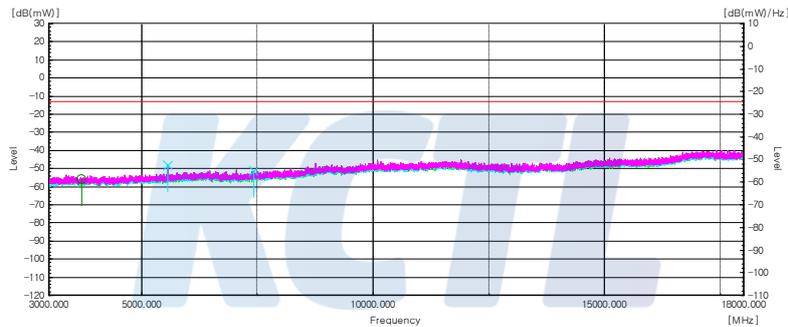
- Limit Calculation(dBm)= 43 + 10log(P<sub>Watts</sub>) [dBc]
- No spurious emission were detected 1 000 MHz to 3 000 MHz.

Test mode : HSUPA1900  
Frequency(MHz) : 1 852.4  
Channel : 9262

1 000 MHz to 3 000 MHz



Above 3 000 MHz



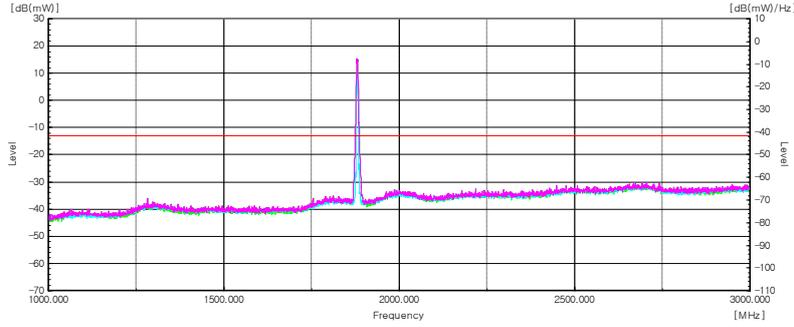
Mode	Frequency	Pol.	Antenna Gain	Cable loss	Substitute Level	Level	Limit	Margin
	[MHz]	[V/H]	[dBi]	[dB]	[dBm]	[dBm]	[dBm]	[dB]
QPSK	3 704.05	H	9.6	8.92	-56.78	-56.10	-13.00	43.10
	5 560.17	V	10.8	11.20	-47.60	-48.00	-13.00	35.00
	7 409.29	V	10.8	13.24	-48.86	-51.30	-13.00	38.30

Note.

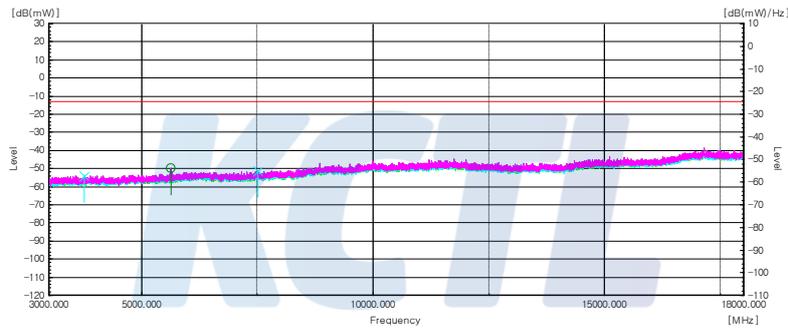
1. Limit Calculation(dBm)= 43 + 10log(P<sub>[Watts]</sub>) [dBc]
2. No spurious emission were detected 1 000 MHz to 3 000 MHz.

Test mode : HSUPA1900  
Frequency(MHz) : 1 880.0  
Channel : 9400

1 000 MHz to 3 000 MHz



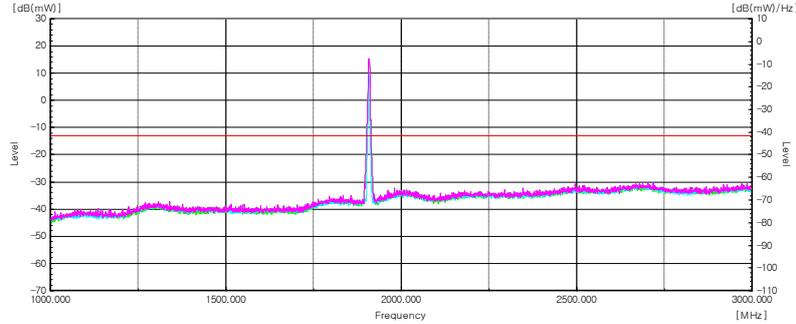
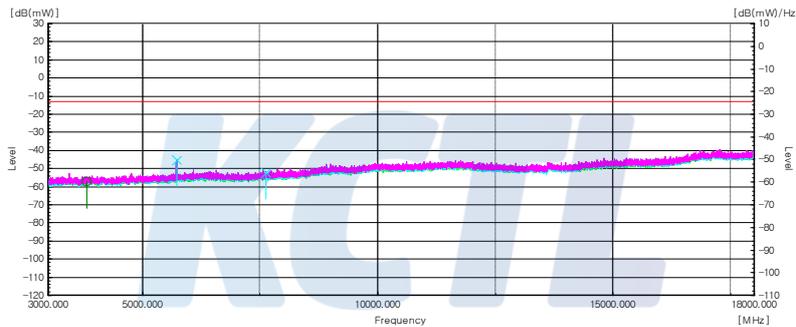
Above 3 000 MHz



Mode	Frequency	Pol.	Antenna Gain	Cable loss	Substitute Level	Level	Limit	Margin
	[MHz]	[V/H]	[dBi]	[dB]	[dBm]	[dBm]	[dBm]	[dB]
QPSK	5 637.18	H	9.3	8.92	-50.08	-49.70	-13.00	36.70
	3 761.05	V	10.8	11.27	-53.83	-54.30	-13.00	41.30
	7 519.30	V	11.0	13.24	-49.06	-51.30	-13.00	38.30

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 : HSUPA1900Frequency(MHz) : 1 907.6Channel : 95381 000 MHz to 3 000 MHzAbove 3 000 MHz

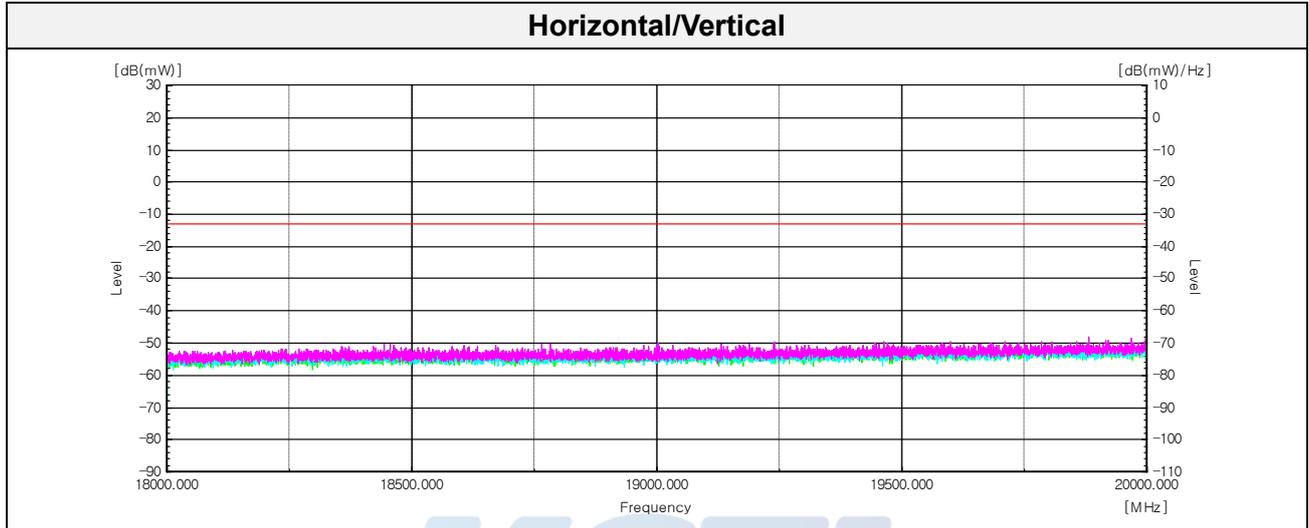
Mode	Frequency	Pol.	Antenna Gain	Cable loss	Substitute Level	Level	Limit	Margin
	[MHz]	[V/H]	[dBi]	[dB]	[dBm]	[dBm]	[dBm]	[dB]
QPSK	3 815.05	H	9.1	9.04	-57.56	-57.50	-13.00	44.50
	5 725.18	V	11.5	11.16	-45.44	-45.10	-13.00	32.10
	7 627.31	V	11.3	13.25	-50.45	-52.40	-13.00	39.40

## Note.

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

**Test results (Above 18 GHz to 20 GHz) – Worst case**

Test mode : GSM1900  
Frequency (MHz) : 1 850.2  
Channel : 512

**Note.**

1. No spurious emissions were detected above 18GHz.

**KCTL**

**7. 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
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
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	N/A
Cable Assembly	Radiall	TESTPRO 3	-	N/A

**End of test report**