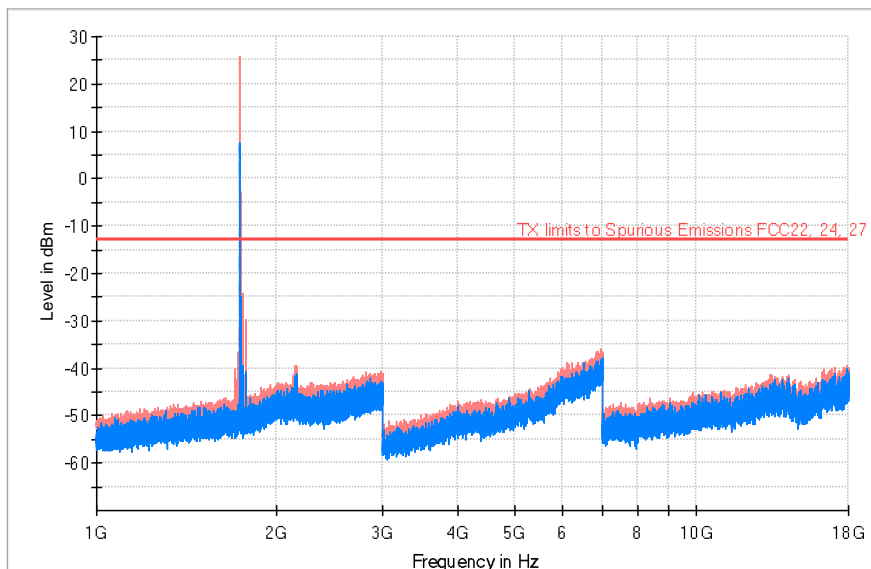


<b>TEST RESULTS (Cont):</b>	High Channel
-----------------------------	--------------

FREQUENCY RANGE: 1-18 GHz

Frequency (MHz)	PK+ _CLRWR (dBm)	PK+ _MAXH (dBm)	Comment
1736.200000	7.28	25.89	
2146.933333	-43.73	-39.50	Fundamental
2980.533333	-44.25	-40.69	
6939.000000	-42.96	-36.00	
13366.500000	-43.76	-41.36	
17889.000000	-46.17	-39.36	

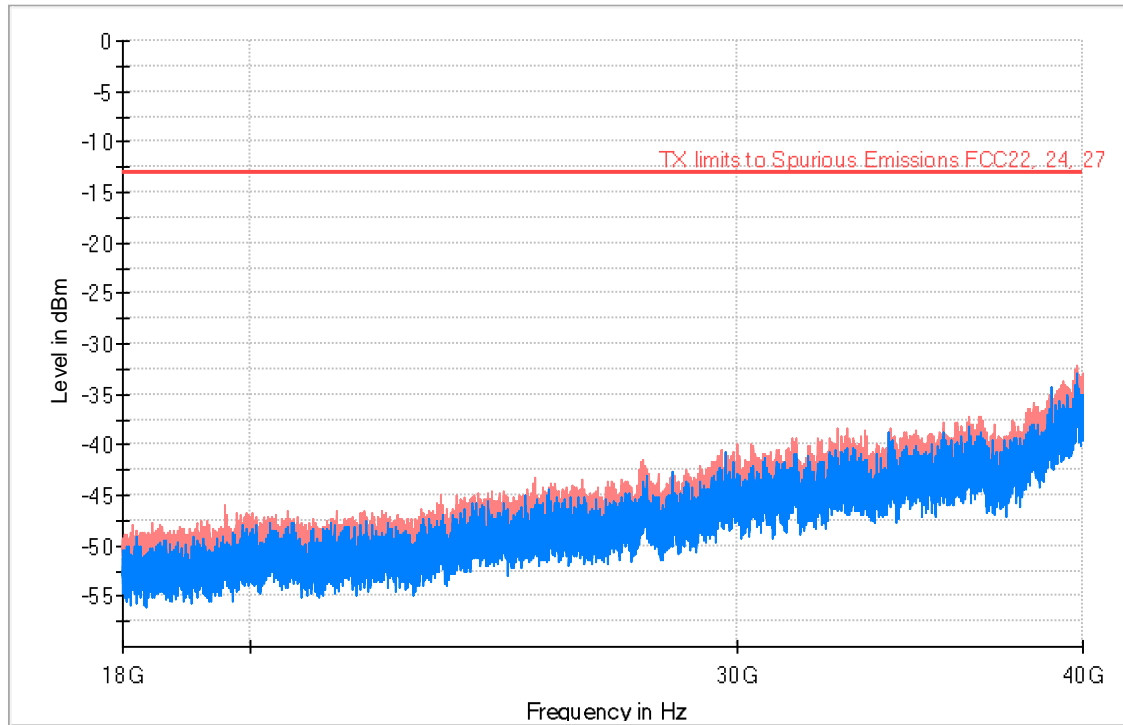


— PK+ \_MAXH    — PK+ \_CLRWR    — TX limits to Spurious Emissions FCC22, 24, 27

TEST RESULTS (Cont):

High Channel

FREQUENCY RANGE: 18-40 GHz



PK+\_MAXH    PK+\_CLRWR    TX limits to Spurious Emissions FCC22, 24, 27

<b>TESTED SAMPLES:</b>	S/01
<b>TESTED CONDITIONS MODES:</b>	TC#02 (Band 7)
<b>TEST RESULTS:</b>	PASS

**RESULTS**

A preliminary scan determined the QPSK 15 MHz bandwidth as the worst case. The configuration of Resource Blocks which is the worst case for conducted power was used.

The following plots show the results for this configuration.

No spurious signal was found at less than 20dB respect to the limit in all the frequency ranges.

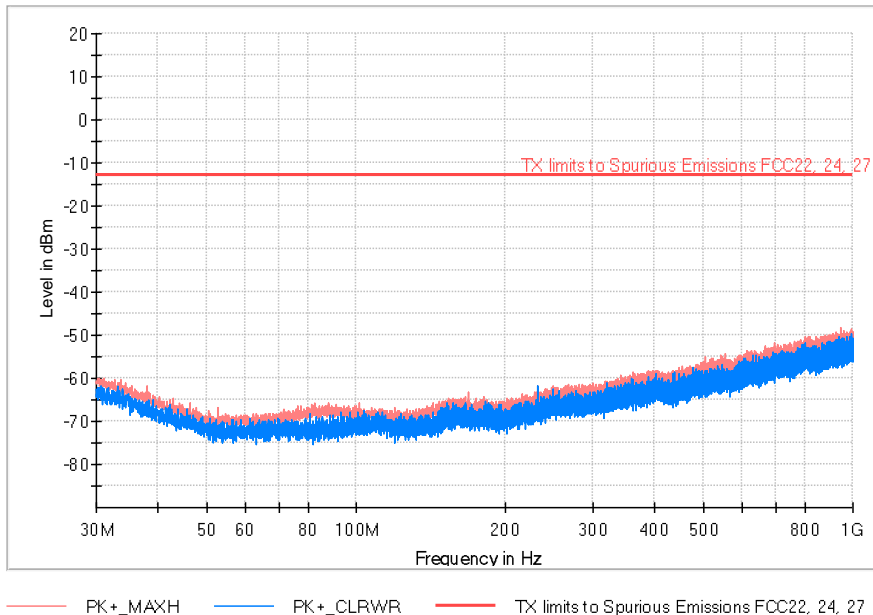
LTE QPSK MODULATION.

<b>TEST RESULTS (Cont):</b>	Lowest Channel
-----------------------------	----------------

Lowest Channel. RB = 1. Offset = 0. BW = 15 MHz

**FREQUENCY RANGE: 30-1000 MHz**

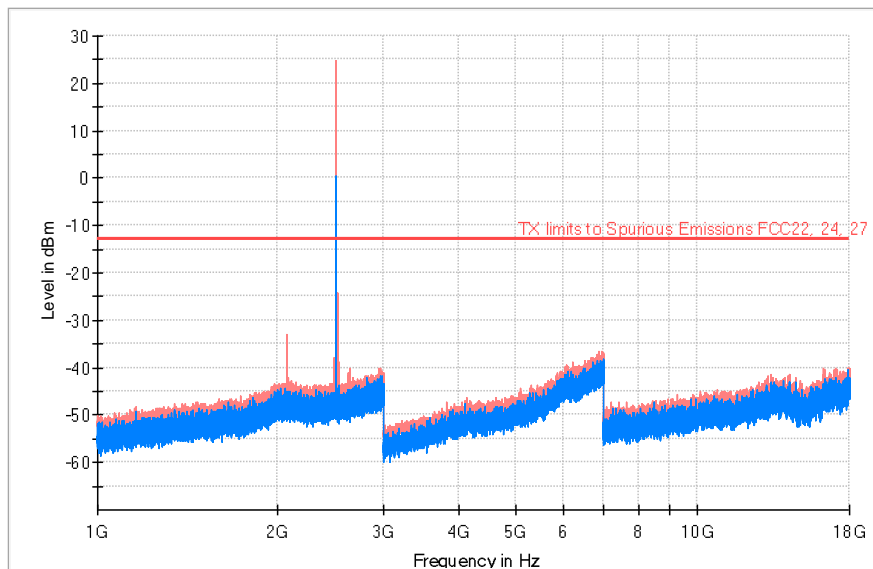
Frequency (MHz)	PK+_CLRWR (dBm)	PK+_MAXH (dBm)
30.323333	-64.01	-59.95
943.675333	-56.19	-48.37



<b>TEST RESULTS (Cont):</b>	Lowest Channel
-----------------------------	----------------

FREQUENCY RANGE: 1-18 GHz

Frequency (MHz)	PK+ CLRWR (dBm)	PK+ MAXH (dBm)	Comment
2072.266667	-46.92	-33.09	
2500.800000	-0.73	24.89	<b>Fundamental</b>
2631.333333	-47.29	-40.09	
6963.500000	-42.18	-36.47	
14264.500000	-46.91	-41.40	
17958.000000	-43.27	-39.98	

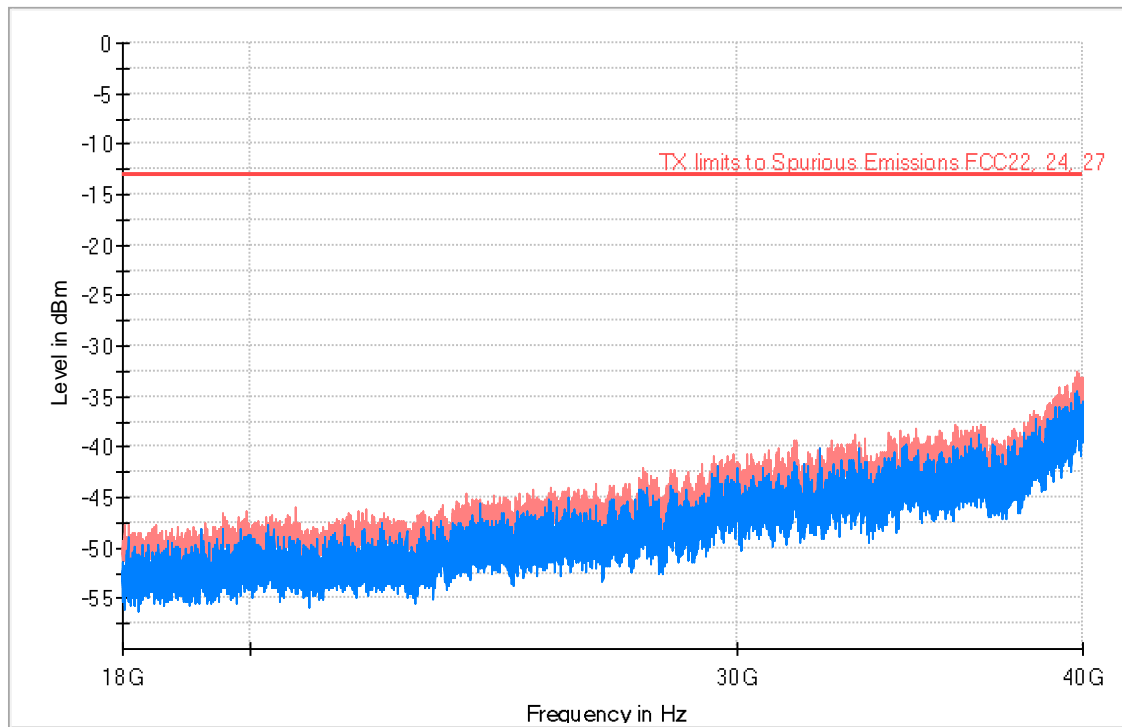


PK+ MAXH    PK+ CLRWR    TX limits to Spurious Emissions FCC22, 24, 27

TEST RESULTS (Cont):

Lowest Channel

FREQUENCY RANGE: 18-40 GHz



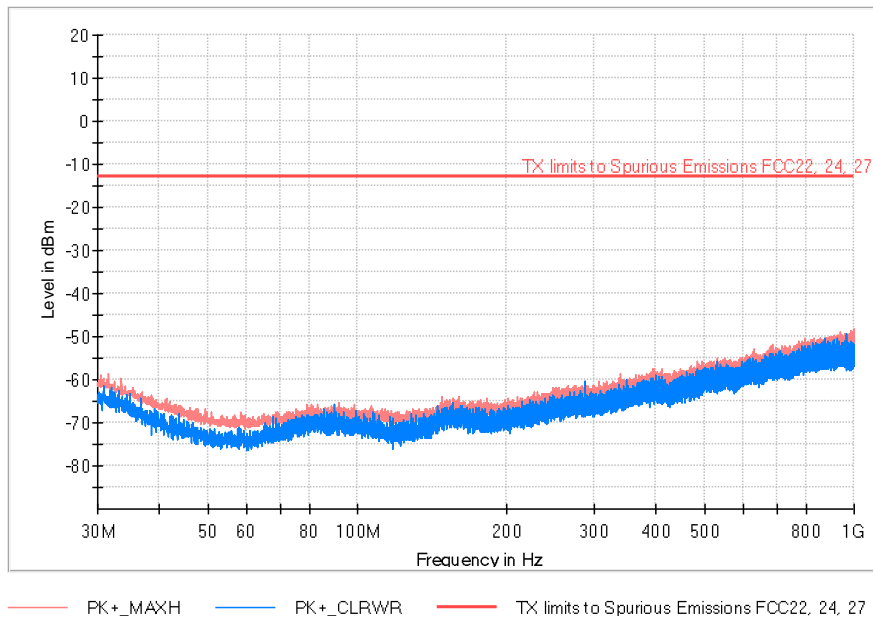
PK+\_MAXH PK+\_CLRWR TX limits to Spurious Emissions FCC22, 24, 27

<b>TEST RESULTS (Cont):</b>	Middle Channel
-----------------------------	----------------

Middle Channel RB = 1. Offset = 0. BW = 15 MHz

FREQUENCY RANGE: 30-1000 MHz

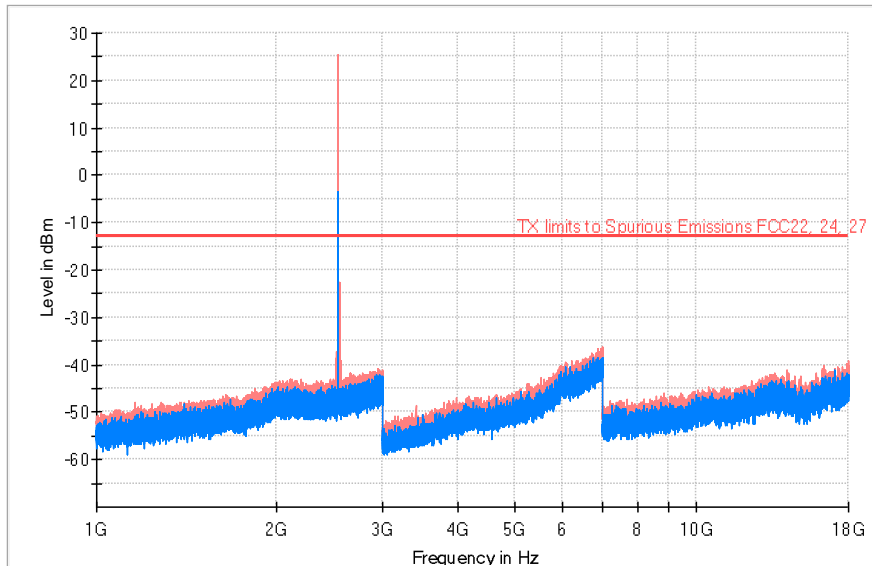
Frequency (MHz)	PK+_CLRWR (dBm)	PK+_MAXH (dBm)
31.552000	-65.75	-58.53
996.605000	-55.43	-48.33



<b>TEST RESULTS (Cont):</b>	Middle Channel
-----------------------------	----------------

**FREQUENCY RANGE: 1-18 GHz**

Frequency (MHz)	PK+_CLRWR (dBm)	PK+_MAXH (dBm)	Comment
2528.400000	-3.77	25.32	<b>Fundamental</b>
2951.200000	-43.23	-40.78	
6971.500000	-41.82	-36.10	
14244.000000	-46.27	-41.10	
17957.000000	-44.38	-39.28	

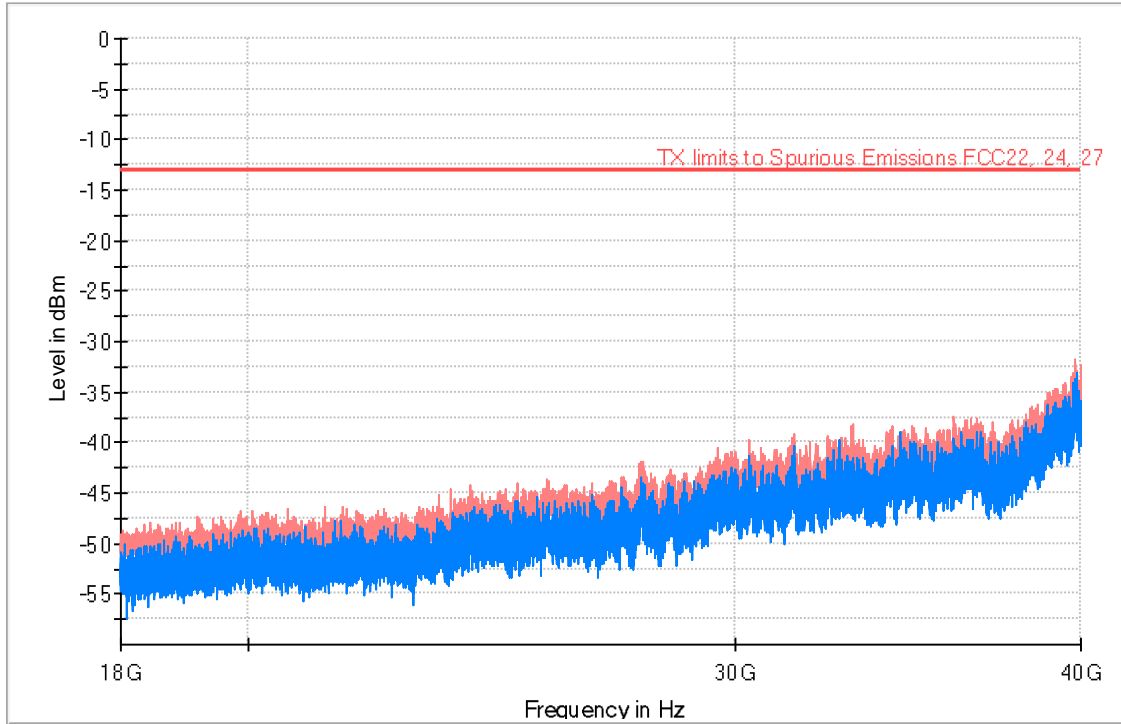


— PK+\_MAXH    — PK+\_CLRWR    — TX limits to Spurious Emissions FCC22, 24, 27

TEST RESULTS (Cont):

Middle Channel

FREQUENCY RANGE: 18-40 GHz



PK+\_MAXH    PK+\_CLRWR    TX limits to Spurious Emissions FCC22, 24, 27



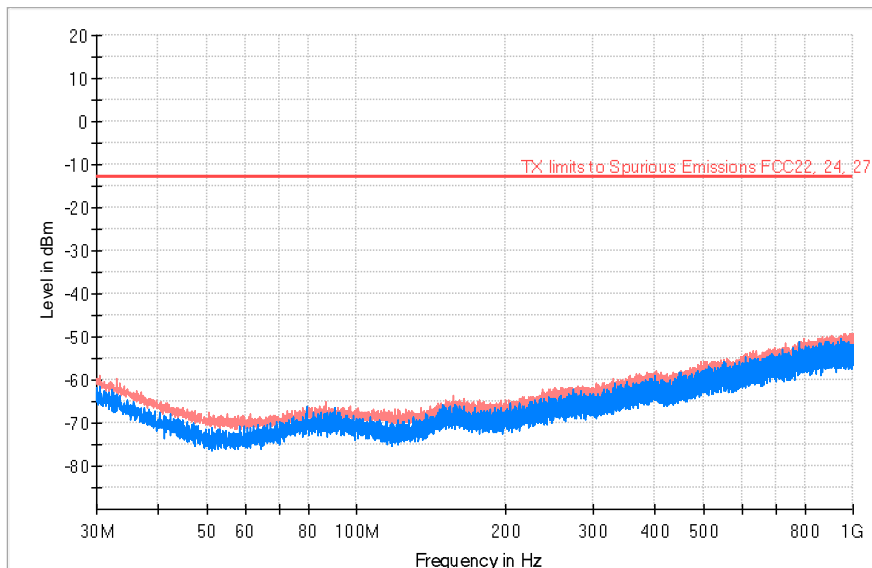
**TEST RESULTS (Cont):**

Highest Channel

Highest Channel RB = 1. Offset = 0. BW = 15 MHz

FREQUENCY RANGE: 30MHz-1 GHz

Frequency (MHz)	PK+_CLRWR (dBm)	PK+_MAXH (dBm)
30.485000	-63.59	-59.04
982.443000	-54.77	-49.15

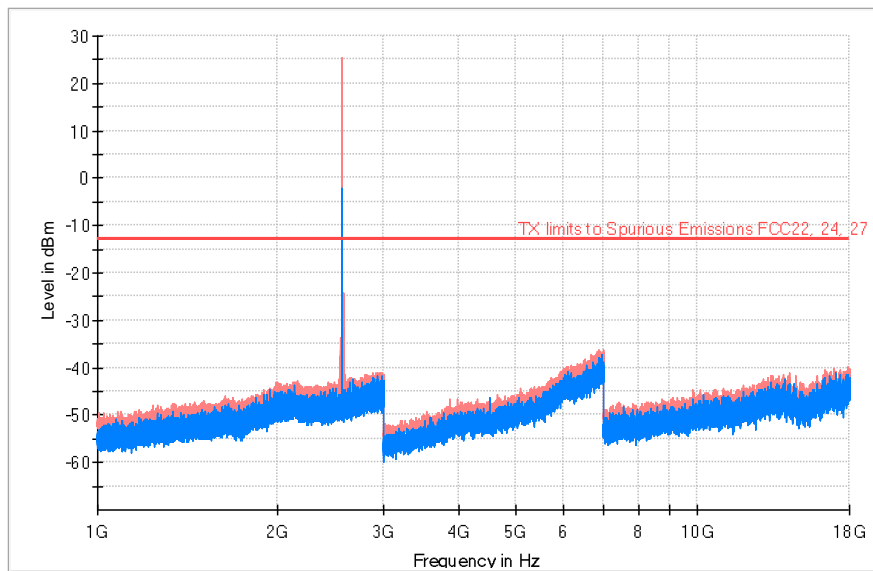


— PK+\_MAXH — PK+\_CLRWR — TX limits to Spurious Emissions FCC22, 24, 27

<b>TEST RESULTS (Cont):</b>	High Channel
-----------------------------	--------------

FREQUENCY RANGE: 1-18 GHz

Frequency (MHz)	PK+_CLRWR (dBm)	PK+_MAXH (dBm)	Comment
2555.866667	-3.96	25.46	<b>Fundamental</b>
2911.533333	-48.95	-40.96	
6986.000000	-40.31	-36.09	
14270.000000	-47.38	-41.22	
17921.000000	-44.00	-39.92	

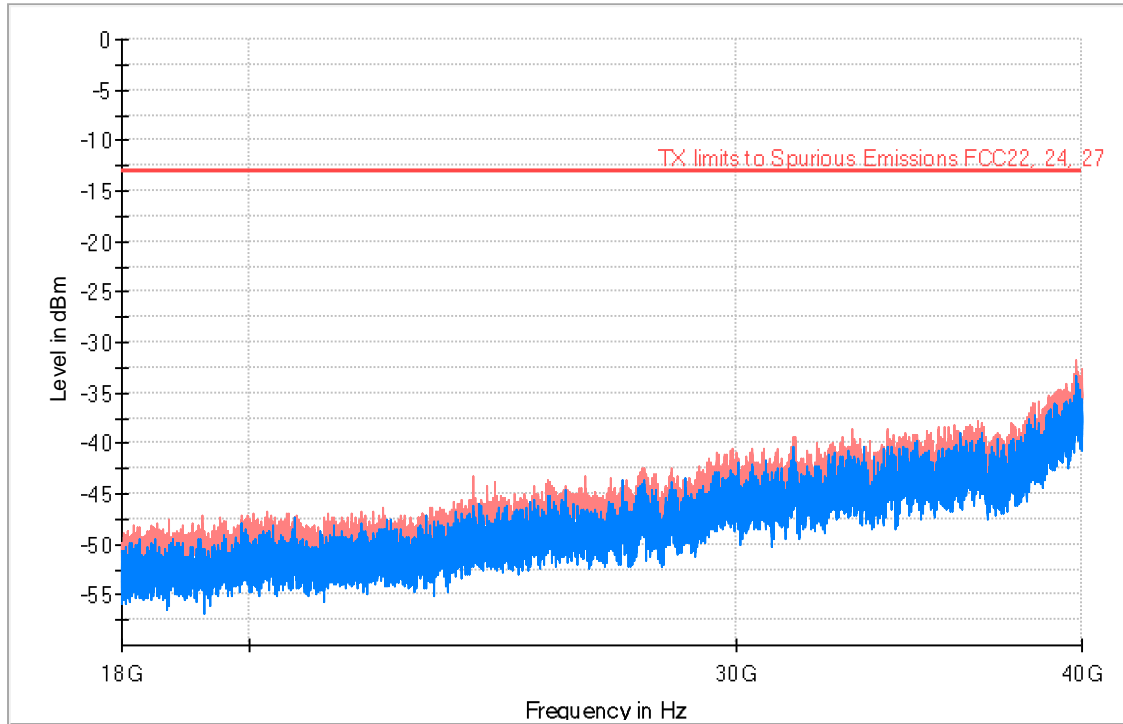


— PK+\_MAXH    — PK+\_CLRWR    — TX limits to Spurious Emissions FCC22, 24, 27

TEST RESULTS(Cont.):

High Channel

FREQUENCY RANGE: 18-40 GHz



PK+\_MAXH    PK+\_CLRWR    TX limits to Spurious Emissions FCC22, 24, 27

<b>TESTED SAMPLES:</b>	S/01
<b>TESTED CONDITIONS MODES:</b>	TC#03 (Band 12)
<b>TEST RESULTS:</b>	PASS

**RESULTS**

A preliminary scan determined the QPSK 3 MHz bandwidth as the worst case. The configuration of Resource Blocks which is the worst case for conducted power was used.

The following plots show the results for this configuration.

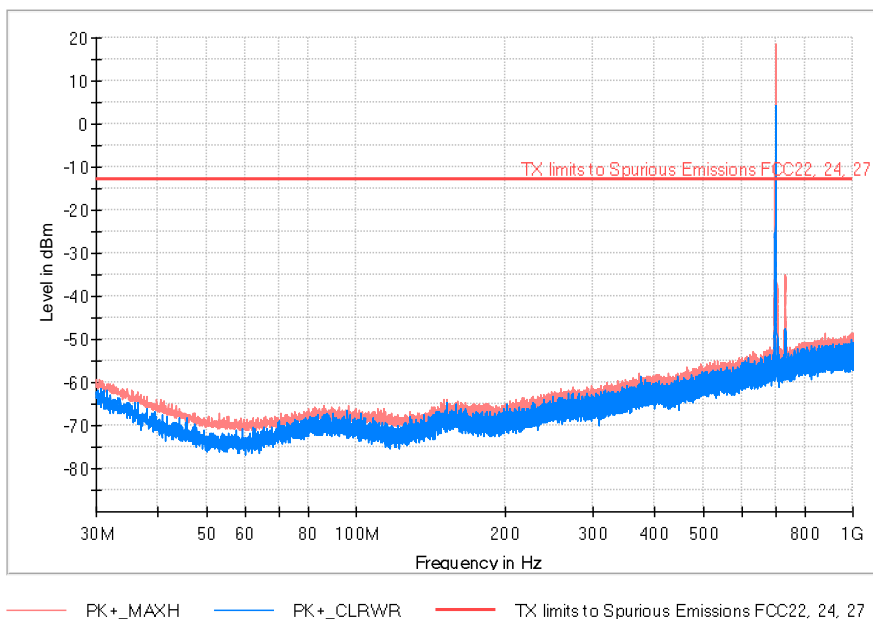
No spurious signal was found at less than 20dB respect to the limit in all the frequency ranges.

LTE QPSK MODULATION. RB = 1. Offset = 0. BW = 3 MHz

<b>TEST RESULTS (Cont):</b>	Low Channel
-----------------------------	-------------

FREQUENCY RANGE: 30-1000 MHz

Frequency (MHz)	PK+_CLRWR (dBm)	PK+_MAXH (dBm)	Comment
30.452667	-65.09	-59.40	
699.203000	4.33	18.43	Fundamental
731.051333	-47.86	-34.95	
880.948667	-55.21	-48.50	

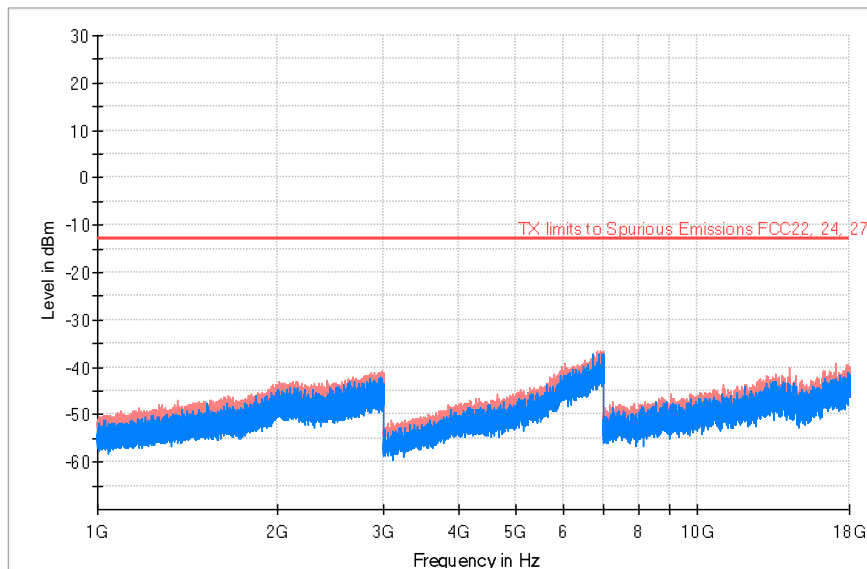


**TEST RESULTS (Cont):**

Low Channel

FREQUENCY RANGE: 1-18 GHz

Frequency (MHz)	PK+ CLRWR (dBm)	PK+ MAXH (dBm)
2983.200000	-46.36	-40.76
6979.500000	-40.70	-36.50
14269.000000	-45.38	-40.00
17022.000000	-44.60	-39.00

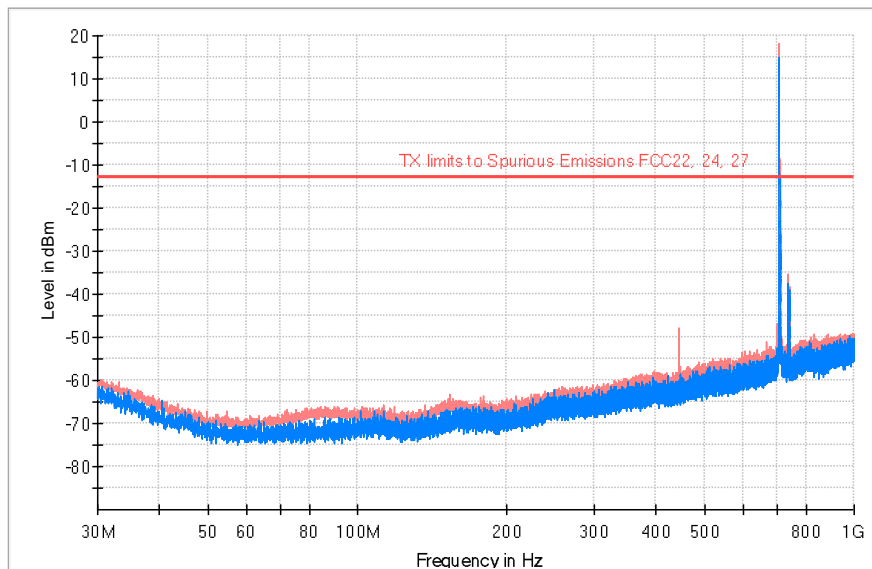


— PK+ MAXH — PK+ CLRWR — TX limits to Spurious Emissions FCC22, 24, 27

<b>TEST RESULTS (Cont):</b>	Middle Channel
-----------------------------	----------------

FREQUENCY RANGE: 30-1000 MHz

Frequency (MHz)	PK+ _CLRWR (dBm)	PK+ _MAXH (dBm)	Comment
30.323333	-64.53	-59.95	
444.804333	-62.70	-47.85	Fundamental
706.154667	14.41	18.15	
737.679667	-40.13	-35.36	



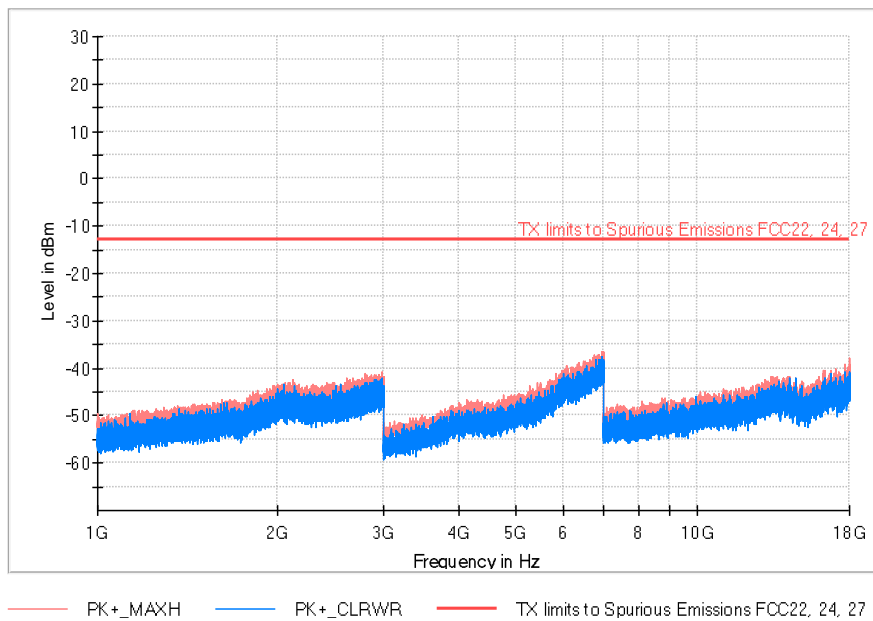
— PK+ \_MAXH    — PK+ \_CLRWR    — TX limits to Spurious Emissions FCC22, 24, 27

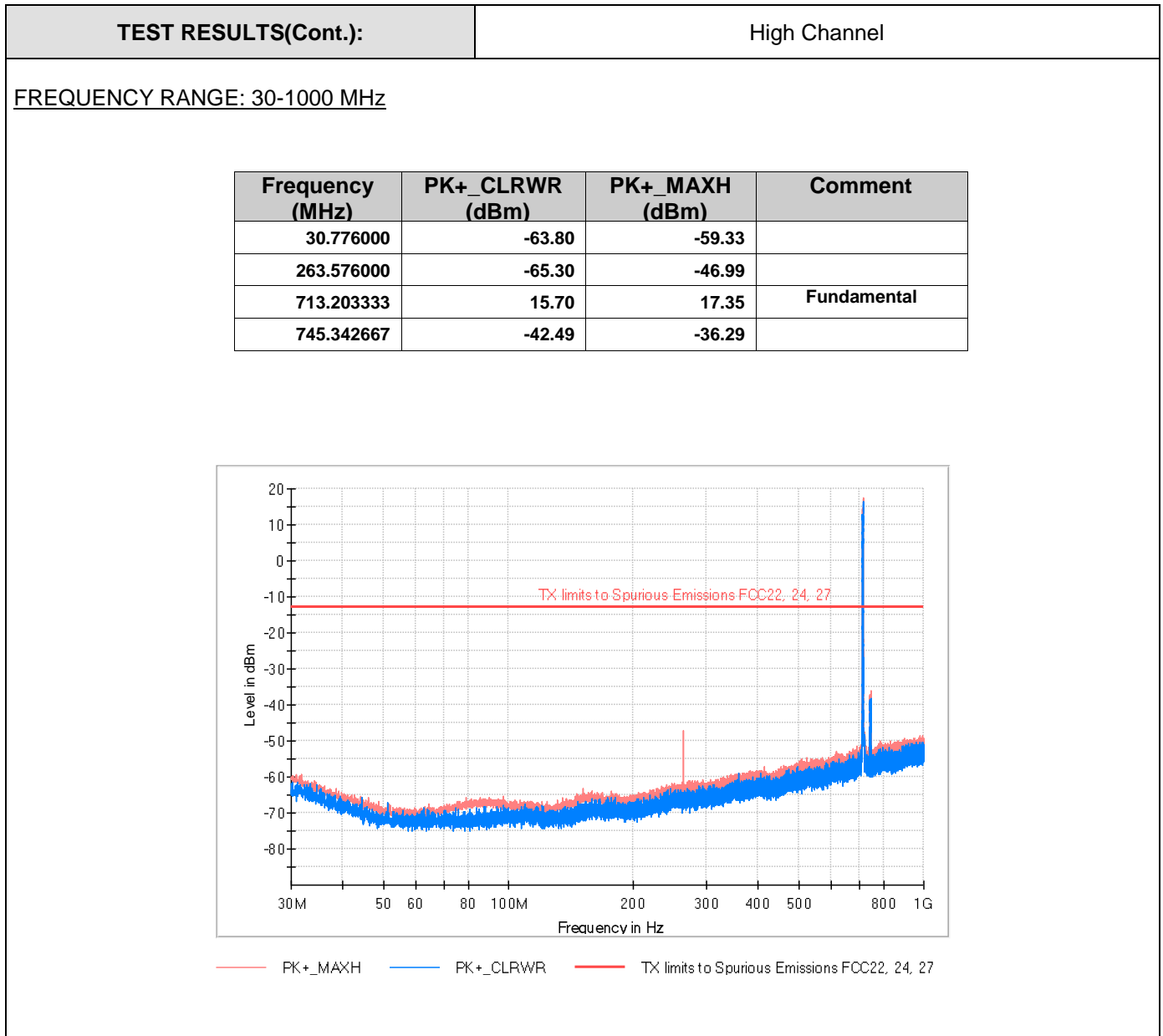
**TEST RESULTS (Cont):**

Middle Channel

FREQUENCY RANGE: 1-18 GHz

Frequency (MHz)	PK+_CLRWR (dBm)	PK+_MAXH (dBm)
2991.133333	-45.58	-40.66
6975.500000	-41.85	-36.57
14284.500000	-44.13	-41.66
17949.500000	-43.27	-37.88





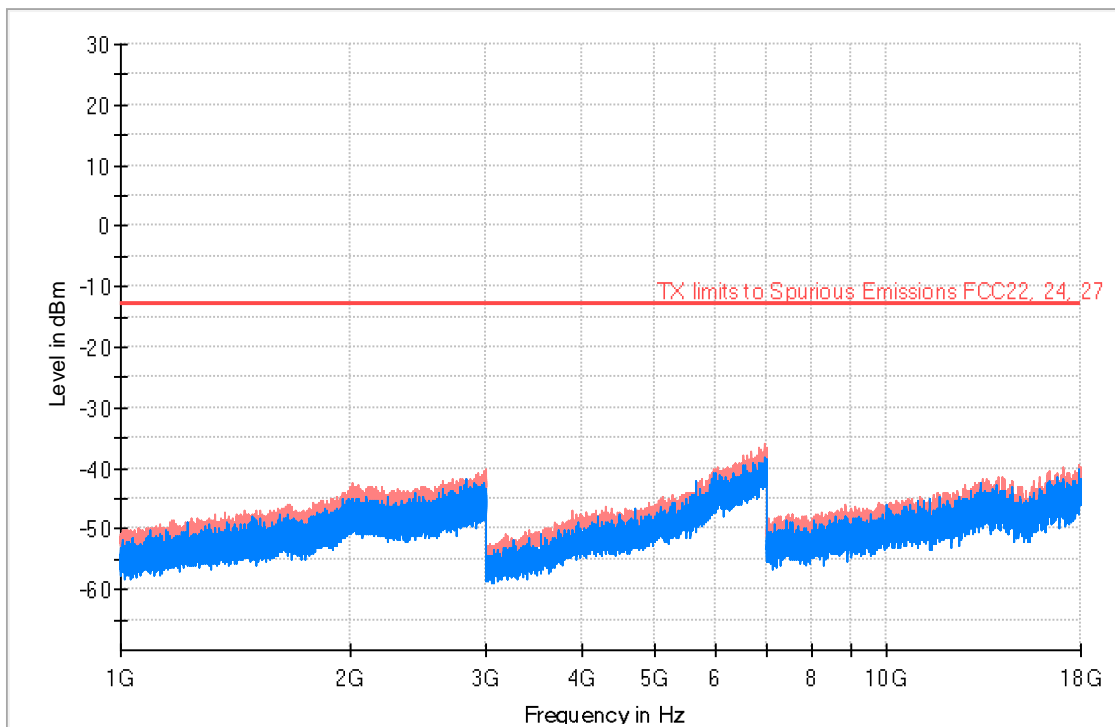


**TEST RESULTS (Cont):**

High Channel

FREQUENCY RANGE: 1-18 GHz

Frequency (MHz)	PK+ _CLRWR (dBm)	PK+ _MAXH (dBm)
2983.200000	-46.36	-40.76
6979.500000	-40.70	-36.50
14269.000000	-45.38	-40.00
17022.000000	-44.60	-39.00



— PK+ \_MAXH    — PK+ \_CLRWR    — TX limits to Spurious Emissions FCC22, 24, 27

<b>TESTED SAMPLES:</b>	S/01
<b>TESTED CONDITIONS MODES:</b>	TC#04 (Band 13)
<b>TEST RESULTS:</b>	PASS

**RESULTS**

A preliminary scan determined the QPSK 5 MHz bandwidth as the worst case. The configuration of Resource Blocks which is the worst case for conducted power was used.

The following plots show the results for this configuration.

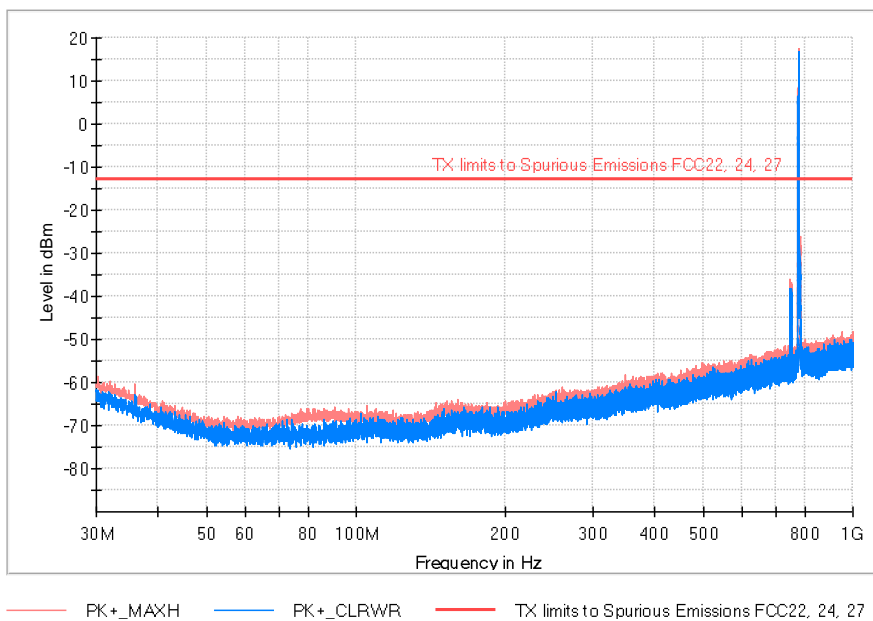
No spurious signal was found at less than 20dB respect to the limit in all the frequency ranges.

LTE QPSK MODULATION. RB = 1. Offset = 0. BW = 5 MHz

<b>TEST RESULTS (Cont):</b>	Low Channel
-----------------------------	-------------

FREQUENCY RANGE: 30-1000 MHz

Frequency (MHz)	PK+_CLRWR (dBm)	PK+_MAXH (dBm)	Comment
30.161667	-63.79	-58.62	
748.834667	-47.28	-36.12	
777.320333	16.62	17.61	<b>Fundamental</b>
953.698667	-54.32	-48.25	

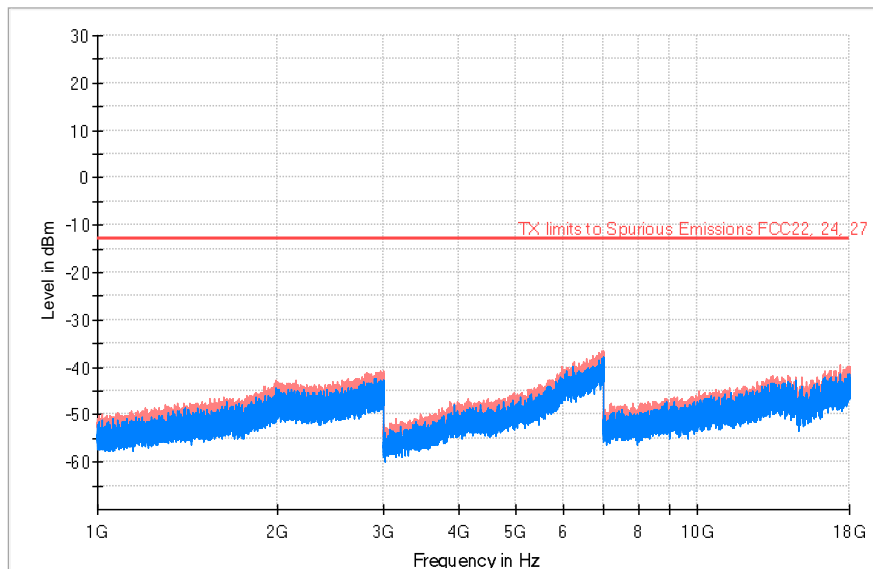


**TEST RESULTS (Cont):**

Low Channel

FREQUENCY RANGE: 1-18 GHz

Frequency (MHz)	PK+ _CLRWR (dBm)	PK+ _MAXH (dBm)
2966.666667	-45.88	-40.79
6995.000000	-40.87	-36.64
13390.500000	-46.20	-41.87
17358.000000	-45.47	-39.52

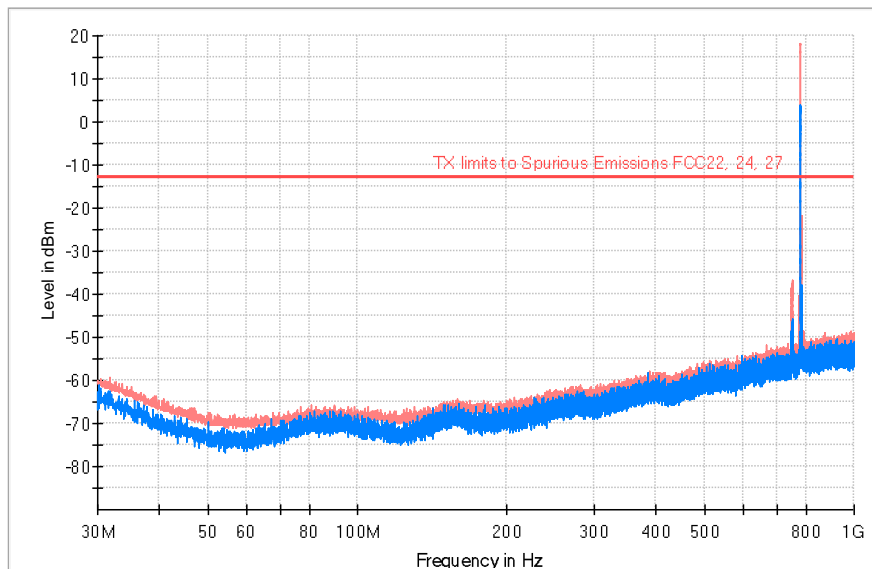


— PK+ \_MAXH    — PK+ \_CLRWR    — TX limits to Spurious Emissions FCC22, 24, 27

<b>TEST RESULTS (Cont):</b>	Middle Channel
-----------------------------	----------------

FREQUENCY RANGE: 30-1000 MHz

Frequency (MHz)	PK+ _CLRWR (dBm)	PK+ _MAXH (dBm)	Comment
31.713667	-65.74	-59.16	
752.520667	-48.03	-36.61	Fundamental
779.842333	2.93	18.24	
984.641667	-55.54	-48.62	



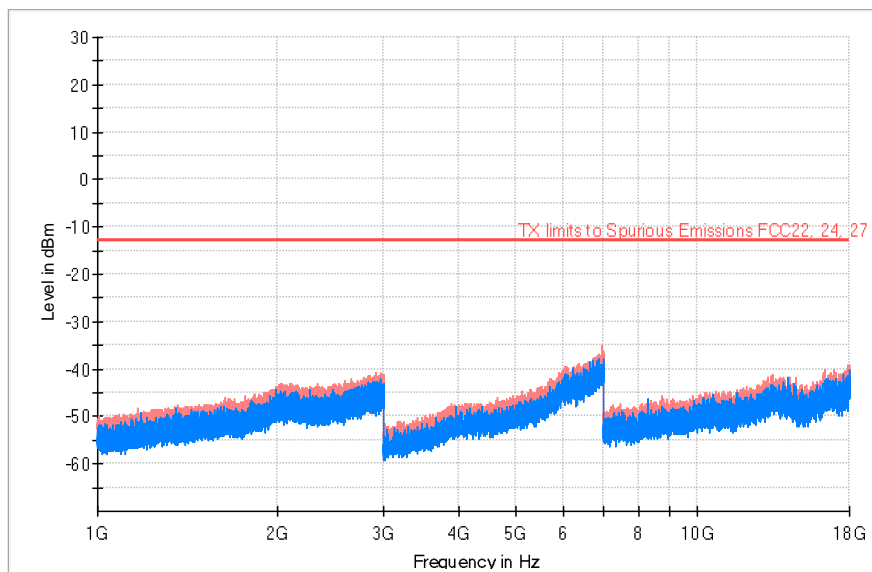
— PK+ \_MAXH    — PK+ \_CLRWR    — TX limits to Spurious Emissions FCC22, 24, 27

**TEST RESULTS (Cont):**

Middle Channel

FREQUENCY RANGE: 1-18 GHz

Frequency (MHz)	PK+_CLRWR (dBm)	PK+_MAXH (dBm)
2971.533333	-46.96	-40.90
6970.500000	-41.01	-35.06
13395.500000	-45.35	-40.95
17953.000000	-43.86	-39.04

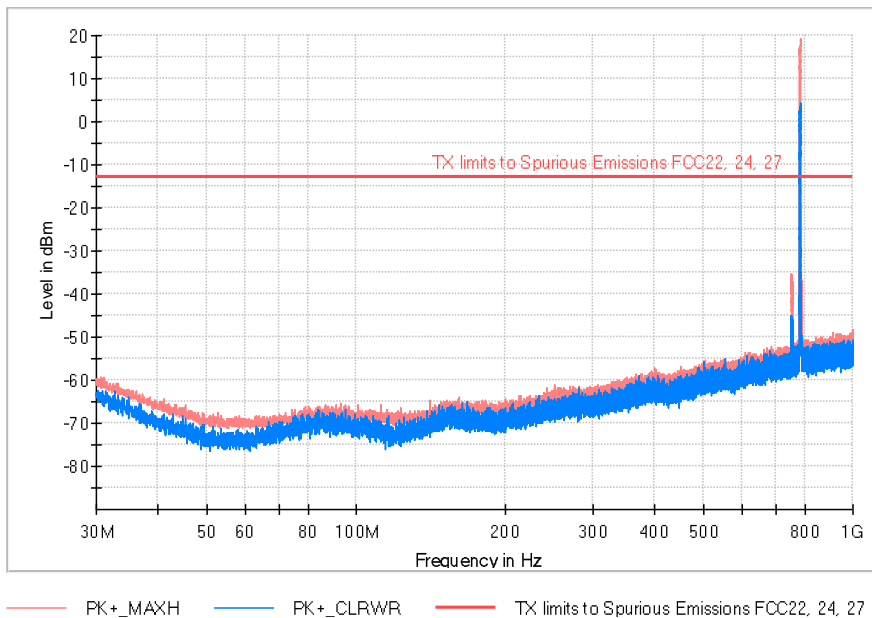


— PK+\_MAXH    — PK+\_CLRWR    — TX limits to Spurious Emissions FCC22: 24, 27

**TEST RESULTS(Cont.):** High Channel

FREQUENCY RANGE: 30-1000 MHz

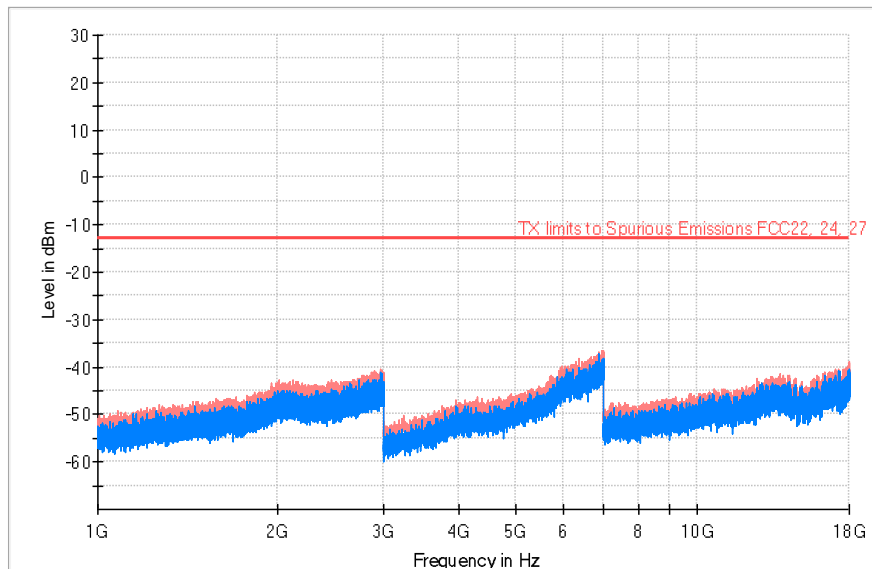
Frequency (MHz)	PK+_CLRWR (dBm)	PK+_MAXH (dBm)	Comment
30.646667	-63.28	-59.36	
752.714667	-57.45	-35.51	
782.396667	4.29	19.23	Fundamental
997.413333	-54.32	-48.14	



<b>TEST RESULTS (Cont):</b>	High Channel
-----------------------------	--------------

**FREQUENCY RANGE: 1-18 GHz**

Frequency (MHz)	PK+ _CLRWR (dBm)	PK+ _MAXH (dBm)
2960.200000	-46.22	-40.44
6986.000000	-39.04	-36.46
13809.500000	-47.36	-41.42
17948.000000	-42.94	-38.67



— PK+ \_MAXH    — PK+ \_CLRWR    — TX limits to Spurious Emissions FCC22, 24, 27

<b>TESTED SAMPLES:</b>	S/01
<b>TESTED CONDITIONS MODES:</b>	TC#05 (Band 66)
<b>TEST RESULTS:</b>	PASS

**RESULTS**

A preliminary scan determined the QPSK 20 MHz bandwidth as the worst case. The configuration of Resource Blocks which is the worst case for conducted power was used.

The following plots show the results for this configuration.

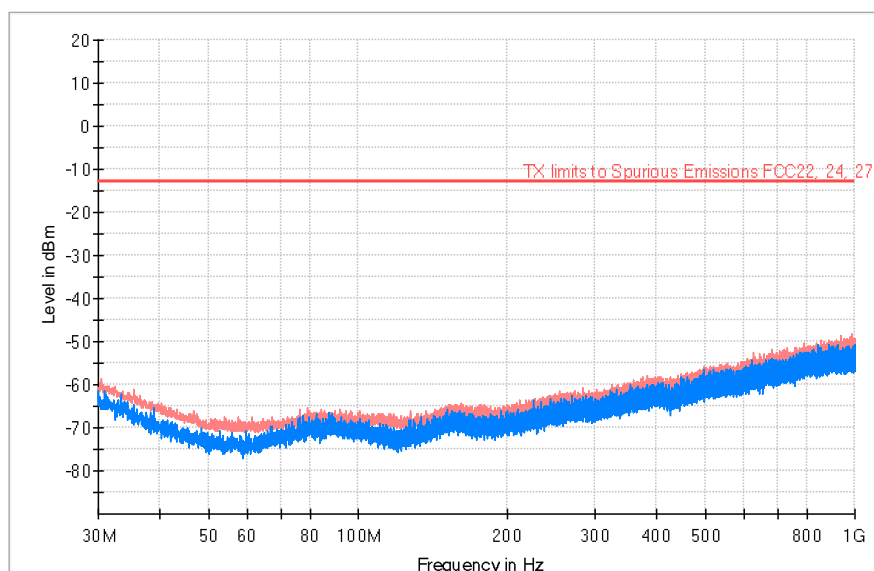
No spurious signal was found at less than 20dB respect to the limit in all the frequency ranges.

LTE QPSK MODULATION. RB = 1. Offset = 0. BW = 20 MHz

<b>TEST RESULTS (Cont):</b>	Low Channel
-----------------------------	-------------

FREQUENCY RANGE: 30-1000 MHz

Frequency (MHz)	PK+_CLRWR (dBm)	PK+_MAXH (dBm)	Comment
30.420333	-64.54	-58.67	
986.808000	-53.14	-48.23	



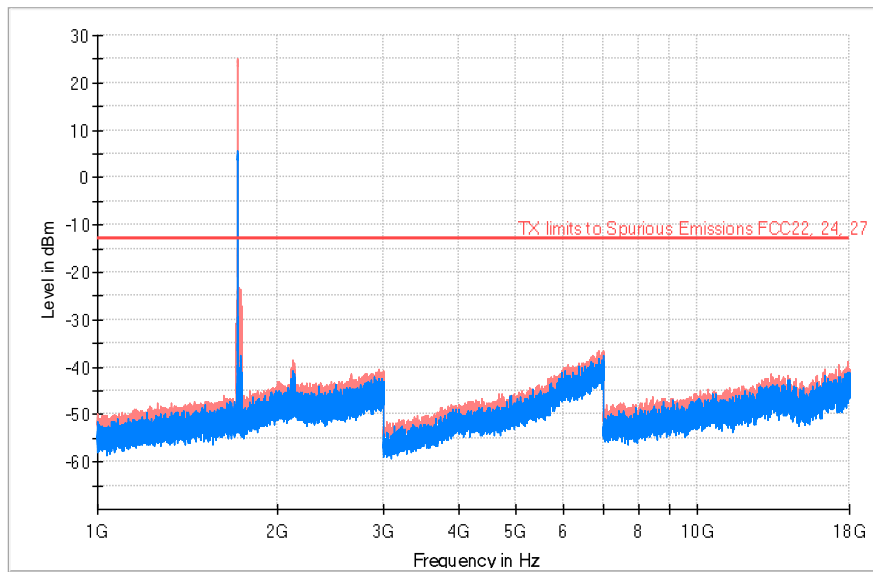
PK+\_MAXH    PK+\_CLRWR    TX limits to Spurious Emissions FCC22, 24, 27



<b>TEST RESULTS (Cont):</b>	Low Channel
-----------------------------	-------------

FREQUENCY RANGE: 1-18 GHz

Frequency (MHz)	PK+ CLRWR (dBm)	PK+ MAXH (dBm)	Comment
1711.133333	5.30	25.16	
2116.733333	-44.57	-38.42	Fundamental
2956.200000	-47.42	-40.61	
6991.500000	-41.50	-36.57	
13348.000000	-46.45	-41.36	
17909.000000	-45.84	-38.88	

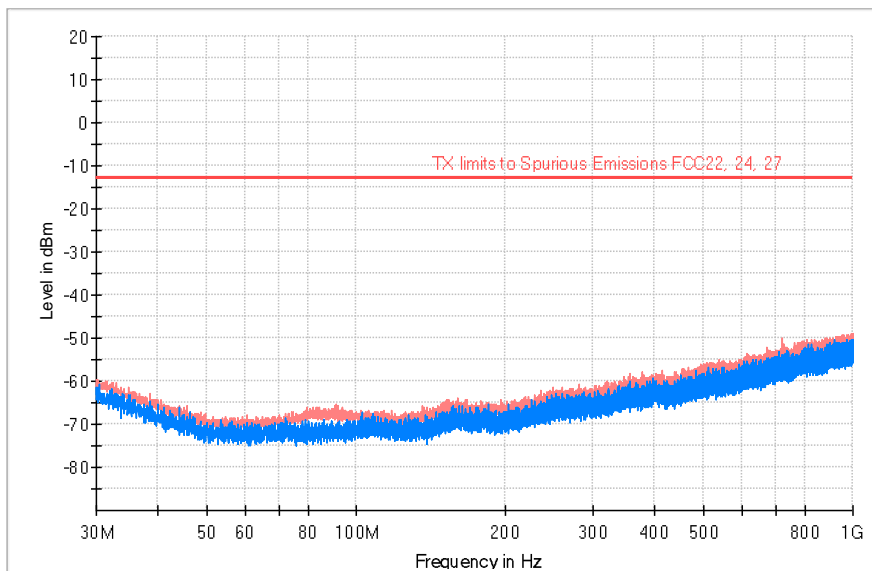


— PK+\_MAXH    — PK+\_CLRWR    — TX limits to Spurious Emissions FCC22, 24, 27

<b>TEST RESULTS(Cont.):</b>	Middle Channel
-----------------------------	----------------

FREQUENCY RANGE: 30-1000 MHz

Frequency (MHz)	PK+_CLRWR (dBm)	PK+_MAXH (dBm)	Comment
30.129333	-61.55	-59.76	
718.312000	-58.38	-49.97	
990.397000	-54.41	-48.81	

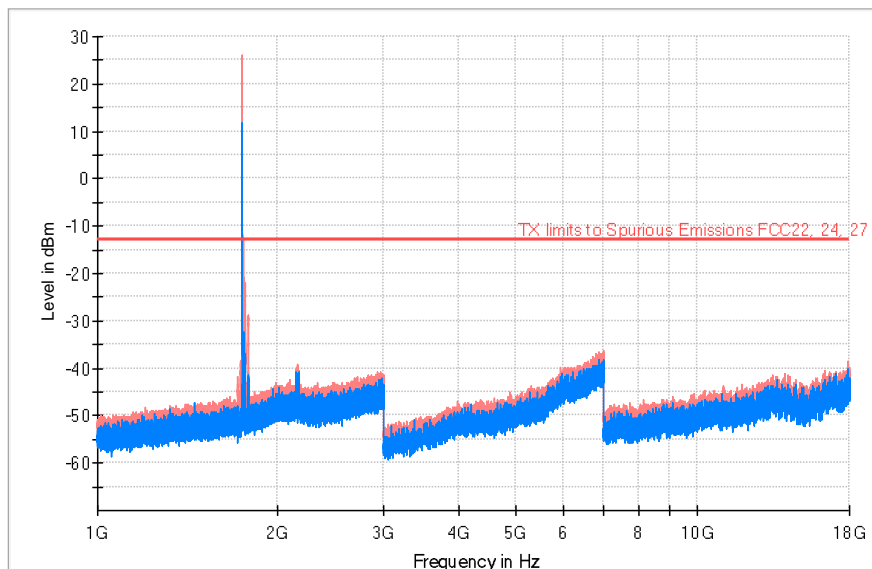


— PK+\_MAXH    — PK+\_CLRWR    — TX limits to Spurious Emissions FCC22, 24, 27

<b>TEST RESULTS (Cont):</b>	Middle Channel
-----------------------------	----------------

FREQUENCY RANGE: 1-18 GHz

Frequency (MHz)	PK+ _CLRWR (dBm)	PK+ _MAXH (dBm)	Comment
1746.000000	11.67	25.96	
2151.600000	-45.52	-39.27	Fundamental
2932.933333	-48.19	-40.78	
6977.500000	-40.68	-36.12	
14015.500000	-46.49	-41.22	
17919.000000	-44.07	-38.62	

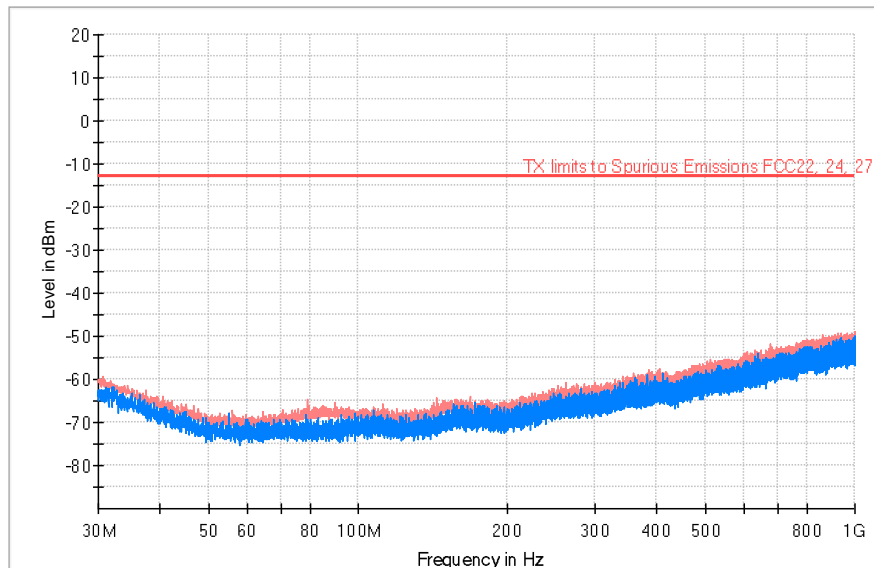


— PK+ \_MAXH    — PK+ \_CLRWR    — TX limits to Spurious Emissions FCC22, 24, 27

<b>TEST RESULTS(Cont.):</b>	High Channel
-----------------------------	--------------

FREQUENCY RANGE: 30-1000 MHz

Frequency (MHz)	PK+_CLRWR (dBm)	PK+_MAXH (dBm)	Comment
30.549667	-64.41	-59.27	
999.967667	-53.61	-48.90	

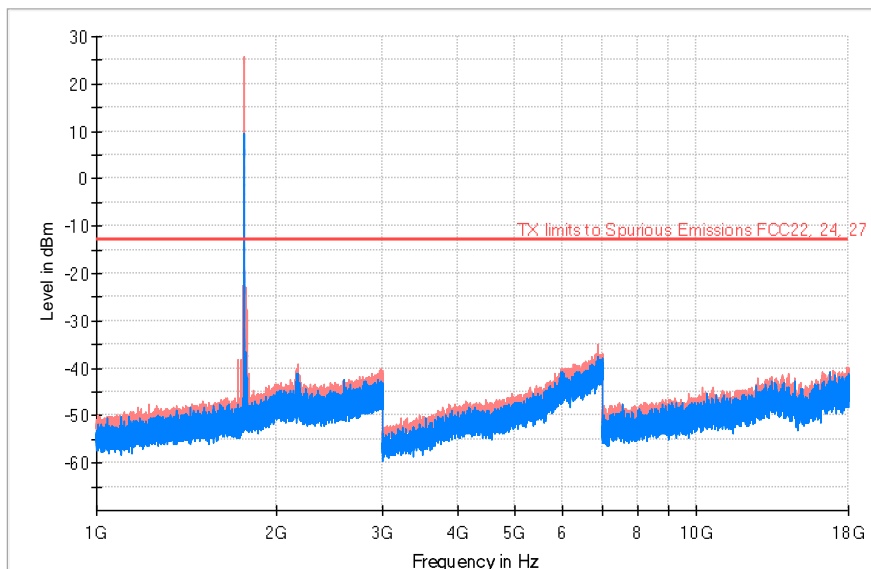


— PK+\_MAXH    — PK+\_CLRWR    — TX limits to Spurious Emissions FCC22, 24, 27

<b>TEST RESULTS (Cont):</b>	High Channel
-----------------------------	--------------

FREQUENCY RANGE: 1-18 GHz

Frequency (MHz)	PK+ _CLRWR (dBm)	PK+ _MAXH (dBm)	Comment
1761.000000	8.84	25.65	
2167.800000	-42.30	-39.25	Fundamental
2981.600000	-46.05	-40.29	
6857.500000	-41.86	-34.98	
14297.000000	-47.47	-41.22	
17936.000000	-43.37	-39.72	



— PK+ \_MAXH    — PK+ \_CLRWR    — TX limits to Spurious Emissions FCC22, 24, 27

## Appendix B: Test Results for 3G

## Appendix B Content

PRODUCT INFORMATION .....	385
DESCRIPTION OF TEST CONDITIONS .....	386
TEST B.1: RF OUTPUT POWER.....	387
TEST B.2: MODULATION CHARACTERISTICS .....	391
TEST B.3: FREQUENCY STABILITY .....	393
TEST B.4: OCCUPIED BANDWIDTH .....	395
TEST B.5: SPURIOUS EMISSIONS AT ANTENNA TERMINALS.....	399
TEST B.6: SPURIOUS EMISSIONS AT ANTENNA TERMINALS AT BLOCK EDGES.....	403
TEST B.7: RADIATED EMISSIONS.....	406

## PRODUCT INFORMATION

---

The following information is provided by the client

Information	Description
Modulation	WCDMA, HSPA
Maximum RF Output Power	24 dBm
Operation mode:	
- Operating Frequency Range	Band 4: 1710-1755 MHz
- Nominal Channel Bandwidth	Band 4: 5 MHz
Extreme operating conditions	
- Temperature range	T <sub>nom</sub> = +15 to + 35 T <sub>min</sub> = -30 T <sub>max</sub> = +50
Antenna type	External attachable Antenna.
Antenna gain	4 dBi
Nominal Voltage	
- Supply Voltage	3.8 Vdc
- Type of power source	DC voltage from power supply.



## DESCRIPTION OF TEST CONDITIONS

The worst case was found when positioned as the table below. Following channel(s) was (were) selected for the final test as listed below:

TEST CONDITIONS	DESCRIPTION										
TC#01 Band 4	<p>Power supply (V):  <math>V_{\text{nominal}} = 3.8 \text{ Vdc}</math></p> <p><u>Test Frequencies for Conducted tests:</u></p> <ul style="list-style-type: none"> <li>-Lowest Channel: 1313 (1712.6 MHz)</li> <li>-Middle Channel: 1450 (1740 MHz)</li> <li>-Highest Channel: 1512 (1752.4 MHz)</li> </ul> <p><u>Test Frequencies for Radiated tests:</u></p> <table border="1" data-bbox="411 1057 1225 1341"> <thead> <tr> <th data-bbox="411 1057 727 1155">Available Frequencies</th> <th data-bbox="727 1057 908 1155">Tested Frequency</th> <th data-bbox="908 1057 1066 1155">Channel Bandwidth</th> <th data-bbox="1066 1057 1225 1155">Modulation</th> </tr> </thead> <tbody> <tr> <td data-bbox="411 1155 727 1341" rowspan="3" style="text-align: center;">1710 to 1755 MHz</td> <td data-bbox="727 1155 908 1189" style="text-align: center;">1712.6 MHz</td> <td data-bbox="908 1155 1066 1341" rowspan="3" style="text-align: center;">5 MHz</td> <td data-bbox="1066 1155 1225 1341" rowspan="3" style="text-align: center;">WCDMA</td> </tr> <tr> <td data-bbox="727 1189 908 1223" style="text-align: center;">1740 MHz</td> </tr> <tr> <td data-bbox="727 1223 908 1341" style="text-align: center;">1752.4 MHz</td> </tr> </tbody> </table> <p>Note: This device was tested under all channels and modulations. The worst case found in WCDMA modulation.</p>	Available Frequencies	Tested Frequency	Channel Bandwidth	Modulation	1710 to 1755 MHz	1712.6 MHz	5 MHz	WCDMA	1740 MHz	1752.4 MHz
Available Frequencies	Tested Frequency	Channel Bandwidth	Modulation								
1710 to 1755 MHz	1712.6 MHz	5 MHz	WCDMA								
	1740 MHz										
	1752.4 MHz										

## TEST B.1: RF OUTPUT POWER

<b>LIMITS:</b>	Product standard:	FCC Part 27 / IC RSS-199
	Test standard:	FCC §2.1046 and §27.50 / RSS-199 Clause 4.4

### LIMITS

Fixed, mobile, and portable (hand-held) stations operating in the band are limited to 1-watt EIRP (30 dBm). Fixed stations operating in the band are limited to a maximum antenna height of 10 meters above ground. Mobile and portable stations operating in these bands must employ a means for limiting power to the minimum necessary for successful communications.

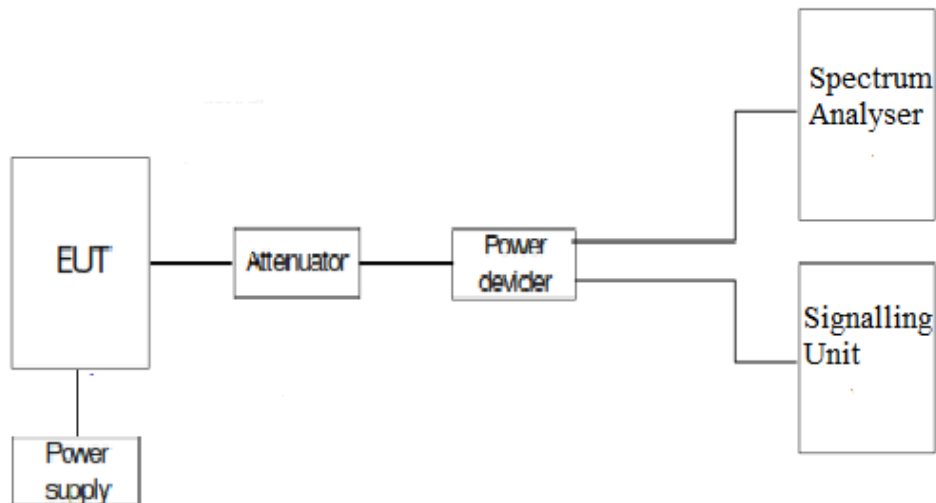
The peak-to-average ratio (PAR) of the transmission shall not exceed 13 dB.

### RSS-199 Clause 6.5

The equivalent isotropically radiated power (e.i.r.p.) for mobile and portable transmitters shall not exceed two watts.

The peak-to-average power ratio (PAPR) of the transmission shall not exceed 13 dB.

### TEST SETUP



<b>TESTED SAMPLES:</b>	S/01
<b>TESTED CONDITIONS MODES:</b>	TC#01
<b>TEST RESULTS:</b>	PASS

WCDMA Modulation:

Channel	Average power at antenna port (dBm)	Maximum declared antenna gain (dBi)	Maximum E.I.R.P. average power (dBm)	PAPR (dB)
Lowest	24.35	4.0	28.35	2.99
Middle	24.29	4.0	28.29	3.33
Highest	24.22	4.0	28.22	3.25
Measurement uncertainty (dB)			<±0.95	

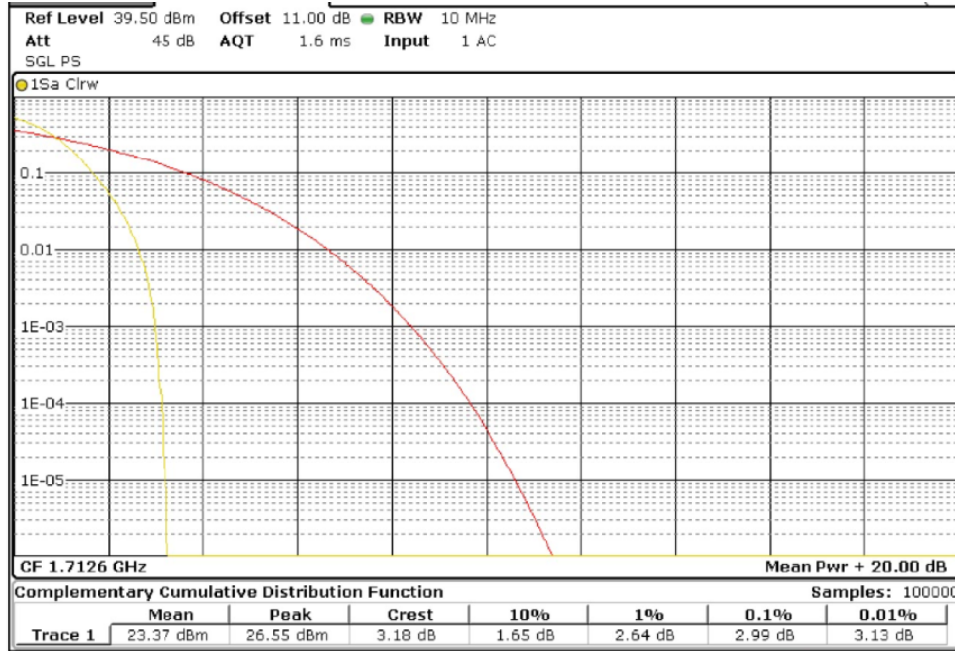
HSPA Modulation:

Channel	Average power at antenna port (dBm)	Maximum declared antenna gain (dBi)	Maximum E.I.R.P. average power (dBm)
Lowest	21.6	4.0	25.6
Middle	22.5	4.0	26.5
Highest	22.29	4.0	26.29
Measurement uncertainty (dB)			<±0.95

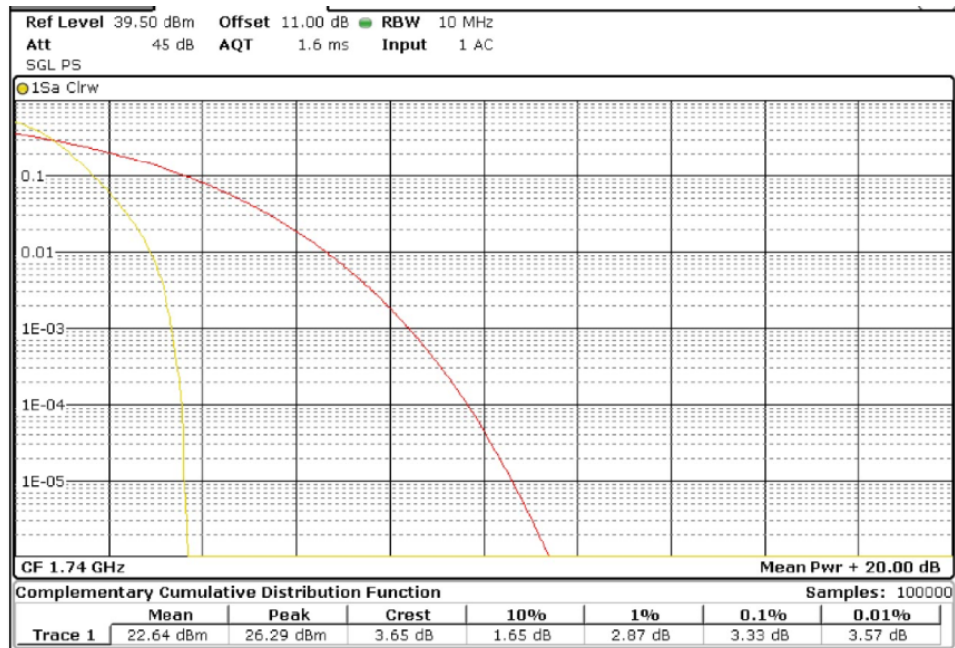
**TEST RESULTS (Cont):**

WCDMA:

Lowest channel

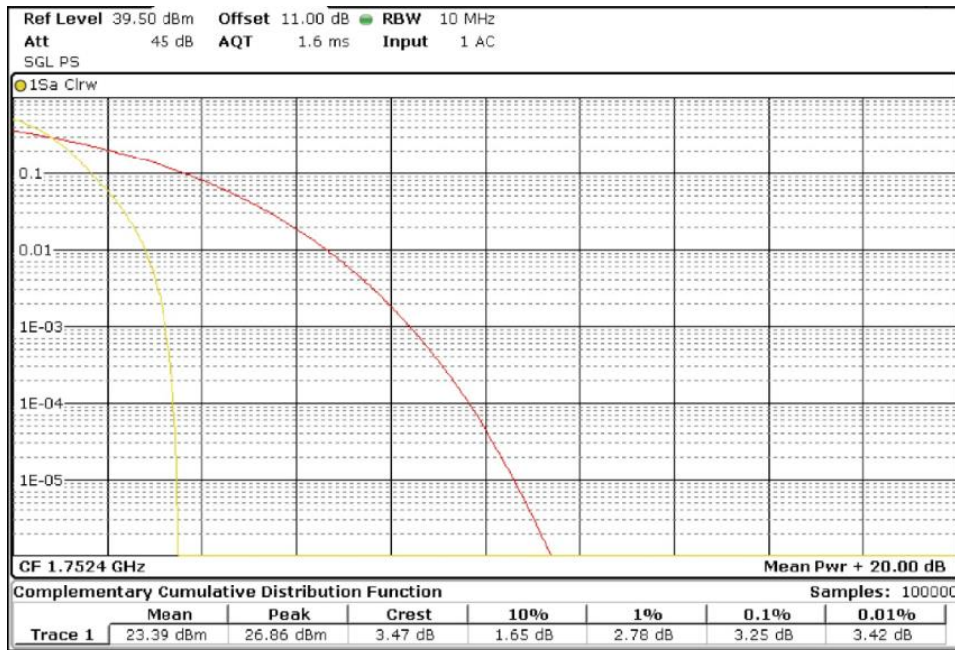


Middle channel



**TEST RESULTS (Cont):**

Highest channel



## TEST B.2: MODULATION CHARACTERISTICS

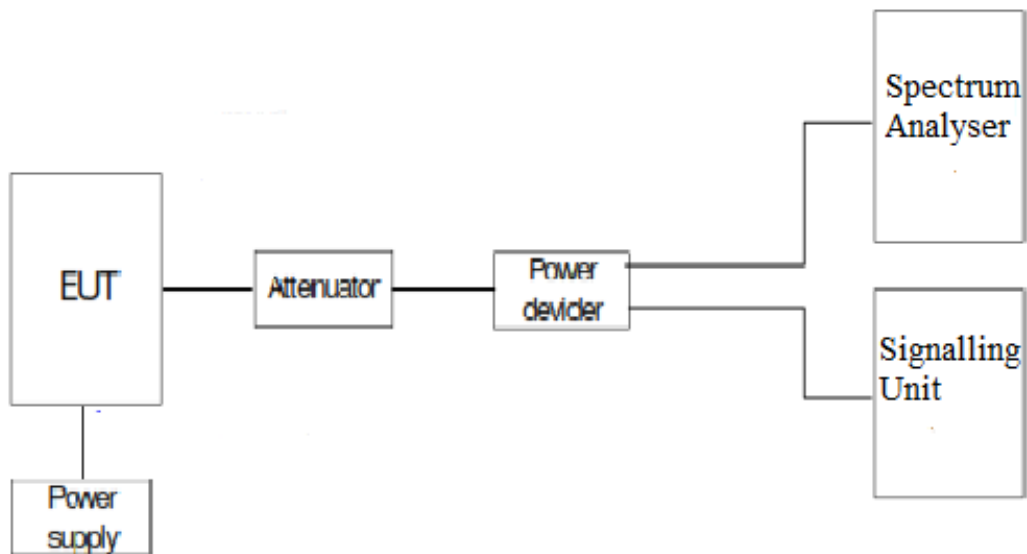
<b>LIMITS:</b>	Product standard:	FCC Part 27 / IC RSS-199
	Test standard:	FCC §2.1047 and §27.50 / RSS-199 Clause 4.1

### LIMITS

A curve or equivalent data which shows that the equipment will meet the modulation requirements of the rules under which the equipment is to be licensed.

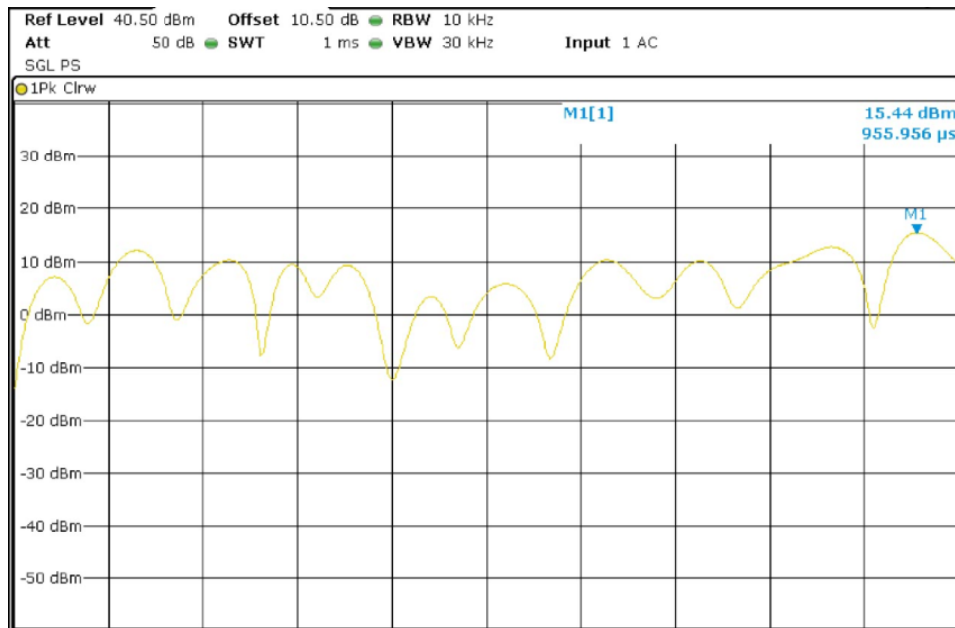
The devices shall employ digital modulation techniques.

### TEST SETUP

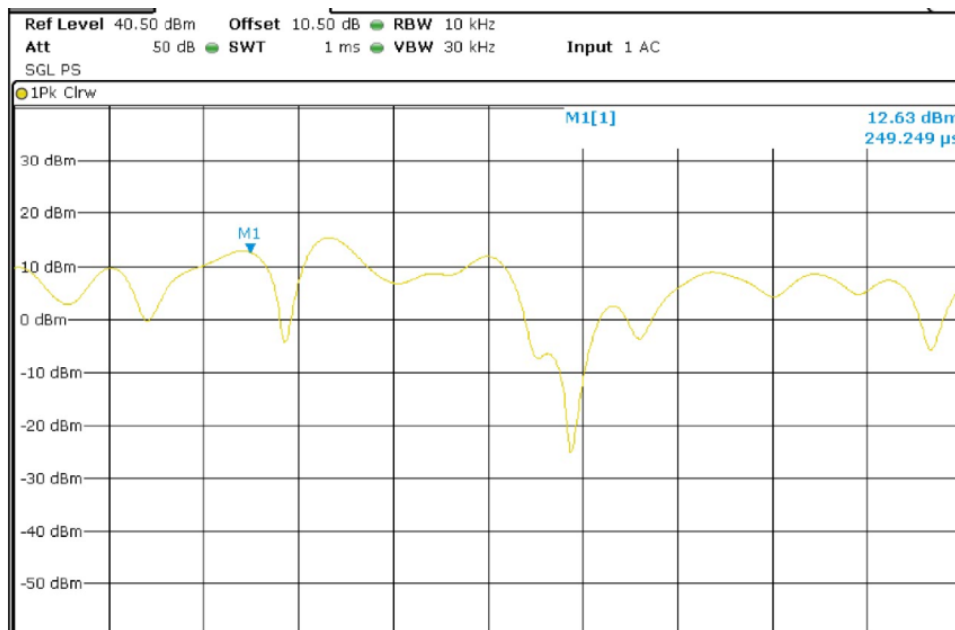


<b>TESTED SAMPLES:</b>	S/01
<b>TESTED CONDITIONS MODES:</b>	TC#01
<b>TEST RESULTS:</b>	PASS

WCDMA Modulation



HSPA Modulation



## TEST B.3: FREQUENCY STABILITY

<b>LIMITS:</b>	Product standard:	FCC Part 27 / IC RSS-199
	Test standard:	FCC §2.1055 and § 27.54 / RSS-199 Clause 4.3

### LIMITS

The frequency stability shall be enough to ensure that the fundamental emissions stay within the authorized bands of operation.

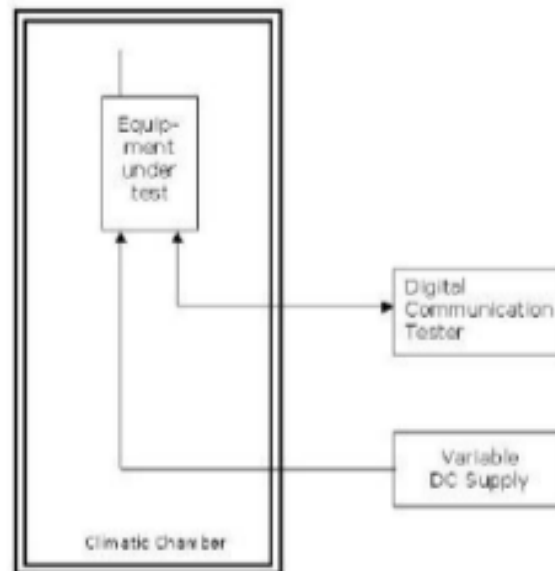
### **TEST SETUP**

The frequency tolerance measurements over temperature variations were made over the temperature range of  $-30^{\circ}\text{C}$  to  $+50^{\circ}\text{C}$ . The EUT was placed inside a climatic chamber and the temperature was raised hourly in  $10^{\circ}\text{C}$  steps from  $-30^{\circ}\text{C}$  up to  $+50^{\circ}\text{C}$ .

The supply voltage was varied between 85% and 115% of nominal voltage.

The EUT was set in "call mode" in the middle channel using the Universal Radio Communication tester R&S CMW500 and the maximum frequency error was measured using the built-in calibrated frequency meter.

For LTE mode the QPSK modulation was used for the test as it is the worst case for conducted power.





<b>TESTED SAMPLES:</b>	S/01
<b>TESTED CONDITIONS MODES:</b>	TC#01
<b>TEST RESULTS:</b>	PASS

GPRS MODULATION.

Frequency stability over temperature variations

Temperature (°C)	Frequency Error (Hz)	Frequency Error (ppm)	Frequency Error (%)
50	-2.52	-0.0014	-0.00000014
40	3.45	0.0020	0.00000020
30	1.22	0.0007	0.00000007
20	8.61	0.0049	0.00000049
10	10.9	0.0063	0.00000063
0	12.22	0.0070	0.00000070
-10	14.44	0.0083	0.00000083
-20	13.72	0.0079	0.00000079
-30	13.79	0.0079	0.00000079

Frequency stability over voltage variations

Battery Supply voltage	Voltage (V)	Frequency Error (Hz)	Frequency Error (ppm)	Frequency Error (%)
Vmax	4.37	11.49	0.0066	0.00000066
Vmin	3.23	7.73	0.0044	0.00000044

## TEST B.4: OCCUPIED BANDWIDTH

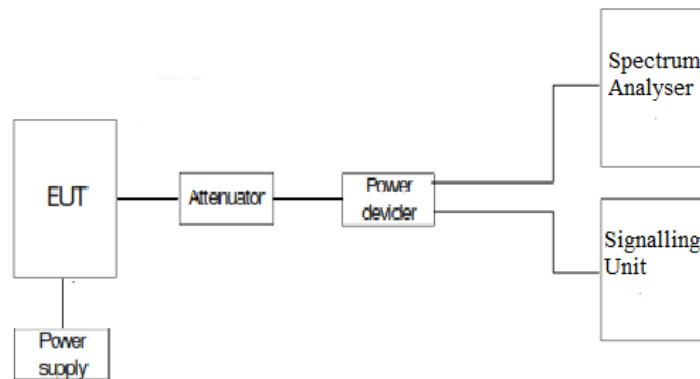
<b>LIMITS:</b>	Product standard:	FCC Part 27 / IC RSS-199
	Test standard:	FCC § 2.1049 / RSS-199 Clause 4.2

### LIMITS

Reference only.

### TEST SETUP

The occupied bandwidth measurement was performed at the output terminals of the EUT using an attenuator, power splitter and spectrum analyzer. The EUT was controlled via the Universal Radio Communication Tester R&S CMW500 selecting maximum transmission power of the EUT and different modes of modulation. The 99% occupied bandwidth and the -26 dBc bandwidth were measured directly using the built-in bandwidth measuring option of spectrum analyzer.



<b>TESTED SAMPLES:</b>	S/01
<b>TESTED CONDITIONS MODES:</b>	TC#01
<b>TEST RESULTS:</b>	PASS

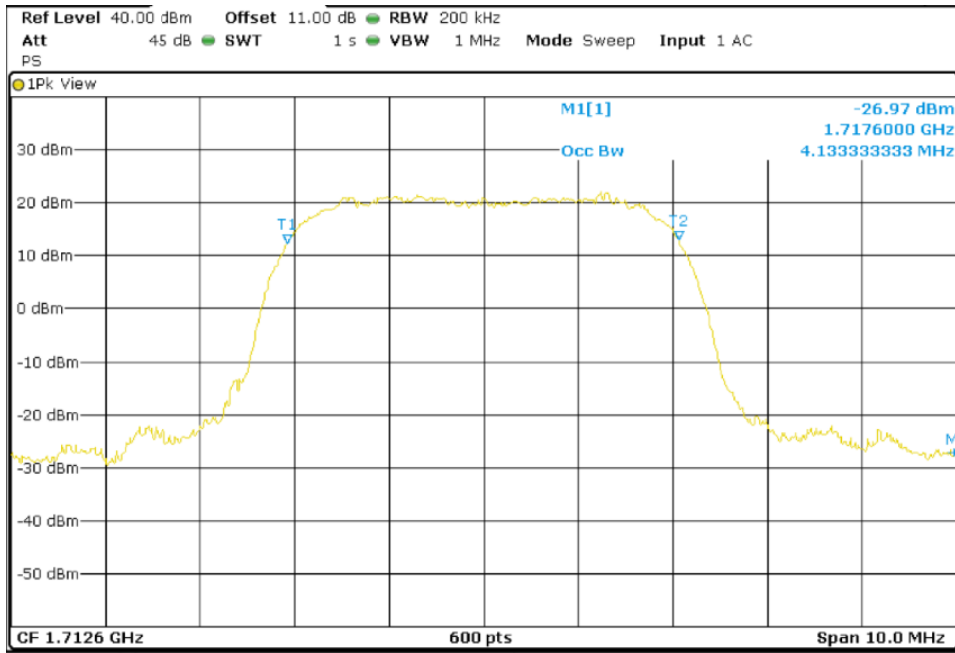
### WCDMA MODULATION.

Channel	Lowest	Middle	Highest
99% Occupied bandwidth (kHz)	4.13	4.15	4.15
-26 dBc bandwidth (kHz)	4.72	4.69	4.70

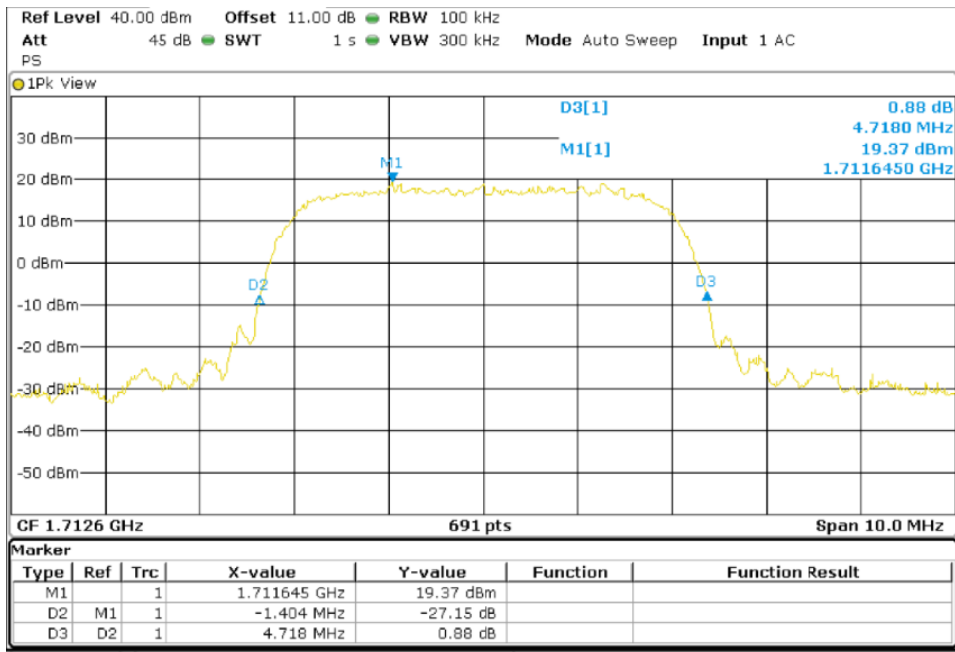
**TEST RESULTS (Cont):**

WCDMA MODULATION.

Lowest Channel 99% Occupied Bandwidth

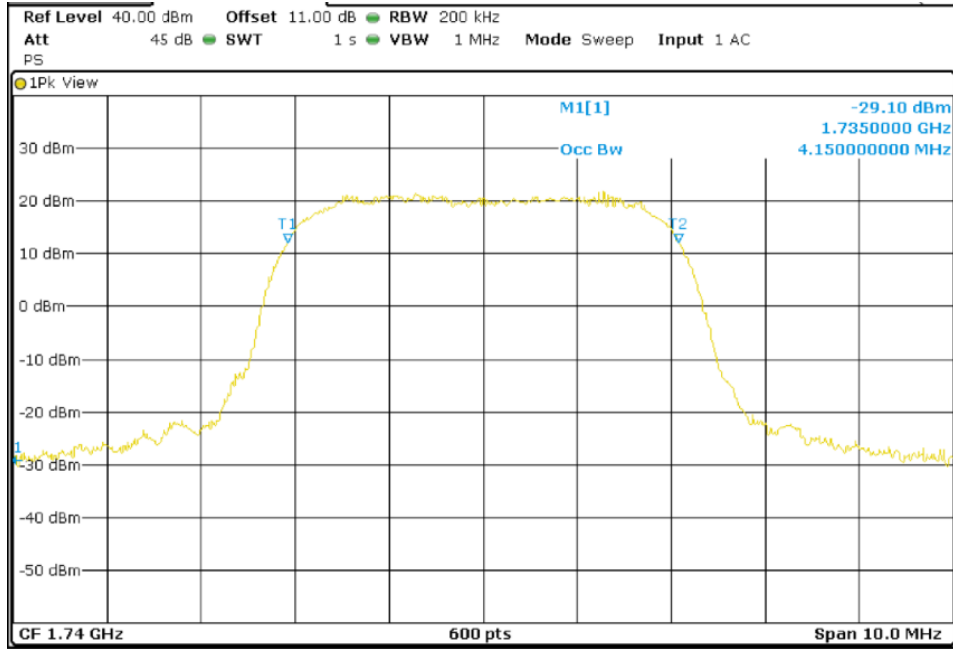


Lowest Channel -26dBc Bandwidth kHz

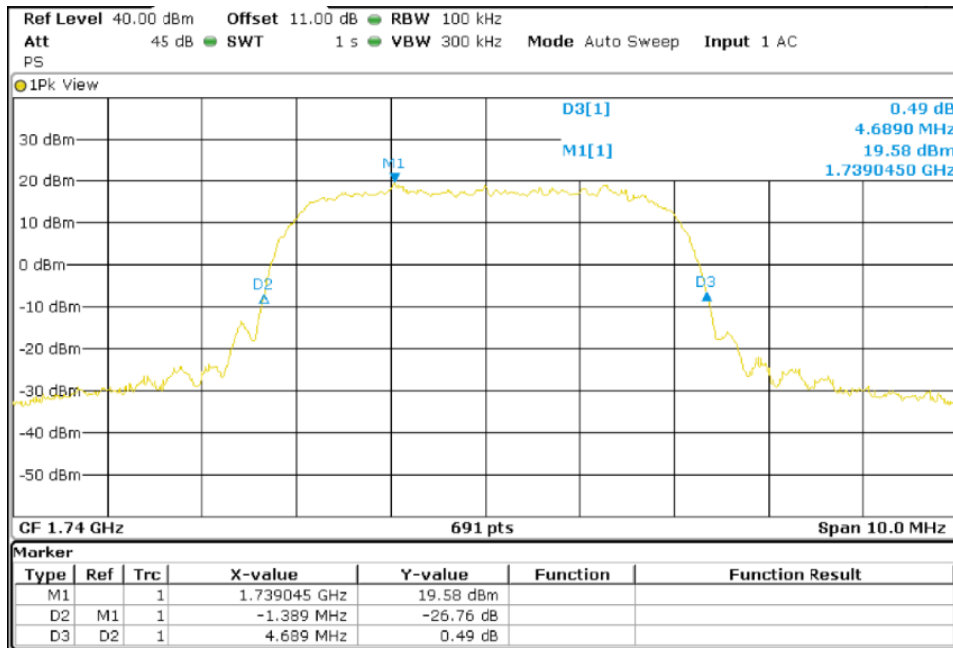


**TEST RESULTS (Cont):**

Middle Channel 99% Occupied Bandwidth

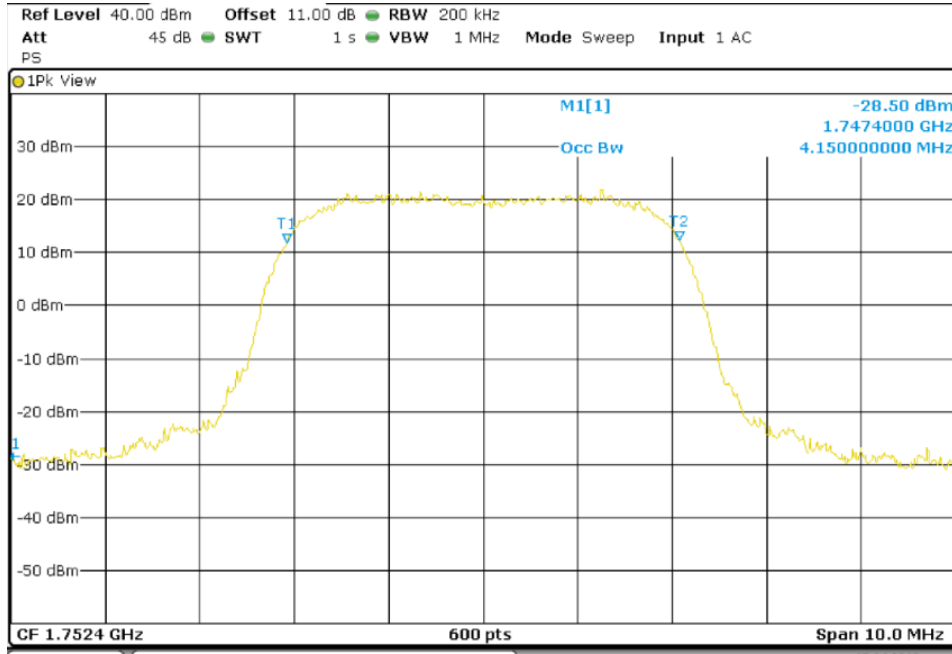


Middle Channel 26dBc Bandwidth kHz

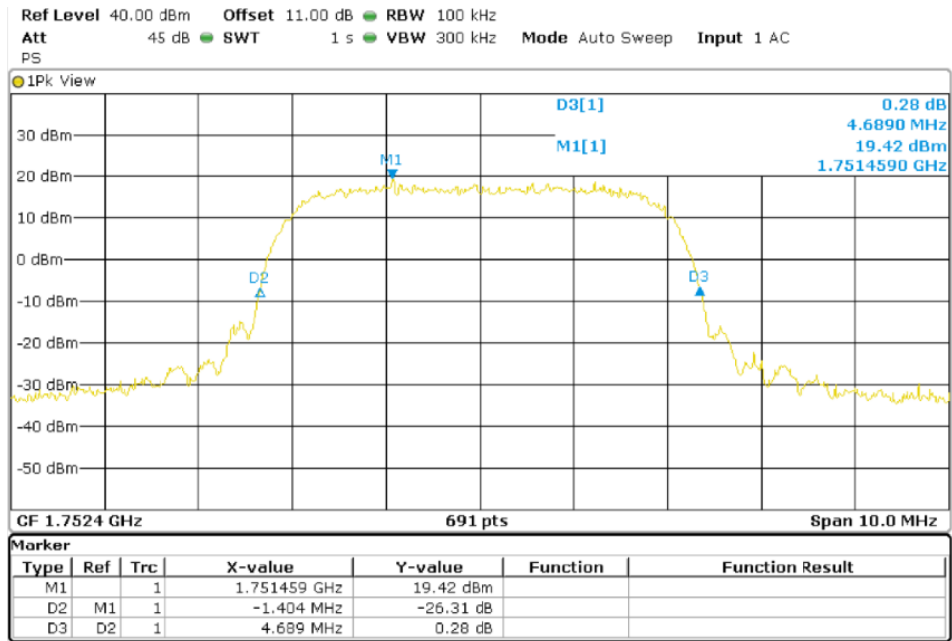


**TEST RESULTS (Cont):**

Highest Channel 99% Occupied Bandwidth



Highest Channel 26dBc Bandwidth kHz



## TEST B.5: SPURIOUS EMISSIONS AT ANTENNA TERMINALS

<b>LIMITS:</b>	Product standard:	FCC Part 27 / IC RSS-199
	Test standard:	FCC §2.1051 and § 27.53 / RSS-199 Clause 4.5

### LIMITS

According to specification, the power of emissions shall be attenuated below the transmitter power (P) by a factor of at least  $43 + 10 \log (P)$  dB. P in watts.

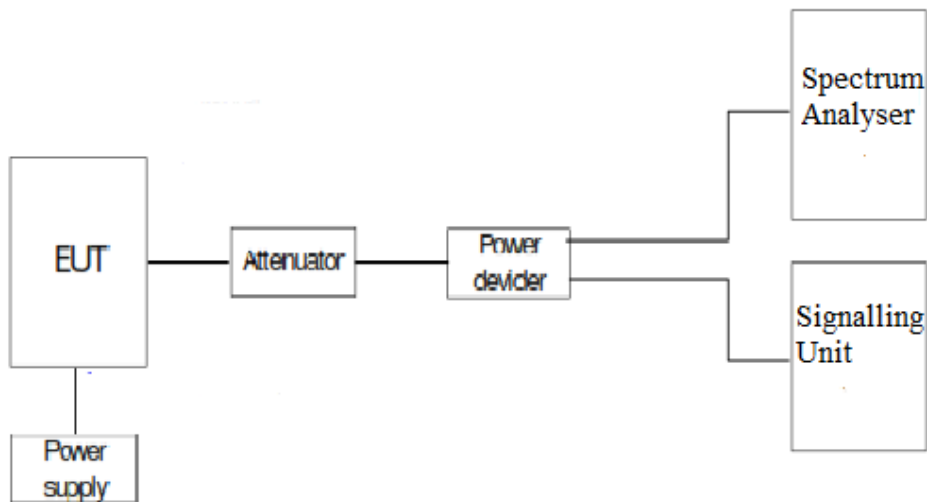
At  $P_o$  transmitting power of 2 watts (33 dBm), the specified minimum attenuation becomes  $43+10\log (P_o)$ . and the level in dBm relative to  $P_o$  becomes:

$$P_o \text{ (dBm)} - [43 + 10 \log (P_o \text{ in watts})] = -13 \text{ dBm}$$

### TEST SETUP

The EUT RF output connector was connected to a spectrum analyzer and to the Universal Radio Communication Tester R&S CMW500 (selecting maximum transmission power of the EUT and different modes of modulation) using a 50-ohm attenuator and a power splitter.

The reading of the spectrum analyzer is corrected with the attenuation loss of connection between output terminal of EUT and input of the spectrum analyzer.



<b>TESTED SAMPLES:</b>	S/01
<b>TESTED CONDITIONS MODES:</b>	TC#01
<b>TEST RESULTS:</b>	PASS

Frequency range 9 KHz – 26 GHz

WCDMA MODULATION.

Lowest Channel

Spurious frequency (MHz)	Level (dBm)	Measurement uncertainty (dB)
2112.84	-30.32	< ± 1.20

Middle Channel

Spurious frequency (MHz)	Level (dBm)	Measurement uncertainty (dB)
2140.46	-30.73	< ± 1.20

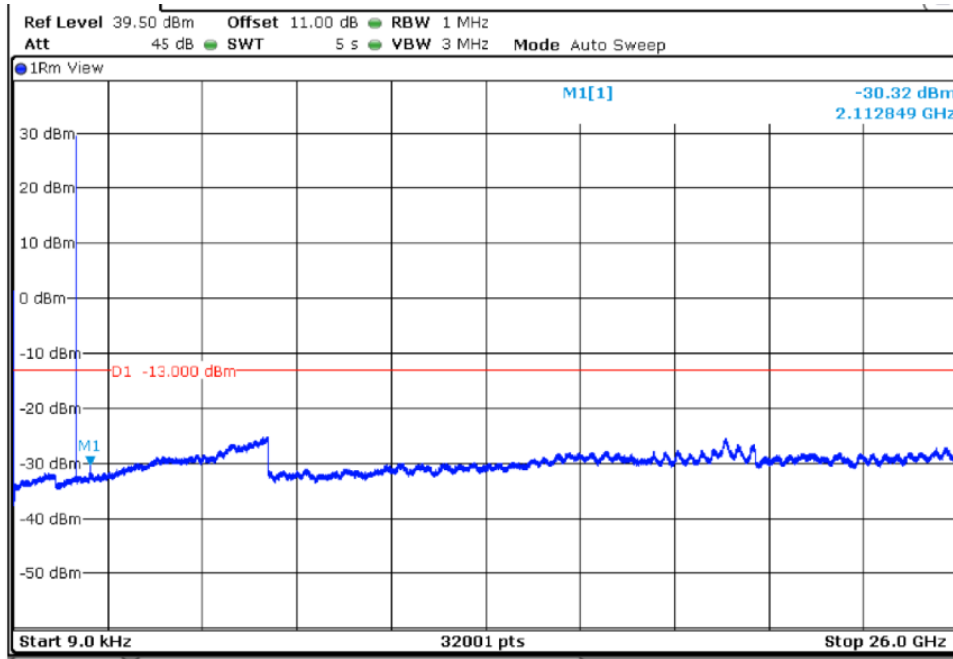
Highest Channel

Spurious frequency (MHz)	Level (dBm)	Measurement uncertainty (dB)
2154.28	-30.95	< ± 1.20

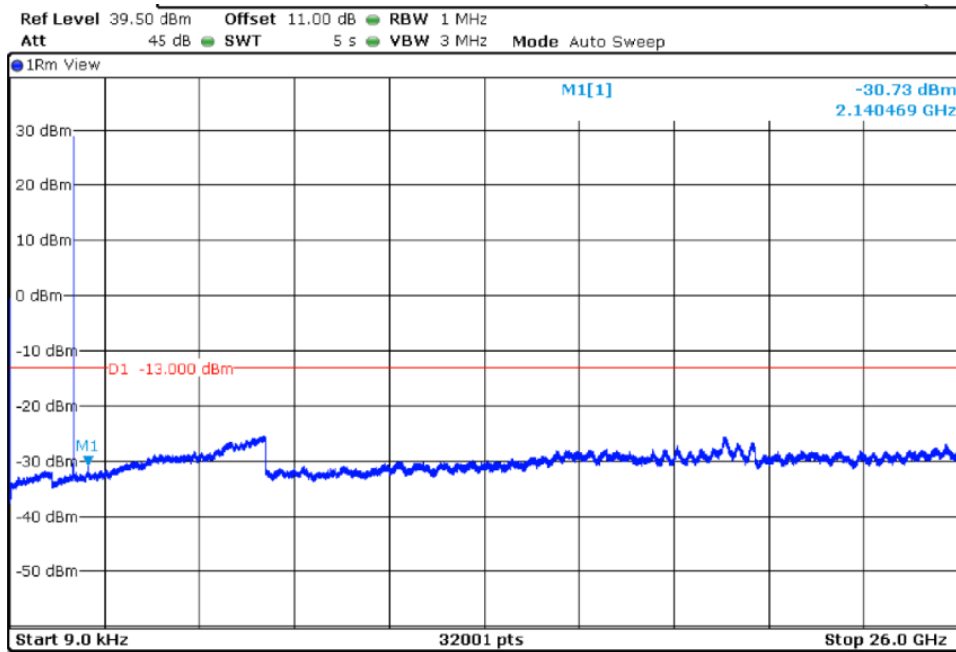
TEST RESULTS (Cont.):

WCDMA MODULATION.

Lowest Channel



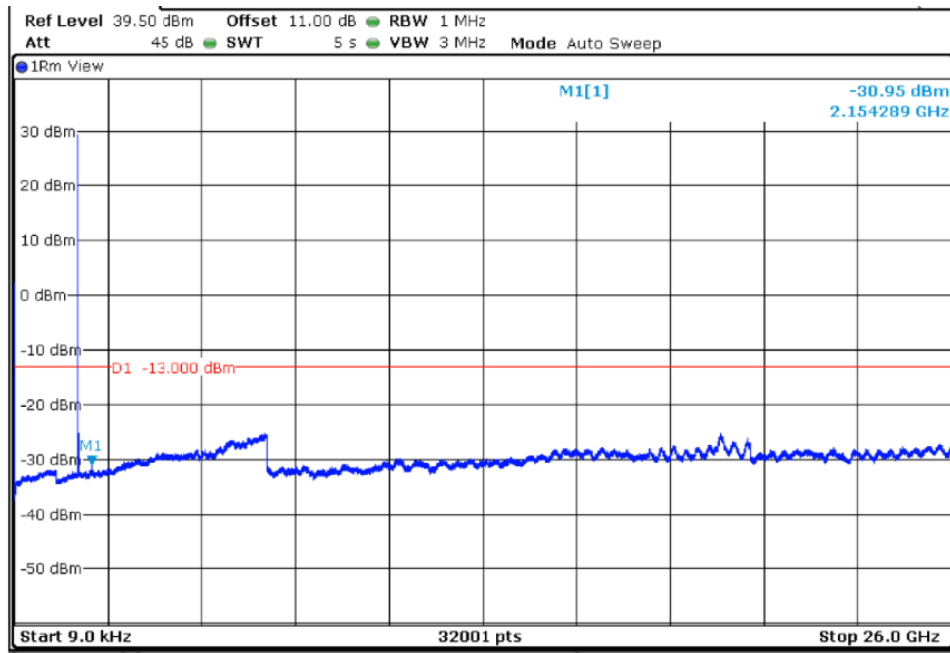
Middle Channel





TEST RESULTS (Cont):

Highest Channel



## TEST B.6: SPURIOUS EMISSIONS AT ANTENNA TERMINALS AT BLOCK EDGES

<b>LIMITS:</b>	Product standard:	FCC Part 27 / IC RSS-199
	Test standard:	FCC § 27.53 / RSS- Clause 4.5

### LIMITS

According to specification, the power of emissions shall be attenuated below the transmitter power (P) by a factor of at least  $43 + 10 \log (P)$  dB. P in watts.

At  $P_o$  transmitting power of 2 watts (33 dBm), the specified minimum attenuation becomes  $43+10\log (P_o)$ . and the level in dBm relative to  $P_o$  becomes:

$$P_o \text{ (dBm)} - [43 + 10 \log (P_o \text{ in watts})] = -13 \text{ dBm}$$

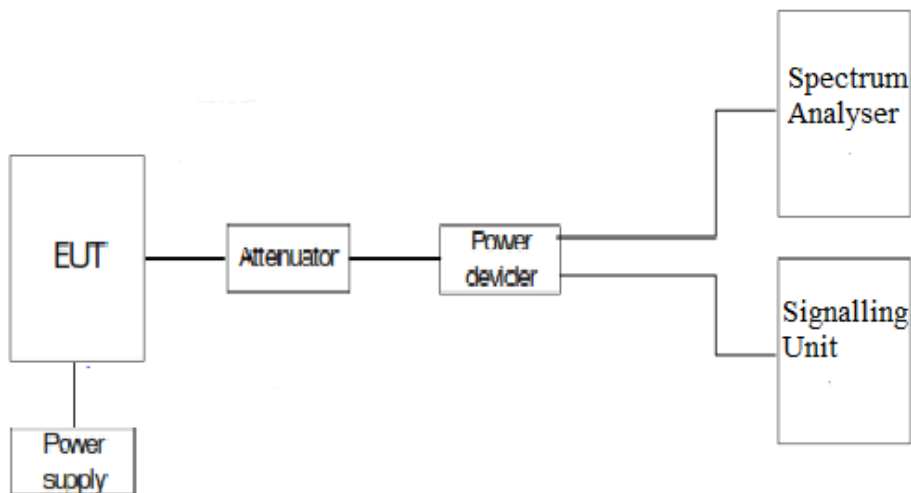
### TEST SETUP

The EUT RF output connector was connected to a spectrum analyzer and to the Universal Radio Communication Tester R&S CMW500 (selecting maximum transmission power of the EUT and different modes of modulation) using a 50-ohm attenuator and a power splitter.

The reading of the spectrum analyzer is corrected with the attenuation loss of connection between output terminal of EUT and input of the spectrum analyzer.

For LTE mode the configuration of modulation which is the worst case for conducted power was used.

As indicated in FCC part 27, in the 1 MHz bands immediately outside and adjacent to the licensee's frequency block or band, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.



<b>TESTED SAMPLES:</b>	S/01
<b>TESTED CONDITIONS MODES:</b>	TC#01
<b>TEST RESULTS:</b>	PASS

WCDMA MODULATION	Low Channel	High Channel
Maximum measured level at lowest and Highest Block Edge at antenna port (dBm)	-29.78	-32.96