PRODUCT INFORMATION

The following information is provided by the client

Information	Description
Modulation	WCDMA
Maximum RF Output Power	23.5 dBm
Operation mode:	
- Operating Frequency Range	Band 2: 1850-1910 MHz
- Nominal Channel Bandwidth	Band 2: 5 MHz
Extreme operating conditions	
- Temperature range	T_{nom} = +15 to + 35 T_{min} = -30 T_{max} = +50
Antenna type	External Antenna.
Antenna gain	2 dBi
Nominal Voltage	
- Supply Voltage	12 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:

<table>
<tr><th>TEST CONDITIONS</th><th>DESCRIPTION</th></tr>
<tr><td>TC#01
Band 2</td><td>
<u>Power supply (V):</u>
$V_{nominal}$ = 12 Vdc

<u>Test Frequencies for Conducted tests:</u>

-Lowest Channel: 9263 (1852.6 MHZ)
-Middle Channel: 9400 (1880 MHz)
-Highest Channel: 9537 (1907.4 MHz)

<u>Test Frequencies for Radiated tests:</u>

<table>
<tr><th>Available Frequencies</th><th>Tested Frequency</th><th>Channel Bandwidth</th><th>Modulation</th></tr>
<tr><td>1850 to 1910 MHz</td><td>1852.6 MHz
1880 MHz
1907.4 MHz</td><td>5 MHz</td><td>WCDMA</td></tr>
</table>
Note: This device was tested under all channels and modulations. The worst case found in WCDMA modulation.
</td></tr>
</table>

TEST B.1: RF OUTPUT POWER

LIMITS:	Product standard:	FCC Part 24 / IC RSS-133
	Test standard:	FCC §2.1046 and §24.232 / RSS-133 Clause 6.4

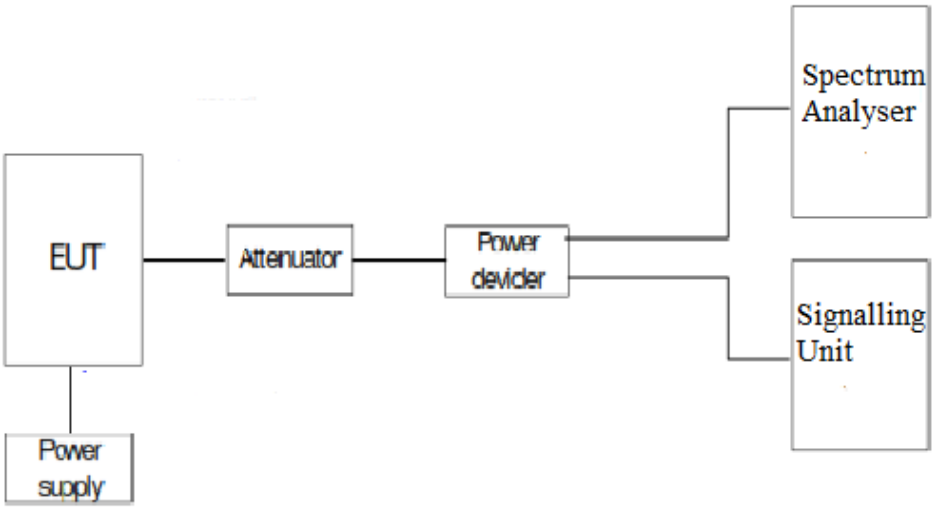
LIMITS

Fixed. mobile. and portable (hand-held) stations are limited to 2-watt EIRP (30 dBm). Fixed stations 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-133 Clause 6.4
The equivalent isotropically radiated power (e.i.r.p.) for transmitters shall not exceed the limits given in SRSP-510. Moreover, base station transmitters operating in the band 1930-1995 MHz shall not have output power exceeding 100 watts.

In addition, the transmitter's peak-to-average power ratio (PAPR) shall not exceed 13 dB for more than 0.1% of the time using a signal corresponding to the highest PAPR during periods of continuous transmission.

TEST SETUP



TESTED SAMPLES:	S/01
TESTED CONDITIONS MODES:	TC#01
TEST RESULTS:	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	22.73	2.0	24.73	3.33
Middle	22.65	2.0	24.65	3.30
Highest	22.50	2.0	24.50	3.59
Measurement uncertainty (dB)			<±0.95	

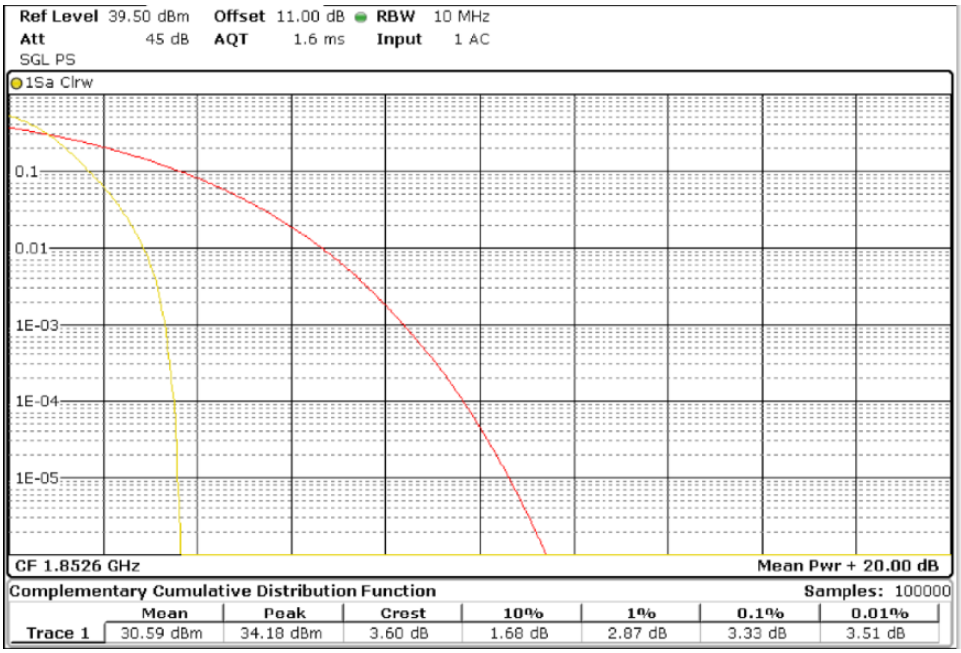
HSPA Modulation:

Channel	Average power at antenna port (dBm)	Maximum declared antenna gain (dBi)	Maximum E.I.R.P. average power (dBm)
Lowest	21.01	2.0	23.01
Middle	20.36	2.0	22.36
Highest	20.87	2.0	22.87
Measurement uncertainty (dB)			<±0.95

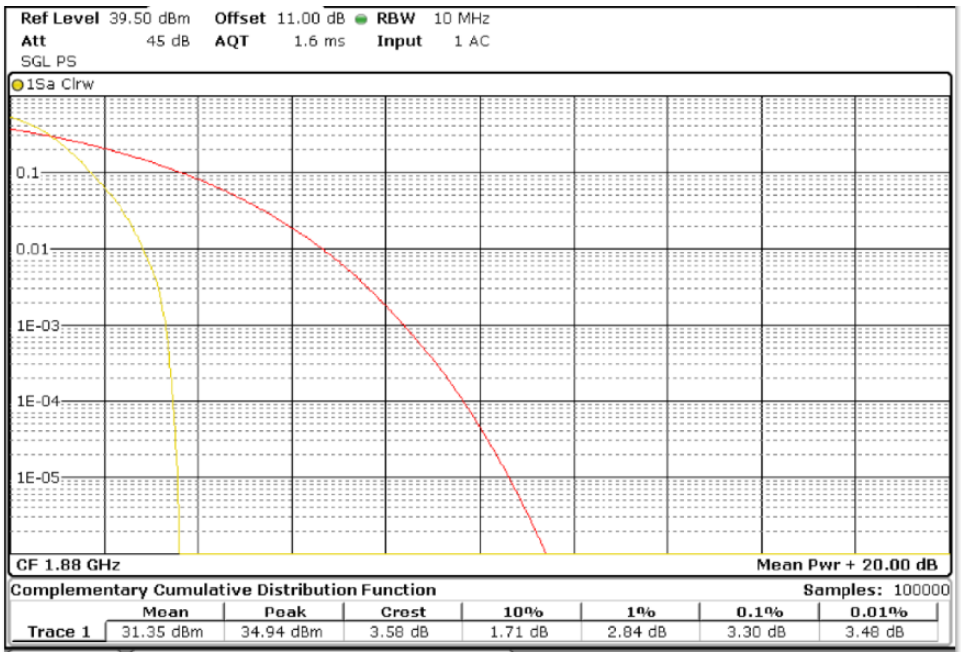
TEST RESULTS (Cont):	

WCDMA:

Lowest channel

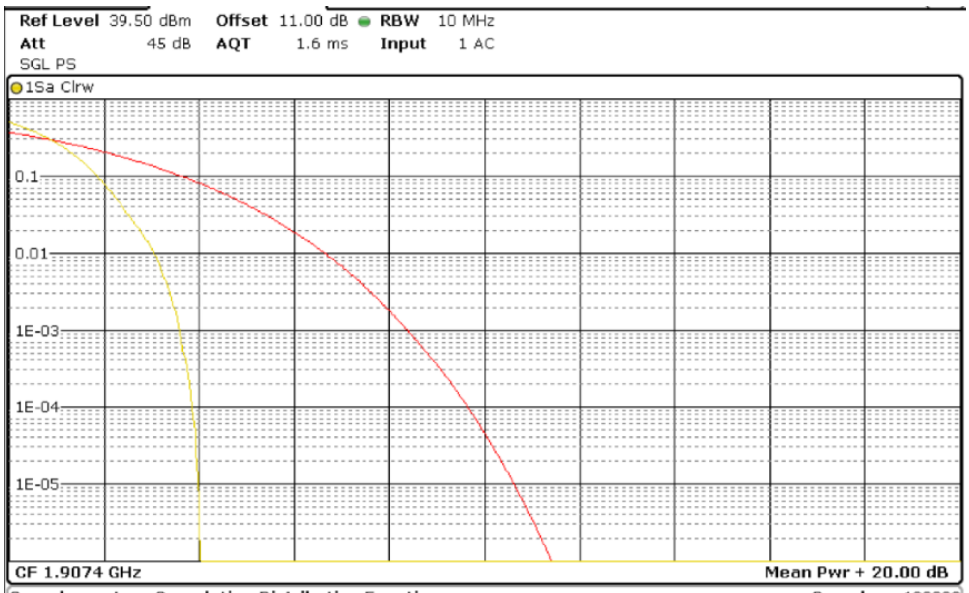


Middle channel



TEST RESULTS (Cont):	

Highest channel



TEST B.2: MODULATION CHARACTERISTICS

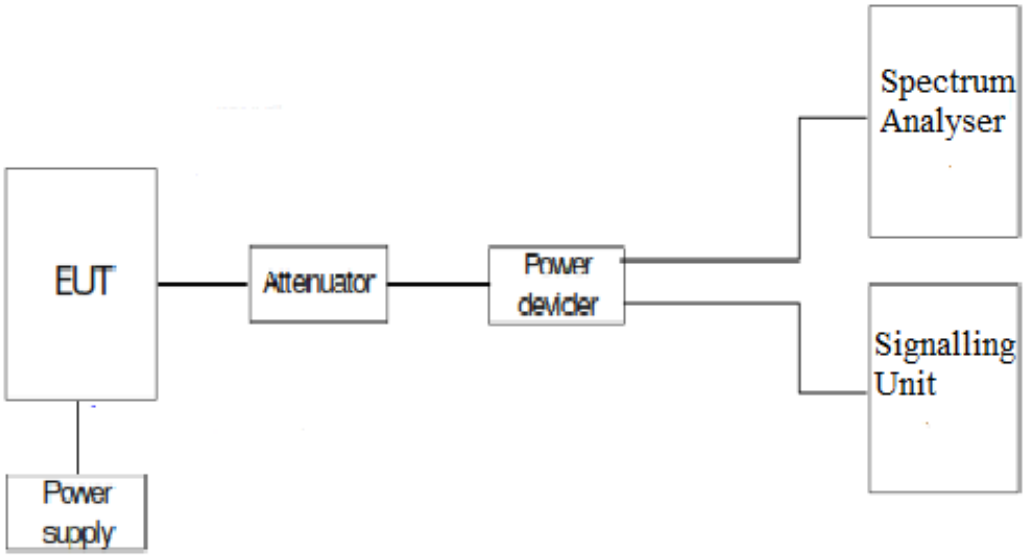
LIMITS:	Product standard:	FCC Part 24 / IC RSS-133
	Test standard:	FCC §2.1047 / RSS-133 Clause 6.3

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.

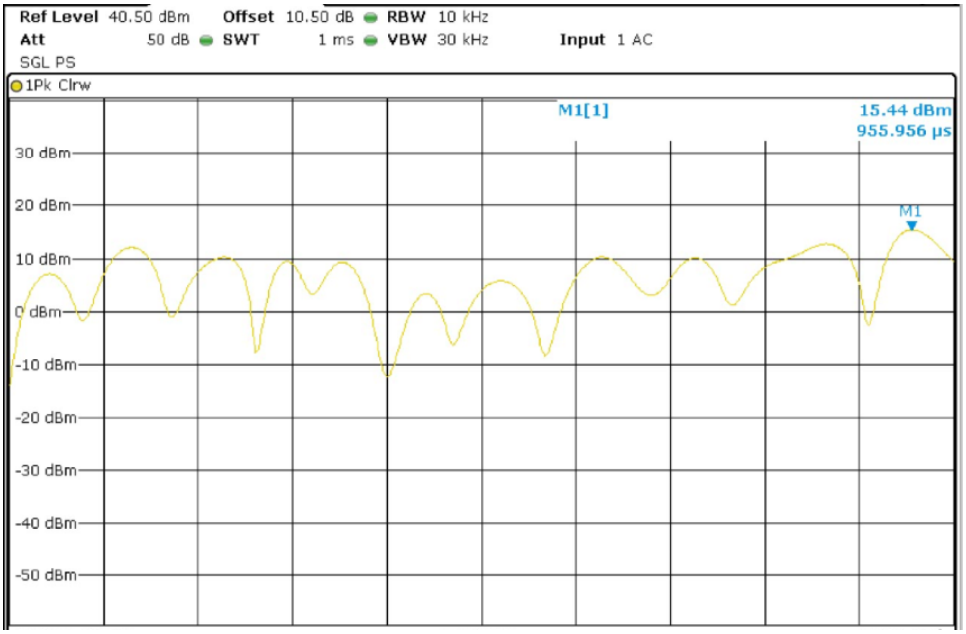
The devices shall employ digital modulation techniques.

TEST SETUP	

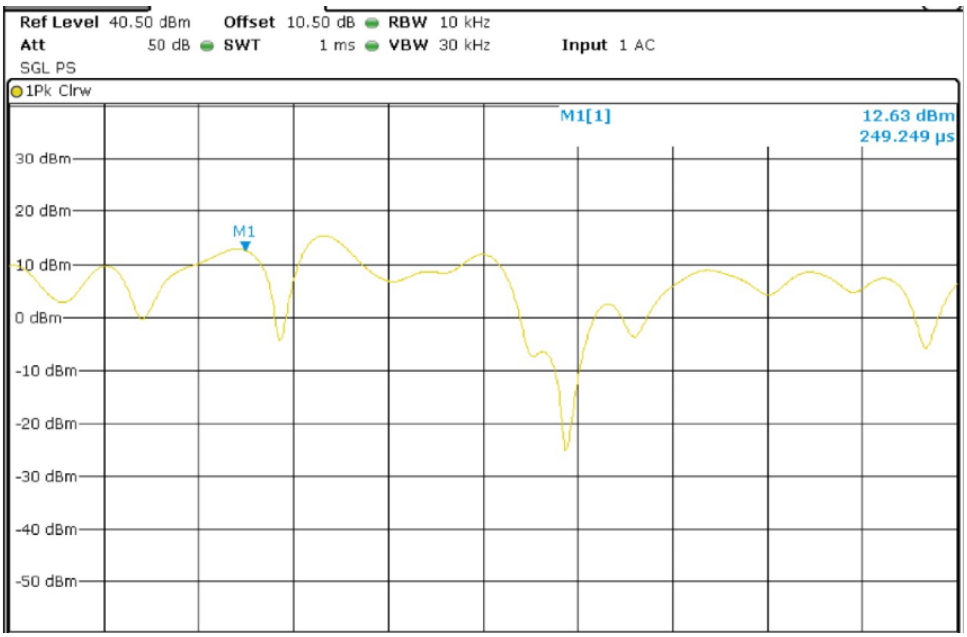


TESTED SAMPLES:	S/01
TESTED CONDITIONS MODES:	TC#01
TEST RESULTS:	PASS

WCDMA Modulation



HSPA Modulation



TEST B.3: FREQUENCY STABILITY

LIMITS:	Product standard:	FCC Part 24 / IC RSS-133
	Test standard:	FCC §2.1055 and § 24.235 / RSS-133 Clause 6.3

LIMITS

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

TEST SETUP	

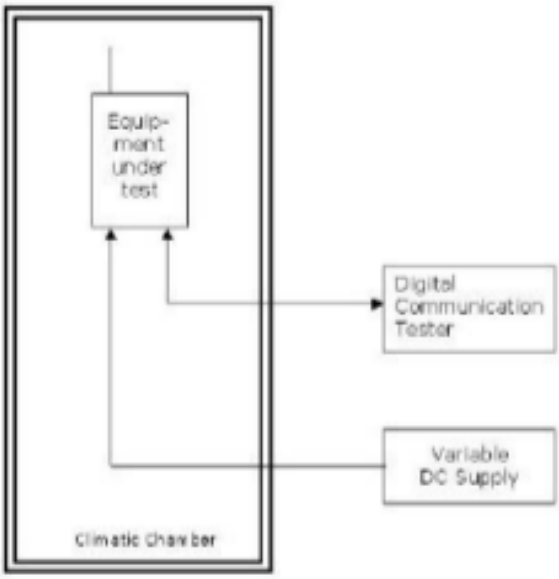
The frequency tolerance measurements over temperature variations were made over the temperature range of

–30ºC to +50ºC. The EUT was placed inside a climatic chamber and the temperature was raised hourly in 10ºC steps from –30ºC up to +50ºC.

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.



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

GPRS MODULATION.

Frequency stability over temperature variations

Temperature (ºC)	Frequency Error (Hz)	Frequency Error (ppm)	Frequency Error (%)
50	11.34	0.0060	0.00000060
40	9.69	0.0052	0.00000052
30	10.73	0.0057	0.00000057
20	9.84	0.0052	0.00000052
10	8.5	0.0045	0.00000045
0	13.67	0.0073	0.00000073
-10	14.46	0.0077	0.00000077
-20	11.04	0.0059	0.00000059
-30	13.19	0.0070	0.00000070

Frequency stability over voltage variations

Battery Supply voltage	Voltage (V)	Frequency Error (Hz)	Frequency Error (ppm)	Frequency Error (%)
Vmax	13.8	11.63	0.0062	0.00000062
Vmin	10.2	9.1	0.0048	0.00000048

TEST B.4: OCCUPIED BANDWIDTH

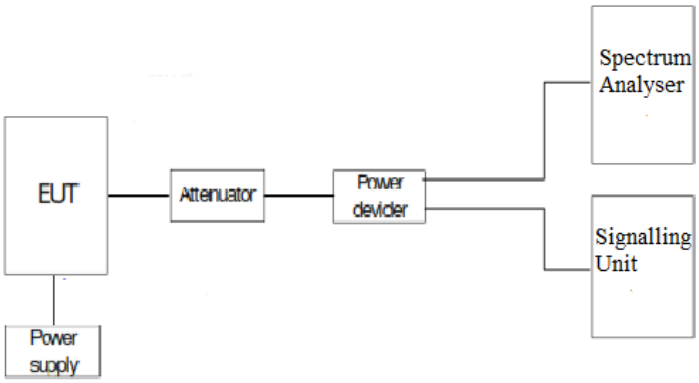
LIMITS:	Product standard:	FCC Part 24 / IC RSS-133
	Test standard:	FCC § 2.1049 / RSS-133 Clause 2.3

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.



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

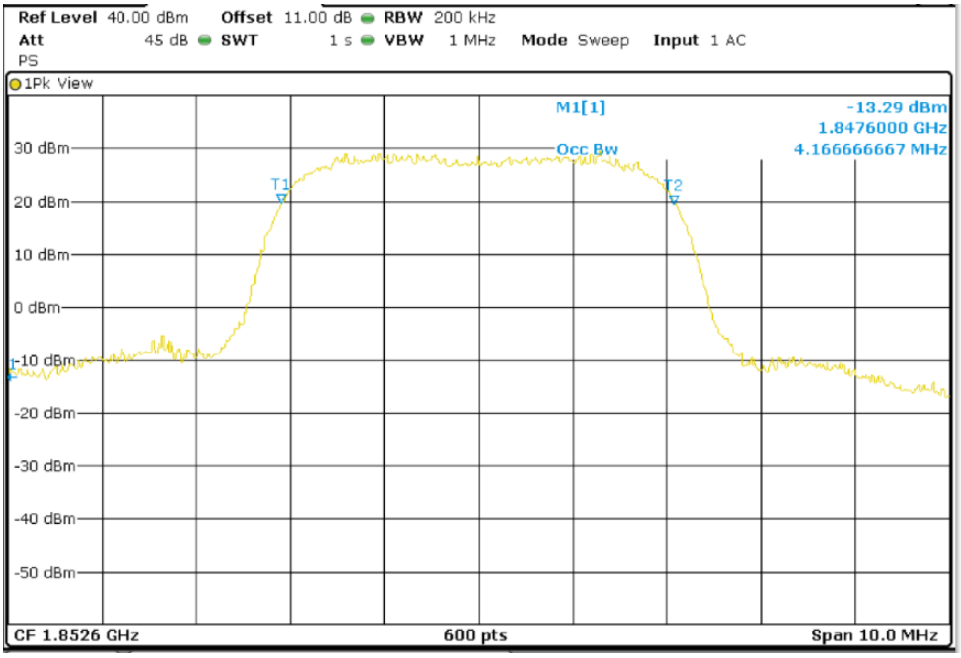
WCDMA MODULATION.

Channel	Lowest	Middle	Highest
99% Occupied bandwidth (kHz)	4.17	4.15	4.13
-26 dBc bandwidth (kHz)	4.72	4.70	4.70

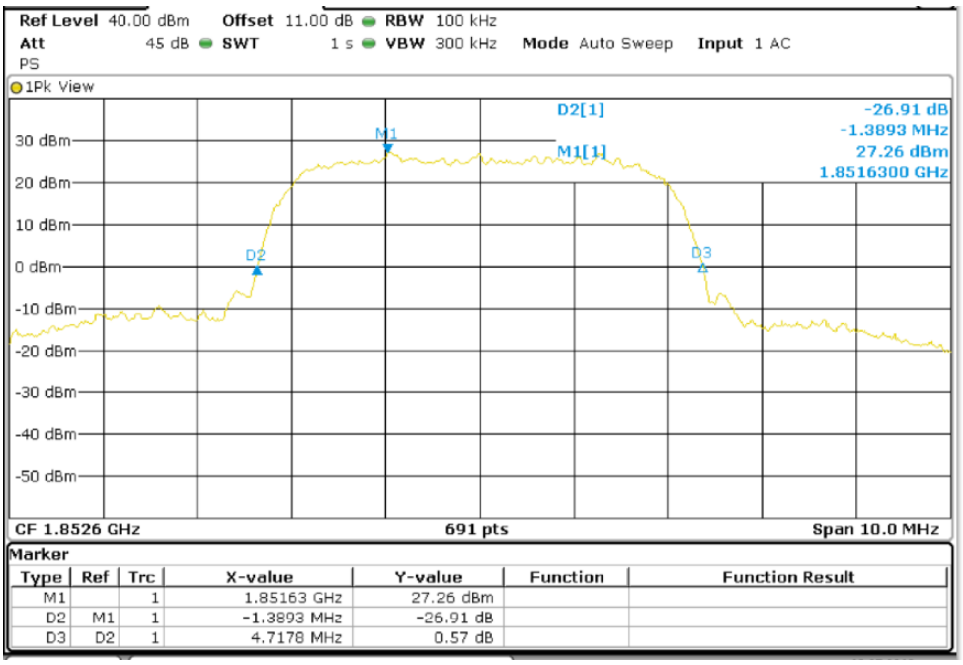
TEST RESULTS (Cont):	

WCDMA MODULATION.

Lowest Channel 99% Occupied Bandwidth



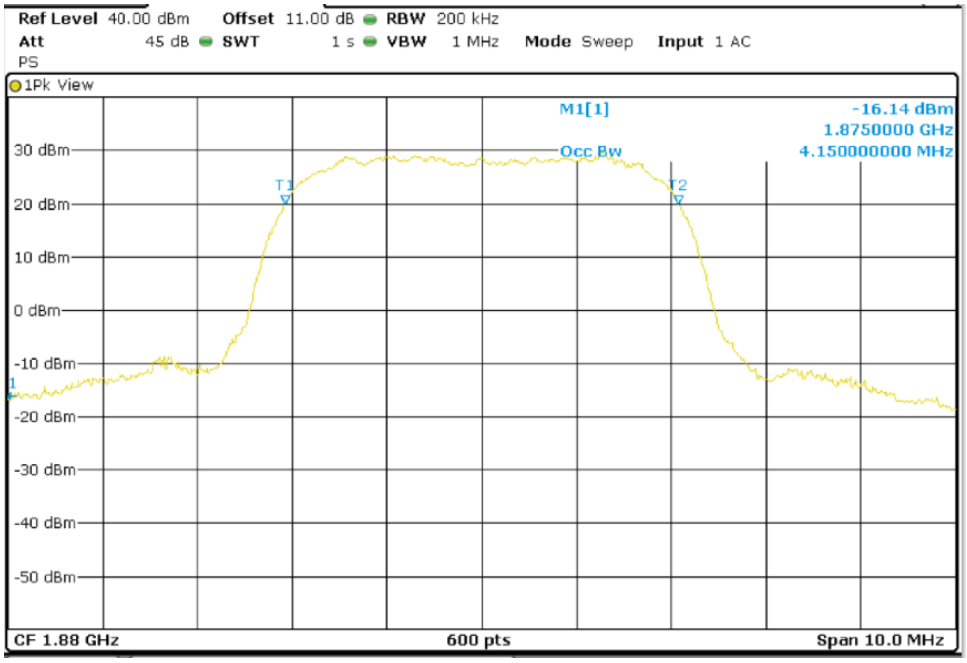
Lowest Channel -26dBc Bandwidth kHz



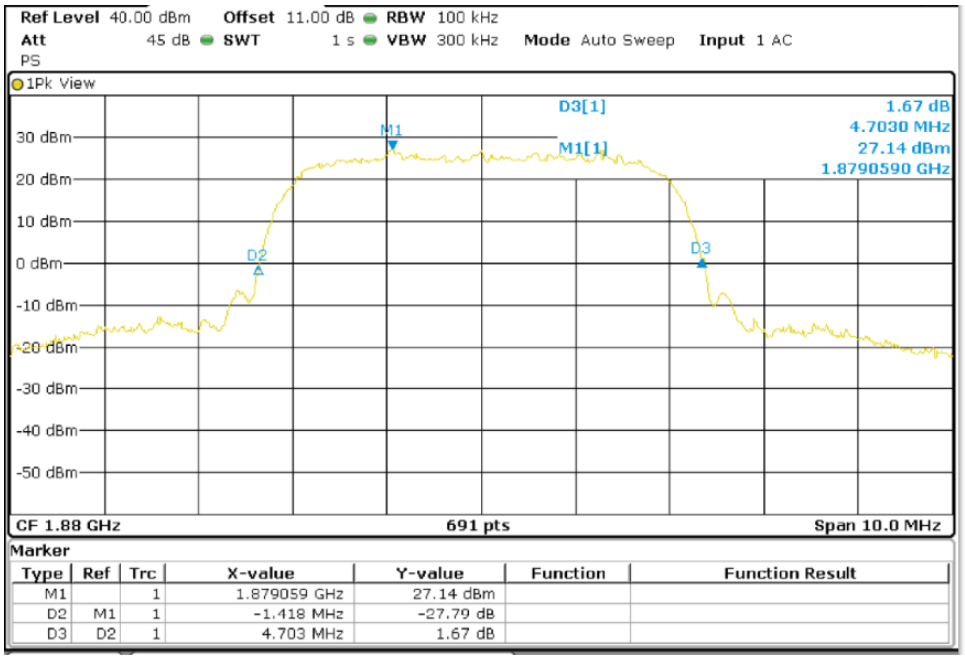
Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	1.85163 GHz	27.26 dBm		
D2	M1	1	-1.3893 MHz	-26.91 dB		
D3	D2	1	4.7178 MHz	0.57 dB		

TEST RESULTS (Cont):	

Middle Channel 99% Occupied Bandwidth

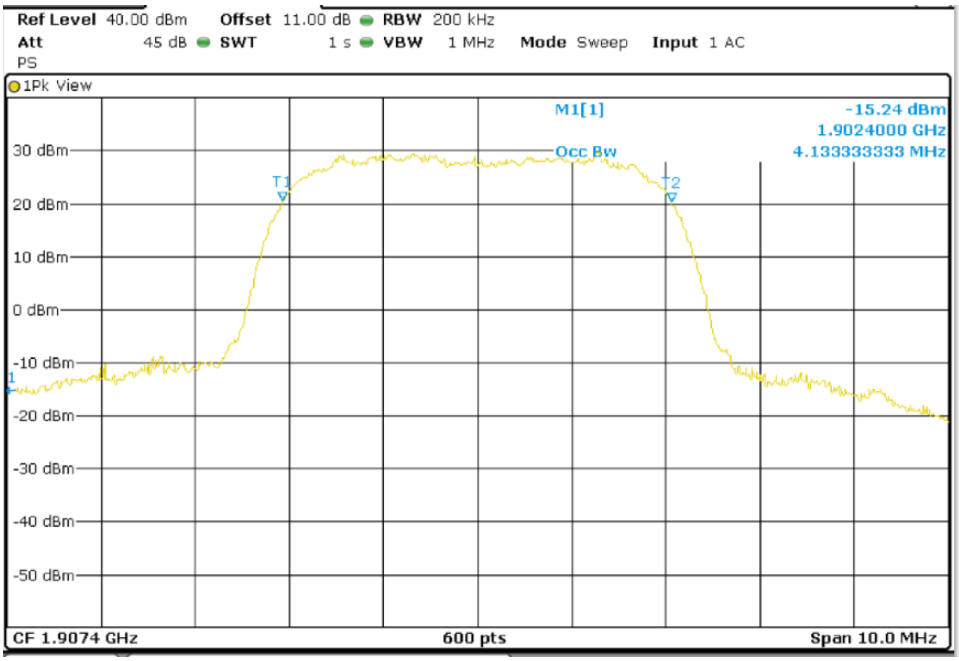


Middle Channel 26dBc Bandwidth kHz

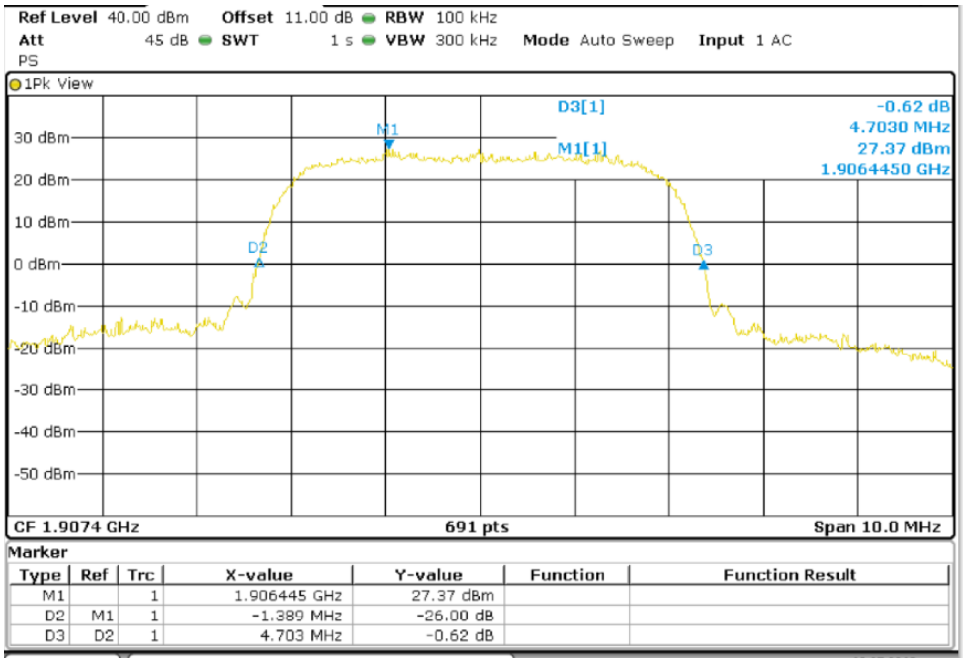


TEST RESULTS (Cont):	

Highest Channel 99% Occupied Bandwidth



Highest Channel 26dBc Bandwidth kHz



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	1.906445 GHz	27.37 dBm		
D2	M1	1	-1.389 MHz	-26.00 dB		
D3	D2	1	4.703 MHz	-0.62 dB		

TEST B.5: SPURIOUS EMISSIONS AT ANTENNA TERMINALS

LIMITS:	Product standard:	FCC Part 24 / IC RSS-133
	Test standard:	FCC §2.1051 and § 24.238 / RSS-133 Clause 6.5

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.

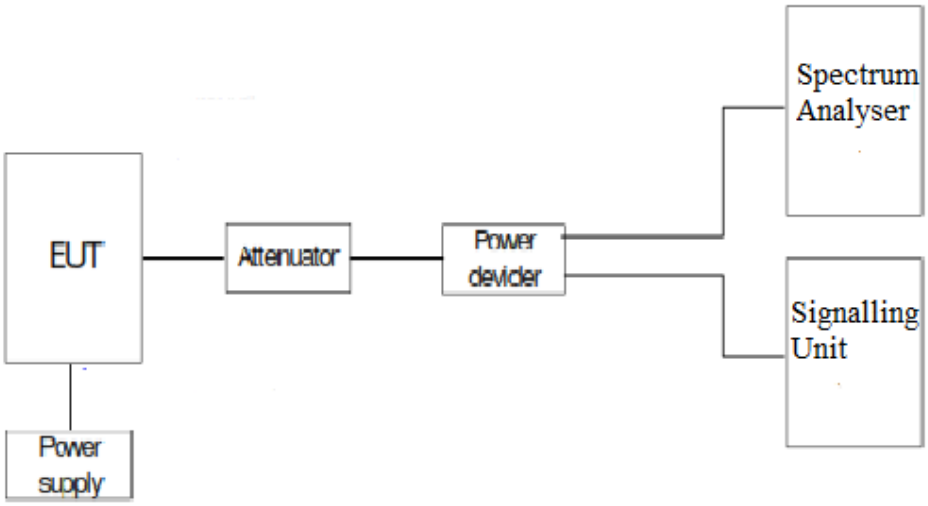
At Po transmitting power of 2 watts (33 dBm), the specified minimum attenuation becomes 43+10log (Po). and the level in dBm relative to Po becomes:

Po (dBm) – [43 + 10 log (Po in watts)] = -13 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.



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

Frequency range 9 KHz – 26 GHz

WCDMA MODULATION.

Lowest Channel

Spurious frequency (MHz)	Level (dBm)	Measurement uncertainty (dB)
1932.19	-23.16	< ± 1.20

Middle Channel

Spurious frequency (MHz)	Level (dBm)	Measurement uncertainty (dB)
1959.06	-23.31	< ± 1.20

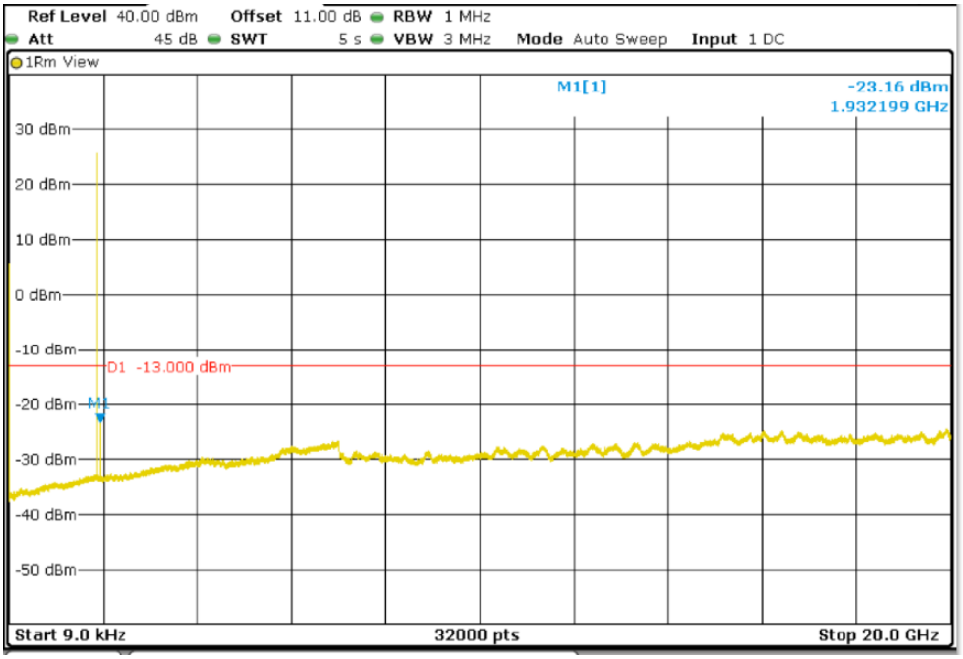
Highest Channel

Spurious frequency (MHz)	Level (dBm)	Measurement uncertainty (dB)
1987.81	-23.21	< ± 1.20

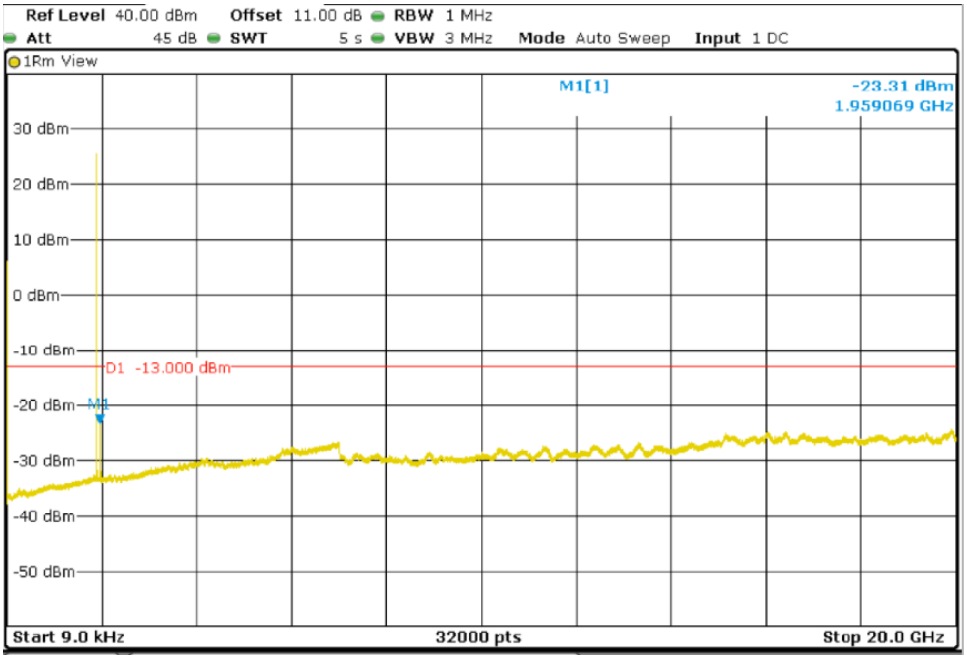
TEST RESULTS (Cont.):	

WCDMA MODULATION.

Lowest Channel

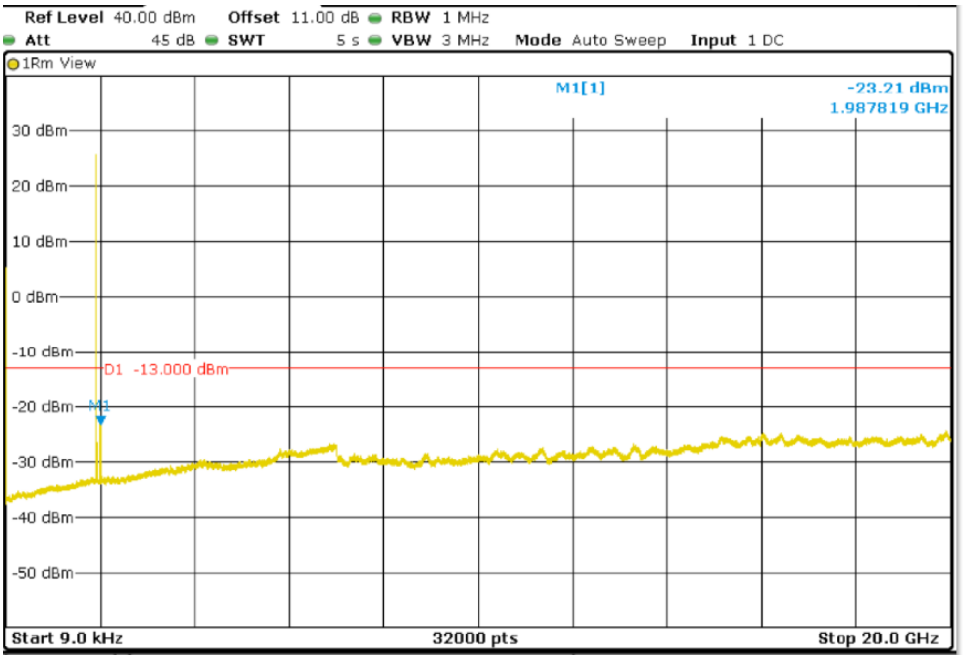


Middle Channel



TEST RESULTS (Cont):	

Highest Channel



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

LIMITS:	Product standard:	FCC Part 24 / IC RSS-133
	Test standard:	FCC § 24.238 / RSS 133- Clause 6.5

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

Po (dBm) – [43 + 10 log (Po in watts)] = -13 dBm

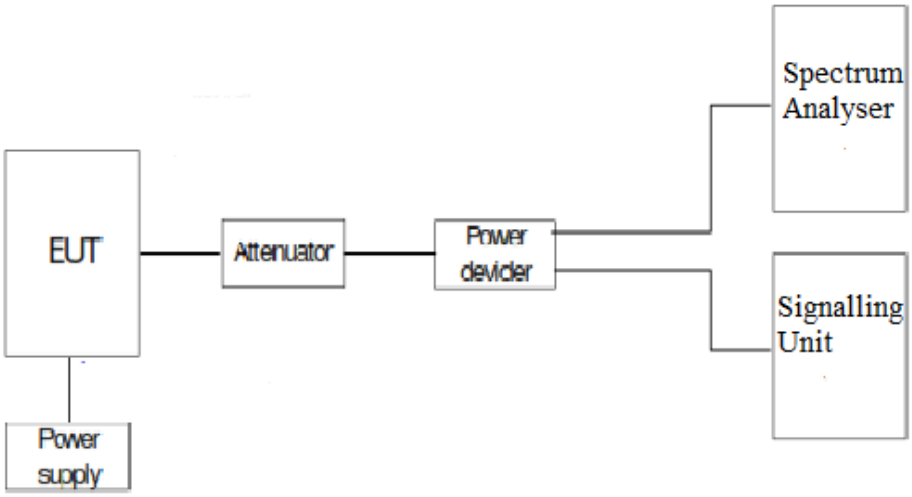
TEST SETUP

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 24, 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.



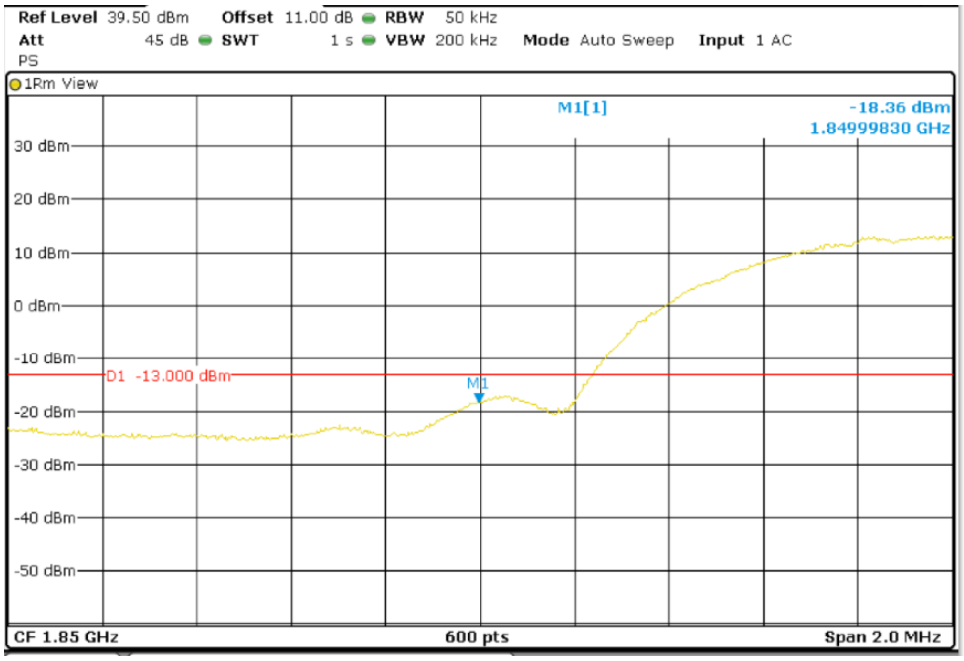
TESTED SAMPLES:	S/01
TESTED CONDITIONS MODES:	TC#01
TEST RESULTS:	PASS

WCDMA MODULATION	Low Channel	High Channel
Maximum measured level at lowest and Highest Block Edge at antenna port (dBm)	-18.36	-21.54

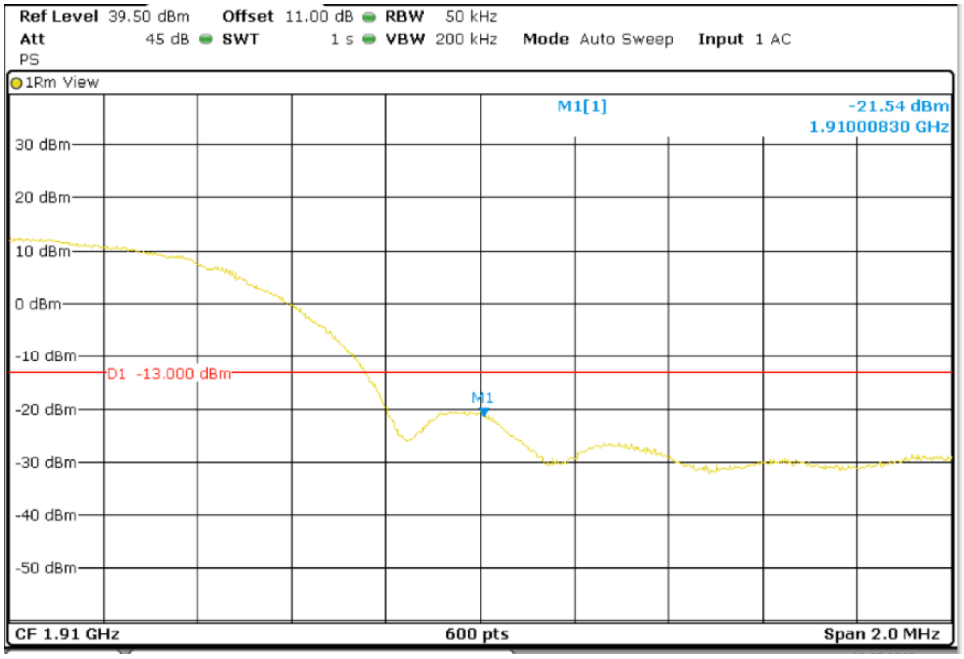
TEST RESULTS (Cont):	

WCDMA MODULATION.

Lowest Channel



Highest Channel



TEST B.7: RADIATED EMISSIONS

LIMITS:	Product standard:	FCC Part 24 / IC RSS-133
	Test standard:	FCC §2.1053 and §24.238 /RSS-133 Clause 6.5

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

Po (dBm) – [43 + 10 log (Po in watts)] = -13 dBm

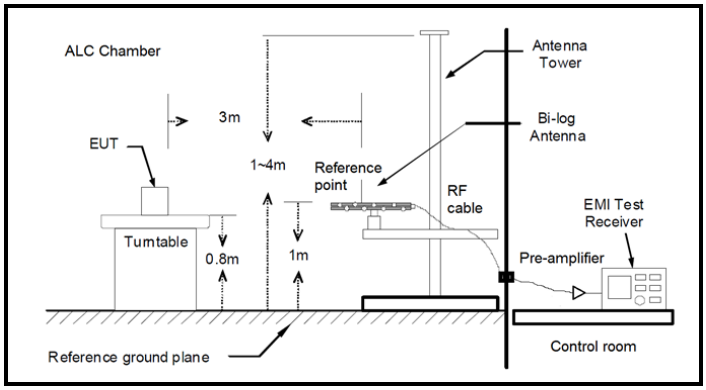
TEST SETUP

The measurement was performed with the EUT inside an anechoic chamber. The spectrum was scanned from 30 MHz to at least the 10th harmonic of the highest frequency generated within the equipment.

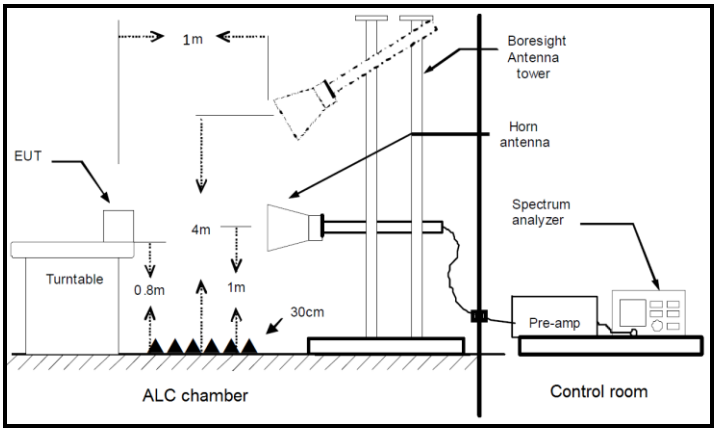
The EUT was placed on a non-conductive stand at a 3-meter distance from the measuring antenna for measurements below 1 GHz and at 1-meter distance for measurements above 1 GHz.

Detected emissions were maximized at each frequency by rotating the EUT and adjusting the measuring antenna height and polarization. The maximum reading was recorded.

Radiated measurements < 1GHz



Radiated measurements > 1GHz

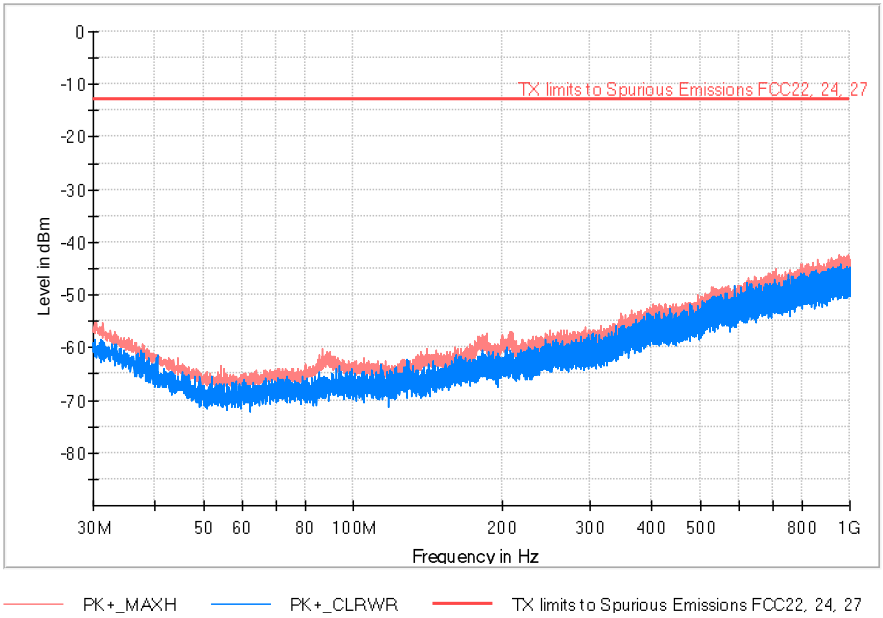


TESTED SAMPLES:	S/01
TESTED CONDITIONS MODES:	TC#01
TEST RESULTS:	PASS

A preliminary scan determined the WCDMA Modulation as the worst case. The following plots show the results for this configuration.

TEST RESULTS (Cont):	Low Channel

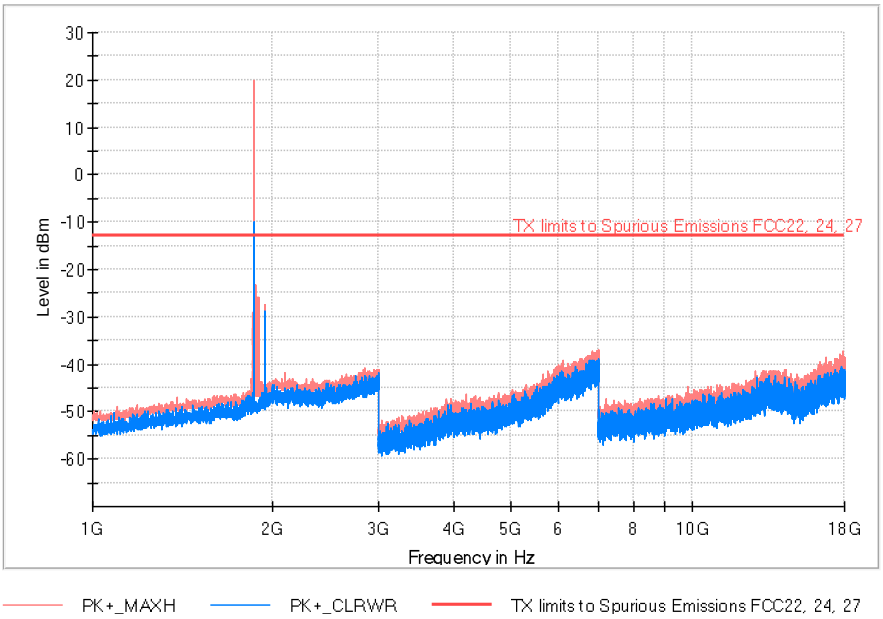
FREQUENCY RANGE: 30-1000 MHz



TEST RESULTS (Cont):	Low Channel

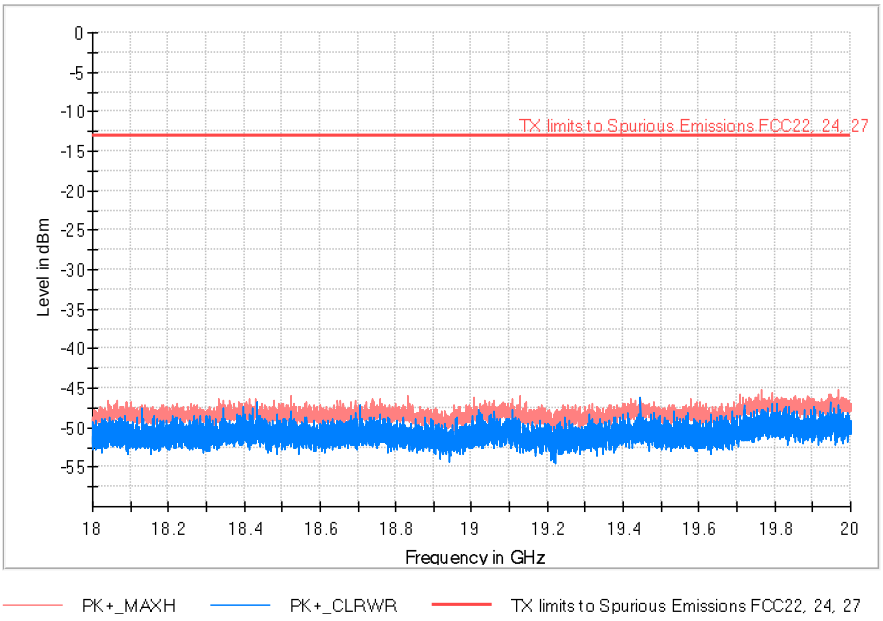
FREQUENCY RANGE: 1-18 GHz

Frequency (MHz)	PK+_CLRWR (dBm)	PK+_MAXH (dBm)	Comment
1860.500000	-10.95	19.79	Fundamental
1941.000000	-30.52	-27.43	



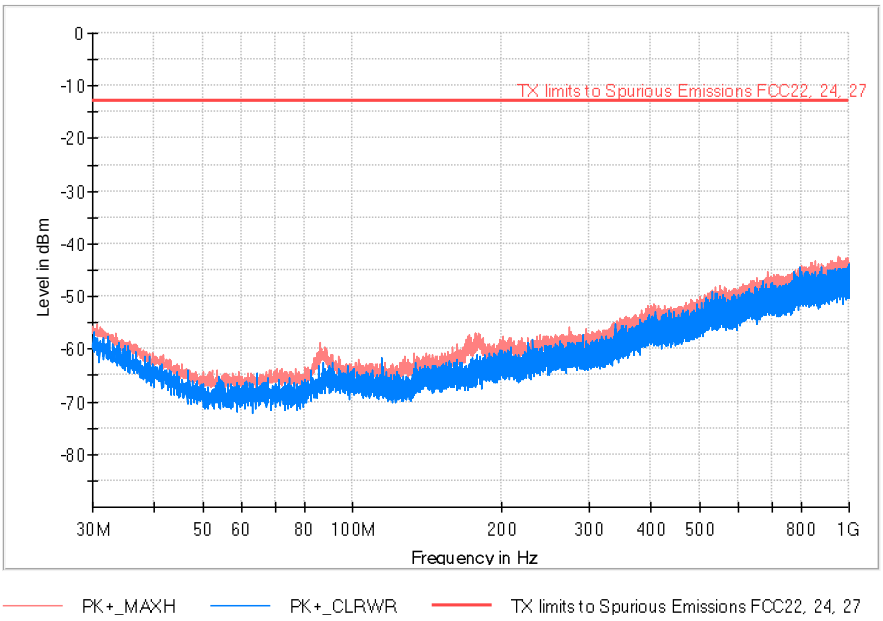
TEST RESULTS (Cont):	Low Channel

FREQUENCY RANGE: 18-20 GHz



TEST RESULTS (Cont):	Mid Channel

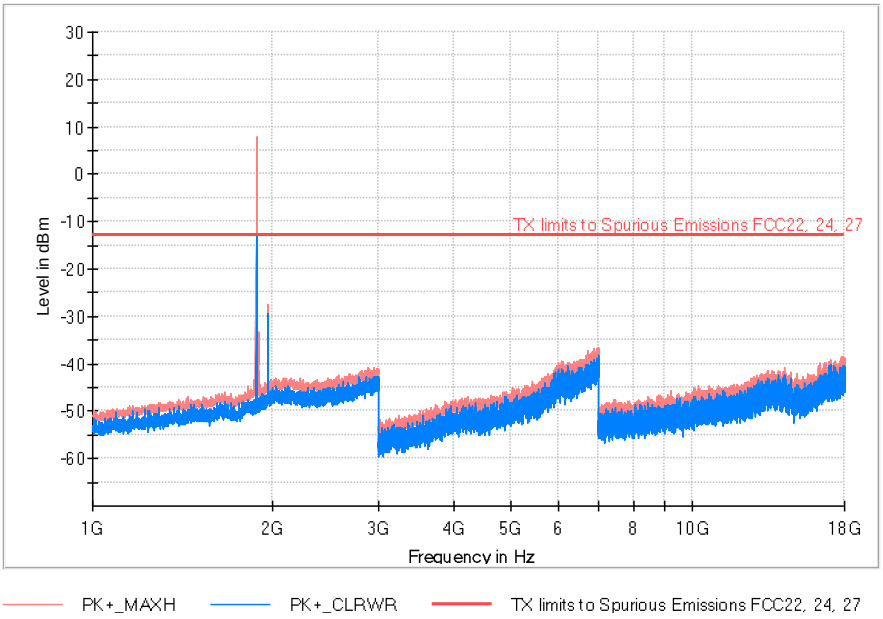
FREQUENCY RANGE: 30MHz -1 GHz



TEST RESULTS (Cont):	Mid Channel

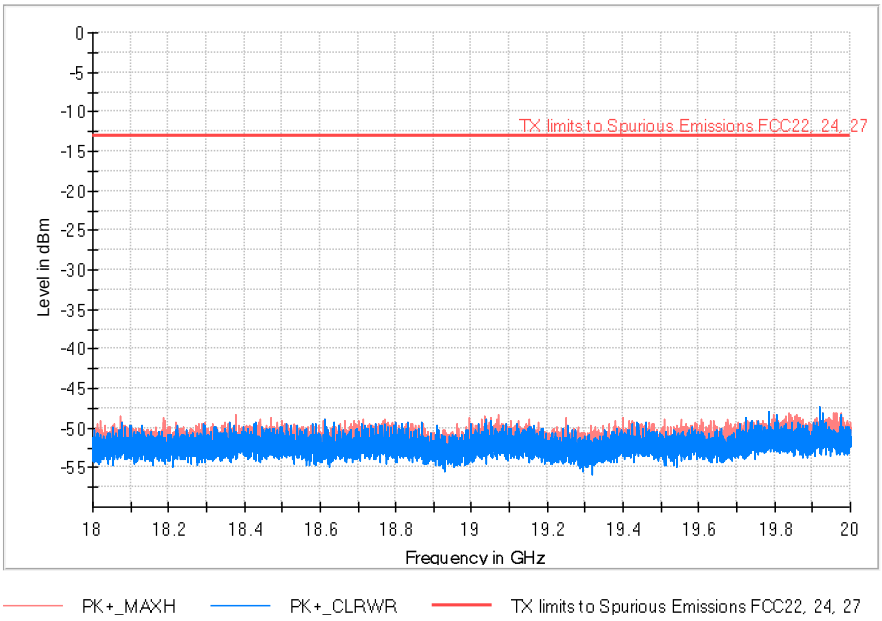
FREQUENCY RANGE: 1-18 GHz

Frequency (MHz)	PK+_CLRWR (dBm)	PK+_MAXH (dBm)	Comment
1881.000000	-12.42	7.90	Fundamental
1958.500000	-29.65	-27.54	
6974.500000	-40.58	-36.50	
17918.500000	-43.06	-38.45	



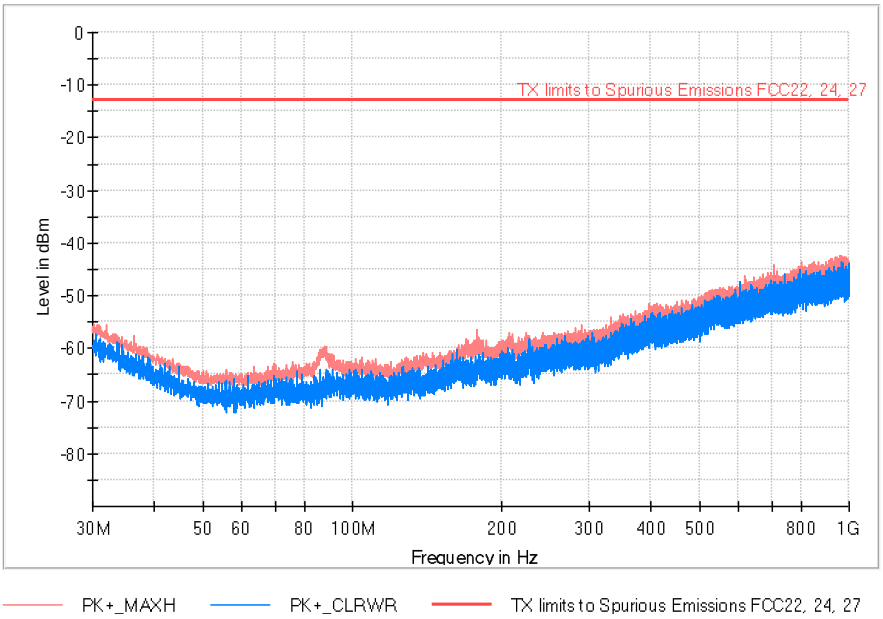
TEST RESULTS (Cont):	Mid Channel

FREQUENCY RANGE: 18-20 GHz



TEST RESULTS (Cont):	High Channel

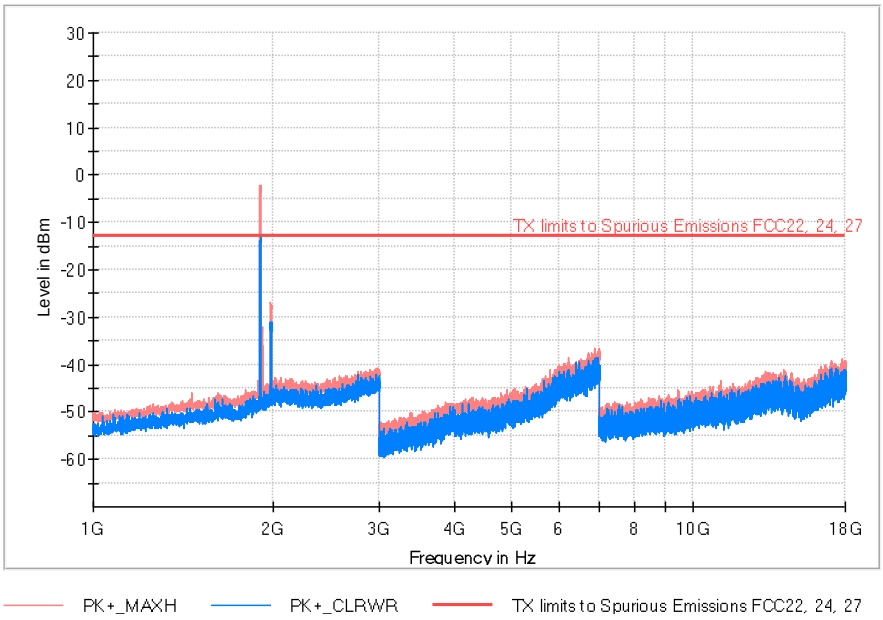
FREQUENCY RANGE: 30MHz-1 GHz



TEST RESULTS(Cont.):	High Channel

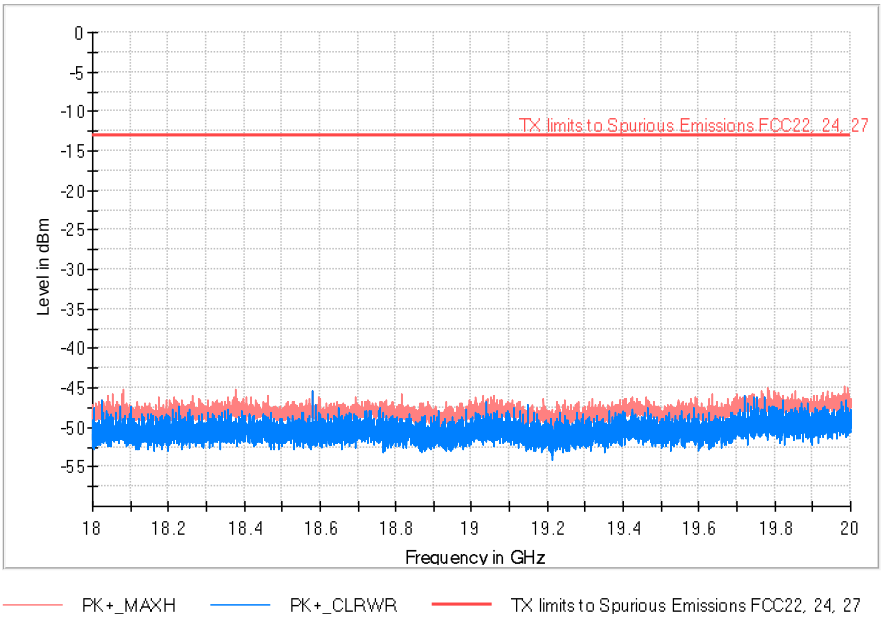
FREQUENCY RANGE: 1-18 GHz

Frequency (MHz)	PK+_CLRWR (dBm)	PK+_MAXH (dBm)	Comment
1898.500000	-13.99	-2.07	Fundamental
1979.000000	-32.72	-26.97	
6878.000000	-41.87	-36.65	
17794.000000	-44.12	-38.67	



TEST RESULTS (Cont):	High Channel

FREQUENCY RANGE: 18-20 GHz



Appendix C: Test Results for LTE

FCC Part 24/ IC RSS-133

Appendix C Content

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PRODUCT INFORMATION

The following information is provided by the client

Information	Description
Modulation	QPSK, QAM
Maximum RF Output Power	23 dBm
Operation mode:	
- Operating Frequency Range	Band 2: 1850-1910 MHz
- Nominal Channel Bandwidth	Band 2: 1.4 / 3 / 5 / 10 / 15 / 20 MHz
Extreme operating conditions	
- Temperature range	T_{nom} = +15 to + 35 T_{min} = -30 T_{max} = +50
Antenna type	External Antenna.
Antenna gain	2 dBi
Nominal Voltage	
- Supply Voltage	12 Vdc
- Type of power source	DC 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:

<table>
<tr><th>TEST CONDITIONS</th><th>DESCRIPTION</th></tr>
<tr><td>TC#01

LTE Band 2</td><td>
<u>Power supply (V):</u>
$V_{nominal}$ =12 Vdc
<u>Test Frequencies for Conducted tests:</u>
<u>1.4 MHz Bandwidth</u>:
-Lowest Channel: 18607(1850.7 MHz)
-Middle Channel: 18900(1880 MHz)
-Highest Channel: 19193(1909.3 MHz)

<u>3 MHz Bandwidth</u>:
-Lowest Channel: 18615(1851.5 MHz)
-Middle Channel: 18900(1880 MHz)
-Highest Channel: 19185(1908.5 MHz)
<u>5 MHz Bandwidth</u>:
-Lowest Channel: 18625(1852.5 MHz)
-Middle Channel: 18900(1880 MHz)
-Highest Channel: 19175(1907.5 MHz)
<u>10 MHz Bandwidth</u>:
-Lowest Channel: 18650(1855 MHz)
-Middle Channel: 18900(1880 MHz)
-Highest Channel: 19150(1905 MHz)
<u>15 MHz Bandwidth</u>:
-Lowest Channel: 18675(1857.5 MHz)
-Middle Channel: 18900(1880 MHz)
-Highest Channel: 19125(1902.5 MHz)

<u>20 MHz Bandwidth</u>:
-Lowest Channel: 18700(1860 MHz)
-Middle Channel: 18900(1880 MHz)
-Highest Channel: 19100(1900 MHz)
<u>Test Frequencies for Radiated tests:</u>
<table>
<tr><th>Available Frequencies</th><th>Tested Frequency</th><th>Channel Bandwidth</th><th>Modulation</th><th>Mode</th></tr>
<tr><td>1850 to 1910 MHz</td><td>1860 MHz
1880 MHz
1900 MHz</td><td>20 MHz</td><td>QPSK</td><td>1 RB</td></tr>
</table>
Note: This device was tested under all bandwidths, RB configurations and modulations. The worst case found in QPSK modulation.
</td></tr>
</table>

TEST C.1: RF OUTPUT POWER

LIMITS:	Product standard:	FCC Part 24 / IC RSS-133
	Test standard:	FCC §2.1046 and §24.232. RSS-133 Clause 6.4

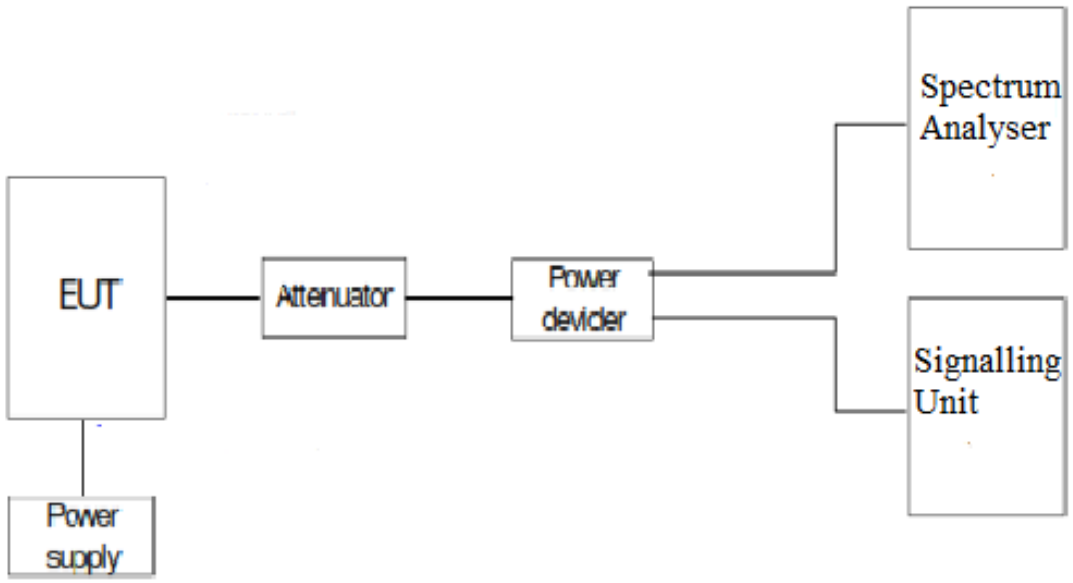
LIMITS

Fixed. mobile. and portable (hand-held) stations are limited to 2-watt EIRP (30 dBm). Fixed stations 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-133 Clause 6.4
The equivalent isotopically radiated power (e.i.r.p.) for transmitters shall not exceed the limits given in SRSP-510. Moreover, base station transmitters operating in the band 1930-1995 MHz shall not have output power exceeding 100 watts.

In addition, the transmitter's peak-to-average power ratio (PAPR) shall not exceed 13 dB for more than 0.1% of the time using a signal corresponding to the highest PAPR during periods of continuous transmission.

TEST SETUP



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

LTE QPSK AND 16QAM MODULATION. Bandwidth = 1.4 MHz

Channel	Average power at antenna port (dBm)	Maximum declared antenna gain (dBi)	Maximum E.I.R.P. average power (dBm)	PAPR (dB)
Lowest	22.33	2.0	24.33	4.81
Middle	22.24	2.0	24.24	5.42
Highest	22.37	2.0	24.37	4.12

LTE QPSK AND 16QAM MODULATION. Bandwidth = 3 MHz

Channel	Average power at antenna port (dBm)	Maximum declared antenna gain (dBi)	Maximum E.I.R.P. average power (dBm)	PAPR (dB)
Lowest	22.29	2.0	24.29	4.58
Middle	22.28	2.0	24.28	5.07
Highest	22.48	2.0	24.48	4.41

LTE QPSK AND 16QAM MODULATION. Bandwidth = 5 MHz

Channel	Average power at antenna port (dBm)	Maximum declared antenna gain (dBi)	Maximum E.I.R.P. average power (dBm)	PAPR (dB)
Lowest	22.42	2.0	24.42	4.52
Middle	22.42	2.0	24.42	5.01
Highest	22.47	2.0	24.47	4.55

LTE QPSK AND 16QAM MODULATION. Bandwidth = 10 MHz

Channel	Average power at antenna port (dBm)	Maximum declared antenna gain (dBi)	Maximum E.I.R.P. average power (dBm)	PAPR (dB)
Lowest	22.58	2.0	24.58	4.52
Middle	22.68	2.0	24.68	4.99
Highest	22.64	2.0	24.64	4.61

LTE QPSK AND 16QAM MODULATION. Bandwidth = 15 MHz

Channel	Average power at antenna port (dBm)	Maximum declared antenna gain (dBi)	Maximum E.I.R.P. average power (dBm)	PAPR (dB)
Lowest	22.48	2.0	24.48	4.52
Middle	22.61	2.0	24.61	4.87
Highest	22.66	2.0	24.66	4.32

LTE QPSK AND 16QAM MODULATION. Bandwidth = 20 MHz

Channel	Average power at antenna port (dBm)	Maximum declared antenna gain (dBi)	Maximum E.I.R.P. average power (dBm)	PAPR (dB)
Lowest	22.59	2.0	24.59	4.35
Middle	22.71	2.0	24.71	4.78
Highest	22.61	2.0	24.61	4.58
Measurement uncertainty (dB)			<±0.95	

TEST RESULTS (Cont):

Bandwidth (MHz)	Channel Location Frequency (MHz) Channel Number	Modulation	Resource Block Size	Resource Block Offset	Average power at antenna port (dBm)	PAPR (dB)
1.4	Lowest (18607 (1850.7 MHz))	QPSK	1	0	22.27	3.83
			1	5	22.28	
			3	0	22.28	
			3	2	22.33	
			6	0	21.27	
		16-QAM	1	0	21.36	4.81
			1	5	21.39	
			3	0	21.44	
			3	2	21.36	
			6	0	20.34	
	Middle (18900 (1880 MHz))	QPSK	1	0	22.21	4.38
			1	5	22.21	
			3	0	22.21	
			3	2	22.24	
			6	0	21.22	
		16-QAM	1	0	21.35	5.42
			1	5	21.42	
			3	0	21.26	
			3	2	21.32	
			6	0	20.29	
	Highest (19193 (1909.3 MHz))	QPSK	1	0	22.36	3.04
			1	5	22.34	
			3	0	22.32	
			3	2	22.37	
			6	0	21.29	
		16-QAM	1	0	21.57	4.12
			1	5	21.56	
			3	0	21.41	
			3	2	21.4	
			6	0	20.37	

TEST RESULTS (Cont):

Bandwidth (MHz)	Channel Location Frequency (MHz) Channel Number	Modulation	Resource Block Size	Resource Block Offset	Average power at antenna port (dBm)	PAPR (dB)
3	Lowest (18650 (1855 MHz))	QPSK	1	0	22.29	3.74
			1	14	22.28	
			8	0	21.37	
			8	7	21.36	
			15	0	21.37	
		16-QAM	1	0	21.53	4.58
			1	14	21.55	
			8	0	20.43	
			8	7	20.41	
			15	0	20.39	
	Middle (18900 (1880 MHz))	QPSK	1	0	22.26	4.32
			1	14	22.28	
			8	0	21.34	
			8	7	21.29	
			15	0	21.28	
		16-QAM	1	0	21.45	5.07
			1	14	21.34	
			8	0	20.36	
			8	7	20.39	
			15	0	20.35	
	Highest (19185 (1908.5 MHz))	QPSK	1	0	22.48	3.42
			1	14	22.4	
			8	0	21.43	
			8	7	21.4	
			15	0	21.43	
		16-QAM	1	0	21.59	4.41
			1	14	21.39	
			8	0	20.48	
			8	7	20.48	
			15	0	20.45	

TEST RESULTS (Cont):

Bandwidth (MHz)	Channel Location Frequency (MHz) Channel Number	Modulation	Resource Block Size	Resource Block Offset	Average power at antenna port (dBm)	PAPR (dB)
5	Lowest (18625 (1852.5 MHz))	QPSK	1	0	22.41	3.65
			1	24	22.32	
			12	0	22.42	
			12	11	21.39	
			25	0	21.41	
		16-QAM	1	0	21.39	4.52
			1	24	21.5	
			12	0	21.52	
			12	11	21.6	
			25	0	20.49	
	Middle (18900 (1880 MHz))	QPSK	1	0	20.44	4.23
			1	24	20.42	
			12	0	22.41	
			12	11	22.36	
			25	0	22.42	
		16-QAM	1	0	21.42	5.01
			1	24	21.42	
			12	0	21.43	
			12	11	21.55	
			25	0	21.51	
	Highest (19175 (1907.5 MHz))	QPSK	1	0	21.48	3.77
			1	24	20.41	
			12	0	20.44	
			12	11	20.42	
			25	0	22.47	
		16-QAM	1	0	22.39	4.55
			1	24	22.4	
			12	0	21.45	
			12	11	21.4	
			25	0	21.42	

TEST RESULTS (Cont):

BANDWIDTH (MHz)	CHANNEL FREQUENCY (MHz)	MODULATION	RB SIZE	RB OFFSET	AVERAGE POWER (dBm)	PAPR (dB)
10	Lowest (18650 (1855 MHz))	QPSK	1	0	22.58	3.51
			1	24	22.39	
			1	49	22.53	
			25	0	21.45	
			25	24	21.38	
			50	0	21.49	
		16-QAM	1	0	21.75	4.52
			1	24	21.56	
			1	49	21.67	
			25	0	20.48	
			25	24	20.4	
			50	0	20.49	
	Middle (18900 (1880 MHz))	QPSK	1	0	22.68	4.09
			1	24	22.39	
			1	49	22.62	
			25	0	21.45	
			25	24	21.44	
			50	0	21.45	
		16-QAM	1	0	21.75	4.99
			1	24	21.51	
			1	49	21.87	
			25	0	20.48	
			25	24	20.45	
			50	0	20.5	
	Highest (19150 (1905 MHz))	QPSK	1	0	22.64	3.59
			1	24	22.42	
			1	49	22.45	
			25	0	21.46	
			25	24	21.48	
			50	0	21.47	
		16-QAM	1	0	21.83	4.61
			1	24	21.48	
			1	49	21.65	
			25	0	20.51	
			25	24	20.48	
			50	0	20.48	

TEST RESULTS (Cont):	

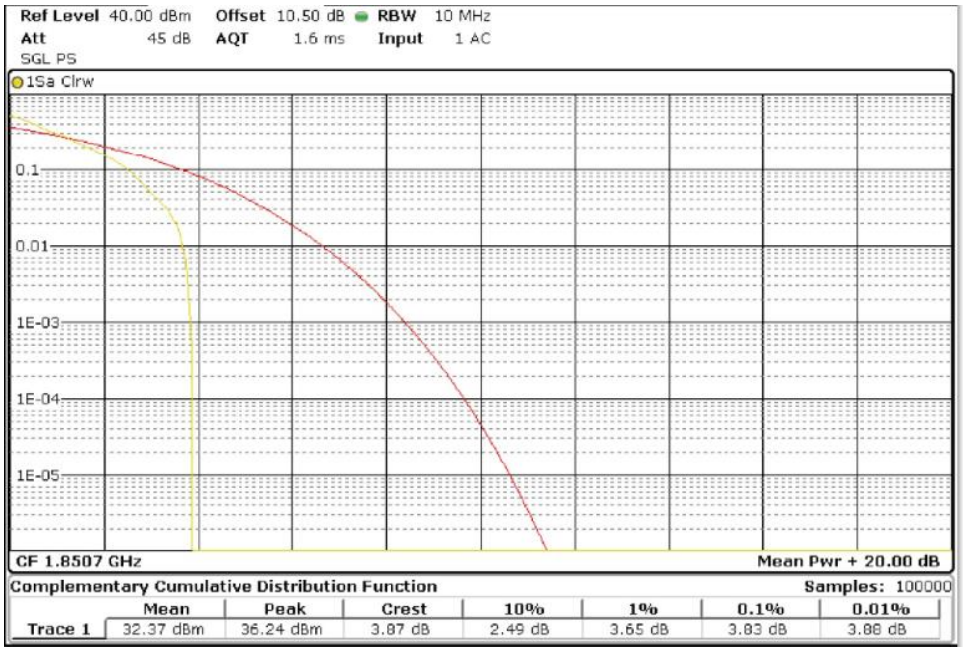
BANDWIDTH (MHz)	CHANNEL FREQUENCY (MHz)	MODULATION	RB SIZE	RB OFFSET	AVERAGE POWER (dBm)	PAPR (dB)
15	Lowest (18675 (1857.5 MHz))	QPSK	1	0	22.48	3.77
			1	37	22.28	
			1	74	22.4	
			36	0	21.44	
			36	37	21.37	
			75	0	21.36	
		16-QAM	1	0	21.58	4.52
			1	37	21.48	
			1	74	21.59	
			36	0	20.47	
			36	37	20.43	
			75	0	20.4	
	Middle (18900 (1880 MHz))	QPSK	1	0	22.61	4.09
			1	37	22.4	
			1	74	22.5	
			36	0	21.45	
			36	37	21.46	
			75	0	21.43	
		16-QAM	1	0	21.75	4.87
			1	37	21.52	
			1	74	21.53	
			36	0	20.47	
			36	37	20.48	
			75	0	20.47	
	Highest (19125 (1902.5 MHz))	QPSK	1	0	22.66	3.39
			1	37	22.39	
			1	74	22.47	
			36	0	21.6	
			36	37	21.44	
			75	0	21.47	
		16-QAM	1	0	21.84	4.32
			1	37	21.68	
			1	74	21.53	
			36	0	20.61	
			36	37	20.47	
			75	0	20.46	

TEST RESULTS (Cont):	

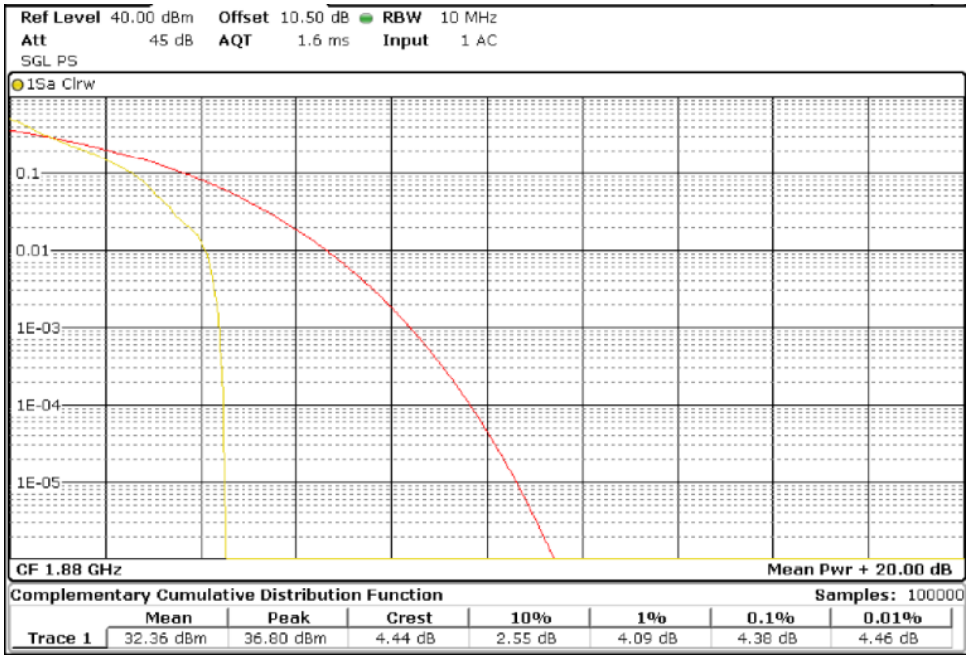
BANDWIDTH (MHz)	CHANNEL FREQUENCY (MHz)	MODULATION	RB SIZE	RB OFFSET	AVERAGE POWER (dBm)	PAPR (dB)
20	Lowest (18700 (1860 MHz))	QPSK	1	0	22.59	3.54
			1	49	22.29	
			1	99	22.51	
			50	0	21.53	
			50	49	21.41	
			100	0	21.45	
		16-QAM	1	0	21.73	4.35
			1	49	21.48	
			1	99	21.65	
			50	0	20.54	
			50	49	20.45	
			100	0	20.46	
	Middle (18900 (1880 MHz))	QPSK	1	0	22.71	4.03
			1	49	22.37	
			1	99	22.52	
			50	0	21.46	
			50	49	21.44	
			100	0	21.47	
		16-QAM	1	0	21.79	4.78
			1	49	21.46	
			1	99	21.78	
			50	0	20.52	
			50	49	20.5	
			100	0	20.49	
	Highest (19100 (1900 MHz))	QPSK	1	0	22.61	3.59
			1	49	22.42	
			1	99	22.42	
			50	0	21.61	
			50	49	21.44	
			100	0	21.5	
		16-QAM	1	0	21.82	4.58
			1	49	21.65	
			1	99	21.53	
			50	0	20.63	
			50	49	20.47	
			100	0	20.53	

TEST RESULTS (Cont):	

PAPR
Bandwidth = 1.4 MHz. Modulation QPSK. RB Size: 1. RB Offset: 0.
Lowest channel

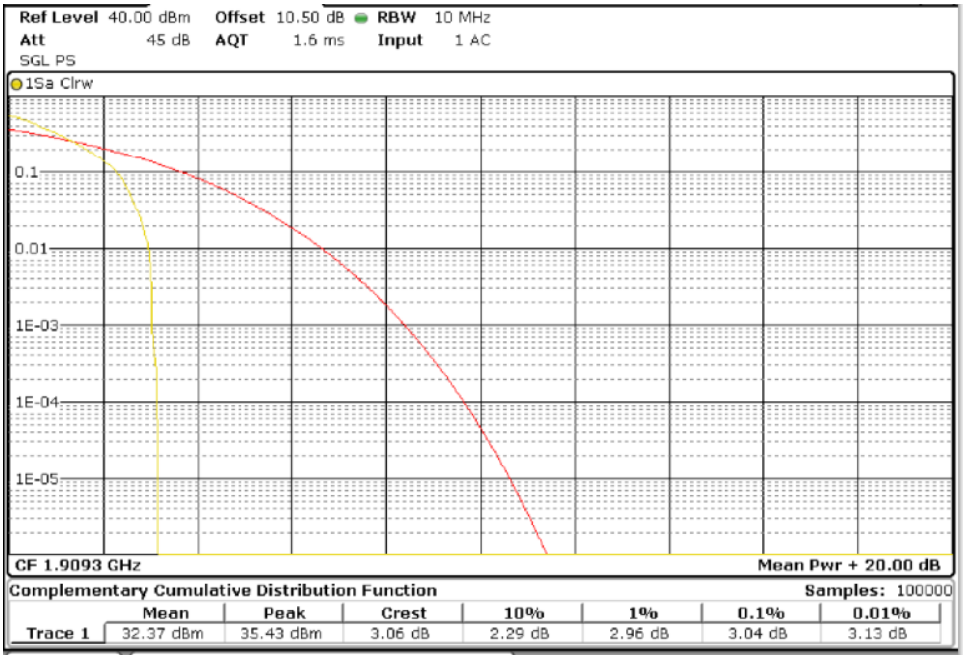


Middle channel

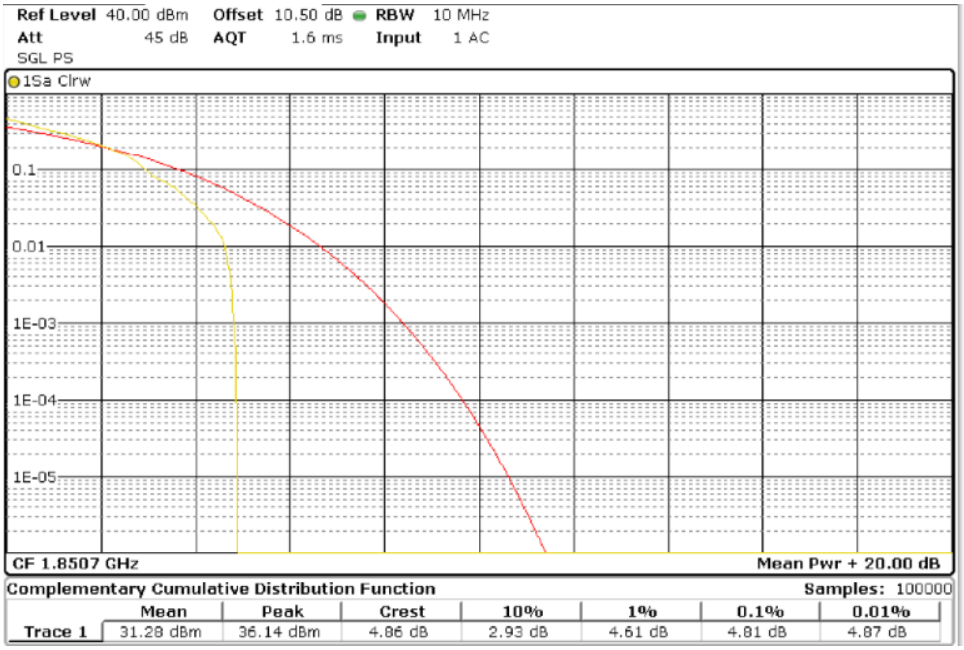


TEST RESULTS (Cont):	

Highest channel

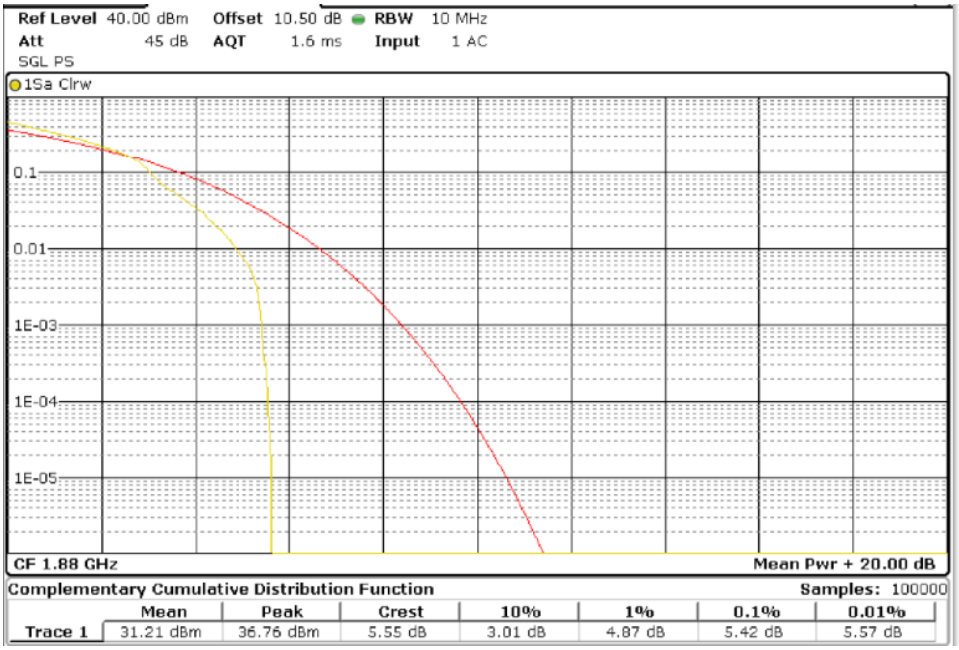
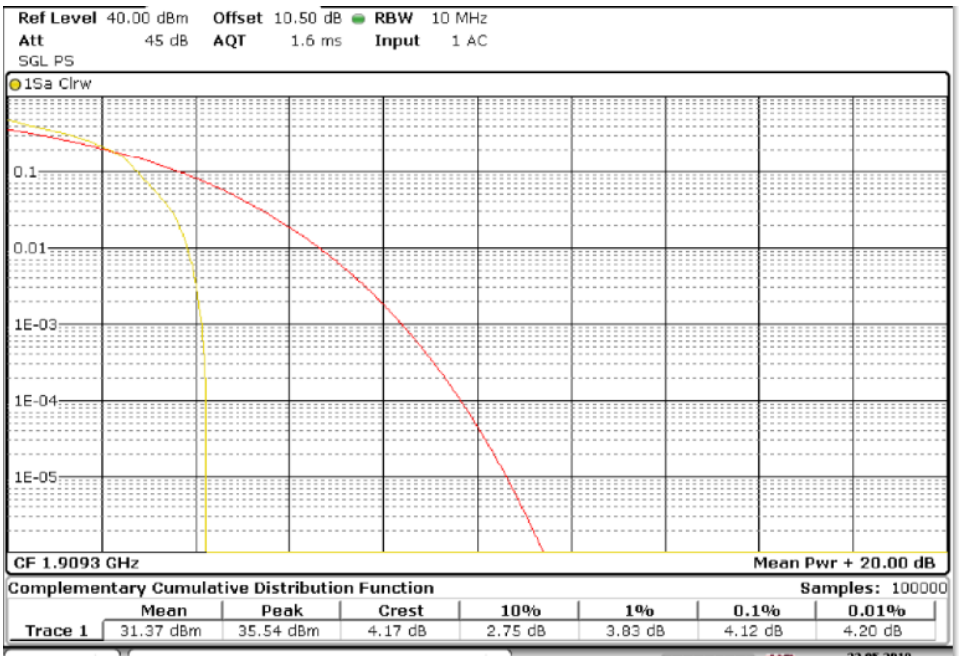


PAPR
Bandwidth = 1.4 MHz. Modulation 16QAM. RB Size: 1. RB Offset: 0.
Lowest channel



TEST RESULTS (Cont):	

Middle channel



Highest channel